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# **The Environmental Assessment and Management (TEAM) Guide**

Donna J. Schell

September 2013

Revised December 2018

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**U.S. TEAM Guide  
December 2018**

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Com- ment #	Page #	Checklist item # or para #	Line #	Comments
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## U.S. TEAM Guide, December 2018

### FOREWORD

This is ERDC/CERL SR-03-16. **The report is based on information available in the Federal Register as of 30 October 2018.** The research was performed for the following under the listed Military Interdepartmental Purchase Request (MIPR)/FAD numbers:

- Air Force, F2MUAA8057GW04, Technical Monitor is Joe Reyna (AFCEC)
- Air National Guard, F9WFEV7159GW01, Technical Monitor is Keith Harris (NGB/A7AN)
- Active Army, Army National Guard, and Army Reserve under ACSIM HQ FAD ID 2303. Technical Monitor is William Dzeda (ACSIM)
- Corps of Engineers, FAD 3058, Technical Monitor is John Coho (Civil Works)
- Defense Logistics Agency (DLA), SP10011800309, Technical Monitor is Pam Hillis
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- U.S. Navy, N6258318MPGBA02, Technical Monitor is Jenna Sells (Navy)
- U.S. Marine Corps, M9549417MPFZ004, Technical Monitor is LtCol Droste (Marine Corps)

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- Department of Commerce, MOU 1301-15-SA00102, Order #4, Technical Monitor is Anna Kavalieris
- Department of Homeland Security (DHS), IAA NUAS-18-00021, Technical Monitor is Dennis McMenamin
- FAA, DTFAWA-15-E-70000, Technical Monitor is George Kelley
- Food and Drug Administration (FDA), IAA 224-18-8004S, Technical Monitor is Jay Collert
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CERL is an element of the U.S. Army Engineer Research and Development Center (ERDC), U.S. Army Corps of Engineers. The Director of ERDC is Dr. David Pittman, and the Commander and Executive Director was COL Ivan P. Beckman.

## **NOTICE**

This guide is intended as general guidance for personnel at Federal facilities. It is not, nor is it intended to be, a complete treatise on environmental laws and regulations. Neither the U.S. Government nor any agency thereof, nor any of their employees, makes any warranty, expressed or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information contained herein. For any specific questions about, or interpretations of, the legal references herein, consult appropriate counsel.

Summary of Changes Since September 2018	
Checklist item/Section	Action Taken
<b>Hazardous Waste Management</b>	
HW.10.9.US	Revised mailing address and length of time exporters are required to keep annual reports, October 2018

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## PROGRAM BACKGROUND

The Environmental Assessment and Management (TEAM) Guide was developed by a Department of Defense (DOD) working group chaired by Headquarters, U.S. Air Force (HQ USAF)/CEV, based on the Interservice Training Review Organization (ITRO) 1993 tasking to develop a “purple” compliance checklist. Sharing a common checklist provides the commonality needed to combine the training of evaluators, provides an excellent day-to-day management tool for Federal facility level personnel, and makes sense and saves dollars. Within 1 yr, the working group formed, organized, defined its goal, and produced the parameters for the TEAM Guide. The first edition of TEAM Guide was published November 1994. In 1998 the TEAM Committee opened its membership to non-DoD Federal agencies.

An annual review meeting of the TEAM Committee is held each year for all participants. The hosting of the meeting is rotated among the participants. Questions concerning the working group should be directed to Donna J. Schell, USACERL/CN-N, telephone 217-373-5841; EMAIL: donna.j.schell@usace.army.mil.

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For a copy of this document, send requests to the agency POC as listed above. Revisions are posted on FedCenter quarterly and an annual final version is published each September.

## **TEAM GUIDE CONTENTS AND UNDERLYING INTENT**

The contents of this guide are based on Federal environmental regulations and are to be supplemented locally using state and local environmental regulations that are applicable to facilities and are more stringent than Federal regulations included in this guide. This guide also is to be supplemented with the Federal agency specific supplements detailing individual agency programs and regulations. This guide, with local supplements, is intended to serve as the primary tool in conducting an environmental compliance assessment. Specifically, this guide:

1. compiles applicable Federal regulations with facility operations and activities
2. synthesizes environmental regulations, management practices (MPs), and risk management issues into consistent and easy to use checklists
3. serves as an aid in the assessment process and management action development phases of Federal agency environmental assessment programs.

## ORGANIZATION OF THE TEAM GUIDE

Federal facilities engage in many operations and activities that can cause environmental impacts on public health and the environment if not controlled or properly managed. Many of these activities and operations are regulated by Federal, state, and local regulations, and by Agency regulations/policies. After a review of these activities at Federal facilities, it is apparent that there are major categories of environmental compliance into which most environmental regulations and Federal agency activities could be grouped. This guide is divided into 14 sections that correspond to major compliance categories:

1. Air Emissions Management
2. Cultural Resources Management
3. Hazardous Materials Management
4. Hazardous Waste Management
5. Natural Resource Management
6. Other Environmental Issues
7. Pesticide Management
8. Petroleum, Oil, and Lubricant (POL) Management
9. Solid Waste Management
10. Storage Tanks Management
11. Toxic Substances Management
12. Wastewater Management
13. Water Quality Management (potable water).\
14. Environmental Management Systems (EMS)

Each section is organized in the following format:

- A. Applicability.** This provides guidance on the major activities and operations included in the section and a brief description of the major application.
- B. Federal Legislation.** This identifies, in summary form, the key legislative issues associated with the compliance area in the Federal law.
- C. State/Local Requirement.** This identifies the typical compliance areas normally addressed in state and local regulations. This section does not present individual state/local requirements. An assessment of state and local requirements must be conducted and supplemental questions prepared to cover these requirements. The guide is prepared in loose-leaf form to allow state and local requirements to be inserted easily.
- D. Key Compliance Requirements.** This summarizes the significant compliance requirements associated with the regulations included in the checklist. It is a brief abstract summarizing the overall thrust of the regulations for that particular compliance category.
- E. Key Compliance Definitions.** This presents definitions taken from the Code of Federal Regulations (CFRs) for those key terms associated with each compliance category.
- F. Records To Review.** This lists documents and records that should be reviewed during the assessment process for each section.
- G. Physical Features To Inspect.** A list of facilities and activities that should be assessed for compliance with that section.
- H. Guidance for Checklist Users.** This is a table of contents for the following checklist.
- I. Compliance Assessment Checklists.** The final portion of each section and its appendices contain checklists composed of requirements or guidelines that serve as indicators to point out possible compliance problems as well as practices, conditions, and situations that could indicate potential problems. These checklists are intended to focus attention on the key compliance questions and issues that should be investigated.

## USING THE CHECKLISTS

Please consult Appendices 3 and 4 for samples of a portion of a checklist.

- **Explanation of Layout/Content.** The checklist portion of the assessment section is divided into two columns. The first of these is a statement of a requirement. This may be a strict regulatory requirement, in which case the citation is given, or it may be a requirement that is considered to be a good management practice to maintain compliance, but which is not specifically mandated by regulation.

The second column gives instructions to help conduct the compliance assessment. These instructions are intended to be specific action items that should be accomplished by the investigator. Some of the instructions may be a simple documentation check that takes a few minutes; others may require physical inspection of a Federal facility.

- **Checklist Item Numbering.** The checklist items are each assigned a three-part number. The first part of the number indicates the section the checklist item is in (i.e., SO for Solid Waste Management, HW for Hazardous Waste Management). The second part of the number indicates the topic within the section. For example, in Appendix 3, the first topic is All Federal Facilities (SO.1). In Appendix 4, the requirements for small quantity generators (SQGs) are spread out among several topic numbers. This second part increases by increments of five to provide for room to add new topics to the checklist. The third number indicates the placement of the checklist item within the topic. These checklist item numbers will be kept static from this year to next year. New checklist items will be added at the end of topics or inserted as entirely new topics.
- **Standard Checklist Items.** The first checklist item under the first two headings (i.e., SO.1.1 and SO.2.1) of each section of the guide are standardized. The first heading item (SO.1.1) requires a review of any previous assessment documents and agreements. The second heading item (SO.2.1) provides a place for assessors to write up findings that are based on regulations that have been promulgated since the publication of the guide or regulations not included in the guide. Appendix 3 provides an example of these two checklist items as found in the Solid Waste Management section.
- **Inserting and Deleting Pages.** Each section is structured so an assessor does not have to carry the whole section while doing the assessment. For example, if the assessor was reviewing compliance at an SQG of hazardous waste (see the provided sample checklist items in Appendix 4) and knows that the facility does not generate any restricted wastes, the checklist items pertaining to restricted wastes at SQGs can be pulled out of the guide without deleting any checklist items pertaining to other topics. Pages from the Agency-specific Supplements or state guides can be inserted in the appropriate chapters.

The assessment procedures are designed as an aid and should not be considered exhaustive. Use of the checklist requires the assessor's judgment to play a role in determining the focus and extent of further investigation. A review of appropriate state regulations should be conducted so additional review questions that reflect the substantive requirements of state/local regulations pertinent to individual facilities can be included in the checklists.

Supplemental information to aid the assessor and the facility in the assessment process and the compliance process is included on the following pages.

## **ACCESSING TEAM GUIDE ONLINE**

A copy of TEAM Guide, Agency-specific Supplements, State Supplements, and OCONUS manuals are available online for users with access Fedcenter.gov on the Web. The URL for Fedcenter.gov is <http://www.fedcenter.gov/>. Access to the manuals on Fedcenter.gov is limited to Federal employees of agencies which are paying TEAM partners. These individuals must be a member (i.e., have a login and password) of Fedcenter.gov.



## **Appendix 1, Glossary of Acronyms**

**[Revised January 2002]**

AAR	annual application rate
ACHP	Advisory Council on Historic Preservation
ACBM	asbestos-containing building material
ACM	asbestos-containing material
AHA	American Hospital Association
AHERA	Asbestos Hazard Emergency Response Act
ANSI	American National Standards Institute
API	American Petroleum Institute
APE	area of potential effects
AQCR	air quality control region
ARAR	applicable or relevant and appropriate requirement
ARI	Air Conditioning and Refrigeration Institute
ARPA	Archeological Resources Protection Act
ASME	American Society of Mechanical Engineers
AST	aboveground storage tank
ASTM	American Society for Testing and Materials
BACT	best available control technology
BAT	best available technology
BCT	best conventional technology
BDAT	best demonstrated available technology
BOD5	5 day biochemical oxygen demand
BOF	basic oxygen furnace
BPT	best practicable technology
Btu	British thermal unit
C	compliance
CA	cost analysis
CAA	Clean Air Act
CAMU	corrective action management unit
CAP	corrective action plan
CARC	Chemical Agent-Resistant Coating
CAS	Chemical Abstract Service
CCR	Consumer Confidence Report
CDC	Centers for Disease Control
CDL	commercial driver's license
CEMS	continuous emissions monitoring system
CEQ	Council on Environmental Quality

## **Appendix 1, Glossary of Acronyms**

**[Revised January 2002]**

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESQG	conditionally exempt small quantity generator
CEQ	Council on Environmental Quality
CFC	chlorofluorocarbons
CFR	Code of Federal Regulations
CFU	colony formation units
COD	certificate of disposal
COTP	Captain of the Port
CPE	comprehensive performance evaluation
CPG	comprehensive procurement guideline
CQA	construction quality assurance
CRMP	Cultural Resources Management Plan
CRP	community relations plan
CT	residual disinfectant concentration (C in CT calculation)
CWA	Clean Water Act
CWT	centralized waste treatment
CX	categorical exclusions
DA	Department of the Army
DBP	disinfection byproduct precursors
DCA	departmental consulting archaeologist
DD	decision document
DENIX	Defense Environmental Network and Information Exchange
DERP	Defense Environmental Restoration Program
DHMIR	detailed hazardous material incident report
DIY	do-it-yourself
DLA	Defense Logistics Agency
DOD	Department of Defense
DOE	Department of Energy
DOI	Department of the Interior
DOT	Department of Transportation
DRE	destruction and removal efficiency
EA	environmental assessment
EAF	electric arc furnace
EBL	elevated blood level
EE/CA	engineering evaluation/cost analysis

## **Appendix 1, Glossary of Acronyms**

**[Revised January 2002]**

EIS	environmental impact statement
EMI	electromagnetic interference
EMP	electromagnetic pulse
EO	Executive Order
EPA	Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
ESA	Endangered Species Act
EUP	experimental use permit
FAO	Federal agency official
FAR	Federal Acquisition Regulations
FDA	Food and Drug Administration
FFCA	Federal Facilities Compliance Act
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FOTW	Federally owned treatment works
FNSI	finding of no significant impact
FR	Federal Register
FUDS	formally used defense sites
FWCA	Fish and Wildlife Conservation Act
FWS	Fish and Wildlife Service
FY	fiscal year
GGTP	gamma glutamyl transpeptidase
GWP	global warming potential
HAA5	haloacetic acids (five)
HAP	hazardous air pollutant
HCFC	hydrogenated chlorofluorocarbons
HCL	hydrogen chloride acid
HDPE	high density polyethylene
HEPA	high efficiency particulate air
HMIWI	hospital/medical/infectious waste incinerators
HOC	halogenated organic compounds
HPC	heterotrophic plate count
HPO	Historic Preservation Officer
HTRW	hazardous, toxic, and radioactive waste
HWM	hazardous waste management
HVLP	high volume low pressure
IAF	induced air flotation

## **Appendix 1, Glossary of Acronyms**

**[Revised January 2002]**

IAG	interagency agreement
IARC	International Agency for Research on Cancer
IBC	intermediate bulk container
ICAO	International Civil Aviation Organization
ID	identification
IOC	inorganic chemicals
IOPP	international oil pollution prevention
IRP	Installation Restoration Program
ISS	interim status standards
LAER	lowest achievable emission rate
LBP	lead-based paint
LDPE	low density polyethylene
LDR	land disposal restriction
LPG	liquid petroleum gas
LQG	large quantity generator
MBtu	Million British thermal units
MCL	maximum contaminant level
MCLG	maximum contaminant level goal
MDL	minimum detection level
MOA	memorandum of agreement
MODEF	mineral oil dielectric fluid
MOU	memorandum of understanding
MP	management practice
MPCD	marine pollution control device
MPN	most probable number
MPT	marine portable tanks
MRDL	maximum residual disinfectant level
MRDLG	maximum residual disinfectant level goal
MRL	minimum reporting level
MSDS	material safety data sheet
MSWLF	municipal solid waste landfill
MVAC	motor vehicle air-conditioner
MWC	municipal waste combustor
NA	not applicable
NAAQS	National Ambient Air Quality Standard
NAGRPA	Native American Graves Protection and Repatriation Act

## **Appendix 1, Glossary of Acronyms**

**[Revised January 2002]**

NASA	National Aeronautics and Space Administration
NACE	National Association of Corrosion Engineers
NARA	National Archives and Records Administration
NCP	national contingency plan
NEPA	National Environmental Policy Act
NESHAP	national emission standards for hazardous air pollutants
NFPA	National Fire Protection Association
NGB	National Guard Bureau
NHPA	National Historic Preservation Act
NIOSH	National Institute of Occupational Safety and Health
NLS	noxious liquid substance
NOI	notice of intent
NOV	notice of violation
NPDES	National Pollutant Discharge Elimination System
NPDWR	National Primary Drinking Water Regulation
NPL	National Priorities List
NRC	National Response Center
NSPS	new source performance standards
NTNC	nontransient noncommunity
NTP	National Toxicology Program
O&M	operations and maintenance
OB/OD	open burning/open detonation
ODA	Ocean Dumping Act
ODP	ozone depleting potential
ODS	ozone depleting substance
OECA	Office of Enforcement and Compliance Assurance
OHSPC	Oil and Hazardous Substances Pollution Contingency Plan
OMB	Office of Management and Budget
OPA	Oil Pollution Act
ORV	off-road vehicle
OSC	on-scene coordinator
OSHA	Occupational Safety and Health Act
PA	preliminary assessment
PCB	polychlorinated biphenyl
PEL	permissible exposure limit
PFC	perfluorocarbons

## **Appendix 1, Glossary of Acronyms**

**[Revised January 2002]**

PL	Public Law
PM	particulate matter
PMN	premanufacture notice
POC	point of contact
PODF	performance-based organic decontamination fluid
POHC	principle organic hazardous constituent
POL	petroleum, oil, and lubricant
POTW	publicly owned treatment works
PPA	Pollution Prevention Act
PPE	personal protective equipment
PQL	practical quantitation limit
PSD	prevention of significant deterioration
PSES	pretreatment standards for existing sources
PSNS	pretreatment standards for new indirect sources
PVC	polyvinyl chloride
PWS	public water system
PWSS	Public Water System Supervision
QA	quality assurance
RACM	regulated asbestos containing material
RCRA	Resource Conservation and Recovery Act
RD/RA	remedial design/remedial action
REC	Regional Environmental Coordinator
REI	restricted-entry interval
RDS	raw duplicate sample
RFS	raw field sample
RI/FS	remedial investigation/feasibility study
RMA	requires management action
RMAN	recovered materials advisory notice
RMP	risk management program
ROD	record of decision
RPD	relative percent difference
RQ	reportable quantity
RSPA	Research and Special Programs Administration
SARA	Superfund Amendments and Reauthorization Act
SCBA	self-contained breathing apparatus
SDWA	Safe Drinking Water Act

## **Appendix 1, Glossary of Acronyms**

**[Revised January 2002]**

SGOT	serum glutamic oxaloacetic transaminase
SGPT	serum glutamic pyruvic transaminase
SHPO	State Historic Preservation Officer
SI	site inspection
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SIR	statistical inventory reconciliation
SMCL	secondary maximum contamination level
SMSA	Standard Metropolitan Statistical Area
SNAP	Significant New Alternatives Policy
SOC	synthetic organic chemicals
SOI	Secretary of the Interior
SOP	standard operating procedure
SOUR	specific oxygen uptake rate
SPCC	Spill Prevention Control and Countermeasure Plan
SPDES	State Pollution Discharge Elimination System
SQG	small quantity generator
STP	sewage treatment plant
SUVA	specific ultraviolet absorption
SWMU	solid waste management unit
SWTR	Surface Water Treatment Rule
TASC	training aid support centers
TCLP	toxicity characteristics leaching procedure
TDS	treated duplicate sample
TEC	transport equipment cleaning
TFS	treated field sample
THM	trihalomethanes
THPO	tribal historic preservation officer
TNT	ammonia nitrate explosive (trinitrotoluene)
TOC	total organic carbon
TPQ	threshold planning quantity
TRC	Technical Review Criteria
TRI	Toxic Release Inventory
TSCA	Toxic Substances Control Act
TSDF	treatment, storage, or disposal facility
TSS	total suspended solids

## **Appendix 1, Glossary of Acronyms**

**[Revised January 2002]**

TTHM	total trihalomethanes
TTO	total toxic organics
TU	temporary unit
UCM	unregulated contaminant monitoring
UCMR	unregulated contaminant monitoring regulation
UIC	underground injection control
UL	Underwriter's Laboratory
USACERL	U.S. Army Construction Engineering Research Laboratories
USC	U.S. Code
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
UST	underground storage tank
VHAP	volatile hazardous air pollutant
VOC	volatile organic compound
VOL	volatile organic liquid
XRF	x-ray fluorescence

## Appendix 2, Commonly Used Abbreviations

bbl	barrel	µg	microgram
C	Celsius	µm	micrometer
cm	centimeter	min	minute
cm <sup>2</sup>	square centimeter	MJ	Megajoule
dscf	dry standard cubic foot	mo	month
dscm	dry standard cubic meter	mm	millimeter
F	Fahrenheit	mrem	millirem
ft	foot	MW	Megawatt
ft <sup>2</sup>	square feet	ng	nanogram
ft <sup>3</sup>	cubic feet	NTU	nephelometric turbidity unit
g	gram	oz	ounce
gal	gallon	pCi	picoCurie
gJ	gigajoule	ppm	part per million
h	hour	ppmv	part per million by volume
ha	hectare		
hp	horsepower	ppmw	part per million by weight
in.	inch	psi	pound per square inch
J	Joule	psia	pounds per square inch absolute
kg	kilogram	psig	pounds per square inch gauge
km	kilometer	qt	quart
kPa	kilopascals	s	second
L	liter	scf	standard cubic foot
lb	pound	scm	standard cubic meter
m	meter	TU	turbidity unit
m <sup>3</sup>	cubic meter	V	volt
meq	milligram equivalent	yd	yard
mg	milligram	yd <sup>2</sup>	square yard
mi	mile	yr	year
mL	milliliter		

### Chemicals

CO	carbon monoxide	NO <sub>2</sub>	nitrogen dioxide
CO <sub>2</sub>	carbon dioxide	NO <sub>x</sub>	nitrogen oxides
Hg	mercury	SO <sub>2</sub>	sulfur dioxide



Appendix 3, Standard Checklist Items	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: September 1998
<p><b>SO.1</b></p> <p><b>ALL FEDERAL FACILITIES</b></p> <p><b>SO.1.1.</b> The current status of any ongoing or unresolved consent orders, compliance agreements, notice of violations (NOVs), inter-agency agreements, or equivalent state enforcement actions is required to be examined (a finding under this checklist item will have the enforcement action/identifying information as the citation).</p>	<p>Determine if noncompliance issues have been resolved by reviewing a copy of the previous report, consent orders, compliance agreements, NOVs, interagency agreements, or equivalent state enforcement actions.</p>



Appendix 3, Standard Checklist Items	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: September 1998
<p><b>SO.2</b></p> <p><b>MISSING CHECKLIST ITEMS</b></p> <p><b>SO.2.1.</b> Federal facilities are required to comply with all applicable regulatory requirements not contained in this checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of finding).</p>	<p>Determine if any new regulations have been issued since the finalization of TEAM.</p> <p>Determine if the Federal facility has activities or facilities that are regulated, but not addressed in this checklist.</p> <p>Verify that the Federal facility is in compliance with all applicable and newly issued regulations.</p>



Appendix 4, Sample Checklist Items [Revised June 1998]	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: September 1998
<p><b>SQGs</b></p> <p><b>HW.25 Personnel Training</b></p> <p><b>HW.25.1.</b> SQG personnel are required to be thoroughly familiar with proper waste handling and emergency procedures (40 CFR 262.34(d)(5)(iii)) [February 1995].</p> <p><b>HW.25.2.</b> Training records should be maintained for all SQG staff who manage hazardous waste (MP).</p>	<p>Verify that personnel are thoroughly familiar with waste handling and emergency procedures relevant to their responsibilities during normal facility operation and emergencies.</p> <p>Examine training records and verify that they include the following:</p> <ul style="list-style-type: none"> <li>– job title and description for each employee by name</li> <li>– written description of how much training each position will obtain</li> <li>– documentation of training received by name.</li> </ul> <p>Determine if training records are retained for 3 yr after employment terminates at the Federal facility or until closure of the facility.</p>

## Appendix 4, Sample Checklist Items [Revised June 1998]

**REGULATORY REQUIREMENTS:**

<p align="center"><b>REVIEWER CHECKS:</b> <b>September 1998</b></p>
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<b>SQGs</b>
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## HW.30

### Containers

**HW.30.1.** Empty containers at SQGs previously holding hazardous wastes must meet the regulatory definition of empty before they are exempted from hazardous waste requirements (40 CFR 261.7).

Verify that, for containers or inner liners holding hazardous waste:

- all wastes are removed that can be removed using common practices and no more than 2.5 cm [1 in.] of residue remains
- if the container is less than or equal to 110 gal, no more than 3 percent by weight of total container capacity remains
- when the container is greater than 110 gal, no more than 0.3 percent by weight of the total container capacity remains.

- Verify that, for containers that held a compressed gas, the pressure in the container approaches atmosphere.

approaches atmosphere.

Verify that, for containers or inner liners which held an acute hazardous waste listed in Appendix 4-5, one of the following is done:

- it is triple rinsed
- it is cleaned by another method identified through the literature or testing as achieving equivalent removal
- the inner liner is removed.

**HW.30.2.** Containers used to store hazardous waste at SQGs must be in good condition and not leaking (40 CFR 262.34(d)(2) and 265.171).

Verify that containers are not leaking, bulging, rusting, damaged, or dented.

Verify that waste is transferred to a new container or managed in another appropriate manner when necessary.

**HW.30.3.** Containers used at SQGs must be made of or lined with materials compatible with the waste stored in them (40 CFR 262.34(d)(2) and 265.172).

Verify that containers are compatible with waste, in particular, check that strong caustics and acids are not stored in metal drums.

**HW.30.4.** Containers of hazardous waste at SQGs must be closed during storage and handled in a safe manner (40 CFR 262.34(d)(2) and 265.173).

Verify that containers are closed, except when it is necessary to add or remove waste (check bungs on drums).

Verify that handling and storage practices do not cause damage to the containers or cause them to leak.

<b>Appendix 4, Sample Checklist Items</b> <b>[Revised June 1998]</b>	
<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b> <b>September 1998</b>
<p><b>HW.30.5.</b> The handling of incompatible wastes, or incompatible wastes and materials in containers at SQGs, must comply with safe management practices (40 CFR 262.34(d)(2) and 265.177).</p>	<p>Verify that incompatible wastes or incompatible wastes and materials are not placed in the same containers unless it is done so that it does not:</p> <ul style="list-style-type: none"> <li>– generate extreme heat or pressure, fire, or explosion, or violent reaction</li> <li>– produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health</li> <li>– produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions</li> <li>– damage the structural integrity of the device or facility</li> <li>– by any other like means threaten human health.</li> </ul> <p>(NOTE: Incompatible wastes as listed in Appendix 4-6 should not be placed in the same drum.)</p> <p>Verify that hazardous wastes are not placed in an unwashed container that previously held an incompatible waste or material.</p> <p>Verify that containers holding hazardous wastes incompatible with wastes stored nearby in other containers, open tanks, piles, or surface impoundments are separated or protected from each other by a dike, berm, wall, or other device.</p>
<p><b>HW.30.6.</b> Containers of hazardous waste at SQGs should be managed in accordance with specific management practices (MP).</p>	<p>Determine the following by inspecting containers and storage areas:</p> <ul style="list-style-type: none"> <li>– containers are not stored more than two high and have pallets between them</li> <li>– containers of ignitable wastes are electrically grounded (check for clips and wires and make sure wires lead to ground rod or system)</li> <li>– at least 3 ft of aisle space is provided between rows of containers.</li> </ul>

<b>Appendix 4, Sample Checklist Items</b> <b>[Revised June 1998]</b>	
<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b> <b>September 1998</b>
<p><b>SQGs</b></p> <p><b>HW.35</b>  <b>Satellite Accumulation Points</b></p> <p><b>HW.35.1.</b> All SQGs may accumulate as much as 55 gal of hazardous waste or 1 qt of acutely hazardous waste in containers at or near any point of initial generation without complying with the requirements for onsite storage if specific standards are met (40 CFR 262.34(c)).</p>	<p>(NOTE: This type of storage is often referred to as a satellite accumulation point.)</p> <p>Verify that the satellite accumulation point is at or near the point of generation and is under the control of the operator of the waste generating process.</p> <p>Verify that the containers are in good condition and are compatible with the waste stored in them and that the containers are kept closed except when waste is being added or removed.</p> <p>Verify that the containers are marked HAZARDOUS WASTE or other words that identify contents.</p> <p>(NOTE: See Appendices 4-1, 4-2, 4-3, and 4-5 for guidance on characteristic and listed hazardous wastes.)</p> <p>Verify that, when waste is accumulated in excess of quantity limitations, the following actions are taken by interviewing the shop managers:</p> <ul style="list-style-type: none"> <li>– the excess container is marked with the date the excess amount began accumulating</li> <li>– the excess waste is transferred to a 180-day or permitted storage area within 3 days.</li> </ul>

<b>Appendix 4, Sample Checklist Items</b> <b>[Revised June 1998]</b>	
<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b> <b>September 1998</b>
<p><b>SQGs</b></p> <p><b>HW.40</b> <b>Container Storage Areas</b></p> <p><b>HW.40.1.</b> Containers of hazardous waste at SQGs should be kept in storage areas designated in the management plan (MP).</p> <p><b>HW.40.2.</b> SQG storage areas for hazardous waste must be designed, constructed, maintained, and operated to minimize the possibility of a fire, explosion, or any unplanned release of hazardous waste (40 CFR 262.34(d)(4) and 265.30 through 265.37).</p> <p><b>HW.40.3.</b> SQGs must conduct weekly inspections of container storage areas (40 CFR 262.34(d)(2) and 265.174).</p>	<p>Verify that all containers are identified and stored in appropriate areas.</p> <p>(NOTE: Any unidentified contents of solid waste containers and/or containers not in designated storage areas must be tested to determine if solid or hazardous waste requirements apply.)</p> <p>Determine if the following required equipment is easily accessible and in working condition by inspecting the SQG storage areas:</p> <ul style="list-style-type: none"> <li>– internal communications or alarm system capable of providing immediate emergency instruction to facility personnel</li> <li>– a telephone or hand-held two-way radio</li> <li>– portable fire extinguishers and special extinguishing equipment (foam, inert gas, or dry chemicals)</li> <li>– spill control equipment</li> <li>– decontamination equipment</li> <li>– fire hydrants or other source of water (reservoir, storage tank, etc.) with adequate volume and pressure, foam producing equipment, automatic sprinklers, or water spray systems.</li> </ul> <p>Determine if equipment is tested and maintained as necessary to ensure proper operation in an emergency.</p> <p>Verify that sufficient aisle space is maintained to allow unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of the operation.</p> <p>Verify that police, fire departments, and emergency response teams are familiar with the layout of the facility, properties of the waste being handled, and general operations as appropriate for the type of waste and potential need for such services.</p> <p>Verify that the hospital is familiar with the site and the types of injuries that could result in an emergency as appropriate for the type of waste and potential need for such services.</p> <p>Verify that inspections are conducted at least weekly to look for leaking containers and signs of deterioration of containers.</p>

<b>Appendix 4, Sample Checklist Items</b> <b>[Revised June 1998]</b>	
<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b> <b>September 1998</b>
<p><b>SQGs</b></p> <p><b>HW.45</b></p> <p><b>Disposal of Restricted Wastes</b></p> <p><b>HW.45.1.</b> SQGs must test their wastes or use process knowledge to determine if they are restricted from land disposal (40 CFR 268.7(a)(1)) <b>[Revised June 1998].</b></p> <p><b>HW.45.2.</b> When an SQG is managing a waste or soil that does not meet treatment standards, a notice must be issued to the TSDF in writing of the appropriate treatment standards and prohibition levels (40 CFR 268.7(a)(2), 268.7(a)(3) and 268.7(a)(10)) <b>[Revised June 1998].</b></p>	<p>(NOTE: Determine whether the SQG governs if wastes have to be treated prior to disposal. Determination can be made by testing the waste or using knowledge of the waste.)</p> <p>Determine if the Federal facility generates land disposal restricted wastes by reviewing test results (see Appendix 4-8).</p> <p>Verify that, for waste or soil which does not meet the applicable treatment standards or exceeds the applicable prohibition levels, the notice is issued and includes:</p> <ul style="list-style-type: none"> <li>– the USEPA hazardous waste number</li> <li>– waste constituents that the treater will monitor, if monitoring will not include all regulated constituents, for wastes F001 - F005, F039, D001, D002, D003, and D012 - D043</li> <li>– whether the waste is a nonwastewater or wastewater</li> <li>– the subcategory of the waste</li> <li>– for hazardous debris, the contaminants subject to treatment, and indication that the contaminants are being treated plus: <ul style="list-style-type: none"> <li>– the USEPA hazardous waste number</li> <li>– waste constituents that the treater will monitor, if monitoring will not include all regulated constituents, for wastes F001 - F005, F039, D001, D002, D003, and D012 - D043</li> <li>– whether the waste is a nonwastewater or wastewater</li> <li>– the subcategory of the waste</li> </ul> </li> <li>– a certification statement for contaminated soil.</li> </ul> <p>Verify that, for waste or contaminated soil which meets the treatment standard at the original point of generation, the notice includes:</p> <ul style="list-style-type: none"> <li>– the USEPA hazardous waste number</li> <li>– waste constituents that the treater will monitor, if monitoring will not include all regulated constituents, for wastes F001 - F005, F039, D001, D002, D003, and D012 - D043</li> <li>– whether the waste is a nonwastewater or wastewater</li> <li>– the subcategory of the waste</li> <li>– the manifest number associated with the shipment</li> <li>– the waste analysis data, when available</li> </ul>

<b>Appendix 4, Sample Checklist Items</b> <b>[Revised June 1998]</b>	
<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b> <b>September 1998</b>
<p><b>HW.45.3.</b> SQGs that are managing hazardous wastes in tanks, containers, or containment buildings and treating the waste to meet applicable treatment standards must develop and follow a written waste analysis plan (40 CFR 268.7(a)(5) and 268.7(a)(10)) <b>[Citation Revised June 1998].</b></p>	<ul style="list-style-type: none"> <li>– the signature of an authorized representative certifying that the waste complies with the treatment standards of 40 CFR 268.</li> </ul> <p>Verify that, for restricted waste which is subject to an exemption from a prohibition of the type of land disposal used, the notice states that the waste is not prohibited from land disposal and includes:</p> <ul style="list-style-type: none"> <li>– the USEPA hazardous waste number</li> <li>– waste constituents that the treater will monitor, if monitoring will not include all regulated constituents, for wastes F001 - F005, F039, D001, D002, D003, and D012 - D043</li> <li>– whether the waste is a nonwastewater or wastewater</li> <li>– the subcategory of the waste</li> <li>– the manifest number associated with the shipment</li> <li>– the waste analysis data, when available</li> <li>– for hazardous debris, the contaminants subject to treatment, and indication that the contaminants are being treated plus: <ul style="list-style-type: none"> <li>– the USEPA hazardous waste number</li> <li>– waste constituents that the treater will monitor, if monitoring will not include all regulated constituents, for wastes F001 - F005, F039, D001, D002, D003, and D012 - D043</li> <li>– whether the waste is a nonwastewater or wastewater</li> <li>– the subcategory of the waste.</li> </ul> </li> </ul> <p>(NOTE: SQGs with tolling agreements are required to comply with notification and certification requirements for the initial shipment of waste subject to the agreement. The SQG will retain an onsite copy of the notification and certification along with the tolling agreement for at least 3 yr after the termination or expiration of the agreement.)</p> <p>Verify that the plan describes the procedures the generator will carry out to comply with treatment standards.</p> <p>(NOTE: SQGs treating hazardous debris under the alternative treatment standards in Table 1 of 40 CFR 268.7(a)(4) are not required to conduct waste analysis.)</p> <p>Verify that the plan is kept onsite and:</p> <ul style="list-style-type: none"> <li>– the plan is based on a detailed chemical and physical analysis of representative sample of the prohibited waste being treated</li> <li>– contains all information necessary to treat the wastes in accordance with regulatory requirements, including the selected testing frequency</li> <li>– the plan is filed with the USEPA regional administrator or state-authorized official at least 30 days prior to the treatment activity, with delivery verified.</li> </ul> <p>(NOTE: SQGs with tolling agreements are required to comply with notification and certification requirements for the initial shipment of waste subject to the</p>

**Appendix 4, Sample Checklist Items**  
**[Revised June 1998]**

<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b> <b>September 1998</b>
<p><b>HW.45.4.</b> SQGs are required to keep specific documents pertaining to restricted wastes onsite (40 CFR 268.7(a)(4), 268.7(a)(6), 268.7(a)(7) and 268.7(a)(10))[Revised June 1998].</p> <p><b>HW.45.5.</b> The storage of hazardous waste that is restricted from land disposal is not allowed unless specific conditions are met (40 CFR 268.50).</p>	<p>agreement. The SQG will retain an onsite copy of the notification and certification along with the tolling agreement for at least 3 yr after the termination or expiration of the agreement.)</p> <p>Verify that, if generator knowledge is used to determine whether a waste or contaminated soil meets land disposal restriction requirements, the supporting data used in making this determination is retained onsite in the Federal facility operating files.</p> <p>Verify that, when it is determined whether a waste or contaminated soil is restricted using appropriate test methods, the waste analysis data are retained onsite in the files.</p> <p>Verify that, when managing a prohibited waste that is excluded from the definition of a hazardous waste or solid waste or exempt from RCRA Subtitle C, a one-time notice is placed in the files stating that the generated waste is excluded.</p> <p>Verify that a copy of all notices, certifications, demonstrations, waste analysis data, and other documentation is kept for at least 3 yr from the date the waste was last sent to onsite or offsite treatment, storage, or disposal.</p> <p>Verify that SQGs with a tolling agreement retain the agreement and copies of notification and certification for at least 3 yr after the agreement expires.</p> <p>Verify that land disposal restricted waste is not stored at the Federal facility unless: the SQG is storing the wastes in tanks, containers, or containment buildings onsite only for the purpose of accumulating enough hazardous waste to facilitate proper recovery, treatment, or disposal and all appropriate standards for containers, tanks, and containment buildings are met.</p> <p>Verify that transporters do not store manifested shipments of land disposal restricted wastes for more than 10 days.</p> <p>(NOTE: The prohibition on storage does not apply to hazardous wastes that have met treatment standards.)</p> <p>Verify that liquid hazardous wastes containing PCBs at concentrations greater than 50 ppm are stored at a site that meets the requirements of 40 CFR 761.65(b) (see the section titled Toxic Substances Management) and is removed from storage within 1 yr of the date it was first placed into storage.</p>

## SECTION 1

### AIR EMISSIONS MANAGEMENT U.S. TEAM Guide, December 2018

#### A. Applicability

This section includes regulations, responsibilities, and compliance requirements associated with air pollution emissions from stationary and mobile sources. The significant types and sources of air pollution emissions include:

- Particulates, SO<sub>2</sub>, NO<sub>x</sub>, CO, volatile organic compounds (VOCs), and hazardous air pollutants from fuel burning at steam and hot water generation plants and boilers.
- Particulates and toxic air emissions from the operation of hazardous waste, general waste, classified material, and medical, pathological, and/or infectious waste incinerators.
- Particulates, CO, metals, and toxic air pollutant emissions from open burning and open detonation operations.
- The emission of VOC vapors from the operation of degreasers and other processes (paint stripping and metal finishing) that use solvents.
- The emission of CO from vehicles and equipment.
- Fugitive particulate emissions from training activities and construction/ demolition operations.

Most facilities and activities have air emissions sources in one or more of these categories. Therefore this section is applicable to some extent at all facilities.

Assessors are required to review state and local regulations and, if applicable, the appropriate Agency Supplement, to perform a comprehensive assessment.

#### B. Federal Legislation

- *The Clean Air Act Amendments of 1990 (CAAA90)*. This act, Public Law (PL) 101-549 (42 U.S. Code (USC) 7401-7671q), is currently the Federal legislation regulating the prevention and control of air pollution. It is composed of seven major titles that address various aspects of the national air pollution control program:
  1. Title I describes air pollution control requirements for geographic areas in the United States with respect to the National Ambient Air Quality Standards (NAAQS).
  2. Title II deals mostly with revised tailpipe emission standards for motor vehicles. These requirements compel automobile manufacturers to improve design standards to limit CO, hydrocarbon, and NO<sub>x</sub> emissions. Oxygenated gasoline will be required in cities with the worst ozone and CO nonattainment. Reformulated gasoline and gasoline with reduced Reid vapor pressure is used in ozone nonattainment areas.
  3. Title III potentially contains the most costly requirement of the CAAA90. The major elements of Title III deal with hazardous air pollutants through control of routine emissions, and contingency planning for accidental releases.
  4. Title IV addresses acid deposition control and applies only to commercial utilities that produce electricity for sale.
  5. Title V outlines the requirement of having states issue Federally enforceable operating permits to major stationary sources. The permits are designed to enhance the ability of the U.S. Environmental Protection Agency (USEPA), state regulatory agencies, and private citizens to enforce the requirements of the CAAA90. Permits will also be used to specify operation and control requirements for stationary sources.
  6. Title VI limits the emissions of chlorofluorocarbons (CFC), halons, and other halogenated chemicals that contribute to the destruction of stratospheric ozone. These requirements closely follow the control strategies recommended in June 1990 by the second meeting of parties to the Montreal Protocol. Also, procurement of ozone depleting substances is restricted by Federal agency acquisition policies.
  7. Title VII describes civil and criminal penalties that may be imposed for violation of new and existing air pollution control requirements. This title also gives authority to the USEPA to issue field citations for many types of violations.

- The Department of Justice, Office of Legal Counsel decision issued 16 July 1997 stipulates the USEPA is administratively authorized under the CAA to assess civil penalties against Federal agencies for violations of the CAA. States on the other hand, do not have the authority to assess civil penalties against Federal agencies for violations of the CAA **[Revised June 1998]**.
- *The Federal Water Pollution Control Act*. This act, commonly known as the Clean Water Act (CWA) governs the control of water pollution in the nation. The objective of this Act is to restore and maintain the chemical, physical, and biological integrity of the nation's waters. This act led to the promulgation of regulations concerning the incineration of sewage sludge. The regulations implementing regulations for the control of emissions from the incineration of sewage sludge are found in 40 CFR 503.40 through 503.48.
- *Resource Conservation and Recovery Act (RCRA) of 1976*. This is the Federal law that governs the disposal of solid waste. Subtitle D of this act, as last amended in November 1984, PL 98-616, 42 USC 6941-6949a, establishes Federal standards and requirements for state and regional authorities respecting solid waste disposal. The objectives of this subtitle are to assist in developing and encouraging methods for the disposal of solid wastes which are environmentally sound and which maximize the utilization of valuable resources recoverable from solid waste. The objectives are to be achieved through Federal technical and financial assistance to states and regional authorities for comprehensive planning (42 USC 6941).
- *Energy Policy Act of 1992 (EPACT)* – This act sets forth the statutory requirements for the acquisition of alternative fuel vehicles (AFVs) by Federal agencies. In fiscal year 2000 and beyond, 75 percent of light-duty vehicle acquisitions in “covered” fleets must be AFVs. In general, the EPACT requirements apply to agency fleets of 20 or more light-duty vehicles (vehicles under 8,500 lbs) that are “centrally fueled or capable of being centrally fueled” and are primarily operated in Metropolitan Statistical Areas (MSAs) or Consolidated Metropolitan Statistical Areas (CMSAs) with populations of 250,000 or more according to 1980 census data. Vehicles that do not meet these requirements are considered geographically exempt from the EPACT requirements. EPACT provides certain exemptions for law enforcement, emergency, and national security vehicles **[Added April 2005]**.
- *The Federal Employees Clean Air Incentives Act* – This act, dated 2 December 1993 (Public Law 103-172), was designed to improve air quality and reduce traffic congestion by having Federal agencies encourage their employees to commute by means other than single-occupancy vehicles. The legislation permitted the head of each agency to establish programs to promote initiatives such as transit passes, furnishing space, facilities or services to bicyclists, and provide nonmonetary incentives such alternative work schedules, flextime, telework, flexiplace, and related parking and shuttle arrangements **[Added April 2005]**.
- *Instructions for Implementing Climate Change Adaptation Planning in Accordance with Executive Order 13514*. This document, dated 4 March 2011, is issued by the Council on Environmental Quality (CEQ). The purpose of this document is to provide implementing instructions to be used by Federal agencies in climate change adaptation planning **[Added April 2011]**.
- EO 13150, *Federal Workforce Transportation* – This EO, dated 21 April 2000, was enacted to help reduce Federal employees' contribution to traffic congestion and air pollution and to expand their commuting alternatives. Federal agencies are required to implement mass transportation fringe benefit programs under this EO **[Added April 2005]**.
- Executive Order (EO) 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*. This EO, dated 24 January 2007, requires Federal agencies to lead by example in advancing the nation's energy security and environmental performance by achieving goals outlined in the EO. In relation to air emissions management, if an agency operates a fleet of at least 20 motor vehicles, the agency, relative to agency baselines for fiscal year 2005 **[Added January 2007]**:
  1. reduces the fleet's total consumption of petroleum products by 2 percent annually through the end of fiscal year 2015,
  2. increases the total fuel consumption that is non-petroleum-based by 10 percent annually, and

3. uses plug-in hybrid (PIH) vehicles when PIH vehicles are commercially available at a cost reasonably comparable, on the basis of life-cycle cost, to non-PIH vehicles.

Additionally, agencies must reduce greenhouse gas emissions of the agency, through reduction of energy intensity by:

1. 3 percent annually through the end of fiscal year 2015, or
2. 30 percent by the end of fiscal year 2015, relative to the baseline of the agency's energy use in fiscal year 2003.

This EO revokes the following EOs:

1. Executive Order 13101, Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition of September 14, 1998;
  2. Executive Order 13123, Greening the Government Through Efficient Energy Management of June 3, 1999;
  3. Executive Order 13134, *Developing and Promoting Biobased Products and Bioenergy* of August 12, 1999, as amended;
  4. Executive Order 13148, Greening the Government through Leadership in Environmental Management of April 21, 2000; and
  5. Executive Order 13149, Greening the Government Through Federal Fleet and Transportation Efficiency of April 21, 2000.
- EO 13432: *Cooperation Among Agencies in Protecting the Environment With Respect to Greenhouse Gas Emissions From Motor Vehicles, Nonroad Vehicles, and Nonroad Engines*. This EO, dated 14 May 2007, endorses the coordinated and effective exercise of the authorities of the President and the heads of the Department of Transportation, the Department of Energy, and the Environmental Protection Agency to protect the environment with respect to greenhouse gas emissions from motor vehicles, nonroad vehicles, and nonroad engines, in a manner consistent with sound science, analysis of benefits and costs, public safety, and economic growth [Added July 2007].

### C. State/Local Regulations

For information on regulations in specific states, see the State Supplements to TEAM Guide.

CAA Section 118(a) requires that each agency and employee of the Federal government comply with all Federal, State, interstate and local requirements respecting the control and abatement of air pollution in the same manner and the same extent as any non-governmental entity [Added April 2005].

The primary mechanisms regulating air pollutant emissions are the state air quality regulations. These regulations will normally follow the Federal guidelines for state programs and will have many similar features. However, depending on the type and degree of air pollutant problems within the state/region, the individual regulations will vary. As an example, ozone problems are widespread in California; therefore, various local authorities in that state have stringent VOC emission requirements. The State of North Dakota has no such problem and, therefore, has fewer and less stringent VOC regulations.

A permit is normally required for new, expanded, or modified sources of air pollutants. There are Federal, state, and local permits required for various sources. Large sources, and activities as a whole, may require a permit to operate. States review permit applications for construction or operation of many sources. Open burning permits are typically handled locally.

Some state regulations apply directly to some activities and operations without requiring a permit. At a minimum, state regulations should be reviewed for the following activities:

1. fugitive dust emissions
2. control of particulate emissions from the transportation of refuse or materials in open vehicles
3. certification requirements for boiler operators
4. emissions and emission control requirements for the operation of existing fossil fuel-fired steam generators
5. open burning
6. vehicle exhaust emissions testing
7. spray painting of vehicles, buildings, or furniture

8. certification of vehicles transporting VOC liquids
9. paving of roads and parking lots
10. toxic air pollutants
11. operation of cold cleaners, degreasers, and open-top vapor degreasers

Facility administrators are responsible for ensuring that all Federally owned government vehicles subject to a state I/M program are tested/inspected in accordance with the appropriate I/M program requirements. As stated in Section I, the government vehicle must comply with the I/M program in effect for the area where the vehicle is primarily operated. The program area where the vehicle is primarily operated is usually the program area where the government vehicle is garaged. Thus, no two program areas can compel testing of any one government vehicle. If the Federal agency or facility wishes to submit a government vehicle to I/M program requirements in a program area other than (and in lieu of) the one where the government vehicle is garaged, the Federal agency or facility should retain mileage records that substantiates the program area in which the government vehicle primarily operates **[Added April 2005]**.

In relation to vehicle emissions testing of government vehicles, under CAA section 118(c) “each department, agency, and instrumentality of executive, legislative, and judicial branches of the Federal Government shall comply with all applicable provisions of a valid inspection and maintenance program established under the provisions of subpart 2 of part D or subpart 3 of part D except for such vehicles that are considered military tactical vehicles.” (NOTE: subpart 2 of part D concerns additional provisions for ozone nonattainment areas and subpart 3 of part D concerns additional provisions for CO nonattainment areas.) Each department, agency, and instrumentality of executive, legislative, and judicial branches of the Federal Government having jurisdiction over any property or facility shall require all employees which operate motor vehicles on the property or facility to furnish proof of compliance with the applicable requirements of any vehicle inspection and maintenance program established under the provisions of subpart 2 of part D or subpart 3 of part D for the State in which such property or facility is located (without regard to whether such vehicles are registered in the State). The facility shall use one of the following methods to establish proof of compliance **[Added April 2005]**.

1. presentation by the vehicle owner of a valid certificate of compliance from the vehicle inspection and maintenance program;
2. presentation by the vehicle owner of proof of vehicle registration within the geographic area covered by the vehicle inspection and maintenance program (except for any program whose enforcement mechanism is not through the denial of vehicle registration);
3. another method approved by the vehicle inspection and maintenance program administrator [42 U.S.C. 7418].

As of 16 May 2012 the EPA Administrator has determined that onboard refueling vapor recovery (ORVR) systems are in widespread use in the motor vehicle fleet within the United States. Therefore, the EPA Administrator waives the requirement of Clean Air Act section 182(b)(3) for Stage II vapor recovery systems in ozone nonattainment areas regardless of classification. States must submit and receive EPA approval of a revision to their approved State Implementation Plans (SIPs) before removing Stage II requirements that are contained in their SIPs **[Added July 2012]**.

#### **D. Key Compliance Requirements**

- Steam Generating Units (greater than 29 MW (100 MMBtu/h)) - Steam generating units with capacity greater than 29 MW (100 MMBtu/h) that started construction or modification after 19 June 1984 are required to meet emissions limitation for particulates, SO<sub>2</sub>, and NO<sub>x</sub>. The limit that applies is dependent on the type of fuel being burned. Records are required to be kept of the amounts of fuel combusted each day (40 CFR 60.40b through 49b) **[Revised April 2011]**.
- Steam Generating Units (2.9 MW (10 MMBtu/h) - 29 MW (100 MMBtu/h)) - Steam generating units that started construction, modification, or reconstruction after 3 June 1989 with a maximum design heat input capacity of greater than or equal to 2.9 MW (10 MMBtu/h) but equal to or less than 29 MW (100 MMBtu/h) are required to

limit emissions of SO<sub>2</sub> and particulates. Emission rates are to be monitored. Excess emission reports are required to be submitted for any calendar quarter in which it exceeds opacity limits. If the limits are not exceeded in a given year, a semiannual report must be filed affirming this fact. Quarterly reports must also be submitted for steam generating units required to meet SO<sub>2</sub> emission limits (40 CFR 60.40c through 60.48c) [**Revised April 2011**]

- Fuel Burning Facilities (greater than 73 MW (250 MMBtu/h)) - Fuel burning facilities constructed or modified after 17 August 1971 with greater than 73 MW (250 MMBtu/h) heat input are required to limit emissions of particulates, SO<sub>2</sub>, and NO<sub>x</sub>. Monitoring of these pollutants and fuel analysis is also required to be done (40 CFR 60.44 and 60.45).
- Stationary Gas Turbines - Stationary gas turbines, with a heat input greater than or equal to 10.7 gJ/ h [approx. 10 MBtu/h], that were constructed or modified after 3 October 1977, are required to limit the amounts of NO<sub>x</sub> and SO<sub>2</sub> emitted. In addition to the emissions, the sulfur and nitrogen content of the fuel being fired must also be monitored (40 CFR 60.330 through 60.335).
- Municipal Waste Combustor - Municipal waste combustors, with a capacity greater than 225 Mg (250 tons) per day, that started construction or modification after 20 December 1989, are required to limit the amounts of dioxin/furan, SO<sub>2</sub>, hydrogen chloride, CO, and NO<sub>x</sub> emitted. The chief municipal waste combustor operator and shift supervisors are required to be certified to operate the combustor, and there must be an operating manual that is updated yearly (40 CFR 60.50a through 60.58a).
- New Municipal Waste Combustors - New MWCs with a combustion capacity greater than 250 tons/day of municipal solid waste for which construction is started after 20 September 1994 or for which modification or reconstruction is started after 19 June 1996, are required to limit the amounts of dioxin/furan, SO<sub>2</sub>, hydrogen chloride, CO, and NO<sub>x</sub> emitted. The chief municipal waste combustor operator and shift supervisors are required to be certified to operate the combustor, and there must be an operating manual that is updated yearly (40 CFR 60.50b through 60.58b) [**Revised December 1997**].
- Incinerators - Incinerators with greater than 45 metric tons/day (50 tons/day) charging rate that started construction or modification after 17 August 1971 are required to meet emissions limitations for particulates. Additionally, they are to maintain records of daily charging rates and hours of operation (40 CFR 60.50 through 60.54).
- Medical Waste Incinerators - Hospital/medical/infectious waste incinerators (HMIWI) are required to limit discharges of particulates, CO, dioxins/furans, hydrogen chloride, SO<sub>2</sub>, NO<sub>x</sub>, lead, cadmium, and mercury. Emissions limitations will be performed by the use of appropriate filters and scrubbers and the implementation of extensive monitoring and operating parameters. Existing HMIWIs will be required to comply with the new regulations as USEPA approves state-developed plans. The deadline for compliance will be no later than September 2002 (40 CFR 60.50c through 60.58c) [**Added December 1997**].
- Sewage Sludge Incinerators - Sewage sludge incinerators that combust greater than 1000 kg/day (2205 lb/day), which were constructed or modified after 11 June 1973, are required to limit their emissions of particulates. Monitoring devices are required; depending on what type of incinerator is being operated. Semiannual reports are required (40 CFR 60.150 through 60.156).
- Beryllium Incinerators - Incinerators for beryllium containing waste, beryllium, beryllium oxide, or beryllium alloys cannot emit more than 10 g [0.32 oz] of beryllium over a 24 h period into the atmosphere. Records of emissions tests are required to be kept for 2 yr (40 CFR 61.30 through 61.34).
- Incineration of Sewage Sludge - Incinerators that fire sewage sludge must meet specific emissions standards for beryllium emissions, mercury emissions, and hydrocarbons. The incinerators are required to have continuous monitoring devices for hydrocarbons and oxygen in the exit gas, and continuous monitoring for combustion temperature as specified by the permitting authority. Assorted reports are required to be submitted and records kept (40 CFR 503.40 through 503.48).

- Gasoline Dispensing - Leaded gasoline shall not be introduced into any motor vehicle that is labeled unleaded gasoline only or that is equipped with a gasoline tank filler inlet designed for introduction of unleaded gasoline. Fuel pumps are required to display signs stating the type of fuel in each pump and that only unleaded gas can be introduced into labeled vehicles. The nozzles of the pumps are required to be properly sized. Depending on whether the oxygenated gas is still in the control period, or the area has an oxygenated gasoline program with a credit program, pumps dispensing oxygenated gasoline are required to be labeled. During 1992 and later, high ozone seasons, and regulatory control periods, gasoline shall not be sold, offered for sale, imported, dispensed, supplied, or transported that exceeds Reid vapor pressure standards in Appendix 1-1. No diesel fuel shall be distributed, transported, offered for sale, or dispensed for use in motor vehicles unless it is free of the dye 1,4-dialkylamino-antraquinone and has an cetane index of at least 40, or a maximum aromatic content of 35 volume percent and a sulfur percentage of less than 0.05 percent (40 CFR 80.22(a), 80.22(d), 80.22(e), 80.24(a)(1), 80.27(a)(2), 80.35, 80.80(d), and 80.29(a)).
- Rotogravure Printing Presses - Publication rotogravure printing presses, except for proof presses, that started construction or modification after 28 October 1980, are required to ensure that gases are not being discharged containing VOC equal to more than 16 percent of the total mass of VOC solvent and water used at that press during any one performance averaging period (40 CFR 60.430 through 60.435).
- Fugitive Emissions - The emission of volatile hazardous air pollutants (VHAPs), vinyl chloride, and benzene, is required to be managed, monitored, and controlled according to specific requirements. These include taking certain actions when a leak is detected, ensuring that certain records are maintained, ensuring that pumps and compressors meet certain standards, and that pressure relief devices in gas/vapor service have no detectable emissions except during pressure releases. Valves and lines in VHAP service are required to be monitored monthly and repairs done within 15 days of leak detection. Systems and devices used to control VHAP emissions must recover vapors with 95 percent efficiency or greater. Enclosed combustion devices will be designed and operated to reduce VHAP and benzene emissions and closed-vent systems will have no detectable emissions (40 CFR 61.240 through 61.242-10, 61.246, and 61.247).
- Sulfuric and Nitric Acid Plants - These plants are required to limit their emissions and install continuous monitoring systems (40 CFR 60.70 through 60.85).
- CFCs and Halons - To protect the ozone layer, no person repairing or servicing motor vehicles for payment can service a motor vehicle air-conditioner (MVAC) in any way that affects the refrigerant unless they have been trained and certified and are using approved equipment. Additionally, persons who maintain, service, or repair appliances, except MVACs, and persons who dispose of appliances, except for small appliances, room air conditioners, MVACs, and MVAC-like appliances are required to be certified through an approved technician certification program. As of 15 November 1992, no Class I or Class II substances suitable for use in motor vehicles as a refrigerant can be sold or distributed in any container that is less than 20 lb to any person unless that person is trained and certified. When Class I or Class II substances suitable for use as a refrigerant are sold in containers of less than 20 lb, a sign with certain wording must be displayed. The servicing of appliances containing CFCs and halons is required to be done in a manner to prevent emissions (40 CFR 82.34(a), 82.34(b), 82.42(a) through 82.42(c), and 82.150 through 82.166) **[Revised December 1997]**.????????????????
- Degreasing Operations - Batch cold cleaning machines, batch vapor-cleaning machines, and in-line cleaning machines have to have tightly fitting covers and assorted emission control devices to prevent excess emissions. Operators of these types of units are also required to submit notifications, operating reports, exceedance reports, and solvent use reports. These regulations specifically apply to each individual batch vapor, in-line vapor, in-line cold, and batch cold **solvent-cleaning** machine that uses any solvent containing methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, or chloroform or any combination of these halogenated HAP solvents, in total concentration greater than 5 percent by weight, as a cleaning and/or drying agent (40 CFR 63.460 through 63.469)
- Aerospace Manufacturing/ Rework Facilities - Aerospace manufacturing/rework facilities are required to control HAP emissions from hand-wipe cleaning operations, spray gun cleaning operations, and flush cleaning operations. There are emissions limitations imposed on primer and topcoat applications, repainting operations,

and chemical milling maskant operations. Monitoring requirements are based on whether carbon adsorbers, incinerators, dry particulate filters, or waterwash systems are used to comply with emissions limitations (40 CFR 63.740 through 63.745) [Added January 1998].

## E. Key Compliance Definitions

(NOTE: The definitions provided are specific to the regulations cited in the checklist. Other regulations may define the terms differently.)

- *10-day Rolling Average* - the arithmetic mean of the previous 240 hours of valid operating data. Valid data excludes hours during startup and shutdown, data collected during periods when the monitoring system is out of control as specified in your site-specific monitoring plan, while conducting repairs associated with periods when the monitoring system is out of control, or while conducting required monitoring system quality assurance or quality control activities, and periods when this unit is not operating. The 240 hours should be consecutive, but not necessarily continuous if operations were intermittent (40 CFR 63.7575) [Added April 2013].
- *10-day Rolling Average* - the arithmetic mean of all valid hours of data from 10 successive operating days, except for periods of startup and shutdown and periods when the unit is not operating (40 CFR 63.11237) [Added April 2013].
- *30-day Rolling Average* - the arithmetic mean of the previous 720 hours of valid CO CEMS. The 720 hours should be consecutive, but not necessarily continuous if operations were intermittent. For parameters other than CO, 30-day rolling average means either the arithmetic mean of all valid hours of data from 30 successive operating days or the arithmetic mean of the previous 720 hours of valid operating data. Valid data excludes hours during startup and shutdown, data collected during periods when the monitoring system is out of control as specified in your site-specific monitoring plan, while conducting repairs associated with periods when the monitoring system is out of control, or while conducting required monitoring system quality assurance or quality control activities, and periods when this unit is not operating (40 CFR 63.7575) [Added April 2013; Revised January 2016].
- *30-day Rolling Average* - the arithmetic mean of all valid hours of data from 30 successive operating days, except for periods of startup and shutdown and periods when the unit is not operating (40 CFR 63.11237) [Added April 2013].
- *Accidental Release* - an unanticipated emission of a regulated substance or other extremely hazardous substance into the ambient air from a stationary source (40 CFR 68.3) [Added January 2005].
- *Accuracy of a Measurement at a Specified Level (e.g., one percent of full scale or one percent of the value measured)* – the mean of repeat measurements made by a device or technique are within 95 percent of the range bounded by the true value plus or minus the specified level (40 CFR 98.6) [Added January 2010].
- *Acid Rain Program* - the program established under title IV of the Clean Air Act, and implemented under 40 CFR 72 through 78 for the reduction of sulfur dioxide and nitrogen oxides emissions (40 CFR 98.6) [Added January 2010].
- *Active Measures* - risk management measures or engineering controls that rely on mechanical, or other energy input to detect and respond to process deviations. Examples of active measures include alarms, safety instrumented systems, and detection hardware (such as hydrocarbon sensors) (40 CFR 68.3) [Added April 2017].
- *Actual Annual Average Temperature, for Organic Liquids* - the temperature determined using the following methods (40 CFR 63.2406) [Added April 2004]:
  1. For heated or cooled storage tanks, use the calculated annual average temperature of the stored organic liquid as determined from a design analysis of the storage tank.
  2. For ambient temperature storage tanks:

- a. Use the annual average of the local (nearest) normal daily mean temperatures reported by the National Climatic Data Center; or
  - b. Use any other method that the EPA approves.
- *Additive* - a material that is added to a coating after purchase from a supplier (e.g., catalysts, activators, accelerators) (40 CFR 63.11180) [**Added April 2011**].
- *Administrative Controls* - written procedural mechanisms used for hazard control (40 CFR 68.3) [**Added January 2014**].
- *Administrator* - for the purposes of this rulemaking, the Administrator of the U.S. Environmental Protection Agency or the State or local agency that is granted delegation for implementation of this 40 CFR 63, Subpart HHHHHH (40 CFR 63.11180) [**Added April 2011**].
- *Administrator* – means the following (40 CFR 60.51b) [**Added July 2006**]:
  1. For approved and effective State Section 111(d)/129 plans, the Director of the State air pollution control agency, or employee of the State air pollution control agency that is delegated the authority to perform the specified task;
  2. For Federal Section 111(d)/129 plans, the Administrator of the EPA, an employee of the EPA, the Director of the State air pollution control agency, or employee of the State air pollution control agency to whom the authority has been delegated by the Administrator of the EPA to perform the specified task; and
  3. For NSPS, the Administrator of the EPA, an employee of the EPA, the Director of the State air pollution control agency, or employee of the State air pollution control agency to which the authority has been delegated by the Administrator of the EPA to perform the specified task.
- *Aeration Process* - any time when ethylene oxide is removed from the aeration unit through the aeration unit vent or from the combination sterilization unit through the sterilization unit vent, while aeration or off-gassing is occurring (40 CFR 63.10448) [**Added January 2008**].
- *Aeration Unit* - any vessel that is used to facilitate off-gassing of ethylene oxide (40 CFR 63.10448) [**Added January 2008**].
- *Aerospace Affected Sources* - These requirements apply to facilities that are engaged, either in part or in whole, in the manufacture or rework of *commercial*, civil, or military aerospace vehicles or components and that are major sources. The activities subject to these requirements are limited to the manufacture or rework of aerospace vehicles or components. The affected sources are as follows (40 CFR 63.741(a) through 63.741(c) [**Added January 1999; Revised January 2016**]):
  1. all hand-wipe cleaning operations constitute an affected source
  2. each spray gun cleaning operation constitutes an affected source
  3. all flush cleaning operations constitute an affected source
  4. for organic HAP or VOC emissions, each primer application operation, which is the total of all primer applications at the facility
  5. for organic HAP or VOC emissions, each topcoat application operation, which is the total of all topcoat applications at the facility
  6. for organic HAP or VOC emissions, each specialty coating application operation, which is the total of all specialty coating applications at the facility
  7. for organic HAP or VOC emissions, each repainting operation, which is the total of all repainting at the facility
  8. each chemical milling maskant application operation, which is the total of all chemical milling maskant applications at the facility
  9. each waste storage and handling operation, which is the total of all waste handling and storage at the facility
  10. for inorganic HAP emissions, each spray booth, portable enclosure, or hangar that contains a primer or topcoat application operation subject to inorganic HAP emissions requirements (40 CFR 63.745(g)) or

a depainting operation generating airborne inorganic HAP emission from dry media blasting equipment (40 CFR 63.746(b)(4)).)

- *Aerospace Exempted Sources* - The following are exemptions from compliance with 40 CFR 63.741 through 63.753 (40 CFR 63.741(f), 63.741(h), 63.741(j)) [**Added January 1999; Revised January 2016**]:
  1. research and development, quality control, and laboratory testing activities, chemical milling, metal finishing, electrodeposition (except for electrodeposition of paints), composites processing (except for cleaning and coating of composite parts or components that become part of an aerospace vehicle or component as well as composite tooling that comes in contact with such composite parts or components prior to cure), electronic parts and assemblies (except for cleaning and topcoating of completed assemblies), manufacture of aircraft transparencies, and wastewater operations at aerospace facilities.
  2. the rework of aircraft or aircraft components if the holder of the Federal Aviation Administration (FAA) design approval, or the holder's licensee, is not actively manufacturing the aircraft or aircraft components
  3. parts and assemblies not critical to the vehicle's structural integrity or flight performance
  4. primers, topcoats, specialty coatings, chemical milling maskants, strippers, and cleaning solvents that meet the definition of non-HAP material, as determined from manufacturer's representations, such as in a material safety data sheet or product data sheet, or testing, except that if an owner or operator chooses to include one or more non-HAP primer, topcoat, specialty coating, or chemical milling maskant in averaging under 40 CFR 63.743(d), then the recordkeeping requirements of 40 CFR 63.752(c)(4) apply
  5. primers, topcoats, and specialty coatings that meet the definition of "classified national security information" in 40 CFR 63.742
  6. regulated activities associated with space vehicles designed to travel beyond the limit of the earth's atmosphere, including but not limited to satellites, space stations, and the Space Shuttle System (including orbiter, external tanks, and solid rocket boosters), are exempt
  7. rework operations performed on antique aerospace vehicles or components are exempt.
- *Aerospace Facility* - any facility that produces, reworks, or repairs in any amount any commercial, civil, or military aerospace vehicle or component (40 CFR 63.742) [**Added January 1999**].
- *Aerospace Vehicle or Component* - any fabricated part, processed part, assembly of parts, or completed unit, with the exception of electronic components, of any aircraft including but not limited to airplanes, helicopters, missiles, rockets, and space vehicles (40 CFR 63.742 and 63.11180) [**Added January 1999, Citation Revised April 2011**].
- *Affected Federal Land Manager* - the Federal agency or the Federal official charged with direct responsibility for management of an area designated as Class I under the Act (42 U.S.C. 7472) that is located within 100 km of the proposed Federal action (40 CFR 93.152) [**Added April 2009**].
- *Affected Site Remediation Sources* – 40 CFR 63, Subpart GGGGG [40 CFR 63.7880 through 63.7957, see checklist items AE.300.1.US through AE.300.12.US] applies to each of the following new, reconstructed, or existing affected sources (40 CFR 63.7882(a)) [**Added April 2004**]:
  1. Process vents. The affected source is the entire group of process vents associated with the in-situ and ex-situ remediation processes used at your site to remove, destroy, degrade, transform, or immobilize hazardous substances in the remediation material subject to remediation. Examples of such in-situ remediation processes include, but are not limited to, soil vapor extraction and bioremediation processes. Examples of such ex-situ remediation processes include but are not limited to, thermal desorption, bioremediation, and air stripping processes.
  2. Remediation material management units. Remediation material management unit means a tank, surface impoundment, container, oil-water separator, organic-water separator, or transfer system, as defined in 40 CFR 63.7957 and is used at the site to manage remediation material. The affected source is the entire group of remediation material management units used for the site remediations at the site. For the purpose of this 40 CFR 63, 40 CFR 63, Subpart GGGGG [40 CFR 63.7880 through 63.7957, see checklist items

AE.300.1.US through AE.300.12.US], a tank or container that is also equipped with a vent that serves as a process vent, as defined in 40 CFR 63.7957, is not a remediation material management unit, but instead this unit is considered to be a process vent affected source under paragraph 1.

3. Equipment leaks. The affected source is the entire group of equipment components (pumps, valves, etc.) used to manage remediation materials and meeting both of the following conditions. If either of these conditions do not apply to an equipment component, then that component is not part of the affected source for equipment leaks.
    - a. The equipment component contains or contacts remediation material having a concentration of total HAP listed in Table 1 of this 40 CFR 63, Subpart GGGGG (Appendix 1-27) equal to or greater than 10 percent by weight.
    - b. The equipment component is intended to operate for 300 h or more during a calendar year in remediation material service, as defined in 40 CFR 63.7957.
- *Affected Source* - the group of all equipment that comprise the POTW treatment plant (40 CFR 63.1595) [**Added January 2000**].
  - *Affected Source* - a sewage sludge incineration unit as defined in 40 CFR 60.4930 (40 CFR 60.4930) [**Added April 2011**].
  - *Affected Source* – in relation to the NESHAPS for stationary RICE, this is any existing, new, or reconstructed stationary RICE located at a major or area source of HAP emissions, excluding stationary RICE being tested at a stationary RICE test cell/stand (40 CFR 63.6590(a)) [**Added April 2013**].
  - *Affected Source* – in relation to engine test cells, an affected source is the collection of all equipment and activities associated with engine test cells/stands used for testing uninstalled stationary or uninstalled mobile (motive) engines located at a major source of HAP emissions (40 CFR 63.9290(a)) [**Added July 2003**].
  - *Affirmative Defense* - in the context of an enforcement proceeding, a response or defense put forward by a defendant, regarding which the defendant has the burden of proof, and the merits of which are independently and objectively evaluated in a judicial or administrative proceeding (40 CFR 60.4930) [**Added April 2011**].
  - *AGA* - the American Gas Association.
  - *Agricultural By-Products* - those parts of arable crops that are not used for the primary purpose of producing food. Agricultural by-products include, but are not limited to, oat, corn and wheat straws, bagasse, peanut shells, rice and coconut husks, soybean hulls, palm kernel cake, cottonseed and sunflower seed cake, and pomace (40 CFR 98.6) [**Added January 2011**].
  - *Agricultural Waste* - vegetative agricultural materials such as nut and grain hulls and chaff (e.g., almond, walnut, peanut, rice, and wheat), bagasse, orchard prunings, corn stalks, coffee bean hulls and grounds, and other vegetative waste materials generated as a result of agricultural operations (40 CFR 62.14840) [**Added January 2004**].
  - *AICHE/CCPS* - the American Institute of Chemical Engineers/Center for Chemical Process Safety (40 CFR 68.3) [**Added January 2005**].
  - *Air Blanket* - the layer of air inside the **solvent-cleaning** machine freeboard located above the solvent/air interface. The centerline of the air blanket is equidistant between the sides of the machine (40 CFR 63.461).
  - *Air Curtain Incinerator* – an incinerator that operates by forcefully projecting a curtain of air across an open chamber or open pit in which combustion occurs. Incinerators of that type can be constructed above or below ground and with or without refractory walls and floor (40 CFR 60.1435 and 60.1465) [**Added April 2001**].
  - *Air Curtain Incinerator* - an incineration unit operating by forcefully projecting a curtain of air across an open, integrated combustion chamber (fire box) or open pit or trench (trench burner) in which combustion occurs. For

the purpose of this subpart and 40 CFR subpart FFFF of this part only, air curtain incinerators include both firebox and trench burner units (40 CFR 60.2977) **[Added January 2006]**.

- *Air Curtain Incinerator* - an incinerator that operates by forcefully projecting a curtain of air across an open chamber or pit in which combustion occurs. Incinerators of this type can be constructed above or below ground and with or without refractory walls and floor. (Air curtain incinerators are different from conventional combustion devices which typically have enclosed fireboxes and controlled air technology such as mass burn, modular, and fluidized bed combustors.) (40 CFR 62.14840) **[Added January 2004]**. *Air Knife System* - a device that directs forced air at high pressure, high volume, or a combination of high pressure and high volume, through a small opening directly at the surface of a continuous web part. The purpose of this system is to remove the solvent film from the surfaces of the continuous web part (40 CFR 63.461) **[Added October 1999]**.
- *Air Pollution Control Device* - a catalytic oxidizer, acid-water scrubber, or any other air pollution control equipment that reduces the quantity of **ethylene oxide** in the effluent gas stream from sterilization and aeration processes (40 CFR 63.10448) **[Added January 2008]**.
- *Air Pollution Control Device* - one or more processes used to treat the exit gas from a sewage sludge incinerator stack (40 CFR 503.41(a)).
- *Aircraft Fluid Systems* - those systems that handle hydraulic fluids, fuel, cooling fluids, or oils (40 CFR 63.742) **[Added January 1999]**.
- *Aircraft Transparency* - the aircraft windshield, canopy, passenger windows, lenses, and other components that are constructed of transparent materials (40 CFR 63.742) **[Added January 1999]**.
- *Airless and Air-Assisted Airless Spray* - any coating spray application technology that relies solely on the fluid pressure of the coating to create an atomized coating spray pattern and does not apply any atomizing compressed air to the coating before it leaves the spray gun nozzle. Air-assisted airless spray uses compressed air to shape and distribute the fan of atomized coating, but still uses fluid pressure to create the atomized coating (40 CFR 63.472) **[Added January 2016]**.
- *Alaska Railbelt Grid* - the service areas of the six regulated public utilities that extend from Fairbanks to Anchorage and the Kenai Peninsula. These utilities are Golden Valley Electric Association; Chugach Electric Association; Matanuska Electric Association; Homer Electric Association; Anchorage Municipal Light & Power; and the City of Seward Electric System (40 CFR 63.6675 and 63.4219) **[Added April 2013; Revised October 2016]**.
- *Alkali Bypass* - a duct between the feed end of the kiln and the preheater tower through which a portion of the kiln exit gas stream is withdrawn and quickly cooled by air or water to avoid excessive buildup of alkali, chloride and/or sulfur on the raw feed. This may also be referred to as the “kiln exhaust gas bypass” (40 CFR 98.6) **[Added January 2010]**.
- *Anaerobic Digester* - the system where wastes are collected and anaerobically digested in large containment vessels or covered lagoons. Anaerobic digesters stabilize waste by the microbial reduction of complex organic compounds to CO<sub>2</sub> and CH<sub>4</sub>, which is captured and may be flared or used as fuel (40 CFR 98.6) **[Added January 2010]**.
- *Anaerobic Digestion Systems* - includes but are not limited to covered lagoon, complete mix, plug flow, and fixed film digesters (40 CFR 98.6) **[Added January 2010]**.
- *Anaerobic Lagoon* – with respect to 40 CFR 98, subpart JJ [40 CFR 98.360 – 98.368: Manure Management] a type of liquid storage system component that is designed and operated to stabilize wastes using anaerobic microbial processes. Anaerobic lagoons may be designed for combined stabilization and storage with varying lengths of retention time (up to a year or greater), depending on the climate region, the volatile solids loading rate, and other operational factors (40 CFR 98.6) **[Added January 2010, Revised July 2010]**.

- *Ancillary Equipment* - the equipment used with a dry cleaning machine in a dry cleaning system including, but not limited to, emission control devices, pumps, filters, muck cookers, stills, solvent tanks, solvent containers, water separators, exhaust dampers, diverter valves, interconnecting piping, hoses, and ducts (40 CFR 63.321).
- *Annual Average True Vapor Pressure* - the equilibrium partial pressure exerted by the total Table 1 organic HAP (see Appendix 1-11a) in the stored or transferred organic liquid. For the purpose of determining if a liquid meets the definition of an organic liquid, the vapor pressure is determined using standard conditions of 77 °F and 29.92 in of Hg. For the purpose of determining whether an organic liquid meets the applicability criteria in Table 2, items 1 through 6 (see Appendix 1-11b), use the actual annual average temperature as defined in 40 CFR 63, Subpart EEEE. The vapor pressure value in either of these cases is determined (40 CFR 63.2406) **[Added April 2004; Revised January 2007]**:
  1. In accordance with methods described in American Petroleum Institute Publication 2517, Evaporative Loss from External Floating-Roof Tanks (incorporated by reference, see 40 CFR 63.14);
  2. Using standard reference texts;
  3. By the American Society for Testing and Materials Method D2879-83, 96 (incorporated by reference, see 40 CFR 63.14); or
  4. Using any other method that the EPA approves.
- *Annual Capacity Factor* - the ratio between the actual heat input to a steam generating unit from the fuels listed in 40 CFR 60.42b(a), 60.43b(a), or 60.44b(a) (see checklist item AE.10.5.US and AE.10.5.US), as applicable, during a calendar year and the potential heat input to the steam generating unit had it been operated for 8,760 h during a calendar year at the maximum steady state design heat input capacity. In the case of steam generating units that are rented or leased, the actual heat input shall be determined based on the combined heat input from all operations of the affected facility in a calendar year (40 CFR 60.41b) **[Added July 2007]**.
- *Annual Capacity Factor* - the ratio between the actual heat input to a steam generating unit from an individual fuel or combination of fuels during a period of 12 consecutive calendar months and the potential heat input to the steam generating unit from all fuels had the steam generating unit been operated for 8,760 hours during that 12-month period at the maximum design heat input capacity. In the case of steam generating units that are rented or leased, the actual heat input shall be determined based on the combined heat input from all operations of the affected facility during a period of 12 consecutive calendar months (40 CFR 60.41c) **[Revised January 2006; Revised July 2007]**.
- *Annual Capacity Factor* - the ratio between the actual heat input to a boiler or process heater from the fuels burned during a calendar year and the potential heat input to the boiler or process heater had it been operated for 8,760 hours during a year at the maximum steady state design heat input capacity (40 CFR 63.7575) **[Added April 2013]**.
- *Annual Capacity Factor* - the ratio between the actual heat input to a boiler from the fuels burned during a calendar year and the potential heat input to the boiler had it been operated for 8,760 hours during a year at the maximum steady state design heat input capacity (40 CFR 63.11237) **[Added October 2016]**.
- *Annual Heat Input* - the heat input for the 12 mo preceding the compliance demonstration (40 CFR 63.7575) **[Added April 2011]**.
- *Annual Heat Input* - the heat input for the 12 mo preceding the compliance demonstration (40 CFR 63.11237) **[Added April 2013]**.
- *Annual Heat Input Basis* - the heat input for the 12 mo preceding the compliance demonstration (40 CFR 63.11237) **[Added April 2011]**.
- *Anode Effect* - a process upset condition of an aluminum electrolysis cell caused by too little alumina dissolved in the electrolyte. The anode effect begins when the voltage rises rapidly and exceeds a threshold voltage, typically 8 volts (40 CFR 98.6) **[Added January 2010]**.

- *Anode Effect Minutes Per Cell Day* (24 h) - the total minutes during which an electrolysis cell voltage is above the threshold voltage, typically 8 volts (40 CFR 98.6) [**Added January 2010**].
- *Antique Aerospace Vehicle or Component* - an aircraft or component thereof that was built at least 30 yr ago. An antique aerospace vehicle would not routinely be in commercial or military service in the capacity for which it was designed (40 CFR 63.742) [**Added January 1999**].
- *ANSI* - the American National Standards Institute.
- *API* - the American Petroleum Institute (40 CFR 68.3) [**Added January 2005**].
- *Appliance* - any device which contains and uses a class I or class II substance or substitute as a refrigerant and which is used for household or commercial purposes, including any air conditioner, motor vehicle air conditioner, refrigerator, chiller, or freezer. For a system with multiple circuits, each independent circuit is considered a separate appliance (40 CFR 82.152) [**Revised April 2004; Revised January 2017**].
- *Applicable Implementation Plan or Applicable SIP* - the portion (or portions) of the SIP or most recent revision thereof, which has been approved under section 110 of the Act, or promulgated under section 110(c) of the Act (Federal implementation plan), or promulgated or approved pursuant to regulations promulgated under section 301(d) of the Act and which implements the relevant requirements of the Act (40 CFR 93.152) [**Added April 2009**].
- *Apprentice* - any person who is currently registered as an apprentice in maintenance, service, repair, or disposal of appliances with the U.S. Department of Labor's Office of Apprenticeship (or a State Apprenticeship Council recognized by the Office of Apprenticeship). A person may only be an apprentice for two years from the date of first registering with that office (40 CFR 82.152) [**Revised January 2017**].
- *Approved Equipment Testing Organization* - any organization that has applied for and received approval from the administrator pursuant to 40 CFR 82.160 (40 CFR 82.152).
- *Appurtenance* - any accessory to a stationary structure coated at the site of installation, whether installed or detached, including but not limited to: bathroom and kitchen fixtures; cabinets; concrete forms; doors; elevators; fences; hand railings; heating equipment, air conditioning equipment, and other fixed mechanical equipment or stationary tools; lamp posts; partitions; pipes and piping systems; rain gutters and downspouts; stairways, fixed ladders, catwalks, and fire escapes; and window screens (40 CFR 63.11180) [**Added April 2011**].
- *Architectural Coating* - a coating to be applied to stationary structures or their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs (40 CFR 63.11180) [**Added April 2011**].
- *Area Source* - any stationary source of HAP that is not a major source as defined in 40 CFR 63 (40 CFR 63.1595, 63.6175, 63.6675) [**Added July 2004**].
- *Area Source of HAP* - a source of HAP that is not a major source of HAP, is not located at a major source, and is not part of a major source of HAP emissions. A major source of HAP emissions is any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit any single HAP at a rate of 9.07 megagrams (Mg) (10 tons) or more per year, or emit any combination of HAP at a rate of 22.68 Mg (25 tons) or more per year (40 CFR 63.11170(b)) [**Added April 2011**].
- *Areawide Air Quality Modeling Analysis* - an assessment on a scale that includes the entire nonattainment or maintenance area which uses an air quality dispersion model to determine the effects of emissions on air quality (40 CFR 93.152) [**Added April 2009**].

- *Article* - a manufactured item, as defined under 29 CFR 1910.1200(b), that is formed to a specific shape or design during manufacture, that has end use functions dependent in whole or in part upon the shape or design during end use, and that does not release or otherwise result in exposure to a regulated substance under normal conditions of processing and use (40 CFR 68.3) **[Added January 2005]**.
- *Articles* - clothing, garments, textiles, fabrics, leather goods, and the like, that are dry cleaned (40 CFR 63.321).
- *ASABE* - the American Society of Agricultural and Biological Engineers.
- *ASME* - the American Society of Mechanical Engineers.
- *Asphalt* - a dark brown-to-black cement-like material obtained by petroleum processing and containing bitumens as the predominant component. It includes crude asphalt as well as the following finished products: cements, fluxes, the asphalt content of emulsions (exclusive of water), and petroleum distillates blended with asphalt to make cutback asphalts (40 CFR 98.6) **[Added January 2010]**.
- *Associated Equipment* - as used in 40 CFR 63 as referred to in section 112(n)(4) of the CAA, equipment associated with an oil or natural gas exploration or production well, and includes all equipment from the well bore to the point of custody transfer, except glycol dehydration units, storage vessels with potential for flash emissions, combustion turbines, and stationary reciprocating internal combustion engines (40 CFR 63.6175 and 63.6675) **[Added April 2004; Citation Revised July 2004]**.
- *ASTM* - the American Society of Testing and Materials.
- *Automated Parts Handling System* - a mechanical device that carries all parts and parts baskets at a controlled speed from the initial loading of soiled or wet parts through the removal of the cleaned or dried parts. Automated parts handling systems include, but are not limited to, hoists and conveyors (40 CFR 63.461).
- *Auxiliary Fuel* - fuel used to augment the fuel value of sewage sludge. This includes, but is not limited to, natural gas, fuel oil, coal, gas generated during anaerobic digestion of sewage sludge, and municipal solid waste (not to exceed 30 percent of the dry weight of sewage sludge and auxiliary fuel together (40 CFR 503.41(b)).
- *Auxiliary Fuel* - natural gas, liquified petroleum gas, fuel oil, or diesel fuel (40 CFR 60.2977, 60.4930, and 62.14840) **[Added January 2004; Citation Revised January 2006, Citation Revised April 2011]**.
- *Average Annual Heat Input Rate* - total heat input divided by the hours of operation for the 12 months preceding the compliance demonstration (40 CFR 63.7575) **[Added April 2013]**.
- *Average Daily Concentration* - the arithmetic mean of the concentration of a pollutant in milligrams per kilogram of sewage sludge (dry weight basis) in the samples collected and analyzed in a month (40 CFR 503.41) **[Added October 1999]**.
- *Aviation Gasoline* - a complex mixture of volatile hydrocarbons, with or without additives, suitably blended to be used in aviation reciprocating engines. Specifications can be found in ASTM Specification D910-07a, Standard Specification for Aviation Gasolines (incorporated by reference, see 40 CFR 98.7) (40 CFR 98.6) **[Added January 2010]**.
- *Bag Leak Detection System* - an instrument that is capable of monitoring particulate matter loadings in the exhaust of a fabric filter (i.e., baghouse) in order to detect bag failures. A bag leak detection system includes, but is not limited to, an instrument that operates on triboelectric, light scattering, light transmittance, or other principle to monitor relative particulate matter loadings (40 CFR 60.4930 and 62.14840) **[Added January 2004; Revised October 2004; Citation Revised April 2011]**.

- *Bag Leak Detection System* - a group of instruments that are capable of monitoring particulate matter loadings in the exhaust of a fabric filter (i.e., baghouse) in order to detect bag failures. A bag leak detection system includes, but is not limited to, an instrument that operates on electrodynamic, triboelectric, light scattering, light transmittance, or other principle to monitor relative particulate matter loadings (40 CFR 63.7575 and 63.11237) [Added April 2011].
- *B<sub>0</sub>* - the maximum CH<sub>4</sub> producing capacity of a waste stream, kg CH<sub>4</sub>/kg COD (40 CFR 98.6) [Added January 2010].
- *Backup Power for Renewable Energy* - an engine that provides backup power to a facility that generates electricity from renewable energy resources, as that term is defined in Alaska Statute 42.45.045(l)(5) (incorporated by reference, see 40 CFR 63.14) (40 CFR 63.6675) [Added April 2013].
- *Bag Leak Detection System* - a group of instruments that are capable of monitoring particulate matter loadings in the exhaust of a fabric filter (i.e., baghouse) in order to detect bag failures. A bag leak detection system includes, but is not limited to, an instrument that operates on electrodynamic, triboelectric, light scattering, light transmittance, or other principle to monitor relative particulate matter loadings (40 CFR 63.11237) [Revised April 2013].
- *Base Load* - the load level at which a gas turbine is normally operated (40 CFR 60.331) [Added October 2004].
- *Basic Oxygen Furnace* - any refractory-lined vessel in which high-purity oxygen is blown under pressure through a bath of molten iron, scrap metal, and fluxes to produce steel (40 CFR 98.6) [Added January 2010].
- *Batch* - a single bulk cylinder of refrigerant after all reclamation has been completed prior to packaging or shipping to the market (40 CFR 82.152) [Added January 2017].
- *Batch* - quantity of diesel fuel (or other product subject to the requirements of this subpart I) which is homogeneous with regard to those properties that are specified for MVNRLM diesel fuel or ECA marine fuel under this subpart I, has the same designation under this subpart I (if applicable), and whose custody is transferred from one facility to another facility (40 CFR 80.502(d)) [Added July 2006. Revised July 2010]:
  1. In the case of aggregated facilities consisting of a refinery and a truck loading terminal, a batch may be defined by one of the following methods:
    - a. The sum of the deliveries from the truck loading terminal rack to trucks for periods not to exceed 1 month;
    - b. Each individual truck or truck compartment; or
    - c. For refineries with “certification tanks” where testing is performed and “rack tanks” that feed the truck loading terminal rack, each transfer from the certification tank to the rack tank. If this method of determining a batch is selected, it must be the sole method used and must be performed such that no double-counting or undercounting of volumes occurs.
- *Batch Cleaning Machine* - a **solvent-cleaning** machine in which individual parts or a set of parts move through the entire cleaning cycle before new parts are introduced into the **solvent-cleaning** machine. An open top vapor-cleaning machine is a type of batch cleaning machine. A **solvent-cleaning** machine, such as a ferris wheel or a cross rod degreaser, that cleans multiple batch loads simultaneously and are manually loaded are batch cleaning machine (40 CFR 63.461).
- *Batch HMIWI* - an HMIWI that is designed such that neither waste charging nor ash removal can occur during combustion (40 CFR 60.51c) [Added December 1997].
- *Batch HMIWI* - an HMIWI that is designed such that neither waste charging nor ash removal can occur during combustion (40 CFR 62.14490) [Added October 2000].

- *Batch Municipal Waste Combustor* - an incinerator that operates by forcefully projecting a curtain of air across an open chamber or pit in which burning occurs. Incinerators of this type can be constructed above or below ground and with or without refractory walls and floor (40 CFR 60.51b).
- *Batch Municipal Waste Combustion Unit* - a municipal waste combustion unit designed so it cannot combust municipal solid waste continuously 24 hours per day because the design does not allow waste to be fed to the unit or ash to be removed during combustion (40 CFR 60.1465) [Added April 2001].
- *Batch OSWI Unit* - an OSWI unit that is designed such that neither waste charging nor ash removal can occur during combustion (40 CFR 60.2977) [Added January 2006].
- *Benchmark* - the fuel heat input for a boiler or process heater for the one-year period before the date that an energy demand reduction occurs, unless it can be demonstrated that a different time period is more representative of historical operations (40 CFR 63.7575) [Added April 2013].
- *Benzene Service* - a piece of equipment that either contains or contacts a fluid (liquid or gas) that is at least 10 percent benzene by weight (40 CFR 61.111).
- *Biodiesel* - a mono-alkyl ester derived from biomass and conforming to ASTM D6751-11b, Standard Specification for Biodiesel Fuel Blend Stock (B100) for Middle Distillate Fuels (incorporated by reference, see 40 CFR 63.14) (40 CFR 63.7575 and 63.11237) [Added April 2013].
- *Biodiesel* - a mono-alkyl ester derived from biomass and conforming to ASTM D6751-08, Standard Specification for Biodiesel Fuel Blend Stock (B100) for Middle Distillate Fuels (40 CFR 98.6) [Added January 2010].
- *Biogas* - the combination of CO<sub>2</sub>, CH<sub>4</sub>, and other gases produced by the biological breakdown of organic matter in the absence of oxygen (40 CFR 98.358) [Added July 2010].
- *Biogas* - gas produced by the anaerobic digestion or fermentation of organic matter including manure, sewage sludge, municipal solid waste, biodegradable waste, or any other biodegradable feedstock, under anaerobic conditions. Biogas is comprised primarily of methane and CO<sub>2</sub> (40 CFR 60.4420) [Added April 2009].
- *Biogenic CO<sub>2</sub>* - carbon dioxide emissions generated as the result of biomass combustion from combustion units for which emission calculations are required by an applicable 40 CFR 98 subpart (40 CFR 98.6) [Added January 2010].
- *Biologicals* - preparations made from living organisms and their products, including vaccines, cultures, etc., intended for use in diagnosing, immunizing, or treating humans or animals or in research pertaining thereto (40 CFR 60.51c and 62.14490) [Added October 2000].
- *Biomass* - non-fossilized and biodegradable organic material originating from plants, animals or microorganisms, including products, by-products, residues and waste from agriculture, forestry and related industries as well as the non-fossilized and biodegradable organic fractions of industrial and municipal wastes, including gases and liquids recovered from the decomposition of non-fossilized and biodegradable organic material (40 CFR 98.6) [Added January 2010].
- *Biomass* - any biomass-based solid fuel that is not a solid waste. This includes, but is not limited to, wood residue and wood products (e.g., trees, tree stumps, tree limbs, bark, lumber, sawdust, sander dust, chips, scraps, slabs, millings, and shavings); animal manure, including litter and other bedding materials; vegetative agricultural and silvicultural materials, such as logging residues (slash), nut and grain hulls and chaff (e.g., almond, walnut, peanut, rice, and wheat), bagasse, orchard prunings, corn stalks, coffee bean hulls and grounds. This definition of biomass is not intended to suggest that these materials are or are not solid waste (40 CFR 63.11237) [Added April 2011].

- *Biomass or Bio-Based Solid Fuel* - any biomass-based solid fuel that is not a solid waste. This includes, but is not limited to, wood residue; wood products (e.g., trees, tree stumps, tree limbs, bark, lumber, sawdust, sander dust, chips, scraps, slabs, millings, and shavings); animal manure, including litter and other bedding materials; vegetative agricultural and silvicultural materials, such as logging residues (slash), nut and grain hulls and chaff (e.g., almond, walnut, peanut, rice, and wheat), bagasse, orchard prunings, corn stalks, coffee bean hulls and grounds. This definition of biomass is not intended to suggest that these materials are or are not solid waste (40 CFR 63.7575) [**Added April 2011**].
- *Biomass Subcategory* - includes any boiler that burns any biomass and is not in the coal subcategory (40 CFR 63.11237) [**Revised April 2013**].
- *Black Start Engine* - an engine whose only purpose is to start up a combustion turbine (40 CFR 63.6675) [**Added April 2010**].
- *Blast Furnace* - a furnace that is located at an integrated iron and steel plant and is used for the production of molten iron from iron ore pellets and other iron bearing materials (40 CFR 98.6) [**Added January 2010**].
- *Blast Furnace Gas Fuel-fired Boiler or Process Heater* - an industrial/commercial/institutional boiler or process heater that receives 90 percent or more of its total annual gas volume from blast furnace gas (40 CFR 63.7575) [**Added April 2011**].
- *Blendstock for Oxygenate Blending* - gasoline blendstock which could become gasoline solely upon the addition of an oxygenate (40 CFR 80.1500) [**Added October 2011**].
- *Blendstocks* - petroleum products used for blending or compounding into finished motor gasoline. These include RBOB (reformulated blendstock for oxygenate blending) and CBOB (conventional blendstock for oxygenate blending), but exclude oxygenates, butane, and pentanes plus (40 CFR 98.6) [**Added January 2010**].
- *Blendstocks -- Others* - products used for blending or compounding into finished motor gasoline that are not defined elsewhere. Excludes Gasoline Treated as Blendstock (GTAB), Diesel Treated as Blendstock (DTAB), conventional blendstock for oxygenate blending (CBOB), reformulated blendstock for oxygenate blending (RBOB), oxygenates (e.g. fuel ethanol and methyl tertiary butyl ether), butane, and pentanes plus (40 CFR 98.6) [**Added January 2010**].
- *Blood Products* - any product derived from human blood, including but not limited to, blood plasma, platelets, red or white blood corpuscles, and other derived licensed products, such as interferon, etc. (40 CFR 60.51c) [**Added December 1997**].
- *Blood Products* - any product derived from human blood, including but not limited to blood plasma, platelets, red or white blood corpuscles, and other derived licensed products, such as interferon, etc (40 CFR 62.14490) [**Added October 2000**].
- *Blowdown* - the act of emptying or depressuring a vessel. This may also refer to the discarded material such as blowdown water from a boiler or cooling tower (40 CFR 98.6) [**Added January 2010**].
- *Body Fluids* - liquid emanating or derived from humans and limited to blood; dialysate; amniotic, cerebrospinal, synovial, pleural, peritoneal, and pericardial fluids; and semen and vaginal secretions (40 CFR 60.51c) [**Added December 1997**].
- *Boiler* - an enclosed combustion device that extracts useful energy in the form of steam and is not an incinerator or a process heater (40 CFR 63.7957) [**Added April 2004**].
- *Boiler* - an enclosed device using controlled flame combustion and having the primary purpose of recovering thermal energy in the form of steam or hot water. Controlled flame combustion refers to a steady-state, or near

steady-state, process wherein fuel and/or oxidizer feed rates are controlled. A device combusting solid waste, as defined in 40 CFR 241.3 of this chapter, is not a boiler unless the device is exempt from the definition of a solid waste incineration unit as provided in section 129(g)(1) of the Clean Air Act. Waste heat boilers are excluded from this definition (40 CFR 63.7575) **[Revised April 2013]**.

- *Boiler* - an enclosed device using controlled flame combustion in which water is heated to recover thermal energy in the form of steam and/or hot water. Controlled flame combustion refers to a steady-state, or near steady-state, process wherein fuel and/or oxidizer feed rates are controlled. A device combusting solid waste, as defined in 40 CFR 241.3 of this chapter, is not a boiler unless the device is exempt from the definition of a solid waste incineration unit as provided in section 129(g)(1) of the Clean Air Act. Waste heat boilers, process heaters, and autoclaves are excluded from the definition of Boiler (40 CFR 63.11237) **[Revised April 2013]**.
- *Boiler Operating Day* - a 24-h period between 12 midnight and the following midnight during which any fuel is combusted at any time in the steam-generating unit. It is not necessary for fuel to be combusted the entire 24-h period (40 CFR 60.41) **[Added July 2007]**.
- *Boiler System* - the boiler and associated components, such as, the feed water system, the combustion air system, the fuel system (including burners), blowdown system, combustion control systems, steam systems, and condensate return systems (40 CFR 63.7575) **[Revised April 2013]**.
- *Boiler System* - the boiler and associated components, such as, feedwater systems, combustion air systems, fuel systems (including burners), blowdown systems, combustion control systems, steam systems, and condensate return systems, directly connected to and serving the energy use systems (40 CFR 63.11237) **[Revised April 2013]**.
- *Bottoms Receiver* - a tank that collects distillation bottoms before the stream is sent for storage or for further processing downstream (40 CFR 63.2406) **[Added January 2007]**.
- *British Thermal Unit or Btu* - the quantity of heat required to raise the temperature of one pound of water by one degree Fahrenheit at about 39.2° Fahrenheit (40 CFR 98.6) **[Added January 2010]**.
- *Bulk* - with respect to industrial GHG suppliers and CO<sub>2</sub> suppliers, means the transfer of a product inside containers, including but not limited to tanks, cylinders, drums, and pressure vessels (40 CFR 98.6) **[Added January 2010]**.
- *Bulk Gasoline Terminal* - any gasoline facility that receives gasoline by pipeline, ship, or barge, and has throughput greater than 75,000 L/day approx. 19,998 gal/day] (40 CFR 60.501).
- *Bulk Natural Gas Liquid or NGL* - mixtures of hydrocarbons that have been separated from natural gas as liquids through the process of absorption, condensation, adsorption, or other methods. Generally, such liquids consist of ethane, propane, butanes, and pentanes plus. Bulk NGL is sold to fractionators or to refineries and petrochemical plants where the fractionation takes place (40 CFR 98.6) **[Added January 2010; Revised January 2011]**.
- *Butane, or n-Butane* - a paraffinic straight-chain hydrocarbon with molecular formula C<sub>4</sub>H<sub>10</sub> (40 CFR 98.6) **[Added January 2010]**.
- *Butylene, or n-Butylene* - an olefinic straight-chain hydrocarbon with molecular formula C<sub>4</sub>H<sub>10</sub> (40 CFR 98.6) **[Added January 2010]**.
- *Bypass Stack* - a device used for discharging combustion gases to avoid severe damage to the air pollution control device or other equipment (40 CFR 60.51c and 62.14490) **[Added October 2000]**.
- *Bypass Stack* - a device used for discharging combustion gases to avoid severe damage to the air pollution control device or other equipment (40 CFR 60.4930) **[Added April 2011]**.

- *By-product Coke Oven Battery* - a group of ovens connected by common walls, where coal undergoes destructive distillation under positive pressure to produce coke and coke oven gas from which by-products are recovered (40 CFR 98.6) **[Added January 2010]**.
- *Byproduct/waste* - any liquid or gaseous substance produced at chemical manufacturing plants, petroleum refineries, or pulp and paper mills (except natural gas, distillate oil, or residual oil) and combusted in a steam generating unit for heat recovery or for disposal. Gaseous substances with CO<sub>2</sub> levels greater than 50 percent or CO levels greater than 10 percent are not byproduct/waste for the purpose of this 40 CFR Subpart Db (40 CFR 60.41b) **[Added July 2007]**.
- *CBI* - confidential business information (40 CFR 68.3) **[Added April 2017]**.
- *CBOB-Summer* (conventional blendstock for oxygenate blending) - a petroleum product which, when blended with a specified type and percentage of oxygenate, meets the definition of Conventional-Summer (40 CFR 98.6) **[Added January 2010]**.
- *CBOB-Winter* (Conventional Blendstock for Oxygenate Blending) - a petroleum product which, when blended with a specified type and percentage of oxygenate, meets the definition of Conventional-Winter (40 CFR 98.6) **[Added January 2010]**.
- *CH<sub>4</sub>* - methane.
- *COD* - the chemical oxygen demand as determined using methods specified pursuant to 40 CFR 136 (40 CFR 98.6) **[Added January 2010]**.
- *Calendar Year* - the period between January 1 and December 31, inclusive, for a given year (40 CFR 63.7575) **[Added April 2011]**.
- *Calcination* - the process of thermally treating minerals to decompose carbonates from ore (40 CFR 98.6) **[Added January 2010]**.
- *Calculation Methodology* - a methodology prescribed under the section "Calculating GHG Emissions" in any subpart of 40 CFR 98 (40 CFR 98.6) **[Added January 2010]**.
- *Calendar Quarter* - 3 consecutive months (non-overlapping) beginning on: January 1, April 1, July 1, or October 1 (40 CFR 62.14840) **[Added January 2004]**.
- *Calendar Quarter* - 3 consecutive months (nonoverlapping) beginning on: January 1, April 1, July 1, or October 1 (40 CFR 60.2977) **[Added January 2006]**.
- *Calendar Year* - 365 consecutive days starting on January 1 and ending on December 31 (40 CFR 60.2977) **[Added January 2006]**.
- *Calendar Year* - 365 consecutive days starting on January 1 and ending on December 31 (40 CFR 62.14840) **[Added January 2004]**.
- *Calendar Year* - the period between January 1 and December 31, inclusive, for a given year (40 CFR 63.11237) **[Added April 2013]**.
- *Carbon Adsorber* - a bed of activated carbon into which an air-perchloroethylene gas-vapor stream is routed and which adsorbs the perchloroethylene on the carbon (40 CFR 63.321).
- *Carbon Adsorber* - a bed of activated carbon into which an air solvent gas vapor stream is routed and which adsorbs the solvent on the carbon (40 CFR 63.461).

- *Carbon Adsorber* - one vessel in a series of vessels in a carbon adsorption system that contains carbon and is used to remove gaseous pollutants from a gaseous emission source (40 CFR 63.742) **[Added January 1999]**.
- *Carbon Adsorber Control Efficiency* - the total efficiency of the control system, determined by the product of the capture efficiency and the control device efficiency (40 CFR 63.742) **[Added January 1999]**.
- *Carbon Dioxide Equivalent or CO<sub>2</sub>e* - the number of metric tons of CO<sub>2</sub> emissions with the same global warming potential as one metric ton of another greenhouse gas, and is calculated using Equation A-1 of this subpart (40 CFR 98.6) **[Added January 2010]**.
- *Carbon Dioxide Production Well* - any hole drilled in the earth for the primary purpose of extracting carbon dioxide from a geologic formation or group of formations which contain deposits of carbon dioxide (40 CFR 98.6) **[Added January 2010]**.
- *Carbon Dioxide Production Well Facility* - one or more carbon dioxide production wells that are located on one or more contiguous or adjacent properties, which are under the control of the same entity. Carbon dioxide production wells located on different oil and gas leases, mineral fee tracts, lease tracts, subsurface or surface unit areas, surface fee tracts, surface lease tracts, or separate surface sites, whether or not connected by a road, waterway, power line, or pipeline, shall be considered part of the same CO<sub>2</sub> production well facility if they otherwise meet the definition. (40 CFR 98.6) **[Added January 2010]**.
- *Carbon Dioxide Stream* - carbon dioxide that has been captured from an emission source (e.g. a power plant or other industrial facility) or extracted from a carbon dioxide production well plus incidental associated substances either derived from the source materials and the capture process or extracted with the carbon dioxide (40 CFR 98.6) **[Added January 2010]**.
- *Carbon Share* - the percent of total mass that carbon represents in any product (40 CFR 98.6) **[Added January 2010]**.
- *Carbonate* - compounds containing the radical CO<sub>3</sub><sup>-2</sup>. Upon calcination, the carbonate radical decomposes to evolve carbon dioxide (CO<sub>2</sub>). Common carbonates consumed in the mineral industry include calcium carbonate (CaCO<sub>3</sub>) or calcite; magnesium carbonate (MgCO<sub>3</sub>) or magnesite; and calcium-magnesium carbonate (CaMg(CO<sub>3</sub>)<sub>2</sub>) or dolomite (40 CFR 98.6) **[Added January 2010]**.
- *Carbonate-based Mineral* - any of the following minerals used in the manufacture of glass: Calcium carbonate (CaCO<sub>3</sub>), calcium magnesium carbonate (CaMg(CO<sub>3</sub>)<sub>2</sub>), sodium carbonate (Na<sub>2</sub>CO<sub>3</sub>), barium carbonate (BaCO<sub>3</sub>), potassium carbonate (K<sub>2</sub>CO<sub>3</sub>), lithium carbonate (Li<sub>2</sub>CO<sub>3</sub>), and strontium carbonate (SrCO<sub>3</sub>) (40 CFR 98.6) **[Added January 2010; Revised January 2011]**.
- *Carbonate-based Mineral Mass Fraction* - the following: For limestone, the mass fraction of calcium carbonate (CaCO<sub>3</sub>) in the limestone; for dolomite, the mass fraction of calcium magnesium carbonate (CaMg(CO<sub>3</sub>)<sub>2</sub>) in the dolomite; for soda ash, the mass fraction of sodium carbonate (Na<sub>2</sub>CO<sub>3</sub>) in the soda ash; for barium carbonate, the mass fraction of barium carbonate (BaCO<sub>3</sub>) in the barium carbonate; for potassium carbonate, the mass fraction of potassium carbonate (K<sub>2</sub>CO<sub>3</sub>) in the potassium carbonate; for lithium carbonate, the mass fraction of lithium carbonate (Li<sub>2</sub>CO<sub>3</sub>); and for strontium carbonate, the mass fraction of strontium carbonate (SrCO<sub>3</sub>) (40 CFR 98.6) **[Added January 2010; Revised January 2011]**.
- *Carbonate-based Raw Material* - any of the following materials used in the manufacture of glass: Limestone, dolomite, soda ash, barium carbonate, potassium carbonate, lithium carbonate, and strontium carbonate (40 CFR 98.6) **[Added January 2010; Revised January 2011]**.
- *Cargo Tank* - a liquid-carrying tank permanently attached and forming an integral part of a motor vehicle or truck trailer. This term also refers to the entire cargo tank motor vehicle or trailer. For the purpose of 40 CFR 63, Subpart EEEE [40 CFR 63.2330 through 63.2406, see checklist items AE.57.1.US through AE.57.15.US],

vacuum trucks used exclusively for maintenance or spill response are not considered cargo tanks (40 CFR 63.2406) **[Added April 2004]**.

- *Carrier* - any distributor who transports or stores or causes the transportation or storage of gasoline or diesel fuel without taking title to or otherwise having any ownership of the gasoline or diesel fuel, and without altering either the quality or quantity of the gasoline or diesel fuel (40 CFR 80.2(t) and 80.1500) **[Revised October 2011]**.
- *Cartridge Filter* - a discrete filter unit containing both filter paper and activated carbon that traps and removes contaminants from petroleum solvent, together with the piping and ductwork used in installing this device (40 CFR 60.621).
- *Category 3 Marine Vessels* - for the purposes of 40 CFR 80, are vessels that are propelled by engines meeting the definition of "Category 3" in 40 CFR 1042.901 (40 CFR 80.2(uuu)) **[Added July 2010]**.
- *Catalytic Cracking Unit* - a refinery process unit in which petroleum derivatives are continuously charged and hydrocarbon molecules in the presence of a catalyst are fractured into smaller molecules, or react with a contact material suspended in a fluidized bed to improve feedstock quality for additional processing and the catalyst or contact material is continuously regenerated by burning off coke and other deposits. Catalytic cracking units include both fluidized bed systems, which are referred to as fluid catalytic cracking units (FCCU), and moving bed systems, which are also referred to as thermal catalytic cracking units. The unit includes the riser, reactor, regenerator, air blowers, spent catalyst or contact material stripper, catalyst or contact material recovery equipment, and regenerator equipment for controlling air pollutant emissions and for heat recovery (40 CFR 98.6) **[Added January 2010]**.
- *Catastrophic Release* - a major uncontrolled emission, fire, or explosion, involving one or more regulated substances that presents imminent and substantial endangerment to public health and the environment (40 CFR 68.3) **[Added January 2005]**.
- *Cause or Contribute to a New Violation* - a Federal action that (40 CFR 93.152) **[Added April 2009]**:
  1. Causes a new violation of a national ambient air quality standard (NAAQS) at a location in a nonattainment or maintenance area which would otherwise not be in violation of the standard during the future period in question if the Federal action were not taken; or
  2. Contributes, in conjunction with other reasonably foreseeable actions, to a new violation of a NAAQS at a location in a nonattainment or maintenance area in a manner that would increase the frequency or severity of the new violation.
- *Caused By* - as used in the terms "direct emissions" and "indirect emissions," emissions that would not otherwise occur in the absence of the Federal action (40 CFR 93.152) **[Added April 2009]**.
- *Cement Kiln Dust* - non-calcined to fully calcined dust produced in the kiln or pyroprocessing line. Cement kiln dust is a fine-grained, solid, highly alkaline material removed from the cement kiln exhaust gas by scrubbers (filtration baghouses and/or electrostatic precipitators) (40 CFR 98.6) **[Added July 2010]**.
- *Certified Emissions Life* - the period during which the engine is designed to properly function in terms of reliability and fuel consumption, without being remanufactured, specified as a number of hours of operation or calendar years, whichever comes first. The values for certified emissions life for stationary CI ICE with a displacement of less than 10 liters per cylinder are given in 40 CFR 1039.101(g). The values for certified emissions life for stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder are given in 40 CFR 94.9(a) (40 CFR 60.4219) **[Added July 2011]**.
- *Certified Emissions Life* - the period during which the engine is designed to properly function in terms of reliability and fuel consumption, without being remanufactured, specified as a number of hours of operation or calendar years, whichever comes first. The values for certified emissions life for stationary SI ICE with a maximum engine power less than or equal to 19 KW (25 HP) are given in 40 CFR 90.105, 40 CFR 1054.107, and

40 CFR 1060.101, as appropriate. The values for certified emissions life for stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) certified to 40 CFR part 1048 are given in 40 CFR 1048.101(g). The certified emissions life for stationary SI ICE with a maximum engine power greater than 75 KW (100 HP) certified under the voluntary manufacturer certification program of this subpart is 5,000 hours or 7 years, whichever comes first. You may request in your application for certification that we approve a shorter certified emissions life for an engine family. EPA may approve a shorter certified emissions life, in hours of engine operation but not in years, if we determine that these engines will rarely operate longer than the shorter certified emissions life. If engines identical to those in the engine family have already been produced and are in use, your demonstration must include documentation from such in-use engines. In other cases, your demonstration must include an engineering analysis of information equivalent to such in-use data, such as data from research engines or similar engine models that are already in production. Your demonstration must also include any overhaul interval that you recommend, any mechanical warranty that you offer for the engine or its components, and any relevant customer design specifications. Your demonstration may include any other relevant information. The certified emissions life value may not be shorter than any of the following (40 CFR 60.4248) **[Added April 2008; Revised July 2011]**:

1. 1,000 hours of operation.
  2. Your recommended overhaul interval.
  3. Your mechanical warranty for the engine.
- *Certified Refrigerant Recovery or Recycling Equipment* - equipment manufactured before 15 November 1993, that meets the standards in 40 CFR 82.158(c), 82.158(e), or 82.158(g) (see checklist item AE.90.2.US); equipment certified by an approved equipment testing organization to meet the standards in 40 CFR 82.158(b), (d), or (f); or equipment certified pursuant to 40 CFR 82.36(a) (40 CFR 82.152) **[Revised October 2003]**.
  - *Certified Standards* - calibration gases certified by the manufacturer of the calibration gases to be accurate to within 2 percent of the value on the label or calibration gases (40 CFR 98.6) **[Added January 2010]**.
  - *Certified Stationary Internal Combustion Engine* - an engine that belongs to an engine family that has a certificate of conformity that complies with the emission standards and requirements in this part, or of 40 CFR 90 or 40 CFR 1048, as appropriate (40 CFR 60.4248) **[Added April 2008]**.
  - *Chemical Manufacturing Plants* - industrial plants that are classified by the Department of Commerce under Standard Industrial Classification (SIC) Code 28 (40 CFR 60.41b) **[Added July 2007]**.
  - *Chemical Milling Maskant* - a coating that is applied directly to aluminum components to protect surface areas when chemical milling the component with a Type I or Type II etchant. Type I chemical milling maskants are used with a Type I etchant and Type II chemical milling maskants are used with a Type II etchant. This definition does not include bonding maskants, critical use and line sealer maskants, and seal coat maskants. Additionally, maskants that must be used with a combination of Type I or II etchants and any of the above types of maskants (*i.e.*, bonding, critical use and line sealer, and seal coat) are also not included in this definition. (*See* also Type I and Type II etchant definitions.) (40 CFR 63.742) **[Added January 1999; Revised January 2016]**.
  - *Chemical Milling Maskant Application Operation* - application of chemical milling maskant for use with Type I or Type II chemical milling etchants (40 CFR 63.742) **[Added January 1999]**.
  - *Chemical Recovery Combustion Unit* - a combustion device, such as a recovery furnace or fluidized-bed reactor where spent pulping liquor from sulfite or semi-chemical pulping processes is burned to recover pulping chemicals (40 CFR 98.6) **[Added January 2010]**.
  - *Chemical Recovery Furnace* - an enclosed combustion device where concentrated spent liquor produced by the kraft or soda pulping process is burned to recover pulping chemicals and produce steam. Includes any recovery furnace that burns spent pulping liquor produced from both the kraft and soda pulping processes (40 CFR 98.6) **[Added January 2010]**.

- *Chemotherapeutic Waste* - waste material resulting from the production or use of antineoplastic agents used for the purpose of stopping or reversing the growth of malignant cells (40 CFR 60.51c, 60.2977, 62.14490, and 62.14840) [**Revised January 2004; Revised January 2006**].
- *Chief Facility Operator* - the person in direct charge and control of the operation of a municipal waste combustion unit. That person is responsible for daily onsite supervision, technical direction, management, and overall performance of the municipal waste combustion unit (40 CFR 60.1465) [**Added April 2001**].
- *Chloride Process* - a production process where titanium dioxide is produced using calcined petroleum coke and chlorine as raw materials (40 CFR 98.6) [**Added January 2010**].
- *City Gate* - a location at which natural gas ownership or control passes from one party to another, neither of which is the ultimate consumer. In this rule, in keeping with common practice, the term refers to a point or measuring station at which a local gas distribution utility receives gas from a natural gas pipeline company or transmission system. Meters at the city gate station measure the flow of natural gas into the local distribution company system and typically are used to measure local distribution company system sendout to customers (40 CFR 98.6) [**Added January 2010**].
- *Class I* - refers to an ozone-depleting substance that is listed in 40 CFR part 82 subpart A, appendix A (40 CFR 82.152) [**Added January 2017**].
- *Class II* - refers to an ozone-depleting substance that is listed in 40 CFR part 82 subpart A, appendix B (40 CFR 82.152) [**Added January 2017**].
- *Class II Municipal Solid Waste Landfill* - a landfill that meets 4 criteria: (40 CFR 60.2977) [**Added January 2006**].
  1. Accepts, for incineration or disposal, less than 20 tons per day of municipal solid waste or other solid wastes based on an annual average;
  2. Is located on a site where there is no evidence of groundwater pollution caused or contributed to by the landfill;
  3. Is not connected by road to a Class I municipal solid waste landfill, as defined by Alaska regulatory code 18 AAC 60.300(c) or, if connected by road, is located more than 50 miles from a Class I municipal solid waste landfill; and
  4. Serves a community that meets one of two criteria:
    - a. Experiences for at least three months each year, an interruption in access to surface transportation, preventing access to a Class I municipal solid waste landfill; or
    - b. Has no practicable waste management alternative, with a landfill located in an area that annually receives 25 inches or less of precipitation.
- *Class I Small Municipal Waste Combustion Units* - Class I units are small municipal waste combustion units that are located at municipal waste combustion plants with an aggregate plant combustion capacity greater than 250 tons per day of municipal solid waste. (See the definition of "municipal waste combustion plant capacity" in 40 CFR 60.1465 for specification of which units at a plant are included in the aggregate capacity calculation.) (40 CFR 60.1045(a)(1)) [**Added April 2001**].
- *Class II Small Municipal Waste Combustion Units* - Class II units are small municipal waste combustion units that are located at municipal waste combustion plants with an aggregate plant combustion capacity less than or equal to 250 tons per day of municipal solid waste. (See the definition of "municipal waste combustion plant capacity" in 40 CFR 60.1465 for specification of which units at a plant are included in the aggregate capacity calculation.) (40 CFR 60.1045(a)(2)) [**Added April 2001**].
- *Class I Substance* - any substance designated as class I in appendix A to 40 CFR 82, Subpart A [40 CFR 82.1 through 82.24, see checklist items AE.85.6.US, AE.95.4.US through AE.95.7.US], including chlorofluorocarbons, halons, carbon tetrachloride and methyl chloroform and any other substance so designated by the Agency at a later date (40 CFR 82.104(a)) [**Added July 2004**].

- *Class II Substance* - any substance designated as class II in appendix A to 40 CFR 82, Subpart A [40 CFR 82.1 through 82.24, see checklist items AE.85.6.US, AE.95.4.US through AE.95.7.US], including hydrochlorofluorocarbons and any other substance so designated by the Agency at a later date (40 CFR 82.104(b)) **[Added July 2004]**.
- *Class I Units* - small municipal waste combustion units subject to 40 CFR 60, Subpart AAAAA [40 CFR 60.1000 through 60.1465, see checklist items AE.36.17.US through AE.36.28.US] that are located at municipal waste combustion plants with an aggregate plant combustion capacity greater than 250 tons per day of municipal solid waste. See the definition in this section of “municipal waste combustion plant capacity” for specification of which units at a plant site are included in the aggregate capacity calculation (40 CFR 60.1465) **[Added April 2001]**.
- *Class II Units* - small municipal waste combustion units subject to 40 CFR 60, Subpart AAAAA [40 CFR 60.1000 through 60.1465, see checklist items AE.36.17.US through AE.36.28.US] that are located at municipal waste combustion plants with an aggregate plant combustion capacity less than or equal to 250 tons per day of municipal solid waste. See the definition in this section of “municipal waste combustion plant capacity” for specification of which units at a plant site are included in the aggregate capacity calculation (40 CFR 60.1465) **[Added April 2001]**.
- *Class III Municipal Solid Waste Landfill* - landfill that is not connected by road to a Class I municipal solid waste landfill, as defined by Alaska regulatory code 18 AAC 60.300(c) or, if connected by road, is located more than 50 miles from a Class I municipal solid waste landfill, and that accepts, for disposal, either of the following two criteria: (40 CFR 60.2977) **[Added January 2006]**.
  1. Ash from incinerated municipal waste in quantities less than 1 ton per day on an annual average, which ash must be free of food scraps that might attract animals; or
  2. Less than 5 tons per day of municipal solid waste, based on an annual average, and is not located in a place that meets either of the following criteria:
    - a. Where public access is restricted, including restrictions on the right to move to the place and reside there; or
    - b. That is provided by an employer and that is populated totally by persons who are required to reside there as a condition of employment and who do not consider the place to be their permanent residence.
- *Classified Information* – “classified information” as defined in the Classified Information Procedures Act, 18 U.S.C. App. 3, section 1(a) as “any information or material that has been determined by the United States Government pursuant to an executive order, statute, or regulation, to require protection against unauthorized disclosure for reasons of national security” (40 CFR 68.3) **[Added January 2005]**.
- *Classified National Security Information* - information that has been determined pursuant to Executive Order 13526, “Classified National Security Information,” December 29, 2009 or any successor order to require protection against unauthorized disclosure and is marked to indicate its classified status when in documentary form. The term “Classified Information” is an alternative term that may be used instead of “Classified National Security Information” (40 CFR 63.472) **[Added January 2016]**.
- *Clean Dry Biomass* - any biomass-based solid fuel that have not been painted, pigment-stained, or pressure treated, does not contain contaminants at concentrations not normally associated with virgin biomass materials and has a moisture content of less than 20 percent and is not a solid waste (40 CFR 63.7575) **[Added January 2016]**.
- *Clean Liquid Solvent* - fresh, unused solvent, recycled solvent, or used solvent that has been cleaned of soils (e.g., skimmed of oils or sludge and strained of metal ships) (40 CFR 63.461).
- *Clean Lumber* - wood or wood products that have been cut or shaped and include wet, air-dried, and kiln-dried wood products. Clean lumber does not include wood products that have been painted, pigment-stained, or pressure-treated by compounds such as chromate copper arsenate, pentachlorophenol, and creosote (40 CFR 62.14840) **[Added January 2004]**.

- *Clean Lumber* - wood or wood products that have been cut or shaped and include wet, air-dried, and kiln-dried wood products. Clean lumber does not include wood products that have been painted, pigment-stained, or pressure-treated by compounds such as chromate copper arsenate, pentachlorophenol, and creosote, or manufactured wood products that contain adhesives or resins (e.g., plywood, particle board, flake board, and oriented strand board) (40 CFR 60.2977) **[Added January 2006]**.
- *Clean Wood* - untreated wood or untreated wood products including clean untreated lumber, tree stumps (whole or chipped), and tree limbs (whole or chipped). Clean wood does not include two items (40 CFR 60.1465) **[Added April 2001]**:
  1. Yard waste
  2. Construction, renovation, or demolition wastes (for example, railroad ties and telephone poles) that are exempt from the definition of “municipal solid waste”.
- *Cleaning Capacity* - for a cleaning machine without a solvent/air interface, the maximum volume of parts that can be cleaned at one time. In most cases, the cleaning capacity is equal to the volume (length time width time height) of the cleaning chamber (40 CFR 63.461).
- *Cleaning Material* - a solvent used to remove contaminants and other materials, such as dirt, grease, or oil, from a substrate before or after coating application or from equipment associated with a coating operation, such as spray booths, spray guns, racks, tanks, and hangers. Thus, it includes any cleaning material used on substrates or equipment or both (40 CFR 63.11180) **[Added April 2011]**.
- *Cleaning Operation* - collectively spray gun, hand-wipe, and flush cleaning operations (40 CFR 63.742) **[Added January 1999]**.
- *Cleaning Solvent* - a liquid material used for hand-wipe, spray gun, or flush cleaning. This definition does not include solutions that contain HAP and VOC below the de minimis levels specified in 40 CFR 63.741(f) (40 CFR 63.742) **[Added January 1999]**.
- *Closed-cycle Depainting System* - a dust-free, automated process that removes permanent coating in small sections at a time and maintains a continuous vacuum around the area(s) being depainted to capture emissions. (40 CFR 63.742) **[Added January 1999]**
- *Closed-Vent System* - a system that is not open to the atmosphere and is composed of piping, connections, and, if necessary, flow-inducing devices that transport gas or vapor from a piece or pieces of equipment to a control device (40 CFR 61.241).
- *Closed Vent System* - a system that is not open to the atmosphere and is composed of piping, ductwork, connections, and, if necessary, flow-inducing devices that transport gas or vapors from an emission point to a control device. This system does not include the vapor collection system that is part of some transport vehicles or the loading arm or hose that is used for vapor return. For transfer racks, the closed vent system begins at, and includes, the first block valve on the downstream side of the loading arm or hose used to convey displaced vapors (40 CFR 63.2406) **[Added April 2004]**.
- *Closed Vent System* - a system that is not open to the atmosphere and is composed of hard-piping, ductwork, connections, and, if necessary, fans, blowers, or other flow-inducing device that conveys gas or vapor from an emissions point to a control device (40 CFR 63.7957) **[Added April 2004]**.
- *Closure Device* - a cap, hatch, lid, plug, seal, valve, or other type of fitting that prevents or reduces air pollutant emissions to the atmosphere by blocking an opening in a cover when the device is secured in the closed position. Closure devices include devices that are detachable from the cover (e.g., a sampling port cap), manually operated (e.g., a hinged access lid or hatch), or automatically operated (e.g., a spring-loaded pressure relief valve) (40 CFR 63.7957) **[Added April 2004]**.

- *Coal* - all solid fuels classified as anthracite, bituminous, subbituminous, or lignite by ASTM D388 (incorporated by reference, see 40 CFR 60.17) (40 CFR 60.41) **[Added July 2007]**.
- *Coal* - all solid fuels classified as anthracite, bituminous, sub-bituminous, or lignite by the American Society for Testing and Materials Designation ASTM D388–05 Standard Classification of Coals by Rank (incorporated by reference, see 40 CFR 98.7) (40 CFR 98.6) **[Added January 2010]**.
- *Coal* - all solid fuels classified as anthracite, bituminous, subbituminous, or lignite by the American Society of Testing and Materials in ASTM D388 (incorporated by reference, see 40 CFR 60.17), coal refuse, and petroleum coke. Coal-derived synthetic fuels, including but not limited to solvent refined coal, gasified coal not meeting the definition of natural gas, coal-oil mixtures, coke oven gas, and coal-water mixtures, are also included in this definition for the purposes of 40 CFR Subpart Db (40 CFR 60.41b) **[Added July 2007; Revised April 2009]**.
- *Coal* - all solid fuels classified as anthracite, bituminous, subbituminous, or lignite by the American Society of Testing and Materials in ASTM D388 (incorporated by reference, see 40 CFR 60.17), coal refuse, and petroleum coke. Coal-derived synthetic fuels derived from coal for the purposes of creating useful heat, including but not limited to solvent refined coal, gasified coal not meeting the definition of natural gas, coal-oil mixtures, and coal-water mixtures, are also included in this definition for the purposes of 40 CFR 60, Subpart Dc (40 CFR 60.41c) **[Added July 2006; Revised July 2007; Revised April 2009]**.
- *Coal* - all solid fuels classifiable as anthracite, bituminous, sub-bituminous, or lignite by ASTM D388 (incorporated by reference, see 40 CFR 63.14), coal refuse, and petroleum coke. For the purposes of 40 CFR 63, Subpart DDDDD, this definition of “coal” includes synthetic fuels derived from coal for creating useful heat, including but not limited to, solvent-refined coal, coal-oil mixtures, and coal-water mixtures. Coal derived gases are excluded from this definition (40 CFR 63.7575 and 63.11237) **[Added April 2011]**.
- *Coal* - all solid fuels classifiable as anthracite, bituminous, sub-bituminous, or lignite by ASTM D388 (incorporated by reference, see 40 CFR 63.14), coal refuse, and petroleum coke. For the purposes of this subpart, this definition of “coal” includes synthetic fuels derived from coal, including but not limited to, solvent-refined coal, coal-oil mixtures, and coal-water mixtures. Coal derived gases are excluded from this definition (40 CFR 63.7575) **[Revised April 2013]**.
- *Coal Refuse* - any waste products of coal mining, cleaning, and coal preparation operations (e.g., culm, gob) containing coal, matrix material, clay, and other organic and inorganic material (40 CFR 60.41a).
- *Coal Refuse* - any byproduct of coal mining or coal cleaning operations with an ash content greater than 50 percent, by weight, and a heating value less than 13,900 kJ/kg (6,000 Btu/lb) on a dry basis (40 CFR 60.41b, 60.41c, and 63.7575) **[Added July 2007; Citation Revised April 2011]**.
- *Coal Refuse* - waste-products of coal mining, cleaning, and coal preparation operations (e.g. culm, gob, etc.) containing coal, matrix material, clay, and other organic and inorganic material (40 CFR 60.41) **[Added July 2007]**.
- *Coal Subcategory* - includes any boiler that burns any solid fossil fuel and no more than 15 percent biomass on an annual heat input basis (40 CFR 63.11237) **[Added April 2011]**.
- *Coating* - a material that is applied to a substrate for decorative, protective, or functional purposes. Such materials include, but are not limited to, paints, sealants, liquid plastic coatings, caulks, inks, adhesives, and maskants. Decorative, protective, or functional materials that consist only of protective oils for metal, acids, bases, or any combination of these substances; paper film or plastic film which may be precoated with an adhesive by the film manufacturer; or pre-impregnated composite sheets are not considered coatings for the purposes of 40 CFR Subpart GG. Materials in handheld non-refillable aerosol containers, touch-up markers, and marking pens are also not considered coatings for the purposes of this subpart. A liquid plastic coating means a coating made from fine particle-size polyvinyl chloride (PVC) in solution (also referred to as a plastisol) (40 CFR 63.742) **[Added January 1999; Revised January 2016]**.

- *Coating* -, for the purposes of 40 CFR 63, Subpart HHHHHH (40 CFR 63.11169 through 63.11180), a material spray-applied to a substrate for decorative, protective, or functional purposes. For the purposes of 40 CFR 63, Subpart HHHHHH, coating does not include the following materials (40 CFR 63.11180) **[Added April 2011]**:
  1. Decorative, protective, or functional materials that consist only of protective oils for metal, acids, bases, or any combination of these substances.
  2. Paper film or plastic film that may be pre-coated with an adhesive by the film manufacturer.
  3. Adhesives, sealants, maskants, or caulking materials.
  4. Temporary protective coatings, lubricants, or surface preparation materials.
  5. In-mold coatings that are spray applied in the manufacture of reinforced plastic composite parts.
- *Coating Operation* - the use of a spray booth, tank, or other enclosure or any area, such as a hangar, for the application of a single type of coating (e.g., primer); the use of the same spray booth for the application of another type of coating (e.g., topcoat) constitutes a separate coating operation for which compliance determinations are performed separately (40 CFR 63.742) **[Added January 1999]**.
- *Coating Unit* - a series of one or more coating applicators and any associated drying area and/or oven wherein a coating is applied, dried, and/or cured. A coating unit ends at the point where the coating is dried or cured, or prior to any subsequent application of a different coating. It is not necessary to have an oven or flashoff area in order to be included in this definition (40 CFR 63.742) **[Added January 1999]**.
- *Co-fired Combustion Unit* - a unit that combusts municipal solid waste with nonmunicipal solid waste fuel (for example, coal, industrial process waste). To be considered a co-fired combustion unit, the unit must be subject to a federally enforceable permit that limits it to combusting a fuel feed stream which is 30 percent or less (by weight) municipal solid waste as measured each calendar quarter (40 CFR 60.1465) **[Added April 2001]**.
- *Cofired Combustor* - a unit combusting municipal solid waste with nonmunicipal solid waste fuel (e.g., coal, industrial process waste) and subject to a Federally enforceable permit limiting the unit to combusting a fuel feed stream, 30 percent or less of the weight of which is comprised of municipal solid waste as measured on a calendar quarter basis (40 CFR 60.51a and 60.51b) **[Added December 1997]**.
- *Co-fired Combustor* - a unit combusting hospital waste and/or medical/infectious waste with other fuels or wastes (e.g., coal, municipal solid waste) and subject to an enforceable requirement limiting the unit to combusting a fuel feed stream, 10 percent or less of the weight of which is comprised, in aggregate, of hospital waste and medical/infectious waste as measured on a calendar quarter basis. For purposes of this definition, pathological waste, chemotherapeutic waste, and low-level radioactive waste are considered “other” wastes when calculating the percentage of hospital waste and medical/infectious waste combusted (40 CFR 60.51c and 62.14490) **[Added October 2000]**.
- *Cogeneration* - also known as combined heat and power, means a facility that simultaneously produces both electric (or mechanical) and useful thermal energy from the same primary energy source (40 CFR 60.41b) **[Added April 2006; Revised July 2007]**.
- *Cogeneration Steam Generating Unit* - a steam generating unit that simultaneously produces both electrical (or mechanical) and thermal energy from the same primary energy source (40 CFR 60.41c) **[Revised July 2007]**.
- *Cogeneration Cycle Stationary Combustion Turbine* - any stationary combustion turbine that recovers heat from the stationary combustion turbine exhaust gases using an exhaust heat exchanger, such as a heat recovery steam generator (40 CFR 63.6175) **[Added April 2004]**.
- *Cogeneration Unit* - a unit that produces electrical energy and useful thermal energy for industrial, commercial, or heating or cooling purposes, through the sequential or simultaneous use of the original fuel energy (40 CFR 98.6) **[Added October 2010]**.

- *Coin-Operated Dry Cleaning Machine* - a dry cleaning machine that is operated by the customer (that is, the customer places articles into the machine, turns the machine on, and removes articles from the machine) (40 CFR 63.321).
- *Coke Burn-off* - the coke removed from the surface of a catalyst by combustion during catalyst regeneration. Coke burn-off also means the coke combusted in fluid coking unit burner (40 CFR 98.6) **[Added January 2010]**.
- *Coke Oven Gas* - the volatile constituents generated in the gaseous exhaust during the carbonization of bituminous coal to form coke (40 CFR 60.41b) **[Added July 2007]**.
- *Cokemaking* - the production of coke from coal in either a by-product coke oven battery or a non-recovery coke oven battery (40 CFR 98.6) **[Added January 2010]**.
- *Cold Cleaning Machine* - any device or piece of equipment that contains and/or uses liquid solvent, into which parts are placed to remove soils from the surface of the parts or to dry the parts. Cleaning machines that contain and use heated, nonboiling, solvent to clean the parts are classified as cold cleaning machine (40 CFR 63.461).
- *Collected From* - the transfer of material from the site at which the material is generated to a separate site where the material is burned (40 CFR 60.2977) **[Added January 2006]**.
- *Colorimetric Detector Tube* - a glass tube (sealed prior to use), containing material impregnated with a chemical that is sensitive to perchloroethylene and is designed to measure the concentration of perchloroethylene in the air (40 CFR 63.321).
- *Combination Sterilization Unit* - any enclosed vessel in which both the sterilization process and the aeration process occur within the same vessel, i.e., the vessel is filled with ethylene oxide gas or an ethylene oxide/inert gas mixture for the purpose of sterilizing and is followed by off-gassing of ethylene oxide (40 CFR 63.10448) **[Added January 2008]**.
- *Combined Cycle Gas Turbine* - any stationary gas turbine which recovers heat from the gas turbine exhaust gases to heat water or generate steam (40 CFR 60.331) **[Added October 2004]**.
- *Combined Squeegee and Air-Knife System* - a system consisting of a combination of a squeegee system and an air-knife system within a single enclosure (40 CFR 63.461) **[Added January 2000]**.
- *Combined Cycle Combustion Turbine* - any stationary combustion turbine which recovers heat from the combustion turbine exhaust gases to generate steam that is only used to create additional power output in a steam turbine (40 CFR 60.4420) **[Added April 2009]**.
- *Combined Cycle Stationary Combustion Turbine* - any stationary combustion turbine that recovers heat from the stationary combustion turbine exhaust gases using an exhaust heat exchanger to generate steam for use in a steam turbine (40 CFR 63.6175) **[Added April 2004]**.
- *Combined Cycle System* - a system in which a separate source, such as a gas turbine, internal combustion engine, kiln, etc., provides exhaust gas to a steam generating unit (40 CFR 60.41b and 60.41c) **[Added July 2007]**.
- *Combined Heat and Power Combustion Turbine* - any stationary combustion turbine which recovers heat from the exhaust gases to heat water or another medium, generate steam for useful purposes other than additional electric generation, or directly uses the heat in the exhaust gases for a useful purpose (40 CFR 60.4420) **[Added April 2009]**.
- *Combustion Device* - an individual unit of equipment, such as a flare, oxidizer, catalytic oxidizer, process heater, or boiler, used for the combustion of organic emissions (40 CFR 63.2406) **[Added April 2004]**.

- *Combustion Research* - the experimental firing of any fuel or combination of fuels in a steam generating unit for the purpose of conducting research and development of more efficient combustion or more effective prevention or control of air pollutant emissions from combustion, provided that, during these periods of research and development, the heat generated is not used for any purpose other than preheating combustion air for use by that steam generating unit (i.e., the heat generated is released to the atmosphere without being used for space heating, process heating, driving pumps, preheating combustion air for other units, generating electricity, or any other purpose) (40 CFR 60.41c) **[Added July 2007]**.
- *Combustion Turbine* - all equipment, including but not limited to the turbine, the fuel, air, lubrication and exhaust gas systems, control systems (except emissions control equipment), and any ancillary components and sub-components comprising any simple cycle combustion turbine, any regenerative/recuperative cycle combustion turbine, the combustion turbine portion of any cogeneration cycle combustion system, or the combustion turbine portion of any combined cycle steam/electric generating system (40 CFR 60.4219 and 60.4248) **[Added October 2006; Revised April 2008]**.
- *Combustion Turbine Model* - a group of combustion turbines having the same nominal air flow, combustor inlet pressure, combustor inlet temperature, firing temperature, turbine inlet temperature and turbine inlet pressure (40 CFR 60.4420) **[Added April 2009]**.
- *Combustion Research* - the experimental firing of any fuel or combination of fuels in a steam generating unit for the purpose of conducting research and development of more efficient combustion or more effective prevention or control of air pollution emissions from combustion, provided that, during these periods of research and development, the heat generated is not used for any purpose other than preheating combustion air for use by that steam generating unit (i.e., the heat generated is released to the atmosphere without being used for space heating, process heating, driving pumps, preheating combustion air for other units, generating electricity, or any other purpose) (40 CFR 60.41c).
- *Combustion Turbine Engine* - a device in which air is compressed in a compressor, enters a combustion chamber, and is compressed further by the combustion of fuel injected into the combustion chamber. The hot compressed combustion gases then expand over a series of curved vanes or blades arranged on a central spindle that rotates (40 CFR 63.9375) **[Added July 2003]**.
- *Combustion Turbine Engine Test Cells/Stands* - engine test cells/stands, as defined in 40 CFR 63, Subpart P [40 CFR 63.4480 through 63.4581][40 CFR 63.9280 through 63.9375, see checklist items AE.230.1.US through AE.230.4.US], that test stationary combustion turbines (40 CFR 63.6175) **[Added April 2004]**.
- *Combustion Turbine Test Cell/Stand* - any apparatus used for testing uninstalled stationary or uninstalled mobile (motive) combustion turbines (40 CFR 60.4420) **[Added April 2009]**.
- *Comfort Cooling* - the air-conditioning appliances used to provide cooling in order to control heat and/or humidity in occupied facilities including but not limited to residential, office, and commercial buildings. Comfort cooling appliances include but are not limited to chillers, commercial split systems, and packaged roof-top units (40 CFR 82.152) **[Added January 2017]**.
- *Commercial Boiler* - a boiler used in commercial establishments such as hotels, restaurants, and laundries to provide electricity, steam, and/or hot water (40 CFR 63.11237) **[Added April 2011]**.
- *Commercial Emergency Stationary RICE* - an emergency stationary RICE used in commercial establishments such as office buildings, hotels, stores, telecommunications facilities, restaurants, financial institutions such as banks, doctor's offices, and sports and performing arts facilities (40 CFR 63.6675) **[Added October 2010]**.
- *Commercial/Institutional Boiler* - a boiler used in commercial establishments or institutional establishments such as medical centers, nursing homes, research centers, institutions of higher education, elementary and secondary schools, libraries, religious establishments, governmental buildings, hotels, restaurants, and laundries to provide electricity, steam, and/or hot water (40 CFR 63.7575) **[Revised April 2013]**.

- *Commercial Applications* - executing a commercial transaction subject to a contract. A commercial application includes transferring custody of a product from one facility to another if it otherwise meets the definition (40 CFR 98.6) **[Added January 2010]**.
- *Commercial and Industrial Solid Waste Incineration (CISWI) Unit* - any combustion device that combusts commercial and industrial waste, as defined in 40 CFR 62, Subpart III [40 CFR 62.14500 through 62.14840, see checklist items AE.26.1.US through AE.26.10.US]. The boundaries of a CISWI unit are defined as, but not limited to, the commercial or industrial solid waste fuel feed system, grate system, flue gas system, and bottom ash. The CISWI unit does not include air pollution control equipment or the stack. The CISWI unit boundary starts at the commercial and industrial solid waste hopper (if applicable) and extends through two areas (40 CFR 62.14840) **[Added January 2004]**:
  1. The combustion unit flue gas system, which ends immediately after the last combustion chamber.
  2. The combustion unit bottom ash system, which ends at the truck loading station or similar equipment that transfers the ash to final disposal. It includes all ash handling systems connected to the bottom ash handling system.
- *Commercial and Industrial Waste* - for the purposes of 40 CFR 62.14500 through 62.14840, this means solid waste combusted in an enclosed device using controlled flame combustion without energy recovery that is a distinct operating unit of any commercial or industrial facility (including field-erected, modular, and custom built incineration units operating with starved or excess air), or solid waste combusted in an air curtain incinerator without energy recovery that is a distinct operating unit of any commercial or industrial facility (40 CFR 62.14840) **[Added January 2004]**.
- *Commercial Refrigeration* - the refrigeration appliances used in the retail food and cold storage warehouse sectors. Retail food appliances include the refrigeration equipment found in supermarkets, convenience stores, restaurants and other food service establishments. Cold storage includes the refrigeration equipment used to store meat, produce, dairy products, and other perishable goods (40 CFR 82.152) **[Revised January 2017]**.
- *Commercial/Retail Waste* - material discarded by stores, offices, restaurants, warehouses, nonmanufacturing activities at industrial facilities, and other similar establishments or facilities (40 CFR 60.51a).
- *Common Aeration Time* - that items require the same length of time to off-gas ethylene oxide (40 CFR 63.10448) **[Added January 2008]**.
- *Common Stack* - the exhaust of emissions from two or more affected units through a single flue. Affected units with a common stack may each have separate air pollution control systems located before the common stack, or may have a single air pollution control system located after the exhausts come together in a single flue (40 CFR 63.7575) **[Added April 2011]**.
- *Common Stack* - the exhaust of emissions from two or more affected units through a single flue. Affected units with a common stack may each have separate air pollution control systems located before the common stack, or may have a single air pollution control system located after the exhausts come together in a single flue (40 CFR 63.11237) **[Added April 2013]**.
- *Company Records* - in reference to the amount of fuel consumed by a stationary combustion unit (or by a group of such units), a complete record of the methods used, the measurements made, and the calculations performed to quantify fuel usage. Company records may include, but are not limited to, direct measurements of fuel consumption by gravimetric or volumetric means, tank drop measurements, and calculated values of fuel usage obtained by measuring auxiliary parameters such as steam generation or unit operating hours. Fuel billing records obtained from the fuel supplier qualify as company records (40 CFR 98.6) **[Added January 2010]**.
- *Component* - a part of the refrigerant circuit within an appliance including, but not limited to, compressors, condensers, evaporators, receivers, and all of its connections and subassemblies (40 CFR 82.152) **[Added January 2017]**.

- *Compression Ignition* - relating to a type of stationary internal combustion engine that is not a spark ignition engine (40 CFR 60.4219, 60.4248, and 60.6675) [Added October 2006; Revised April 2008].
- *Compressor Station* - any permanent combination of compressors that move natural gas at increased pressure from fields, in transmission pipelines, or into storage (40 CFR 63.6175) [Added April 2004].
- *Completely Destroy* - to cause the destruction of a controlled substance by one of the five destruction processes approved by the Parties at a demonstrable destruction efficiency of 98 percent or more or a greater destruction efficiency if required under other applicable federal regulations (40 CFR 82.104(c)) [Added July 2004].
- *Condensate* - hydrocarbon liquid separated from natural gas that condenses due to changes in temperature, pressure, or both, and remains liquid at standard conditions (40 CFR 68.3) [Added January 2005].
- *Confined Space* - a space that: (1) is large enough and so configured that an employee can bodily enter and perform assigned work; (2) has limited or restricted means for entry or exit (for example, fuel tanks, fuel vessels, and other spaces that have limited means of entry); and (3) is not suitable for continuous employee occupancy (40 CFR 63.742) [Added January 1999].
- *Connector* - to flanged, screwed, or other joined fittings used to connect pipe line segments, tubing, pipe components (such as elbows, reducers, “T”s or valves) or a pipe line and a piece of equipment or an instrument to a pipe, tube or piece of equipment. A common connector is a flange. Joined fittings welded completely around the circumference of the interface are not considered connectors for the purpose of 40 CFR 98 (40 CFR 98.6) [Added January 2010].
- *Construction and Demolition (C&D) Waste Landfill* - a solid waste disposal facility subject to the requirements 40 CFR 257, subparts A or B that receives construction and demolition waste and does not receive hazardous waste (defined in 40 CFR 261.3) or industrial solid waste (defined in 40 CFR 258.2) or municipal solid waste (as defined in 40 CFR 98.6) other than residential lead-based paint waste. A C&D waste landfill typically receives any one or more of the following types of solid wastes: Roadwork material, excavated material, demolition waste, construction/renovation waste, and site clearance waste (40 CFR 98.348) [Added January 2011].
- *Construction and Demolition (C&D) Waste Landfill* - a solid waste disposal facility subject to the requirements of subparts A or B of 40 CFR 257 that receives construction and demolition waste and does not receive hazardous waste (defined in 40 CFR 261.3) or industrial solid waste (defined in 40 CFR 258.2) or municipal solid waste (defined in 40 CFR 98.6) other than residential lead-based paint waste. A C&D waste landfill typically receives any one or more of the following types of solid wastes: roadwork material, excavated material, demolition waste, construction/renovation waste, and site clearance waste (40 CFR 98.468) [Added January 2012].
- *Consumer* - a commercial or non-commercial purchaser of a product or container that has been introduced into interstate commerce (40 CFR 82.104(d)) [Added July 2004].
- *Contained Gaseous Material* - gases that are in a container when that container is combusted (40 CFR 60.2977 and 62.14840) [Added January 2004; Revised January 2006].
- *Container* - a portable unit used to hold material. Examples of containers include, but are not limited to drums, dumpsters, roll-off boxes, bulk cargo containers commonly known as portable tanks or totes, cargo tank trucks, dump trucks, and rail cars. For the purpose of 40 CFR 63, Subpart GGGGG [40 CFR 63.7880 through 63.7957, see checklist items AE.300.1.US through AE.300.12.US], a front-end loader, excavator, backhoe, or other type of self-propelled excavation equipment is not a container (40 CFR 63.7957) [Added April 2004].
- *Container* - a portable unit in which a material can be stored, transported, treated, disposed of, or otherwise handled. Examples of containers include, but are not limited to, drums and portable cargo containers known as “portable tanks” or “tote” (40 CFR 63.2406) [Added April 2004].

- *Container* - the immediate vessel in which a controlled substance is stored or transported (40 CFR 82.104(e)) **[Added July 2004]**.
- *Container Containing* - a container that physically holds a controlled substance within its structure that is intended to be transferred to another container, vessel or piece of equipment in order to realize its intended use (40 CFR 82.104(f)) **[Added July 2004]**.
- *Container Glass* - glass made of soda-lime recipe, clear or colored, which is pressed and/or blown into bottles, jars, ampoules, and other products listed in North American Industry Classification System 327213 (NAICS 327213) (40 CFR 98.6) **[Added January 2010]**.
- *Continuous Automated Sampling System* - the total equipment and procedures for automated sample collection and sample recovery/analysis to determine a pollutant concentration or emission rate by collecting a single or multiple integrated sample(s) of the pollutant (or diluent gas) for subsequent on-or off-site analysis; integrated sample(s) collected are representative of the emissions for the sample time as specified by the applicable requirement (40 CFR 60.51b) **[Added July 2006]**.
- *Continuous Automated Sampling System* - the total equipment and procedures for automated sample collection and sample recovery/analysis to determine a pollutant concentration or emission rate by collecting a single integrated sample(s) or multiple integrated sample(s) of the pollutant (or diluent gas) for subsequent on- or off-site analysis; integrated sample(s) collected are representative of the emissions for the sample time as specified by the applicable requirement (40 CFR 60.4930) **[Added April 2011]**.
- *Continuous Bleed* - a continuous flow of pneumatic supply natural gas to the process control device (e.g. level control, temperature control, pressure control) where the supply gas pressure is modulated by the process condition, and then flows to the valve controller where the signal is compared with the process set-point to adjust gas pressure in the valve actuator (40 CFR 98.6) **[Added January 2014]**.
- *Continuous Burning* - the continuous, semicontinuous, or batch feeding of municipal solid waste to dispose of the waste, produce energy, or provide heat to the combustion system in preparation for waste disposal or energy production. Continuous burning does not mean the use of municipal solid waste solely to thermally protect the grate or hearth during the startup period when municipal solid waste is not fed to the grate or hearth (40 CFR 60.1465) **[Added April 2001]**.
- *Continuous Cleaning Machine* - see In-line Cleaning Machine.
- *Continuous Emission Monitoring System* - a monitoring system that continuously measures the emissions of a pollutant from a municipal waste combustion unit (40 CFR 60.1465) **[Added April 2001]**.
- *Continuous Emissions Monitoring System (CEMS)* - a monitoring system for continuously measuring the emissions of a pollutant from an affected facility (40 CFR 60.51a and 60.51b) **[Added December 1997]**.
- *Continuous Emission Monitoring System or CEMS* - a monitoring system for continuously measuring and recording the emissions of a pollutant from an OSWI unit (40 CFR 60.2977) **[Added January 2006]**.
- *Continuous Emission Monitoring System (CEMS)* - a monitoring system for continuously measuring and recording the emissions of a pollutant (40 CFR 62.14490) **[Added October 2000]**.
- *Continuous Emission Monitoring System (CEMS)* - the total equipment required to sample, analyze, measure, and provide, by means of readings recorded at least once every 15 min, a permanent record of gas concentrations, pollutant emission rates, or gas volumetric flow rates from stationary sources (40 CFR 98.6) **[Added January 2010]**.

- *Continuous Emissions Monitoring System* - a monitoring system for continuously measuring and recording the emissions of a pollutant from an affected facility (40 CFR 60.4930) **[Added April 2011]**.
- *Continuous HMIWI* - an HMIWI that is designed to allow waste charging and ash removal during combustion (40 CFR 60.51c) **[Added December 1997]**.
- *Continuous HMIWI* - an HMIWI that is designed to allow waste charging and ash removal during combustion (40 CFR 62.14490) **[Added October 2000]**.
- *Continuous Monitoring System (CMS)* - a continuous emissions monitoring system, continuous automated sampling system, continuous parameter monitoring system, or other manual or automatic monitoring that is used for demonstrating compliance with an applicable regulation on a continuous basis as defined by this subpart. The term refers to the total equipment used to sample and condition (if applicable), to analyze, and to provide a permanent record of emissions or process parameters (40 CFR 60.4930) **[Added April 2011]**.
- *Continuous OSWI Unit* - an OSWI unit that is designed to allow waste charging and ash removal during combustion (40 CFR 60.2977) **[Added January 2006]**.
- *Continuous Parameter Monitoring System* - a monitoring system for continuously measuring and recording operating conditions associated with air pollution control device systems (e.g., operating temperature, pressure, and power) (40 CFR 60.4930) **[Added April 2011]**.
- *Continuous Record* - documentation of data values measured at least once every 15 min and recorded at the frequency specified in 40 CFR 63, Subpart GGGGG [40 CFR 63.7880 through 63.7957, see checklist items AE.300.1.US through AE.300.12.US] (40 CFR 63.7957) **[Added April 2004]**.
- *Continuous Recorder* - a data recording device that either records an instantaneous data value at least once every 15 min or records 15-min or more frequent block averages (40 CFR 63.7957) **[Added April 2004]**.
- *Continuous Web Cleaning Machine* - a solvent-cleaning machine in which parts such as film, coils, wire, and metal strips are cleaned at speeds typically in excess of 11 feet per minute. Parts are generally uncoiled, cleaned such that the same part is simultaneously entering and exiting the solvent application area of the solvent-cleaning machine, and then recoiled or cut. For the purposes of 40 CFR 63, Subpart T [40 CFR 63.460 through 63.470, see checklist items AE.116.1.US through AE.118.7.US], all continuous web cleaning machines are considered to be a subset of in-line solvent-cleaning machines (40 CFR 63.461) **[Revised January 2000]**.
- *Control Device* - destruction and/or recovery equipment used to destroy or recover HAP or VOC emissions generated by a regulated operation (40 CFR 63.742) **[Added January 1999]**.
- *Control Device* - equipment used recovering, removing, oxidizing, or destroying organic vapors. Examples of such equipment include but are not limited to carbon adsorbers, condensers, vapor incinerators, flares, boilers, and process heaters (40 CFR 63.7957) **[Added April 2004]**.
- *Control Device* - any combustion device, recovery device, recapture device, or any combination of these devices used to comply with 40 CFR 63, Subpart EEEE [40 CFR 63.2330 through 63.2406, see checklist items AE.57.1.US through AE.57.15.US]. Such equipment or devices include, but are not limited to, absorbers, adsorbers, condensers, and combustion devices. Primary condensers, steam strippers, and fuel gas systems are not considered control devices (40 CFR 63.2406) **[Added April 2004]**.
- *Control Efficiency* - the mass of a pollutant in the sewage sludge fed to an incinerator minus the mass of that pollutant in the exit gas from the incinerator stack divided by the mass of the pollutant in the sewage sludge fed to the incinerator (40 CFR 503.41(c)).

- *Control System* - a combination of pollutant capture system(s) and control device(s) used to reduce discharge to the atmosphere of HAP or VOC emissions generated by a regulated operation (40 CFR 63.742) **[Added January 1999]**.
- *Controlled Substance* - a class I or class II ozone-depleting substance (40 CFR 82.104(g)) **[Added July 2004]**.
- *Conventional Blendstock For Oxygenate Blending* - gasoline blendstock which could become conventional gasoline solely upon the addition of an oxygenate (40 CFR 80.1500) **[Added October 2011]**.
- *Conventional Gasoline* - has the same meaning as defined in 40 CFR 80.2(ff) (40 CFR 80.1500) **[Added October 2011]**.
- *Conventional—Summer* - refers to finished gasoline formulated for use in motor vehicles, the composition and properties of which do not meet the requirements of the reformulated gasoline regulations promulgated by the U.S. EPA under 40 CFR 80.40, but which meet summer RVP standards required under 40 CFR 80.27 or as specified by the state. Note: This category excludes conventional gasoline for oxygenate blending (CBOB) as well as other blendstock (40 CFR 98.6) **[Added January 2010]**.
- *Conventional Technology* - wet flue gas desulfurization (FGD) technology, dry FGD technology, atmospheric fluidized bed combustion technology, and oil hydrodesulfurization technology (40 CFR 60.41b and 60.41c) **[Added July 2007]**.
- *Conventional—Winter* - refers to finished gasoline formulated for use in motor vehicles, the composition and properties of which do not meet the requirements of the reformulated gasoline regulations promulgated by the U.S. EPA under 40 CFR 80.40 or the summer RVP standards required under 40 CFR 80.27 or as specified by the state. Note: This category excludes conventional blendstock for oxygenate blending (CBOB) as well as other blendstock (40 CFR 98.6) **[Added January 2010]**.
- *Cost-effective Energy Conservation Measure* - a measure that is implemented to improve the energy efficiency of the boiler or facility that has a payback (return of investment) period of 2 yr or less (40 CFR 63.7575) **[Added April 2011]**.
- *Cover* - a device that prevents or reduces air pollutant emissions to the atmosphere by forming a continuous barrier over the waste material managed in a treatment unit. A cover may have openings (such as access hatches, sampling ports, gauge wells) that are necessary for operation, inspection, maintenance, and repair of the treatment unit on which the cover is used. A cover may be a separate piece of equipment that can be detached and removed from the treatment unit, or a cover may be formed by structural features permanently integrated into the design of the treatment unit. The cover and its closure devices must be made of suitable materials that will minimize exposure of the waste material to the atmosphere, to the extent practical, and will maintain the integrity of the cover and its closure devices throughout its intended service life (40 CFR 63.461) **[Added January 2000]**.
- *Cover* - a device that prevents or reduces air pollutant emissions to the atmosphere by forming a continuous barrier over the remediation material managed in a unit. A cover may have openings (such as access hatches, sampling ports, gauge wells) that are necessary for operation, inspection, maintenance, and repair of the unit on which the cover is used. A cover may be a separate piece of equipment which can be detached and removed from the unit (such as a tarp) or a cover may be formed by structural features permanently integrated into the design of the unit (40 CFR 63.7957) **[Added April 2004]**.
- *Covered Process* - a process that has a regulated substance present in more than a threshold quantity as determined under 40 CFR 68.115 (40 CFR 68.3) **[Added January 2005]**.
- *Criteria Pollutant or Standard* - any pollutant for which there is established a NAAQS at 40 CFR 50 (40 CFR 93.152) **[Added April 2009]**.

- *Critical Component* - for the purpose of 82.156(i) (see checklist items AE.19.16.US, AE.19.18.US, and AE.19.19.US), a component without which industrial process refrigeration equipment will not function, will be unsafe in its intended environment, and/or will be subject to failures that would cause the industrial process served by the refrigeration appliance to be unsafe (40 CFR 82.152).
- *Cross Rod Solvent-cleaning Machine* - a batch solvent-cleaning machine in which parts baskets are suspended from "cross-rods" as they are moved through the machine. In a cross rod cleaning machine, parts are loaded semi-continuously, and enter and exit the machine from a single portal (40 CFR 63.431).
- *Crude Oil* - any naturally occurring, unrefined petroleum liquid (40 CFR 68.3) **[Added January 2005]**.
- *Crude Oil* - a mixture of hydrocarbons that exists in liquid phase in natural underground reservoirs and remains liquid at atmospheric pressure after passing through surface separating facilities (40 CFR 98.6) **[Added January 2010; Revised January 2011]**.
  1. Depending upon the characteristics of the crude stream, it may also include any of the following:
    - a. Small amounts of hydrocarbons that exist in gaseous phase in natural underground reservoirs but are liquid at atmospheric conditions (temperature and pressure) after being recovered from oil well (casing-head) gas in lease separators and are subsequently commingled with the crude stream without being separately measured. Lease condensate recovered as a liquid from natural gas wells in lease or field separation facilities and later mixed into the crude stream is also included.
    - b. Small amounts of non-hydrocarbons, such as sulfur and various metals.
    - c. Drip gases, and liquid hydrocarbons produced from tar sands, oil sands, gilsonite, and oil shale.
    - d. Petroleum products that are received or produced at a refinery and subsequently injected into a crude supply or reservoir by the same refinery owner or operator.
  2. Liquids produced at natural gas processing plants are excluded. Crude oil is refined to produce a wide array of petroleum products, including heating oils; gasoline, diesel and jet fuels; lubricants; asphalt; ethane, propane, and butane; and many other products used for their energy or chemical content.
- *Crude Oil* - any of the naturally occurring liquids commonly referred to as crude oil, regardless of specific physical properties. Only those crude oils downstream of the first point of custody transfer after the production field are considered crude oils in 40 CFR 63, Subpart EEEE [40 CFR 63.2330 through 63.2406, see checklist items AE.57.1.US through AE.57.15.US] (40 CFR 63.2406) **[Added April 2004]**.
- *Custody Transfer* - the transfer of hydrocarbon liquids or natural gas: after processing and/or treatment in the producing operations, or from storage vessels or automatic transfer facilities or other such equipment, including product loading racks, to pipelines or any other forms of transportation. For the purposes of 40 CFR 63, Subpart YYYY [40 CFR 63.6080 through 63.6175, see checklist items AE.20.3.US through AE.20.10.US], the point at which such liquids or natural gas enters a natural gas processing plant is a point of custody transfer (40 CFR 63.6175 and 63.6675) **[Added April 2004]**.
- *Custody Transfer* - the transfer of hydrocarbon liquids after processing and/or treatment in the producing operations, or from storage tanks or automatic transfer facilities to pipelines or any other forms of transportation (40 CFR 63.2406) **[Added April 2004]**.
- *Custom-built* - that the industrial process equipment or any of its components cannot be purchased and/or installed without being uniquely designed, fabricated and/or assembled to satisfy a specific set of industrial process conditions (40 CFR 82.152) **[Revised January 2017]**.
- *Cyclonic Barrel Burner* - a combustion device for waste materials that is attached to a 55 gal, open-head drum. The device consists of a lid, which fits onto and encloses the drum, and a blower that forces combustion air into the drum in a cyclonic manner to enhance the mixing of waste material and air (40 CFR 62.14840) **[Added January 2004]**.

- *DIPE* (Diisopropyl Ether,  $(\text{CH}_3)_2\text{CHOCH}(\text{CH}_3)_2$ ) - an ether as described in “Oxygenates” (40 CFR 98.6) [Added January 2010].
- *DOC<sub>f</sub>* - the fraction of DOC that actually decomposes under the (presumably anaerobic) conditions within the landfill (40 CFR 98.6) [Added January 2010].
- *Daily Block Average* - the arithmetic mean of all valid emission concentrations or parameter levels recorded when a unit is operating measured over the 24-hour period from 12 a.m. (midnight) to 12 a.m. (midnight), except for periods of startup and shutdown or downtime (40 CFR 63.7575) [Added April 2013].
- *Daily Block Average* - the arithmetic mean of all valid emission concentrations or parameter levels recorded when a unit is operating measured over the 24-hour period from 12 a.m. (midnight) to 12 a.m. (midnight), except for periods of startup and shutdown and periods when the unit is not operating (40 CFR 63.11237) [Added April 2013].
- *Daily Spread* - a manure management system component in which manure is routinely removed from a confinement facility and is applied to cropland or pasture within 24 h of excretion (40 CFR 98.6) [Added January 2010].
- *Date of Manufacture* - one of the following things (40 CFR 60.4219 and 60.4248) [Added July 2011]:
  1. For freshly manufactured engines and modified engines, date of manufacture means the date the engine is originally produced.
  2. For reconstructed engines, date of manufacture means the date the engine was originally produced, except as specified in paragraph (3) of this definition.
  3. Reconstructed engines are assigned a new date of manufacture if the fixed capital cost of the new and refurbished components exceeds 75 percent of the fixed capital cost of a comparable entirely new facility. An engine that is produced from a previously used engine block does not retain the date of manufacture of the engine in which the engine block was previously used if the engine is produced using all new components except for the engine block. In these cases, the date of manufacture is the date of reconstruction or the date the new engine is produced.
- *Day* - any consistently designated 24 hour period during which an emission unit is operated (40 CFR 98.6) [Added January 2010].
- *Decarburization Vessel* - any vessel used to further refine molten steel with the primary intent of reducing the carbon content of the steel, including but not limited to vessels used for argon-oxygen decarburization and vacuum oxygen decarburization (40 CFR 98.6) [Added January 2010; Revised January 2011].
- *Deep Bedding Systems for Cattle Swine* - a manure management system in which, as manure accumulates, bedding is continually added to absorb moisture over a production cycle and possibly for as long as 6 to 12 months. This manure management system also is known as a bedded pack manure management system and may be combined with a dry lot or pasture (40 CFR 98.6) [Added January 2010].
- *Degasification System* - the entirety of the equipment that is used to drain gas from underground coal mines. This includes all degasification wells and gob gas vent holes at the underground coal mine. Degasification systems include gob and premine surface drainage wells, gob and premine in-mine drainage wells, and in-mine gob and premine cross-measure borehole wells (40 CFR 98.6) [Added July 2010; Revised January 2014].
- *Degradable Organic Carbon (DOC)* - the fraction of the total mass of a waste material that can be biologically degraded (40 CFR 98.6) [Added January 2010].
- *Density* - the mass contained in a given unit volume (mass/volume) (40 CFR 98.6) [Added January 2010].

- *Depainting* - the removal of a permanent coating from the outer surface of an aerospace vehicle or component, whether by chemical or nonchemical means. For nonchemical means, this definition excludes hand and mechanical sanding, and any other nonchemical removal processes that do not involve blast media or other mechanisms that would result in airborne particle movement at high velocity (40 CFR 63.742) **[Added January 1999]**.
- *Depainting Operation* - the use of a chemical agent, media blasting, or any other technique to remove permanent coatings from the outer surface of an aerospace vehicle or components. The depainting operation includes washing of the aerospace vehicle or component to remove residual stripper, media, or coating residue (40 CFR 63.742) **[Added January 1999]**.
- *Design Capacity* - the maximum amount of solid waste a landfill can accept. For the purposes of this subpart, for landfills that have a permit, the design capacity can be determined in terms of volume or mass in the most recent permit issued by the state, local, or Tribal agency responsible for regulating the landfill, plus any in-place waste not accounted for in the most recent permit. If the owner or operator chooses to convert the design capacity from volume to mass to determine its design capacity, the calculation must include a site-specific density. If the design capacity is within 10 percent of the applicability threshold in 40 CFR 98.460(a) and there is a change in the production process that can reasonably be expected to change the site-specific waste density, the site-specific waste density must be redetermined and the design capacity must be recalculated based on the new waste density (40 CFR 98.468) **[Added January 2012]**.
- *Design Evaluation* - a procedure for evaluating control devices that complies with the requirements in 40 CFR 63.985(b)(1)(i) (40 CFR 63.2406) **[Added April 2004]**.
- *Designated Agency* - the state, local, or Federal agency designated by the state under the provisions of 40 CFR 68.215(d) (40 CFR 68.3) **[Added January 2005]**.
- *Designated Pollutant* - any air pollutant, the emissions of which are subject to a standard of performance for new stationary sources, but for which air quality criteria have not been issued and that is not included on a list published under section 108(a) or section 112(b)(1)(A) of the Act (40 CFR 60.21(a)) **[Added October 2005; Revised January 2012; Revised April 2012]**.
- *Designated Volatility Nonattainment Area* - any area designated as being in nonattainment with the NAAQS for ozone pursuant to rule making under Section 107(d)(4)(A)(ii) of the CAAA90 (40 CFR 80.2).
- *Designated Volatility Attainment Area* - an area not designated as being in nonattainment with the NAAQS for ozone (40 CFR 80.2).
- *Destruction* - the expiration of a controlled substance to the destruction efficiency actually achieved, unless considered completely destroyed. Such destruction does not result in a commercially useful end product and uses one of the following controlled processes approved by the Parties to the Protocol (40 CFR 82.3) **[Added April 2003]**:
  1. Liquid injection incineration;
  2. Reactor cracking;
  3. Gaseous/fume oxidation;
  4. Rotary kiln incineration;
  5. Cement kiln;
  6. Radio frequency plasma; or
  7. Municipal waste incinerators only for the destruction of foams.
- *Destruction* - the expiration of a controlled substance, that does not result in a commercially useful end product using one of the following controlled processes in a manner that complies at a minimum with the "Code of Good Housekeeping" of Chapter 5.5 of the United Nations Environment Programme (UNEP) report entitled, Ad-Hoc Technical Advisory Committee on ODS Destruction Technologies, as well as the whole of Chapter 5 from that report, or with more stringent requirements as applicable. The report is available from the Environmental

Protection Agency, Public Docket A-91-60, 401 M Street, SW., Washington, DC 20460. The controlled processes are:

1. Liquid injection incineration;
  2. Reactor cracking;
  3. Gaseous/fume oxidation;
  4. Rotary kiln incineration; or
  5. Cement kiln (40 CFR 82.104(h)) [**Added July 2004**].
- *Destruction* - with respect to landfills and manure management, the combustion of methane in any on-site or off-site combustion technology. Destroyed methane includes, but is not limited to, methane combusted by flaring, methane destroyed by thermal oxidation, methane combusted for use in on-site energy or heat production technologies, methane that is conveyed through pipelines (including natural gas pipelines) for off-site combustion, and methane that is collected for any other on-site or off-site use as a fuel (40 CFR 98.6) [**Added January 2010**].
  - *Destruction* - with respect to fluorinated GHGs, the expiration of a fluorinated GHG to the destruction efficiency actually achieved. Such destruction does not result in a commercially useful end product (40 CFR 98.6) [**Added January 2010**].
  - *Destruction Device* - for the purposes of subparts II [Industrial Wastewater Treatment] and TT [Industrial Waste Landfills] of 40 CFR 98, means a flare, thermal oxidizer, boiler, turbine, internal combustion engine, or any other combustion unit used to destroy or oxidize methane contained in landfill gas or wastewater biogas (40 CFR 98.6) [**Added July 2010**].
  - *Destruction Device* - a flare, thermal oxidizer, boiler, turbine, internal combustion engine, or any other combustion unit used to destroy or oxidize methane contained in landfill gas (40 CFR 98.348) [**Added January 2011**].
  - *Destruction Efficiency* - the efficiency with which a destruction device reduces the mass of a greenhouse gas fed into the device. Destruction efficiency, or flaring destruction efficiency, refers to the fraction of the gas that leaves the flare partially or fully oxidized. The destruction efficiency is expressed in Equation A-2 as follows:(40 CFR 98.6) [**Added January 2010; Revised January 2011**]:
 
$$DE = 1 - \frac{tGHG_{iOUT}}{tGHG_{iIN}}$$

Where:

    - DE = Destruction Efficiency
    - tGHGiIN = The mass of GHG i fed into the destruction device
    - tGHGiOUT = The mass of GHG i exhausted from the destruction device
  - *Deviation* - any instance in which a unit that meets the requirements in 40 CFR 60.2885, or an owner or operator of such a source: (40 CFR 60.2977) [**Added January 2006**].
    1. Fails to meet any requirement or obligation established by this subpart, including but not limited to any emission limitation, operating limit, or operator qualification and accessibility requirements;
    2. Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any unit that meets the requirements in 40 CFR 60.2885 and is required to obtain such a permit; or
    3. Fails to meet any emission limitation, operating limit, or operator qualification and accessibility requirement in this subpart during startup, shutdown, or malfunction, regardless of whether or not such failure is allowed by this subpart.
  - *Deviation* - any instance in which an affected source subject to 40 CFR 62, Subpart III [40 CFR 62.14500 through 62.14840, see checklist items AE.26.1.US through AE.26.10.US], or an owner or operator of such a source (40 CFR 62.14840) [**Added January 2004**]:

1. Fails to meet any requirement or obligation established by 40 CFR 62, Subpart III [40 CFR 62.14500 through 62.14840, see checklist items AE.26.1.US through AE.26.10.US], including but not limited to any emission limitation, operating limit, or operator qualification and accessibility requirements;
  2. Fails to meet any term or condition that is adopted to implement an applicable requirement in 40 CFR 62, Subpart III [40 CFR 62.14500 through 62.14840, see checklist items AE.26.1.US through AE.26.10.US] and that is included in the operating permit for any affected source required to obtain such a permit; or
  3. Fails to meet any emission limitation, operating limit, or operator qualification and accessibility requirement in 40 CFR 62, Subpart III [40 CFR 62.14500 through 62.14840, see checklist items AE.26.1.US through AE.26.10.US] during startup, shutdown, or malfunction, regardless of whether or not such failure is permitted by 40 CFR 62, Subpart III.
- *Deviation* - any instance in which an affected source subject to 40 CFR 60, Subpart LLLL, or an owner or operator of such a source (40 CFR 60.4930) [**Added April 2011**]:
    1. Fails to meet any requirement or obligation established by 40 CFR 60, Subpart LLLL, including but not limited to any emission limit, operating limit, or operator qualification and accessibility requirements.
    2. Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit.
  - *Deviation* - any instance in which an affected source subject to this subpart, or an owner or operator of such a source (40 CFR 63.7575 and 63.11237) [**Revised April 2013**]:
    1. Fails to meet any applicable requirement or obligation established by this subpart including, but not limited to, any emission limit, operating limit, or work practice standard; or
    2. Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit.

A deviation is not always a violation.
  - *Deviation* - any instance in which an affected source, subject to this subpart, or an owner or operator of such a source fails to meet any requirement or obligation established by 40 CFR 63, Subpart HHHHHH (40 CFR 63.11169 through 63.11180) (40 CFR 63.11180) [**Added April 2011**].
  - *Deviation* - any instance in which an affected source subject to 40 CFR 63, Subpart EEEE [40 CFR 63.2330 through 63.2406, see checklist items AE.57.1.US through AE.57.15.US], or portion thereof, or an owner or operator of such a source (40 CFR 63.2406) [**Added April 2004**]:
    1. Fails to meet any requirement or obligation established by 40 CFR 63, Subpart EEEE [40 CFR 63.2330 through 63.2406, see checklist items AE.57.1.US through AE.57.15.US] including, but not limited to, any emission limitation (including any operating limit) or work practice standard;
    2. Fails to meet any term or condition that is adopted to implement an applicable requirement in 40 CFR 63, Subpart EEEE [40 CFR 63.2330 through 63.2406, see checklist items AE.57.1.US through AE.57.15.US], and that is included in the operating permit for any affected source required to obtain such a permit; or
    3. Fails to meet any emission limitation (including any operating limit) or work practice standard in 40 CFR 63, Subpart EEEE [40 CFR 63.2330 through 63.2406, see checklist items AE.57.1.US through AE.57.15.US] during SSM.
  - *Deviation* - any instance in which an affected source subject to 40 CFR 63, Subpart ZZZZ [40 CFR 63.6580 through 63.6675, see checklist items AE.21.1.US through AE.21.10.US], or an owner or operator of such a source (40 CFR 63.6675) [**Added July 2004**]:
    1. Fails to meet any requirement or obligation established by 40 CFR 63, Subpart ZZZZ [40 CFR 63.6580 through 63.6675, see checklist items AE.21.1.US through AE.21.10.US], including but not limited to any emission limitation or operating limitation;
    2. Fails to meet any term or condition that is adopted to implement an applicable requirement in 40 CFR 63, Subpart ZZZZ [40 CFR 63.6580 through 63.6675, see checklist items AE.21.1.US through AE.21.10.US] and that is included in the operating permit for any affected source required to obtain such a permit; or

3. Fails to meet any emission limitation or operating limitation in 40 CFR 63, Subpart ZZZZ [40 CFR 63.6580 through 63.6675, see checklist items AE.21.1.US through AE.21.10.US] during malfunction, regardless of whether or not such failure is permitted by Subpart ZZZZ.
  4. Fails to conform to any provision of the applicable startup, shutdown, or malfunction plan, or to satisfy the general duty to minimize emissions established by 40 CFR 63.6(e)(1)(i).
- *Deviation* - any instance in which an affected source subject to 40 CFR 63, Subpart GGGGG (40 CFR 63.7880 through 63.7957, see checklist items AE.300.1.US through AE.300.12.US), or an owner or operator of such a source (40 CFR 63.7957) **[Added April 2004; Revised January 2007]**:
    1. Fails to meet any requirement or obligation established by 40 CFR 63, Subpart GGGGG, including but not limited to any emissions limitation (including any operating limit), or work practice standard;
    2. Fails to meet any term or condition that is adopted to implement an applicable requirement in 40 CFR 63, Subpart GGGGG and that is included in the operating permit for any affected source required to obtain such a permit; or
    3. Fails to meet any emissions limitation, (including any operating limit), or work practice standard in 40 CFR 63, Subpart GGGGG during startup, shutdown, or malfunction, regardless of whether or not such failure is permitted by this subpart.
  - *Deviation* - any instance in which an affected source subject to 40 CFR 63, Subpart YYYYY [40 CFR 63.6080 through 63.6175, see checklist items AE.20.3.US through AE.20.10.US], or an owner or operator of such a source (40 CFR 63.6175) **[Added April 2004]**:
    1. Fails to meet any requirement or obligation established by 40 CFR 63, Subpart YYYYY [40 CFR 63.6080 through 63.6175, see checklist items AE.20.3.US through AE.20.10.US], including but not limited to any emission limitation or operating limitation;
    2. Fails to meet any term or condition that is adopted to implement an applicable requirement in 40 CFR 63, Subpart YYYYY [40 CFR 63.6080 through 63.6175, see checklist items AE.20.3.US through AE.20.10.US] and that is included in the operating permit for any affected source required to obtain such a permit;
    3. Fails to meet any emission limitation or operating limitation in 40 CFR 63, Subpart YYYYY during malfunction, regardless of whether or not such failure is permitted by 40 CFR 63, Subpart YYYYY [40 CFR 63.6080 through 63.6175, see checklist items AE.20.3.US through AE.20.10.US]; or
    4. Fails to conform to any provision of the applicable startup, shutdown, or malfunction plan, or to satisfy the general duty to minimize emissions established by 40 CFR 63.6(e)(1)(i).
  - *Deviation* - any instance in which an affected source subject to 40 CFR 63, Subpart PTTTT [40 CFR 63.9280 through 63.9375, see checklist items AE.230.1.US through AE.230.4.US] (i.e., engine test cells), or an owner or operator of such a source (40 CFR 63.9375) **[Added July 2003]**:
    1. Fails to meet any requirement or obligation established by Subpart PTTTT, including but not limited to any emission limitations;
    2. Fails to meet any term or condition that is adopted to implement an applicable requirement in Subpart PTTTT and that is included in the operating permit for any affected source required to obtain such a permit; or
    3. Fails to meet any emission limitation in Subpart PTTTT during malfunction, regardless of whether or not such failure is permitted by Subpart PTTTT.
  - *Deviation* - any instance in which an affected source subject to 40 CFR 63, Subpart YYYYY [40 CFR 63.6080 through 63.6175, see checklist items AE.20.3.US through AE.20.10.US], or an owner or operator of such a source (40 CFR 63.6175) **[Added April 2004; Revised July 2006]**:
    1. Fails to meet any requirement or obligation established by 40 CFR 63, Subpart YYYYY [40 CFR 63.6080 through 63.6175, see checklist items AE.20.3.US through AE.20.10.US], including but not limited to any emission limitation or operating limitation;
    2. Fails to meet any term or condition that is adopted to implement an applicable requirement in 40 CFR 63, Subpart YYYYY [40 CFR 63.6080 through 63.6175, see checklist items AE.20.3.US through AE.20.10.US] and that is included in the operating permit for any affected source required to obtain such a permit;
    3. Fails to meet any emission limitation or operating limitation in 40 CFR 63, Subpart YYYYY during malfunction, regardless of whether or not such failure is permitted by 40 CFR 63, Subpart YYYYY [40 CFR 63.6080 through 63.6175, see checklist items AE.20.3.US through AE.20.10.US]; or

4. Fails to satisfy the general duty to minimize emissions established by 40 CFR 63.6(e)(1)(i).
- *Deviation* - any instance in which an affected source subject to 40 CFR 63, Subpart ZZZZ [40 CFR 63.6580 through 63.6675, see checklist items AE.21.1.US through AE.21.10.US], or an owner or operator of such a source (40 CFR 63.6675) [**Added July 2006**]:
    1. Fails to meet any requirement or obligation established by 40 CFR 63, Subpart ZZZZ [40 CFR 63.6580 through 63.6675, see checklist items AE.21.1.US through AE.21.10.US], including but not limited to any emission limitation or operating limitation;
    2. Fails to meet any term or condition that is adopted to implement an applicable requirement in 40 CFR 63, Subpart ZZZZ [40 CFR 63.6580 through 63.6675, see checklist items AE.21.1.US through AE.21.10.US] and that is included in the operating permit for any affected source required to obtain such a permit; or
    3. Fails to meet any emission limitation or operating limitation in 40 CFR 63, Subpart ZZZZ [40 CFR 63.6580 through 63.6675, see checklist items AE.21.1.US through AE.21.10.US] during malfunction, regardless of whether or not such failure is permitted by Subpart ZZZZ.
    4. Fails to satisfy the general duty to minimize emissions established by 40 CFR 63.6(e)(1)(i).
  - *Diesel Engine* - any stationary RICE in which a high boiling point liquid fuel injected into the combustion chamber ignites when the air charge has been compressed to a temperature sufficiently high for auto-ignition. This process is also known as compression ignition (40 CFR 63.6675) [**Added July 2004**].
  - *Diesel Fuel* - any liquid obtained from the distillation of petroleum with a boiling point of approximately 150 to 360 degrees Celsius. One commonly used form is fuel oil number 2. Diesel fuel also includes any non-distillate fuel with comparable physical and chemical properties (e.g. biodiesel) that is suitable for use in compression ignition engines (40 CFR 63.6675) [**Added April 2010**].
  - *Diesel Fuel* - any fuel sold in any State or Territory of the United States and suitable for use in diesel engines, and that is (40 CFR 80.2(x)) [**Revised October 2011**]:
    1. A distillate fuel commonly or commercially known or sold as No. 1 diesel fuel or No. 2 diesel fuel;
    2. A non-distillate fuel other than residual fuel with comparable physical and chemical properties (e.g., biodiesel fuel); or
    3. A mixture of fuels meeting the criteria of paragraphs (1) and (2) of this definition.
  - *Diesel Fuel* - any liquid obtained from the distillation of petroleum with a boiling point of approximately 150 to 360 °Celsius. One commonly used form is number 2 distillate oil (40 CFR 60.4219) [**Added October 2006**].
  - *Diesel Fuel* - any fuel sold in any state and suitable for use in diesel motor vehicles and diesel motor vehicle engines that is commonly or commercially known or sold as diesel fuel (40 CFR 80.2).
  - *Diesel Fuel* - any liquid obtained from the distillation of petroleum with a boiling point of approximately 150 to 360 °C. One commonly used form is fuel oil number 2 (40 CFR 60.4248 and 63.6675) [**Added July 2004; Revised April 2008**].
  - *Diesel-Other* - any distillate fuel oil not defined elsewhere, including Diesel Treated as Blendstock (DTAB) (40 CFR 98.6) [**Added January 2010**].
  - *Diesel Particulate Filter* - an emission control technology that reduces PM emissions by trapping the particles in a flow filter substrate and periodically removes the collected particles by either physical action or by oxidizing (burning off) the particles in a process called regeneration (40 CFR 60.4219) [**Added October 2006**].
  - *Diffusion Flame Gas-Fired Stationary Combustion Turbine* - (40 CFR 63.6175) [**Added April 2004**]:
    - 1.a. Each stationary combustion turbine which is equipped only to fire gas using diffusion flame technology,
    - b. Each stationary combustion turbine which is equipped both to fire gas using diffusion flame technology and to fire oil, during any period when it is firing gas, and

- c. Each stationary combustion turbine which is equipped both to fire gas using diffusion flame technology and to fire oil, and is located at a major source where all new, reconstructed, and existing stationary combustion turbines fire oil no more than an aggregate total of 1000 h during the calendar year.
- 2. Diffusion flame gas-fired stationary combustion turbines do not include:
  - a. Any emergency stationary combustion turbine,
  - b. Any stationary combustion turbine located on the North Slope of Alaska, or
  - c. Any stationary combustion turbine burning landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, or any stationary combustion turbine where gasified MSW is used to generate 10 percent or more of the gross heat input on an annual basis.
- *Diffusion Flame Oil-Fired Stationary Combustion Turbine* - (40 CFR 63.6175) **[Added April 2004]**:
  - 1.a. Each stationary combustion turbine which is equipped only to fire oil using diffusion flame technology, and
  - b. Each stationary combustion turbine which is equipped both to fire oil using diffusion flame technology and to fire gas, and is located at a major source where all new, reconstructed, and existing stationary combustion turbines fire oil more than an aggregate total of 1000 h during the calendar year, during any period when it is firing oil.
- 2. Diffusion flame oil-fired stationary combustion turbines do not include:
  - a. Any emergency stationary combustion turbine, or
  - b. Any stationary combustion turbine located on the North Slope of Alaska.
- *Diffusion Flame Stationary Combustion Turbine* - any stationary combustion turbine where fuel and air are injected at the combustor and are mixed only by diffusion prior to ignition. A unit which is capable of operating in both lean premix and diffusion flame modes is considered a lean premix stationary combustion turbine when it is in the lean premix mode, and it is considered a diffusion flame stationary combustion turbine when it is in the diffusion flame mode (40 CFR 60.331) **[Added October 2004]**.
- *Diffusion Flame Stationary Combustion Turbine* - any stationary combustion turbine where fuel and air are injected at the combustor and are mixed only by diffusion prior to ignition (40 CFR 60.4420) **[Added April 2009]**.
- *Diffusion Flame Technology* - a configuration of a stationary combustion turbine where fuel and air are injected at the combustor and are mixed only by diffusion prior to ignition (40 CFR 63.6175) **[Added April 2004]**.
- *Digester Gas* - any gaseous by-product of wastewater treatment typically formed through the anaerobic decomposition of organic waste materials and composed principally of methane and CO<sub>2</sub> (40 CFR 60.4248, 63.6175 and 63.6675) **[Added July 2004; Revised April 2008]**.
- *Dioxins/Furans* - tetra- through octachlorinated dibenzo-p-dioxins and dibenzofurans (40 CFR 60.1465, 60.2977, and 62.14840) **[Revised January 2004; Revised January 2006]**.
- *Dioxins/Furans* - the combined emissions of tetra-through octa-chlorinated dibenzo-para-dioxins and dibenzofurans, as measured by USEPA Reference Method 23 (40 CFR 60.51c and 62.14490) **[Added October 2000]**.
- *Dioxins/Furans* - tetra- through octachlorinated dibenzo-p-dioxins and dibenzofurans (40 CFR 60.4930) **[Added April 2011]**.
- *Dioxins/Furans* - tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans (40 CFR 63.7575) **[Added April 2011]**.
- *Direct Emissions* - those emissions of a criteria pollutant or its precursors that are caused or initiated by the Federal action and occur at the same time and place as the action (40 CFR 93.152) **[Added April 2009]**.

- *Discard* - for purposes of 40 CFR 62, Subpart III [40 CFR 62.14500 through 62.14840, see checklist items AE.26.1.US through AE.26.10.US], and 40 CFR 60, Subpart DDDD [40 CFR 60.2500 through 60.2875], only, burned in an incineration unit without energy recovery (40 CFR 62.14840) [**Added January 2004**].
- *Dispersion Factor* - the ratio of the increase in the ground level ambient air concentrations for a pollutant at or beyond the property line of the site where the sewage sludge incinerator is located to the mass emission rate for the pollutant from the incinerator stack (40 CFR 503.41(d)).
- *Disposal* - the process leading to and including (40 CFR 82.152) [**Revised January 2017**]:
  1. The discharge, deposit, dumping or placing of any discarded appliance into or on any land or water;
  2. The disassembly of any appliance for discharge, deposit, dumping or placing of its discarded component parts into or on any land or water;
  3. The vandalism of any appliance such that the refrigerant is released into the environment or would be released into the environment if it had not been recovered prior to the destructive activity;
  4. The disassembly of any appliance for reuse of its component parts; or
  5. The recycling of any appliance for scrap.
- *Disposal of Halon* - the process leading to and including discarding of halon from halon-containing equipment (40 CFR 82.260) [**Added March 1998**].
- *Disposal of Halon-containing Equipment* - the process leading to and including (40 CFR 82.260) [**Added March 1998**]:
  1. The discharge, deposit, dumping, or placing of any discarded halon-containing equipment into or on any land or water
  2. The disassembly of any halon-containing equipment for discharge, deposit, or dumping or placing of its discarded component parts into or on any land or water
  3. The disassembly of any halon-containing equipment for reuse of its component parts.
- *Distillate Fuel* - diesel fuel and other petroleum fuels that can be used in engines that are designed for diesel fuel. For example, jet fuel, heating oil, kerosene, No. 4 fuel, DMX, DMA, DMB, and DMC are distillate fuels; and natural gas, LPG, gasoline, and residual fuel are not distillate fuels. Blends containing residual fuel may be distillate fuels (40 CFR 80.2(aaa)) [**Added October 2011**].
- *Distillate Fuel Oil* - a classification for one of the petroleum fractions produced in conventional distillation operations and from crackers and hydrotreating process units. The generic term distillate fuel oil includes kerosene, kerosene-type jet fuel, diesel fuels (Diesel Fuels No. 1, No. 2, and No. 4), and fuel oils (Fuel Oils No. 1, No. 2, and No. 4) (40 CFR 98.6) [**Added January 2010; Revised January 2011**].
- *Distillate Oil* - fuel oils that contain 0.05 weight percent nitrogen or less and comply with the specifications for fuel oil numbers 1 and 2, as defined by the American Society of Testing and Materials in ASTM D396 (incorporated by reference, see 40 CFR 60.17), diesel fuel oil numbers 1 and 2, as defined by the American Society for Testing and Materials in ASTM D975 (incorporated by reference, see 40 CFR 60.17), kerosine, as defined by the American Society of Testing and Materials in ASTM D3699 (incorporated by reference, see 40 CFR 60.17), biodiesel as defined by the American Society of Testing and Materials in ASTM D6751 (incorporated by reference, see 40 CFR 60.17), or biodiesel blends as defined by the American Society of Testing and Materials in ASTM D7467 (incorporated by reference, see 40 CFR 60.17) (40 CFR 60.41b) [**Added July 2007; Revised April 2009; Revised January 2012; Revised April 2012**].
- *Distillate Oil* - fuel oil that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D396 (incorporated by reference, see 40 CFR 60.17), diesel fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D975 (incorporated by reference, see 40 CFR 60.17), kerosine, as defined by the American Society of Testing and Materials in ASTM D3699 (incorporated by reference, see 40 CFR 60.17), biodiesel as defined by the American Society of Testing and Materials in ASTM D6751 (incorporated by reference, see 40 CFR 60.17), or biodiesel blends as defined by

the American Society of Testing and Materials in ASTM D7467(incorporated by reference, see 40 CFR 60.17) (40 CFR 60.41c) [Added July 2007; Revised April 2009; Revised January 2012; Revised April 2012].

- *Distillate Oil* - any liquid obtained from the distillation of petroleum with a boiling point of approximately 150 to 360 °C. One commonly used form is fuel oil number 2 (40 CFR 63.6175) [Added April 2004].
- *Distillate Oil* - fuel oils that contain 0.05 weight percent nitrogen or less and comply with the specifications for fuel oil numbers 1 and 2, as defined by the American Society of Testing and Materials in ASTM D396 (incorporated by reference, see 40 CFR 63.14) or diesel fuel oil numbers 1 and 2, as defined by the American Society for Testing and Materials in ASTM D975 (incorporated by reference, see 40 CFR 63.14), kerosene, and biodiesel as defined by the American Society of Testing and Materials in ASTM D6751-11b (incorporated by reference, see 40 CFR 60.14) (40 CFR 63.7575 and 63.11237) [Revised April 2013].
- *Distributor* - any person who transports or stores or causes the transportation or storage of gasoline or diesel fuel at any point between any gasoline or diesel fuel refinery or importer's facility and any retail outlet or wholesale purchaser-consumer's facility (40 CFR 80.2) [Added October 2011].
- *Distributor* - a person to whom a product is delivered or sold for purposes of subsequent resale, delivery or export (40 CFR 82.104(i)) [Added July 2004].
- *Diverter Valve* - a flow control device that prevents room air from passing through a refrigerated condenser when the door of the dry cleaning machine is open (40 CFR 63.321).
- *Downstream Location* - any point in the diesel fuel distribution system that is downstream of refineries and import facilities, for example, diesel fuel at facilities of distributors, carriers, retailers, kerosene blenders, and wholesale purchaser-consumers (40 CFR 80.502(e)) [Added July 2006].
- *Drum Reclamation Unit* - a unit that burns residues out of drums (e.g., 55 gal drums) so that the drums can be reused (40 CFR 62.14840) [Added January 2004].
- *Dry Cleaning Cycle* - the washing and drying of articles in a dry-to-dry machine or transfer machine system (40 CFR 63.321).
- *Dry Cleaning Facility* - an establishment with one or more dry cleaning systems (40 CFR 63.321).
- *Dry Cleaning Machine* - a dry-to-dry machine or each machine of a transfer machine system (40 CFR 63.321).
- *Dry Cleaning Machine Drum* - the perforated container inside the dry cleaning machine that holds the articles during dry cleaning (40 CFR 63.321).
- *Dry Cleaning Systems* - a dry-to-dry machine and its ancillary equipment or a transfer machine system and its ancillary equipment (40 CFR 63.321).
- *Dry Flue Gas Desulfurization Technology* - a SO<sub>2</sub> control system that is located downstream of the steam generating unit and removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline reagent and water, whether introduced separately or as a premixed slurry or solution and forming a dry powder material. This definition includes devices where the dry powder material is subsequently converted to another form. Alkaline slurries or solutions used in dry flue gas desulfurization technology include but are not limited to lime and sodium (40 CFR 60.41b) [Added July 2007].
- *Dry Flue Gas Desulfurization Technology* - a SO<sub>2</sub> control system that is located between the steam generating unit and the exhaust vent or stack, and that removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline reagent and water, whether introduced separately or as a premixed slurry or solution and forming a dry powder material. This definition includes devices

where the dry powder material is subsequently converted to another form. Alkaline reagents used in dry flue gas desulfurization systems include, but are not limited to, lime and sodium compounds (40 CFR 60.41c) **[Added July 2007]**.

- *Dry Lot* - a manure management system component consisting of a paved or unpaved open confinement area without any significant vegetative cover where accumulating manure may be removed periodically (40 CFR 98.6) **[Added January 2010]**.
- *Dry Media Blasting* - abrasive blasting using dry media. Dry media blasting relies on impact and abrasion to remove paint from a substrate. Typically, a compressed air stream is used to propel the media against the coated surface (40 CFR 63.11180) **[Added April 2011]**.
- *Dry Scrubber* - an add-on air pollution control system that injects dry alkaline sorbent (dry injection) or sprays an alkaline sorbent (spray dryer) to react with and neutralize acid gases in the HMIWI exhaust stream forming a dry powder material (40 CFR 60.51c and 62.14490) **[Added October 2000]**.
- *Dry Scrubber* - an add-on air pollution control system that injects dry alkaline sorbent (dry injection) or sprays an alkaline sorbent (spray dryer) to react with and neutralize acid gas in the exhaust stream forming a dry powder material. Sorbent injection systems used as control devices in fluidized bed boilers are included in this definition. A dry scrubber is a dry control system (40 CFR 63.11237) **[Added October 2016]**.
- *Dry Scrubber* - an add-on air pollution control system that injects dry alkaline sorbent (dry injection) or sprays an alkaline sorbent (spray dryer) to react with and neutralize acid gas in the exhaust stream forming a dry powder material. Sorbent injection systems used as control devices in fluidized bed boilers and process heaters are included in this definition. A dry scrubber is a dry control system (40 CFR 63.7575 and 63.22137) **[Revised April 2013]**.
- *Dryer* - a machine used to remove petroleum solvent from articles of clothing or other textile or leather goods, after washing and removing excess petroleum solvent, and the piping and ductwork used in the installation of this device (40 CFR 60.621).
- *Dryer* - a machine used to remove perchloroethylene from articles by tumbling them in a heated air stream (40 CFR 63.321).
- *Dry-to-Dry Machine* - a one machine dry cleaning operation in which washing and drying are performed in the same machine (40 CFR 63.321).
- *Dual-fuel Engine* - any stationary RICE in which a liquid fuel (typically diesel fuel) is used for compression ignition and gaseous fuel (typically natural gas) is used as the primary fuel (40 CFR 63.6675) **[Added July 2004]**.
- *Dual-point Vapor Balance System* - a type of vapor balance system in which the storage tank is equipped with an entry port for a gasoline fill pipe and a separate exit port for a vapor connection (40 CFR 63.11132) **[Added April 2008]**.
- *Duct Burner* - a device that combusts fuel and is placed in the exhaust duct from another source (such as a stationary gas turbine, internal combustion engine, kiln, etc.) to allow the firing of additional fuel to heat the exhaust gases before the exhaust gases enter a steam generating unit (40 CFR 60.41b, 60.41c and 60.331) **[Revised October 2004; Citation Revised July 2007]**.
- *Duct Burner* - a device that combusts fuel and that is placed in the exhaust duct from another source, such as a stationary combustion turbine, internal combustion engine, kiln, etc., to allow the firing of additional fuel to heat the exhaust gases before the exhaust gases enter a heat recovery steam generating unit (40 CFR 60.4420) **[Added April 2009]**.

- *Dutch Oven* - a unit having a refractory-walled cell connected to a conventional boiler setting. Fuel materials are introduced through an opening in the roof of the dutch oven and burn in a pile on its floor. Fluidized bed boilers are not part of the dutch oven design category (40 CFR 63.7575) **[Revised April 2013]**.
- *Dwell* - the technique of holding parts within the freeboard area but above the vapor zone of the solvent-cleaning machine. Dwell occurs after cleaning to allow solvent to drain from the parts or parts baskets back into the solvent-cleaning machine (40 CFR 63.461).
- *E0* - a gasoline that contains no ethanol (40 CFR 80.1500) **[Added October 2011]**.
- *E10* - a gasoline-ethanol blend that contains at least 9.0 and no more than 10.0 volume percent ethanol (40 CFR 80.1500) **[Added October 2011]**.
- *E15* - a gasoline-ethanol blend that contains greater than 10.0 volume percent ethanol and not more than 15.0 volume percent ethanol (40 CFR 80.1500) **[Added October 2011]**.
- *ECA Marine Fuel* - diesel, distillate, or residual fuel that meets the criteria of paragraph 1., but not the criteria of paragraph 2. of this section (40 CFR 80.2(ttt)) **[Added July 2010]**:
  1. All diesel, distillate, or residual fuel used, intended for use, or made available for use in Category 3 marine vessels while the vessels are operating within an Emission Control Area (ECA) is ECA marine fuel, unless it meets the criteria of paragraph 2.
  2. ECA marine fuel does not include any of the following fuel:
    - a. Fuel that is allowed by 40 CFR part 1043 to exceed the fuel sulfur limits for operation in an ECA (such as fuel used by excluded vessels or vessels equipped with equivalent emission controls in conformance with 40 CFR 1043.55).
    - b. Fuel that conforms fully to the requirements of this part for NRLM diesel fuel (including being designated as NRLM).
  3. Fuel used, or made available for use, in any diesel engines not installed on a Category 3 marine vessel.
- *ETBE (Ethyl Tertiary Butyl Ether, (CH<sub>3</sub>)<sub>3</sub>COC<sub>2</sub>H)* - an ether as described in "Oxygenates" (40 CFR 98.6) **[Added January 2010]**.
- *EX* - a gasoline-ethanol blend that contains less than 9 volume percent ethanol where X equals the maximum volume percent ethanol in the gasoline-ethanol blend (40 CFR 80.1500) **[Added October 2011]**.
- *EXX* - a gasoline-ethanol blend above E15 where XX equals the maximum volume percent ethanol in the gasoline-ethanol blend (40 CFR 80.1500) **[Added October 2011]**.
- *Effective Dose Equivalent* - the sum of the products of absorbed dose and appropriate factors to account for differences in biological effectiveness due to the quality of radiation and its distribution in the body of reference man. The unit of the effective dose equivalent is the rem. For purposes of 40 CFR 61, Subpart I [40 CFR 61.100 through 61.108. see checklist items AE.350.1.US through AE.350.5.US], doses caused by radon-222 and its decay products formed after the radon is released from the facility are not included. The method for calculating effective dose equivalent and the definition of reference man are outlined in the International Commission on Radiological Protection's Publication No. 26 (40 CFR 61.101) **[Added July 2004]**.
- *Effective Dose Equivalent* - the sum of the products of absorbed dose and appropriate factors to account for differences in biological effectiveness due to the quality of radiation and its distribution in the body of reference man. The unit of the effective dose equivalent is the rem. For purposes of this subpart, doses caused by radon-222 and its respective decay products formed after the radon is released from the facility are not included. The method for calculating effective dose equivalent and the definition of reference man are outlined in the International Commission on Radiological Protection's Publication No. 26 (40 CFR 61.91(a)) **[Added July 2006]**.

- *Efficiency - the gas turbine* manufacturer's rated heat rate at peak load in terms of heat input per unit of power output based on the lower heating value of the fuel (40 CFR 60.331) **[Added October 2004]**.
- *Efficiency - the combustion turbine* manufacturer's rated heat rate at peak load in terms of heat input per unit of power output--based on the higher heating value of the fuel (40 CFR 60.4420) **[Added April 2009]**.
- *Efficiency Credit* - emission reductions above those required by 40 CFR 63, subpart DDDDD. Efficiency credits generated may be used to comply with the emissions limits. Credits may come from pollution prevention projects that result in reduced fuel use by affected units. Boilers that are shut down cannot be used to generate credits unless the facility provides documentation linking the permanent shutdown to implementation of the energy conservation measures identified in the energy assessment (40 CFR 63.7575) **[Added April 2013]**.
- *Eight-hour Block Average* - the average of all hourly emission concentrations or parameter levels when the municipal waste combustion unit operates and combusts municipal solid waste measured over any of three 8-h periods of **time (40 CFR 60.1465) [Added April 2001]**:
  1. 12:00 midnight to 8:00 a.m.
  2. 8:00 a.m. to 4:00 p.m.
  3. 4:00 p.m. to 12:00 midnight.
- *Electric Boiler* - a boiler in which electric heating serves as the source of heat. Electric boilers that burn gaseous or liquid fuel during periods of electrical power curtailment or failure are included in this definition (40 CFR 63.11237) **[Added April 2013, Revised October 2016]**.
- *Electric Power Transmission or Distribution Entity* - any entity that transmits, distributes, or supplies electricity to a consumer or other user, including any company, electric cooperative, public electric supply corporation, a similar Federal department (including the Bureau of Reclamation or the Corps of Engineers), a municipally owned electric department offering service to the public, an electric public utility district, or a jointly owned electric supply project (40 CFR 98.308) **[Added January 2011]**.
- *Electric Utility Stationary Gas Turbine* - any stationary gas turbine **constructed for the purpose** of supplying more than one-third of its potential electric output capacity to any utility power distribution system for sale (40 CFR 60.331) **[Added October 2004]**.
- *Electric Utility Steam Generating Unit (EGU)* – in relation to NESHAPs regulations, a fossil fuel-fired combustion unit of more than 25 megawatts electric (MWe) that serves a generator that produces electricity for sale. A fossil fuel-fired unit that cogenerates steam and electricity and supplies more than one-third of its potential electric output capacity and more than 25 MWe output to any utility power distribution system for sale is considered an electric utility steam generating unit. To be “capable of combusting” fossil fuels, an EGU would need to have these fuels allowed in their operating permits and have the appropriate fuel handling facilities on-site or otherwise available (e.g., coal handling equipment, including coal storage area, belts and conveyers, pulverizers, etc.; oil storage facilities). In addition, fossil fuel-fired EGU means any EGU that fired fossil fuel for more than 10.0 percent of the average annual heat input in any 3 consecutive calendar years or for more than 15.0 percent of the annual heat input during any one calendar year after 16 April 2012 (40 CFR 63.7575) **[Revised April 2013]**.
- *Electric Utility Steam Generating Unit (EGU)* - a fossil fuel-fired combustion unit of more than 25 megawatts that serves a generator that produces electricity for sale. A fossil fuel-fired unit that cogenerates steam and electricity and supplies more than one-third of its potential electric output capacity and more than 25 megawatts electrical output to any utility power distribution system for sale is considered an electric utility steam generating unit. To be “capable of combusting” fossil fuels, an EGU would need to have these fuels allowed in their operating permits and have the appropriate fuel handling facilities on-site or otherwise available (e.g., coal handling equipment, including coal storage area, belts and conveyers, pulverizers, etc.; oil storage facilities). In addition, fossil fuel-fired EGU means any EGU that fired fossil fuel for more than 10.0 percent of the average annual heat input in any 3 consecutive calendar years or for more than 15.0 percent of the annual heat input during any one calendar year after 16 April 2015 (40 CFR 63.11237) **[Added April 2013, Revised October 2016]**.

- *Electrodeposition of Paint* - the application of a coating using a water-based electrochemical bath process. The component being coated is immersed in a bath of the coating. An electric potential is applied between the component and an oppositely charged electrode hanging in the bath. The electric potential causes the ionized coating to be electrically attracted, migrated, and deposited on the component being coated (40 CFR 63.742) **[Added January 1999]**.
- *Electrostatic Application* - any method of coating application where an electrostatic attraction is created between the part to be coated and the atomized paint particles (40 CFR 63.11180) **[Added April 2011]**.
- *Electrostatic Precipitator (ESP)* - an add-on air pollution control device used to capture particulate matter by charging the particles using an electrostatic field, collecting the particles using a grounded collecting surface, and transporting the particles into a hopper. An electrostatic precipitator is usually a dry control system (40 CFR 63.7575) **[Added April 2011]**.
- *Electrostatic Precipitator (ESP)* - an add-on air pollution control device used to capture particulate matter by charging the particles using an electrostatic field, collecting the particles using a grounded collecting surface, and transporting the particles into a hopper. An electrostatic precipitator is usually a dry control system (40 CFR 63.11237) **[Revised April 2013]**.
- *Electrostatic Precipitator or Wet Electrostatic Precipitator* - an air pollution control device that uses both electrical forces and, if applicable, water to remove pollutants in the exit gas from a sewage sludge incinerator stack (40 CFR 60.4930) **[Added April 2011]**.
- *Electrostatic Spray* - a method of applying a spray coating in which an electrical charge is applied to the coating and the substrate is grounded. The coating is attracted to the substrate by the electrostatic potential between them (40 CFR 63.742) **[Added January 1999]**.
- *Emergency* - a situation where extremely quick action on the part of the Federal agencies involved is needed and where the timing of such Federal activities makes it impractical to meet the requirements of 40 CFR 93, Subpart B, such as natural disasters like hurricanes or earthquakes, civil disturbances such as terrorist acts and military mobilizations (40 CFR 93.152) **[Added April 2009]**.
- *Emergency Combustion Turbine* - any stationary combustion turbine which operates in an emergency situation. Examples include stationary combustion turbines used to produce power for critical networks or equipment, including power supplied to portions of a facility, when electric power from the local utility is interrupted, or stationary combustion turbines used to pump water in the case of fire or flood, etc. Emergency stationary combustion turbines do not include stationary combustion turbines used as peaking units at electric utilities or stationary combustion turbines at industrial facilities that typically operate at low capacity factors. Emergency combustion turbines may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are required by the manufacturer, the vendor, or the insurance company associated with the turbine. Required testing of such units should be minimized, but there is no time limit on the use of emergency combustion turbines (40 CFR 60.4420) **[Added April 2009]**.
- *Emergency Fuel* - a fuel fired by a gas turbine only during circumstances, such as natural gas supply curtailment or breakdown of delivery system, that make it impossible to fire natural gas in the gas turbine (40 CFR 60.331) **[Added October 2004]**.
- *Emergency Gas Turbine* - any stationary gas turbine which operates as a mechanical or electrical power source only when the primary power source for a facility has been rendered inoperable by an emergency situation (40 CFR 60.331) **[Added October 2004]**.
- *Emergency Generator* - a stationary combustion device, such as a reciprocating internal combustion engine or turbine that serves solely as a secondary source of mechanical or electrical power whenever the primary energy supply is disrupted or discontinued during power outages or natural disasters that are beyond the control of the owner or operator of a facility. An emergency generator operates only during emergency situations, for training

of personnel under simulated emergency conditions, as part of emergency demand response procedures, or for standard performance testing procedures as required by law or by the generator manufacturer. A generator that serves as a back-up power source under conditions of load shedding, peak shaving, power interruptions pursuant to an interruptible power service agreement, or scheduled facility maintenance shall not be considered an emergency generator (40 CFR 98.6) **[Added January 2010]**.

- *Emergency Equipment* - any auxiliary fossil fuel-powered equipment, such as a fire pump, that is used only in emergency situations (40 CFR 98.6) **[Added January 2010]**.
- *Emergency Stationary Combustion Turbine* - any stationary combustion turbine that operates in an emergency situation. Examples include stationary combustion turbines used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility is interrupted, or stationary combustion turbines used to pump water in the case of fire or flood, etc. Emergency stationary combustion turbines do not include stationary combustion turbines used as peaking units at electric utilities or stationary combustion turbines at industrial facilities that typically operate at low capacity factors. Emergency stationary combustion turbines may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are required by the manufacturer, the vendor, or the insurance company associated with the turbine. Required testing of such units should be minimized, but there is no time limit on the use of emergency stationary combustion turbines (40 CFR 63.6175) **[Added April 2004]**.
- *Emergency Stationary Internal Combustion Engine* – in relationship to NSPS regulations, any stationary reciprocating internal combustion engine that meets all of the criteria in paragraphs (1) through (3) of this definition. All emergency stationary ICE must comply with the requirements specified in 40 CFR 60.4211(f) [or 60.4243(d)] in order to be considered emergency stationary ICE. If the engine does not comply with the requirements specified in 40 CFR 60.4211(f) [or 60.4243(d)], then it is not considered to be an emergency stationary ICE under 40 CFR 60, subpart IIII (40 CFR 60.4219 and 60.4248) **[Revised April 2013]**:
  1. The stationary ICE is operated to provide electrical power or mechanical work during an emergency situation. Examples include stationary ICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary ICE used to pump water in the case of fire or flood, etc.
  2. The stationary ICE is operated under limited circumstances for situations not included in paragraph (1) of this definition, as specified in 40 CFR 60.4211(f) [or 40 CFR 60.4243(d)]
  3. The stationary ICE operates as part of a financial arrangement with another entity in situations not included in paragraph (1) of this definition only as allowed in 40 CFR 60.4211(f)(2)(ii) or (iii) and 40 CFR 60.4211(f)(3)(i) [or 60.4243(d)(2)(ii) or (iii) and 40 CFR 60.4243(d)(3)(i)].
- *Emergency Stationary RICE* – in relation to the NESHAPs regulations, any stationary reciprocating internal combustion engine that meets all of the criteria in paragraphs (1) through (3) of this definition. All emergency stationary RICE must comply with the requirements specified in 40 CFR 63.6640(f) in order to be considered emergency stationary RICE. If the engine does not comply with the requirements specified in 40 CFR 63.6640(f), then it is not considered to be an emergency stationary RICE under this 40 CFR 63, subpart ZZZZ (40 CFR 63.6675) **[Revised April 2013]**:
  1. The stationary RICE is operated to provide electrical power or mechanical work during an emergency situation. Examples include stationary RICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary RICE used to pump water in the case of fire or flood, etc.
  2. The stationary RICE is operated under limited circumstances for situations not included in paragraph (1) of this definition, as specified in 40 CFR 63.6640(f).
  3. The stationary RICE operates as part of a financial arrangement with another entity in situations not included in paragraph (1) of this definition only as allowed in 40 CFR 63.6640(f)(2)(ii) or (iii) and 40 CFR 63.6640(f)(4)(i) or (ii).

- *Emerging Technology* - any SO<sub>2</sub> control system that is not defined as a conventional technology under this section, and for which the owner or operator of the facility has applied to the Administrator and received approval to operate as an emerging technology under 40 CFR 60.48c(a)(4) or 40 CFR 60.49b(a)(4) (40 CFR 60.41b and 60.41c) **[Revised July 2007]**.
- *Emission Control Area* - an Emission Control Area (ECA), for the purposes of this subpart, means the "ECA" as defined in 40 CFR 1043.20 as well as "ECA associated area" as defined in 40 CFR 1043.20 (40 CFR 80.502(g)) **[Added July 2010]**.
- *Emission Limitation* - an emission limit, opacity limit, operating limit, or visible emission limit (40 CFR 63.2406 and 63.7957) **[Added April 2004]**.
- *Emission Points and Control Requirements for an Industrial POTW Treatment Plant* - the emission points and control requirements for an existing industrial POTW treatment plant are specified in the appropriate NESHAPs for the industrial users. For example, an existing industrial POTW treatment plant that provides treatment for a facility subject to 40 CFR 63, Subpart FF, the *National Emission Standard for Benzene Waste Operations*, must meet the treatment and control requirements specified in 40 CFR 61.348(d)(4). The emission points and control requirements for a new or reconstructed industrial POTW treatment plant are either those specified by the particular NESHAPs which apply to the industrial users who discharge their waste for treatment to the POTW, or those emission points and control requirements set forth in 40 CFR 63.1586 for non-industrial POTW treatment plants. The set of control requirements which applies to a particular new or reconstructed POTW is that set which requires the most stringent overall control of HAP emissions (40 CFR 63.1583) **[Added January 2000]**.
- *Emission Standard* - a legally enforceable regulation setting forth an allowable rate of emissions into the atmosphere, establishing an allowance system, or prescribing equipment specifications for control of air pollution emissions (40 CFR 60.21(f)) **[Added October 2005; Revised January 2012; Revised April 2012]**.
- *Emissions Budgets* - those portions of the applicable SIP's projected emission inventories that describe the levels of emissions (mobile, stationary, area, etc.) that provide for meeting reasonable further progress milestones, attainment, and/or maintenance for any criteria pollutant or its precursors (40 CFR 93.152) **[Added April 2009]**.
- *Emissions That a Federal Agency has a Continuing Program Responsibility For* - emissions that are specifically caused by an agency carrying out its authorities, and does not include emissions that occur due to subsequent activities, unless such activities are required by the Federal agency. When an agency, in performing its normal program responsibilities, takes actions itself or imposes conditions that result in air pollutant emissions by a non-Federal entity taking subsequent actions, such emissions are covered by the meaning of a continuing program responsibility (40 CFR 93.152) **[Added April 2009]**.
- *Emissions Offsets* - for purposes of 40 CFR 93.158, are emissions reductions which are quantifiable, consistent with the applicable SIP attainment and reasonable further progress demonstrations, surplus to reductions required by, and credited to, other applicable SIP provisions, enforceable at both the State and Federal levels, and permanent within the timeframe specified by the program (40 CFR 93.152) **[Added April 2009]**.
- *Emissions Point* - an individual tank, surface impoundment, container, oil-water, organic-water separator, transfer system, vent, or enclosure (40 CFR 63.7957) **[Added April 2004]**.
- *Enclosure* - a structure that surrounds a tank or container, captures organic vapors emitted from the tank or container, and vents the captured vapor through a closed vent system to a control device (40 CFR 63.7957) **[Added April 2004]**.
- *Energy Assessment* - the following for the emission units covered by 40 CFR Subpart DDDDD (40 CFR 63.7575 and 63.11237) **[Revised April 2013; Revised January 2016]**:

1. The energy assessment for facilities with affected boilers and process heaters with a combined heat input capacity of less than 0.3 trillion Btu (TBtu) per year will be 8 on-site technical labor hours in length maximum, but may be longer at the discretion of the owner or operator of the affected source. The boiler system(s), process heater(s), and any on-site energy use system(s) accounting for at least 50 percent of the affected boiler(s) energy (e.g., steam, hot water, process heat, or electricity) production, as applicable, will be evaluated to identify energy savings opportunities, within the limit of performing an 8-hour on-site energy assessment.
  2. The energy assessment for facilities with affected boilers and process heaters with a combined heat input capacity of 0.3 to 1.0 TBtu/year will be 24 on-site technical labor hours in length maximum, but may be longer at the discretion of the owner or operator of the affected source. The boiler system(s), process heater(s), and any on-site energy use system(s) accounting for at least 33 percent of the energy (e.g., steam, hot water, process heat, or electricity) production, as applicable, will be evaluated to identify energy savings opportunities, within the limit of performing a 24-hour on-site energy assessment.
  3. The energy assessment for facilities with affected boilers and process heaters with a combined heat input capacity greater than 1.0 TBtu/year will be up to 24 on-site technical labor hours in length for the first TBtu/yr plus 8 on-site technical labor hours for every additional 1.0 TBtu/yr not to exceed 160 on-site technical hours, but may be longer at the discretion of the owner or operator of the affected source. The boiler system(s), process heater(s), and any on-site energy use system(s) accounting for at least 20 percent of the energy (e.g., steam, process heat, hot water, or electricity) production, as applicable, will be evaluated to identify energy savings opportunities.
  4. The on-site energy use systems serving as the basis for the percent of affected boiler(s) and process heater(s) energy production in paragraphs (1), (2), and (3) of this definition may be segmented by production area or energy use area as most logical and applicable to the specific facility being assessed (e.g., product X manufacturing area; product Y drying area; Building Z).
- *Energy Management Practices* - the set of practices and procedures designed to manage energy use that are demonstrated by the facility's energy policies, a facility energy manager and other staffing responsibilities, energy performance measurement and tracking methods, an energy saving goal, action plans, operating procedures, internal reporting requirements, and periodic review intervals used at the facility (40 CFR 63.7575) [**Added April 2011**].
  - *Energy Management Program* - a program that includes a set of practices and procedures designed to manage energy use that are demonstrated by the facility's energy policies, a facility energy manager and other staffing responsibilities, energy performance measurement and tracking methods, an energy saving goal, action plans, operating procedures, internal reporting requirements, and periodic review intervals used at the facility. Facilities may establish their program through energy management systems compatible with ISO 50001 (40 CFR 63.7575 and 63.11237) [**Added April 2013**].
  - *Energy Recovery* - the process of recovering thermal energy from combustion for useful purposes such as steam generation or process heating (40 CFR 60.2977 and 62.14840) [**Added January 2004; Revised January 2006**].
  - *Energy Use System* - the following systems located on-site that use energy (steam, hot water, or electricity) provided by the affected boiler or process heater: process heating; compressed air systems; machine drive (motors, pumps, fans); process cooling; facility heating, ventilation, and air-conditioning systems; hot water systems; building envelop; and lighting; or other systems that use steam, hot water, process heat, or electricity provided by the affected boiler or process heater. Energy use systems are only those systems using energy clearly produced by affected boilers and process heaters (40 CFR 63.7575) [**Added April 2013**].
  - *Energy Use System* - includes the following systems located on the site of the affected boiler that use energy provided by the boiler (40 CFR 63.11237) [**Revised April 2013**].
    1. Process heating; compressed air systems; machine drive (motors, pumps, fans); process cooling; facility heating, ventilation, and air conditioning systems; hot water systems; building envelop; and lighting; or
    2. Other systems that use steam, hot water, process heat, or electricity, provided by the affected boiler.

Energy use systems are only those systems using energy clearly produced by affected boilers.

- *Engine* - any internal combustion engine, any combustion turbine engine, or any rocket engine (40 CFR 63.9375) **[Added July 2003]**.
- *Engine Manufacturer* - the manufacturer of the engine. See the definition of “manufacturer” in this section (40 CFR 60.4219 and 60.4248) **[Added October 2006]**.
- *Engine Startup* - the time from initial start until applied load and engine and associated equipment reaches steady state or normal operation. For stationary engine with catalytic controls, engine startup means the time from initial start until applied load and engine and associated equipment, including the catalyst, reaches steady state or normal operation (40 CFR 63.6675) **[Added April 2010]**.
- *Engine Test Cell/Stand* - any apparatus used for testing uninstalled stationary or uninstalled mobile (motive) engines (40 CFR 63.9375) **[Added July 2003]**.
- *Entity* - any refiner, importer, distributor, retailer or wholesale-purchaser consumer of any distillate fuel or other product subject to the requirements of 40 CFR 80, subpart I) (40 CFR 80.502(a)) **[Added July 2006, Revised July 2010]**.
- *Environmental Receptor* - natural areas such as national or state parks, forests, or monuments; officially designated wildlife sanctuaries, preserves, refuges, or areas; and Federal wilderness areas, that could be exposed at any time to toxic concentrations, radiant heat, or overpressure greater than or equal to the endpoints provided in 40 CFR 68.22(a), as a result of an accidental release and that can be identified on local U. S. Geological Survey maps (40 CFR 68.3) **[Added January 2005]**.
- *Equipment* - each pump, pressure relief device, sampling connection system, valve, and connector used in remediation material service at a facility (40 CFR 63.7957) **[Added April 2004]**.
- *Equipment Cleaning* - the use of an organic solvent to remove coating residue from the surfaces of paint spray guns and other painting related equipment, including, but not limited to stir sticks, paint cups, brushes, and spray booths (40 CFR 63.11180) **[Added April 2011]**.
- *Equipment Leak Component* - each pump, valve, and sampling connection system used in organic liquids service at an OLD operation. Valve types include control, globe, gate, plug, and ball. Relief and check valves are excluded (40 CFR 63.2406) **[Added April 2004]**.
- *Equivalent* - the following only as this term is used in Table 6 of 40 CFR 63, Subpart DDDDD or Table 5 to 40 CFR 63, Subpart JJJJ (40 CFR 63.7575 and 63.11237) **[Added April 2011]**:
  1. An equivalent sample collection procedure means a published voluntary consensus standard or practice (VCS) or EPA method that includes collection of a minimum of three composite fuel samples, with each composite consisting of a minimum of three increments collected at approximately equal intervals over the test period.
  2. An equivalent sample compositing procedure means a published VCS or EPA method to systematically mix and obtain a representative subsample (part) of the composite sample.
  3. An equivalent sample preparation procedure means a published VCS or EPA method that: Clearly states that the standard, practice or method is appropriate for the pollutant and the fuel matrix; or is cited as an appropriate sample preparation standard, practice or method for the pollutant in the chosen VCS or EPA determinative or analytical method.
  4. An equivalent procedure for determining heat content means a published VCS or EPA method to obtain gross calorific (or higher heating) value.
  5. An equivalent procedure for determining fuel moisture content means a published VCS or EPA method to obtain moisture content. If the sample analysis plan calls for determining metals (especially the mercury, selenium, or arsenic) using an aliquot of the dried sample, then the drying temperature must be modified to prevent vaporizing these metals. On the other hand, if metals analysis is done on an “as received” basis, a

separate aliquot can be dried to determine moisture content and the metals concentration mathematically adjusted to a dry basis.

6. An equivalent pollutant (mercury, hydrogen chloride, hydrogen sulfide) determinative or analytical procedure means a published VCS or EPA method that clearly states that the standard, practice, or method is appropriate for the pollutant and the fuel matrix and has a published detection limit equal or lower than the methods listed in Table 6 to this subpart for the same purpose.
- *Equivalent* - the following only as this term is used in Table 6 to this subpart (40 CFR 63.7575) [**Added April 2013**].
    1. An equivalent sample collection procedure means a published voluntary consensus standard or practice (VCS) or EPA method that includes collection of a minimum of three composite fuel samples, with each composite consisting of a minimum of three increments collected at approximately equal intervals over the test period.
    2. An equivalent sample compositing procedure means a published VCS or EPA method to systematically mix and obtain a representative subsample (part) of the composite sample.
    3. An equivalent sample preparation procedure means a published VCS or EPA method that: Clearly states that the standard, practice or method is appropriate for the pollutant and the fuel matrix; or is cited as an appropriate sample preparation standard, practice or method for the pollutant in the chosen VCS or EPA determinative or analytical method.
    4. An equivalent procedure for determining heat content means a published VCS or EPA method to obtain gross calorific (or higher heating) value.
    5. An equivalent procedure for determining fuel moisture content means a published VCS or EPA method to obtain moisture content. If the sample analysis plan calls for determining metals (especially the mercury, selenium, or arsenic) using an aliquot of the dried sample, then the drying temperature must be modified to prevent vaporizing these metals. On the other hand, if metals analysis is done on an “as received” basis, a separate aliquot can be dried to determine moisture content and the metals concentration mathematically adjusted to a dry basis.
    6. An equivalent pollutant (mercury, HCl) determinative or analytical procedure means a published VCS or EPA method that clearly states that the standard, practice, or method is appropriate for the pollutant and the fuel matrix and has a published detection limit equal or lower than the methods listed in Table 6 to this subpart for the same purpose.
  - *Ethane* - a paraffinic hydrocarbon with molecular formula  $C_2H_6$  (40 CFR 98.6) [**Added January 2010**].
  - *Ethanol* - an anhydrous alcohol with molecular formula  $C_2H_5OH$  (40 CFR 98.6) [**Added January 2010**].
  - *Ethanol Production* - an operation that produces ethanol from the fermentation of sugar, starch, grain, or cellulosic biomass feedstocks, or the production of ethanol synthetically from petrochemical feedstocks, such as ethylene or other chemicals (40 CFR 98.358) [**Added July 2010**].
  - *Ethylene* - an olefinic hydrocarbon with molecular formula  $C_2H_4$  (40 CFR 98.6) [**Added January 2010**].
  - *Excess Emissions* - a specified averaging period over which either (40 CFR 60.331) [**Added October 2004**]:
    1. The  $NO_x$  emissions are higher than the applicable emission limit in 40 CFR 60.332;
    2. The total sulfur content of the fuel being combusted in the affected facility exceeds the limit specified in 40 CFR 60.333; or
    3. The recorded value of a particular monitored parameter is outside the acceptable range specified in the parameter monitoring plan for the affected unit.
  - *Excess Emissions* - a specified averaging period over which either (40 CFR 60.4420) [**Added April 2009**]:
    1. the  $NO_x$  emissions are higher than the applicable emission limit in 40 CFR 60.4320;
    2. the total sulfur content of the fuel being combusted in the affected facility exceeds the limit specified in 40 CFR 60.4330; or
    3. the recorded value of a particular monitored parameter is outside the acceptable range specified in the parameter monitoring plan for the affected unit.

- *Excluded OSWI* – the following types of units are excluded from compliance with 40 CFR Subpart EEEE (40 CFR 60.2880 through 60.2977) [**Added January 2006**]:
  1. Cement kilns, the unit is excluded if it is regulated under 40 CFR 63, Subpart LLL (National Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry).
  2. Co-fired combustors, the unit, that would otherwise be considered a very small municipal waste combustion unit, is excluded if it meets the following five requirements
    - a. The unit has a Federally enforceable permit limiting the combustion of municipal solid waste to 30 percent of the total fuel input by weight.
    - b. the Administrator is notified that the unit qualifies for the exclusion.
    - c. the Administrator is provided with a copy of the Federally enforceable permit.
    - d. the weights are recorded, each calendar quarter, of municipal solid waste and of all other fuels combusted.
    - e. Each report is kept for 5 yr. These records must be kept on site for at least 2 years. The records may be kept off site for the remaining 3 yr.
  3. Cogeneration facilities are excluded if they meet the following three requirements:
    - a. The unit qualifies as a cogeneration facility under section 3(18)(B) of the Federal Power Act (16 U.S.C. 796(18)(B)).
    - b. The unit burns homogeneous waste (not including refuse-derived fuel) to produce electricity and steam or other forms of energy used for industrial, commercial, heating, or cooling purposes.
    - c. The Administrator is notified that the unit meets all of these criteria.
  4. Commercial and industrial solid waste incineration units are excluded if the unit is regulated under 40 CFR subparts CCCC or DDDD and is required to meet the emission limitations established in those subparts.
  5. Hazardous waste combustion units are excluded if they meet either of the following two criteria:
    - a. A permit for the unit is obtained under section 3005 of the *Solid Waste Disposal Act*.
    - b. The unit is regulated under 40 CFR part 63, subpart EEE (National Emission Standards for Hazardous Air Pollutants from Hazardous Waste Combustors).
  6. Hospital/medical/infectious waste incinerators. Your unit is excluded if it is regulated under 40 CFR, subparts Ce or Ec (New Source Performance Standards and Emission Guidelines for Hospital/Medical/Infectious Waste Incinerators).
  7. Incinerators and air curtain incinerators in isolated areas of Alaska are excluded if it is used at a solid waste disposal site in Alaska that is classified as a Class II or Class III municipal solid waste landfill, as defined in 40 CFR 60.2977.
  8. Rural institutional waste incinerators are excluded if it is an institutional waste incineration unit, as defined in 40 CFR 60.2977, and the application for exclusion has been approved by the Administrator as follows:
    - a. Prior to initial startup, an application and supporting documentation demonstrating that the institutional waste incineration unit meets the following two requirements and the documentation is submitted to and approved by the Administrator.
      - i. The unit is located more than 50 mi from the boundary of the nearest Metropolitan Statistical Area,
      - ii. Alternative disposal options are not available or are economically infeasible.
    - b. The application described in paragraph (a)(i) above is revised and resubmitted to the Administrator for approval every 5 yr following the initial approval of the exclusion for the unit.
    - c. If the facility re-applied for an exclusion and were denied exclusion by the Administrator, the facility has 3 yr from the expiration date of the current exclusion to comply with the emission limits and all other applicable requirements.
  9. Institutional boilers and process heaters are excluded if they are regulated under 40 CFR 63, Subpart DDDDD (National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters).
  10. Laboratory Analysis Units are excluded if they burn samples of materials only for the purpose of chemical or physical analysis.
  11. Materials recovery units are excluded if they combusts waste for the primary purpose of recovering metals. Examples include primary and secondary smelters.
  12. Pathological waste incineration units such as the facility's institutional waste incineration unit or very small municipal waste combustion unit are excluded from if they burn 90 percent or more by weight (on a calendar quarter basis and excluding the weight of auxiliary fuel and combustion air) of pathological waste,

low-level radioactive waste, and/or chemotherapeutic waste as defined in 40 CFR 60.2977 and you the Administrator is notified that the unit meets these criteria.

13. Small or large municipal waste combustion units are excluded if they are regulated under 40 CFR 60, Subparts AAAA, BBBB, Ea, Eb, or Cb, and are required to meet the emission limitations established in those subparts.
  14. Small power production facilities are excluded if they meet the following three requirements:
    - a. The unit qualifies as a small power-production facility under section 3(17)(C) of the Federal Power Act (16 U.S.C. 796(17)(C)).
    - b. The unit burns homogeneous waste (not including refuse-derived fuel) to produce electricity.
    - c. The Administrator is notified that the unit meets all of these criteria.
  15. Temporary-use incinerators and air curtain incinerators used in disaster recovery are excluded if it is used on a temporary basis to combust debris from a disaster or emergency such as a tornado, hurricane, flood, ice storm, high winds, or act of bioterrorism and the facility complies with the requirements in 40 CFR 60.2969.
  16. Units that combust contraband or prohibited goods are excluded if the unit is owned or operated by a government agency such as police, customs, agricultural inspection, or a similar agency to destroy only illegal or prohibited goods such as illegal drugs, or agricultural food products that can not be transported into the country or across State lines to prevent biocontamination. The exclusion does not apply to items either confiscated or incinerated by private, industrial, or commercial entities.
  17. Incinerators used for national security are excluded if they meet either of the following requirements:
    - a. The incineration unit is used solely during military training field exercises to destroy national security materials integral to the field exercises.
    - b. The incineration unit is used solely to incinerate national security materials, its use is necessary to safeguard national security, and the following exclusion request requirements are met and the Administrator has approved the request for exclusion:
      - i. The request for exclusion and supporting documentation must demonstrate both that the incineration unit is used solely to destroy national security materials and that a reliable alternative to incineration that ensures acceptable destruction of national security materials is unavailable, on either a permanent or temporary basis.
      - ii. The request for exclusion must be submitted to and approved by the Administrator prior to initial startup.
- *Exempt Solvent* - specified organic compounds that have been determined by the USEPA to have negligible photochemical reactivity and are listed in 40 CFR 51.100 (40 CFR 63.742) [**Added January 1999**].
  - *Exempted New Municipal Waste Combustors* – this includes (40 CFR 60.50b(b) through 60.50b(p)) [**Moved July 2003**]:
    1. any waste combustion unit that is capable of combusting more than 250 tons/day of municipal solid waste and is subject to a Federally enforceable permit limiting the plant wide maximum amount of municipal solid waste that may be combusted to less than or equal to 11 tons/day if the owner or operator:
      - a. notifies the USEPA Administrator of an exemption claim
      - b. provides a copy of the Federally enforceable permit
      - c. keeps records of the amount of municipal solid waste fired on a daily basis
    2. physical or operational changes made to an existing unit so it will comply with emissions guidelines
    3. a qualifying small power production facility that burns homogeneous waste (such as auto tires or used oil, but not including refuse-derived fuel) for the production of electric energy if the owner or operator:
      - a. notifies the USEPA Administrator of an exemption claim
      - b. provides data documenting that the unit qualifies for the exemption
    4. a qualifying cogeneration facility that burns homogeneous waste (such as auto tires or used oil, but not including refuse-derived fuel) for the production of electric energy and steam or forms of useful energy that are used for industrial, commercial, heating, or cooling purposes if the owner or operator:
      - a. notifies the USEPA of an exemption claim
      - b. provides data documenting that the unit qualifies for the exemption
    5. any unit combusting a single item waste stream of tires if the owner or operator:
      - a. notifies the USEPA Administrator of an exemption claim
      - b. provides data documenting that the unit qualifies for the exemption

6. any unit required to have a permit under section 3005 of the SWDA
  7. any materials recovery facility (including primary and secondary smelters) that combust waste for the primary purpose of recovering metals
  8. any cofired combustor with an aggregate capacity greater than 35 Mg/day if the owner or operator:
    - a. notifies the USEPA Administrator of an exemption claim
    - b. provides data documenting that the unit qualifies for the exemption
    - c. keeps a record on a calendar quarter basis of the weight of municipal solid waste combusted at the cofired combustor and the weight of all other fuels combusted in the cofired combustor
  9. air curtain incinerators located at a plant with an aggregate capacity greater than 35 Mg/day that combust a fuel stream composed of 100 percent yard waste are exempt from everything except the opacity limit, testing procedures, and reporting and recordkeeping requirements
  10. pyrolysis/combustion units that are an integrated part of a plastics/rubber recycling unit if the owner or operator:
    - a. keeps records of the weight of plastics, rubber, and/or rubber tires processed on a calendar quarter basis
    - b. keeps records of the weight of chemical plant feedstocks and petroleum refinery feedstocks produced and marketed on a calendar quarter basis
    - c. keeps records of the name and address of the purchaser of the feedstock
  11. cement kilns firing municipal solid waste.)
- *Exempted Site Remediation* - the requirements in 40 CFR 63, Subpart GGGGG [40 CFR 63.7880 through 63.7957, see checklist items AE.300.1.US through AE.300.12.US] do not apply if the site remediation qualifies for any of one of the following exemptions (40 CFR 63.7881(b)) **[Added April 2004]**:
    1. the site remediation only cleans up material that does not contain any of the HAP listed in Table 1 (Appendix 1-27)
    2. the site remediation will be performed under the authority of CERCLA as a remedial action or a non time-critical removal action
    3. the site remediation will be performed under a RCRA corrective action conducted at a TSDF that is either required by the facility permit issued by either the USEPA or an authorized State program; required by orders authorized under RCRA; or required by orders authorized under RCRA section 7003
    4. the site remediation is conducted at a gasoline service station to clean up remediation material from a leaking UST
    5. the site remediation is conducted at a farm or residential site.
    6. the site remediation is conducted at a research and development facility that meets the requirements under CAA section 112(c)(7).)
  - *Exhaust Damper* - a flow control device that prevents the air-perchloroethylene gas-vapor stream from exiting the dry cleaning machine into a carbon adsorber before room air is drawn into the dry cleaning machine (40 CFR 63.321).
  - *Existing* - in relation to perchloroethylene dry cleaners, it means commenced construction or reconstruction before 9 December 1991 (40 CFR 63.321).
  - *Existing* - any solvent-cleaning machine the construction or reconstruction of which was commenced on or before 29 November 1993, but did not meet the definition of a solvent-cleaning machine on 2 December 1994 because it did not use halogenated HAP solvent liquid or vapor covered under 40 CFR 63, Subpart T [40 CFR 63.460 through 63.470, see checklist items AE.116.1.US through AE.118.7.US] to remove soils, becomes an existing source when it commences to use such liquid or vapor. A solvent-cleaning machine moved within a contiguous facility or to another facility under the same ownership, constitutes an existing machine (40 CFR 63.461).
  - *Existing Affected Source* – in relation to engine test cells, an affected source is existing if you commenced construction or reconstruction of the affected source on or before 14 May 2002. A change in ownership of an existing affected source does not make that affected source a new or reconstructed affected source (40 CFR 63.9290(a)(1) **[Added July 2003]**).

- *Existing Sewage Sludge Incineration Unit* - a sewage sludge incineration unit the construction of which is commenced on or before 14 October 2010 (40 CFR 60.4930) **[Added April 2011]**.
- *Existing Site Remediation Sources*- the facility commenced construction or reconstruction of the affected source before 30 July 2002 (40 CFR 63.7882(b)) **[Added April 2004]**.
- *Existing Stationary RICE* - in relation to the NESHAPS for stationary RICE, this is defined as follows (40 CFR 63.6590(a)(1)) **[Added April 2013]**:
  1. for stationary RICE with a site rating of more than 500 brake horsepower (HP) located at a major source of HAP emissions, a stationary RICE is existing if construction or reconstruction of the stationary RICE started before 19 December 2002
  2. for stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions, a stationary RICE is existing if construction or reconstruction of the stationary RICE started before 12 June 2006
  3. for a stationary RICE located at an area source of HAP emissions, a stationary RICE is existing if construction or reconstruction of the stationary RICE started before 12 June 2006
  4. change in ownership of an existing stationary RICE does not make that stationary RICE a new or reconstructed stationary RICE.)
- *Export* - to transport a product from inside the United States to persons outside the United States, excluding any such transport on behalf of the United States military including foreign military sales under the *Arms Export Control Act* (40 CFR 98.6) **[Added January 2010]**.
- *Export* - the transport of virgin, used, or recycled class I or class II substances or products manufactured or containing class I or class II substances from inside the United States or its territories to persons outside the United States or its territories, excluding United States military bases and ships for on-board use (40 CFR 82.104(j)) **[Added July 2004]**.
- *Exporter* - the person who contracts to sell class I or class II substances or products manufactured with or containing class I or class II substances for export or transfers such substances or products to his affiliate in another country (40 CFR 82.104(k)) **[Added July 2004]**.
- *Exporter* - any person, company or organization of record that transfers for sale or for other benefit, domestic products from the United States to another country or to an affiliate in another country, excluding any such transfers on behalf of the United States military or military purposes including foreign military sales under the *Arms Export Control Act*. An exporter is not the entity merely transporting the domestic products, rather an exporter is the entity deriving the principal benefit from the transaction (40 CFR 98.6) **[Added January 2010]**.
- *Exterior Primer* - the first layer and any subsequent layers of identically formulated coating applied to the exterior surface of an aerospace vehicle or component where the component is used on the exterior of the aerospace vehicle. Exterior primers are typically used for corrosion prevention, protection from the environment, functional fluid resistance, and adhesion of subsequent exterior topcoats. Coatings that are defined as specialty coatings are not included under this definition (40 CFR 63.742) **[Added January 2000]**.*External Floating Roof* - a pontoon-type or double-deck type cover that rests on the liquid surface in a tank with no fixed roof (40 CFR 63.7957) **[Added April 2004]**.
- *Fabric Filter* - an add-on air pollution control device used to capture particulate matter by filtering gas streams through filter media, also known as a baghouse (40 CFR 62.14840) **[Added January 2004; Revised October 2004]**.
- *Fabric Filter* - an add-on air pollution control device used to capture particulate matter by filtering gas streams through filter media, also known as a baghouse (40 CFR 60.4930) **[Added April 2011]**.

- *Fabric Filter* - an add-on air pollution control device used to capture particulate matter by filtering gas streams through filter media, also known as a baghouse. A fabric filter is a dry control system (40 CFR 63.7575 and 63.11237) [Added April 2011].
- *Fabric Filter or Baghouse* - an add-on air pollution control system that removes particulate matter (PM) and nonvaporous metals emissions by passing flue gas through filter bags (40 CFR 60.51c and 62.14490) [Added October 2000].
- *Facilities Manager* - the individual in charge of purchasing, maintaining, and operating the HMIWI or the owner's or operator's representative responsible for the management of the HMIWI. Alternative titles may include director of facilities or vice president of support services (40 CFR 62.14490) [Added October 2000].
- *Facility* - all buildings, structures and operations on one contiguous site (40 CFR 61.91(b)) [Added July 2006].
- *Facility* - any physical property, plant, building, structure, source, or stationary equipment **located on one** or *more* contiguous or adjacent properties in actual physical contact or separated solely by a public roadway or other public right-of-way and under common ownership or common control, that emits or may emit any greenhouse gas. Operators of military installations may classify such installations as more than a single facility based on distinct and independent functional groupings within contiguous military properties (40 CFR 98.6) [Added January 2010].
- *Facility* - any place, or series of places, where an entity produces, imports, or maintains custody of any distillate fuel (or other product subject to the requirements of this subpart I) from the time it is received to the time custody is transferred to another entity, except as described in paragraphs 1 through 4 below (40 CFR 80.502(a)) [Added July 2006, Revised July 2010]
  1. Where an entity maintains custody of a batch of diesel fuel (or other product subject to the requirements of this subpart I) from one place in the distribution system to another place (e.g., from a pipeline to a terminal), all owned by the same entity, both places combined are considered to be one single aggregated facility, except where an entity chooses to treat components of such an aggregated facility as separate facilities. The choice made to treat these places as separate facilities may not be changed by the entity during any applicable compliance period. Except as specified in paragraph (b)(2), where compliance requirements depend upon facility-type, the entire facility must comply with the requirements that apply to its components as follows:
    - a. If an aggregated facility includes a refinery, the entire facility must comply with the requirements applicable to refineries.
    - b. If an aggregated facility includes a truck loading terminal but not a refinery, the entire facility must comply with the requirements applicable to truck loading terminals.
    - c. Situations where a refinery is aggregated with a truck loading terminal.
      - i. Where a refinery is aggregated with a truck loading terminal, diesel fuel or other product subject to the requirements of this subpart I produced by such refinery and distributed over the truck terminal rack must be included in refinery batches that may be based on shipments to a truck terminal rack tank or on the total volumes delivered to tanker trucks for a period not to exceed 1 calendar month per batch.
      - ii. Where a refinery is aggregated with a truck loading terminal, diesel fuel or other product subject to the requirements of this subpart I that were imported or produced by another refinery, and that are distributed through the refinery or truck terminal rack, must be treated as previously designated fuel for which the aggregated facility is responsible for all applicable balance and downgrade requirements under 40 CFR 80.527, 80.598, 80.599 and related recordkeeping and reporting requirements like any other distributor downstream from the refiner or importer.
  2. A refinery or import facility may not be aggregated with facilities that receive fuel from other refineries or import facilities, either directly or indirectly. For example, a refinery may not be aggregated with a terminal that receives any fuel from a common carrier pipeline. However, a refinery may be aggregated with a pipeline and terminal that are owned by the same entity and which receive no fuel from any source other

than the refinery. If a refinery or import facility is aggregated with other facilities, then the aggregated facility is treated as a refinery or import facility.

3. Retail outlets or wholesale purchaser consumers may not be aggregated with any other facility.
  4. Where an entity maintains custody of diesel fuel in one or more mobile components (e.g., rail, barge, or trucking operations) the mobile components may be aggregated as a single facility. Mobile components may also be aggregated with a facility from which they receive fuel or a facility to which they deliver fuel. However, mobile components may not be aggregated with both a facility from which they receive fuel and a facility to which they deliver fuel.
  5. An individual refinery or contiguous pipeline may not be subdivided into more than one facility. An individual terminal may not be subdivided into more than one facility unless approved by the Administrator.
- *Facility* - all contiguous or adjoining property that is under common control including properties that are separated only by a road or other public right-of-way. Common control includes properties that are owned, leased, or operated by the same entity, parent entity, subsidiary, or any combination thereof. A unit or group of units within a contiguous property that are not under common control (e.g., a wastewater treatment unit located at the facility but is owned by a different company) is a different facility (40 CFR 63.7957) [**Added April 2004**].
  - *Facility* - all buildings, structures and operations on one contiguous site (40 CFR 61.101) [**Added July 2004**].
  - *Facility Maintenance* - for the purposes of this subpart, surface coating performed as part of the routine repair or renovation of the tools, equipment, machinery, and structures that comprise the infrastructure of the affected facility and that are necessary for the facility to function in its intended capacity. Facility maintenance also includes surface coating associated with the installation of new equipment or structures, and the application of any surface coating as part of janitorial activities. Facility maintenance includes the application of coatings to stationary structures or their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs.

*Facility Maintenance* also includes the refinishing of mobile equipment in the field or at the site where they are used in service and at which they are intended to remain indefinitely after refinishing. Such mobile equipment includes, but is not limited to, farm equipment and mining equipment for which it is not practical or feasible to move to a dedicated mobile equipment refinishing facility. Such mobile equipment also includes items, such as fork trucks, that are used in a manufacturing facility and which are refinished in that same facility.

*Facility Maintenance* does not include surface coating of motor vehicles, mobile equipment, or items that routinely leave and return to the facility, such as delivery trucks, rental equipment, or containers used to transport, deliver, distribute, or dispense commercial products to customers, such as compressed gas canisters (40 CFR 63.11180) [**Added April 2011**].

- *Facility, With Respect To An Electric Power System* - the electric power system as defined in this paragraph. An electric power system is comprised of all electric transmission and distribution equipment insulated with or containing SF<sub>6</sub> or PFCs that is linked through electric power transmission or distribution lines and functions as an integrated unit, that is owned, serviced, or maintained by a single electric power transmission or distribution entity (or multiple entities with a common owner), and that is located between (40 CFR 98.308) [**Added January 2011**]:
  1. The point(s) at which electric energy is obtained from an electricity generating unit or a different electric power transmission or distribution entity that does not have a common owner, and
  2. The point(s) at which any customer or another electric power transmission or distribution entity that does not have a common owner receives the electric energy. The facility also includes servicing inventory for such equipment that contains SF<sub>6</sub> or PFCs.
- *Federal Action* - any activity engaged in by a department, agency, or instrumentality of the Federal government, or any activity that a department, agency or instrumentality of the Federal government supports in any way, provides financial assistance for, licenses, permits, or approves, other than activities related to transportation plans, programs, and projects developed, funded, or approved under title 23 U.S.C. or the Federal Transit Act (49

U.S.C. 1601 et seq.). Where the Federal action is a permit, license, or other approval for some aspect of a non-Federal undertaking, the relevant activity is the part, portion, or phase of the non-Federal undertaking that requires the Federal permit, license, or approval (40 CFR 93.152) **[Added April 2009]**.

- *Federal Agency* - for purposes of 40 CFR 93, Subpart B, a Federal department, agency, or instrumentality of the Federal government (40 CFR 93.152) **[Added April 2009]**.
- *Federal Facility* - any facility owned or operated by any department, commission, agency, office, bureau or other unit of the government of the United States of America except for facilities owned or operated by the Department of Energy (40 CFR 61.101) **[Added July 2004]**.
- *Federally Enforceable* - all limitations and conditions that are enforceable by EPA including the requirements of 40 CFR 60, 40 CFR 61, and 40 CFR 63, requirements within any applicable State implementation plan, and any permit requirements established under 40 CFR 52.21 or under 40 CFR 51.18 and 40 CFR 51.24 (40 CFR 60.51b) **[Added July 2006]**.
- *Federally Enforceable* - all limits and conditions the Administrator can enforce (including the requirements of 40 CFR Parts 60, 61, and 63), requirements in a State's implementation plan, and any permit requirements established under 40 CFR 52.21 or under 40 CFR 51.18 and 40 CFR 51.24 (40 CFR 60.1465) **[Added April 2001]**.
- *Federally Enforceable* - all limitations and conditions that are enforceable by the Administrator, including the requirements of 40 CFR 60 and 61, requirements within any applicable State Implementation Plan, and any permit requirements established under 40 CFR 52.21 or under 40 CFR 51.18 and 51.24 (40 CFR 60.41b and 60.41c) **[Revised October 2004; Revised July 2007; Citation Revised April 2011]**.
- *Federally Enforceable* - all limitations and conditions that are enforceable by the EPA Administrator, including, but not limited to, the requirements of 40 CFR parts 60, 61, 63, and 65, requirements within any applicable state implementation plan, and any permit requirements established under 40 CFR 52.21 or under 40 CFR 51.18 and 40 CFR 51.24 (40 CFR 63.7575 and 63.11237) **[Added April 2013]**.
- *Feed* - the prepared and mixed materials, which include but are not limited to materials such as limestone, clay, shale, sand, iron ore, mill scale, cement kiln dust and fly ash that are fed to the kiln. Feed does not include the fuels used in the kiln to produce heat to form the clinker product (40 CFR 98.6) **[Added January 2010]**.
- *Feedstock* - raw material inputs to a process that are transformed by reaction, oxidation, or other chemical or physical methods into products and by-products. Supplemental fuel burned to provide heat or thermal energy is not a feedstock (40 CFR 98.6) **[Added January 2010]**.
- *Field Gas* - gas extracted from a production well before the gas enters a natural gas processing plant (40 CFR 68.3) **[Added January 2005]**.
- *Filter* - a porous device through which PCE is passed to remove contaminants in suspension. Examples include, but are not limited to, lint filter, button trap, cartridge filter, tubular filter, regenerative filter, prefilter, polishing filter, and spin disc filter (40 CFR 63.321) **[Added October 2006]**.
- *Final Cover* - materials used at a landfill to meet final closure regulations of the competent federal, state, or local authority (40 CFR 98.348) **[Added January 2017]**.
- *Fire-Fighting Turbine* - any stationary gas turbine that is used solely to pump water for extinguishing fires (40 CFR 60.331) **[Added October 2004]**.
- *Fire Pump Engine* - an emergency stationary internal combustion engine certified to NFPA requirements that is used to provide power to pump water for fire suppression or protection (40 CFR 60.4219) **[Added October 2006]**.

- *First Calendar Half* - the period that starts on January 1 and ends on June 30 in any year (40 CFR 60.1465) **[Added April 2001]**.
- *Fischer-Tropsch Process* - a catalyzed chemical reaction in which synthesis gas, a mixture of carbon monoxide and hydrogen, is converted into liquid hydrocarbons of various forms (40 CFR 98.6) **[Added January 2010]**.
- *Fixed Roof* - a cover that is mounted on a unit in a stationary position and does not move with fluctuations in the level of the liquid managed in the unit (40 CFR 63.7957) **[Added April 2004]**.
- *Flame Zone* - the portion of the combustion chamber in a boiler or process heater occupied by the flame envelope (40 CFR 63.7957) **[Added April 2004]**.
- *Flare* - a combustion device, whether at ground level or elevated, that uses an open flame to burn combustible gases with combustion air provided by uncontrolled ambient air around the flame (40 CFR 98.6) **[Added January 2010]**.
- *Flex-Fuel Vehicle* - has the same meaning as flexible-fuel vehicle as defined in 40 CFR 86.1803-01 (40 CFR 80.1500) **[Added October 2011]**.
- *Floating Roof* - a cover consisting of a double deck, pontoon single deck, or internal floating cover which rests upon and is supported by the liquid being contained, and is equipped with a continuous seal (40 CFR 63.7957) **[Added April 2004]**.
- *Flow Indicator* - a device that indicates whether gas is flowing, or whether the valve position would allow gas to flow in a bypass line (40 CFR 63.7957) **[Added April 2004]**.
- *Flowmeter* - a device that measures the mass or volumetric rate of flow of a gas, liquid, or solid moving through an open or closed conduit (e.g. flowmeters include, but are not limited to, rotameters, turbine meters, coriolis meters, orifice meters, ultra-sonic flowmeters, and vortex flowmeters) (40 CFR 98.6) **[Added January 2010]**.
- *Fluidized Bed Boiler* - a boiler utilizing a fluidized bed combustion process that is not a pulverized coal boiler (40 CFR 63.7575 and 63.11237) **[Added April 2013]**.
- *Fluidized Bed Boiler With An Integrated Fluidized Bed Heat Exchanger* - a boiler utilizing a fluidized bed combustion where the entire tube surface area is located outside of the furnace section at the exit of the cyclone section and exposed to the flue gas stream for conductive heat transfer. This design applies only to boilers in the unit designed to burn coal/solid fossil fuel subcategory that fire coal refuse (40 CFR 63.7575) **[Added April 2013]**.
- *Fluidized Bed Combustion* - a process where a fuel is burned in a bed of granulated particles, which are maintained in a mobile suspension by the forward flow of air and combustion products (40 CFR 63.11237) **[Added April 2013]**.
- *Fluidized Bed Combustion* - a process where a fuel is burned in a bed of granulated particles, which are maintained in a mobile suspension by the forward flow of air and combustion products (40 CFR 63.7575) **[Added April 2011]**.
- *Fluidized Bed Combustion Technology* - combustion of fuel in a bed or series of beds (including but not limited to bubbling bed units and circulating bed units) of limestone aggregate (or other sorbent materials) in which these materials are forced upward by the flow of combustion air and the gaseous products of combustion (40 CFR 60.41b) **[Added July 2007]**.
- *Fluidized Bed Combustion Technology* - a device wherein fuel is distributed onto a bed (or series of beds) of limestone aggregate (or other sorbent materials) for combustion; and these materials are forced upward in the

device by the flow of combustion air and the gaseous products of combustion. Fluidized bed combustion technology includes, but is not limited to, bubbling bed units and circulating bed units (40 CFR 60.41c) **[Added July 2007]**.

- *Fluidized Bed Combustion Unit* - a unit where municipal waste is combusted in a fluidized bed of material. The fluidized bed material may remain in the primary combustion zone or may be carried out of the primary combustion zone and returned through a recirculation loop (40 CFR 60.1465) **[Added April 2001]**.
- *Fluidized Bed Incinerator* - an enclosed device in which organic matter and inorganic matter in sewage sludge are combusted in a bed of particles in the combustion chamber gas (40 CFR 503.41(e)).
- *Fluidized Bed Incinerator* - an enclosed device in which organic matter and inorganic matter in sewage sludge are combusted in a bed of particles suspended in the combustion chamber gas (40 CFR 60.4930) **[Added April 2011]**.
- *Fluorinated Greenhouse Gas* - sulfur hexafluoride (SF<sub>6</sub>), nitrogen trifluoride (NF<sub>3</sub>), and any fluorocarbon except for controlled substances as defined at 40 CFR 82, subpart A and substances with vapor pressures of less than 1 mm of Hg absolute at 25° C. With these exceptions, “fluorinated GHG” includes but is not limited to any hydrofluorocarbon, any perfluorocarbon, any fully fluorinated linear, branched or cyclic alkane, ether, tertiary amine or aminoether, any perfluoropolyether, and any hydrofluoropolyether (40 CFR 98.6) **[Added January 2010]**.
- *Flush Cleaning* - the removal of contaminants such as dirt, grease, oil, and coatings from an aerospace vehicle or component or coating equipment by passing solvent over, into, or through the item being cleaned. The solvent may simply be poured into the item being cleaned and then drained, or be assisted by air or hydraulic pressure, or by pumping. Hand-wipe cleaning operations where wiping, scrubbing, mopping, or other hand action are used are not included (40 CFR 63.742) **[Added January 1999]**.
- *Follow-up Verification Test* - those tests that involve checking the repairs to an appliance after a successful initial verification test and after the appliance has returned to normal operating characteristics and conditions to verify that the repairs were successful. Potential methods for follow-up verification tests include, but are not limited to, the use of soap bubbles as appropriate, electronic or ultrasonic leak detectors, pressure or vacuum tests, fluorescent dye and black light, infrared or near infrared tests, and handheld gas detection devices (40 CFR 82.152) **[Revised January 2017]**.
- *Food Processing* - an operation used to manufacture or process meat, poultry, fruits, and/or vegetables as defined under NAICS 3116 (Meat Product Manufacturing) or NAICS 3114 (Fruit and Vegetable Preserving and Specialty Food Manufacturing). For information on NAICS codes, see <http://www.census.gov/eos/www/naics/> (40 CFR 98.358) **[Added July 2010]**.
- *Four-hour Block Average or 4-h Block Average* - the average of all hourly emission concentrations or parameter levels when the municipal waste combustion unit operates and combusts municipal solid waste measured over any of six 4-hour periods (40 CFR 60.1465) **[Added April 2001]**:
  1. 12:00 midnight to 4:00 a.m.
  2. 4:00 a.m. to 8:00 a.m.
  3. 8:00 a.m. to 12:00 noon.
  4. 12:00 noon to 4:00 p.m.
  5. 4:00 p.m. to 8:00 p.m.
  6. 8:00 p.m. to 12:00 midnight.
- *Four-stroke Engine* - any type of engine which completes the power cycle in two crankshaft revolutions, with intake and compression strokes in the first revolution and power and exhaust strokes in the second revolution (40 CFR 60.4248 and 63.6675) **[Added July 2004; Revised April 2008]**.

- *Fossil Fuel* - natural gas, petroleum, coal, and any form of solid, liquid, or gaseous fuel derived from such materials for the purpose of creating useful heat (40 CFR 60.41 and 60.41a; 40 CFR 98.6) [**Revised July 2007, Revised January 2011**].
- *Fossil Fuel* - natural gas, oil, coal, and any form of solid, liquid, or gaseous fuel derived from such material (40 CFR 63.7575) [**Added January 2016**].
- *Fossil Fuel* - natural gas, oil, coal, and any form of solid, liquid, or gaseous fuel derived from such material (40 CFR 63.11237) [**Added October 2016**].
- *Fossil Fuel and Wood Residue-Fired Steam Generating Unit* - a furnace or boiler used in the process of burning fossil fuel and wood residue for the purpose of producing steam by heat transfer (40 CFR 60.41) [**Added July 2007**].
- *Fossil Fuel-Fired* - powered by combustion of fossil fuel, alone or in combination with any other fuel, regardless of the percentage of fossil fuel consumed (40 CFR 98.6) [**Added January 2010**].
- *Fossil-Fuel-Fired Steam Generating Unit* - a furnace or boiler used in the process of burning fossil fuel for the purpose of producing steam by heat transfer (40 CFR 60.41) [**Added July 2007**].
- *Force Majeure* - an event that will be or has been caused by circumstances beyond the control of the affected facility, its contractors, or any entity controlled by the affected facility that prevents the owner or operator from complying with the regulatory requirement to conduct performance tests within the specified timeframe despite the affected facility's best efforts to fulfill the obligation. Examples of such events are acts of nature, acts of war or terrorism, or equipment failure or safety hazard beyond the control of the affected facility (40 CFR 61.2 and 63.2) [**Added July 2007**].
- *Fraction Emitted* - the fraction of the mass of HAP entering the POTW wastewater treatment plant which is emitted prior to secondary treatment. The value is calculated using the following steps (40 CFR 63.1583) [**Added January 2000**]:
  1. Determine mass emissions from all equipment up to, but not including, secondary treatment for each HAP listed in Table 1 to 40 CFR 63, Subpart DD [40 CFR 63.680 through 63.698]
  2. Sum the HAP emissions ( $\Sigma E$ )
  3. Sum the HAP mass loadings ( $\Sigma L$ ) in the influent to the POTW wastewater treatment plant
  4. Calculate the fraction emitted (fe monthly) using  $fe\ monthly = \Sigma E / \Sigma L$ .
- *Fractionators* - plants that produce fractionated natural gas liquids (NGLs) extracted from produced natural gas and separate the NGLs individual component products: ethane, propane, butanes and pentane-plus (C5+). Plants that only process natural gas but do not fractionate NGLs further into component products are not considered fractionators. Some fractionators do not process production gas, but instead fractionate bulk NGLs received from natural gas processors. Some fractionators both process natural gas and fractionate bulk NGLs received from other plants (40 CFR 98.6) [**Added January 2010**].
- *Freeboard Area* - for a batch cleaning machine, this is the area within the solvent-cleaning machine that extends from the solvent/air interface to the top of the solvent-cleaning machine; for an in-line cleaning machine, it is the area within the solvent-cleaning machine that extends from the solvent/air interface to the bottom of the entrance or exit opening, whichever is lower (40 CFR 63.461).
- *Freeboard Ratio* - the ratio of the solvent-cleaning machine freeboard height to the smaller interior dimensions (length, width, or diameter) of the solvent-cleaning machine (40 CFR 63.461).
- *Freshly Manufactured Engine* - an engine that has not been placed into service. An engine becomes freshly manufactured when it is originally produced (40 CFR 60.4219 and 60.4248) [**Added July 2011**].

- *Fuel* - solid, liquid or gaseous combustible material (40 CFR 98.6) **[Added January 2010]**.
- *Fuel Cell* - a boiler type in which the fuel is dropped onto suspended fixed grates and is fired in a pile. The refractory-lined fuel cell uses combustion air preheating and positioning of secondary and tertiary air injection ports to improve boiler efficiency. Fluidized bed, dutch oven, pile burner, hybrid suspension grate, and suspension burners are not part of the fuel cell subcategory (40 CFR 63.7575) **[Revised April 2013]**.
- *Fuel Dispenser* - the apparatus used to dispense fuel into motor vehicles or nonroad vehicles, engines or equipment, or into a portable fuel container as defined at 40 CFR 59.680 (40 CFR 80.1500) **[Added October 2011]**.
- *Fuel Gas* - gas generated at a petroleum refinery or petrochemical plant and that is combusted separately or in any combination with any type of gas (40 CFR 98.6) **[Added January 2011]**.
- *Fuel Pretreatment* - a process that removes a portion of the sulfur in a fuel before combustion of the fuel in a steam generating unit (40 CFR 60.41b and 60.41c) **[Revised July 2007]**.
- *Fuel Type* - each category of fuels that share a common name or classification. Examples include, but are not limited to, bituminous coal, sub-bituminous coal, lignite, anthracite, biomass, distillate oil, residual oil. Individual fuel types received from different suppliers are not considered new fuel types (40 CFR 63.11237) **[Added April 2011]**.
- *Fuel Type* - each category of fuels that share a common name or classification. Examples include, but are not limited to, bituminous coal, sub-bituminous coal, lignite, anthracite, biomass, distillate oil, residual oil. Individual fuel types received from different suppliers are not considered new fuel types (40 CFR 63.7575) **[Revised April 2013]**.
- *Fugitive Emissions* - air pollutants entering into the atmosphere from other than a stack chimney, vent, or other functionally equivalent opening. Example: vapors, dust, and fumes (40 CFR 51.301j).
- *Full Capacity* - operation of the steam generating unit at 90 percent or more of the maximum steady-state design heat input capacity (40 CFR 60.41b) **[Added July 2007]**.
- *Full Charge* - the amount of refrigerant required for normal operating characteristics and conditions of the appliance as determined by using one or a combination of the following four methods (40 CFR 82.152) **[Revised April 2005; Revised January 2017]**:
  1. Use of the equipment manufacturer's determination of the full charge;
  2. Use of appropriate calculations based on component sizes, density of refrigerant, volume of piping, and other relevant considerations;
  3. Use of actual measurements of the amount of refrigerant added to or evacuated from the appliance, including for seasonal variances; and/or
  4. Use of an established range based on the best available data regarding the normal operating characteristics and conditions for the appliance, where the midpoint of the range will serve as the full charge.
- *Full Load* - the maximum number of items that does not impede proper air removal, humidification of the load, or sterilant penetration and evacuation in the sterilization unit (40 CFR 63.10448) **[Added January 2008]**.
- *Furnace Slag* - a by-product formed in metal melting furnaces when slagging agents, reducing agents, and/or fluxes (e.g., coke ash, limestone, silicates) are added to remove impurities from the molten metal (40 CFR 98.6) **[Added July 2010]**.
- *GPA* - the Gas Processors Association.

- *GTBA* (Gasoline-Grade Tertiary Butyl Alcohol,  $(\text{CH}_3)_3\text{COH}$ ), or t-butanol, - an alcohol as described in "Oxygenates" (40 CFR 98.6) [Added January 2010].
- *Garrison Facility* - any permanent military installation (40 CFR 60.331) [Added October 2004].
- *Gas Collection System or Landfill Gas Collection System* - a system of pipes used to collect landfill gas from different locations in the landfill by means of a fan or similar mechanical draft equipment (forced convection) to a single location for treatment (thermal destruction) or use. Landfill gas collection systems may also include knock-out or separator drums and/or a compressor. A single landfill may have multiple gas collection systems. Landfill gas collection systems do not include "passive" systems, whereby landfill gas flows naturally (without forced convection) to the surface of the landfill where an opening or pipe (vent) is installed to allow for the flow of landfill gas to the atmosphere or to a remote flare installed to combust landfill gas that is passively emitted from the vent. Landfill gas collection systems also do not include "active venting" systems, whereby landfill gas is conveyed to the surface of the landfill using forced convection, but the landfill gas is never recovered or thermally destroyed prior to release to the atmosphere (40 CFR 98.6) [Revised January 2017].
- *Gas-fired Boiler* - includes any boiler that burns gaseous fuels not combined with any solid fuels and burns liquid fuel only during periods of gas curtailment, gas supply interruption, startups, or for periodic testing, maintenance, or operator training on liquid fuel. Periodic testing, maintenance, or operator training on liquid fuel shall not exceed a combined total of 48 hours during any calendar year (40 CFR 63.11237) [Added April 2013, Revised October 2016].
- *Gas-Fired Unit* - a stationary combustion unit that derives more than 50 percent of its annual heat input from the combustion of gaseous fuels, and the remainder of its annual heat input from the combustion of fuel oil or other liquid fuels (40 CFR 98.6) [Added January 2010].
- *Gas Monitor* - an instrument that continuously measures the concentration of a particular gaseous species in the effluent of a stationary source (40 CFR 98.6) [Added January 2010].
- *Gas Turbine Model* - a group of gas turbines having the same nominal air flow, combustor inlet pressure, combustor inlet temperature, firing temperature, turbine inlet temperature and turbine inlet pressure (40 CFR 60.331) [Added October 2004].
- *Gaseous Fuel* - a material used for combustion which is in the gaseous state at standard atmospheric temperature and pressure conditions (40 CFR 63.6675) [Added July 2004].
- *Gaseous Fuel* - a material that is in the gaseous state at standard atmospheric temperature and pressure conditions and that is combusted to produce heat and/or energy (40 CFR 98.6) [Added January 2010].
- *Gaseous Fuel* - any fuel that is a gas at ISO conditions. This includes, but is not limited to, natural gas and gasified coal (including coke oven gas) (40 CFR 60.41b) [Added July 2007; Revised April 2009].
- *Gaseous Fuel* - includes, but is not limited to, natural gas, process gas, landfill gas, coal derived gas, refinery gas, and biogas. Blast furnace gas and process gases that are regulated under another subpart of 40 CFR 63, or part 60, part 61, or part 65 of this chapter, are exempted from this definition (40 CFR 63.7575) [Revised April 2013].
- *Gaseous Fuels* - includes, but is not limited to, natural gas, process gas, landfill gas, coal derived gas, refinery gas, hydrogen, and biogas (40 CFR 63.11237) [Added April 2011].
- *Gasification* - the conversion of a solid or liquid raw material into a gas (40 CFR 98.6) [Added January 2010].
- *Gasoline* - any petroleum distillate or petroleum distillate/alcohol blend having a Reid vapor pressure of 27.6 kPa (4.0 psia) or greater which is used as a fuel for internal combustion engines. Aviation gasoline is included in this definition (40 CFR 63.2406) [Added April 2004].

- *Gasoline* - any fuel sold in any State for use in motor vehicles and motor vehicle engines, or nonroad or stationary engines, and commonly or commercially known or sold as gasoline (40 CFR 60.4248 and 40 CFR 63.6675) **[Added April 2008]**.
- *Gasoline* - any fuel sold in any State for use in motor vehicles and motor vehicle engines, and commonly or commercially known or sold as gasoline. (40 CFR 80.2(c) and 80.1500). NOTE: State means a State, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa and the Commonwealth of the Northern Mariana Islands **[Added January 2006, Revised October 2011]**.
- *Gasoline Blending Stock, Blendstock, or Component* - any liquid compound which is blended with other liquid compounds to produce gasoline (40 CFR 80.2(s)) **[Added October 2011]**.
- *Gasoline Cargo Tank* - a delivery tank truck or railcar which is loading gasoline or which has loaded gasoline on the immediately previous load (40 CFR 63.11132) **[Added April 2008]**.
- *Gasoline Carrier* - any distributor who transports or stores, or causes the transportation or storage of, gasoline or diesel fuel without taking title to or otherwise having any ownership of the gasoline, and without altering either the quality or quantity of the gasoline or diesel fuel (40 CFR 80.2).
- *Gasoline Dispensing Facility (GDF)* - any stationary facility which dispenses gasoline into the fuel tank of a motor vehicle (40 CFR 63.11132) **[Added April 2008]**.
- *Gasoline Distributor* - any person who transports or stores or causes the transportation or storage of gasoline or diesel fuel at any point between any gasoline refinery or importer's facility and any retail outlet or wholesale purchaser consumer facility (40 CFR 80.2).
- *Gasoline – Other* - any gasoline that is not defined elsewhere, including GTAB (gasoline treated as blendstock) (40 CFR 98.6) **[Added January 2010]**.
- *Gasoline Treated as Blendstock (GTAB)* - imported gasoline that is excluded from the import facility's compliance calculations, but is treated as blendstock in a related refinery that includes the GTAB in its refinery compliance calculations (40 CFR 80.2(ww)) **[Added January 2006]**.
- *Global Warming Potential (GWP)* - how much a given mass of a chemical contributes to global warming over a given time period compared to the same mass of carbon dioxide. Carbon dioxide's global warming potential is defined as 1.0 (48 CFR 2.101(b)(2)) **[Added July 2016]**.
- *Global Warming Potential (GWP)* - the ratio of the time-integrated radiative forcing from the instantaneous release of one kilogram of a trace substance relative to **that of one kilogram-** of a reference gas, i.e., CO<sub>2</sub> (40 CFR 98.6) **[Added January 2010]**.
- *Glycol Dehydration Unit* - a device in which a liquid glycol (including, but not limited to, ethylene glycol, diethylene glycol, or triethylene glycol) absorbent directly contacts a natural gas stream and absorbs water in a contact tower or absorption column (absorber). The glycol contacts and absorbs water vapor and other gas stream constituents from the natural gas and becomes "rich" glycol. This glycol is then regenerated in the glycol dehydration unit reboiler. The "lean" glycol is then recycled (40 CFR 63.6175 and 63.6675) **[Added April 2004]**.
- *Greenhouse Gas (GHG)* - carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), sulfur hexafluoride (SF<sub>6</sub>), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and other fluorinated greenhouse gases as defined in this section (40 CFR 98.6) **[Added January 2010]**.
- *Gross Output* - the gross useful work performed by the steam generated. For units generating only electricity, the gross useful work performed is the gross electrical output from the turbine/generator set. For cogeneration units, the gross useful work performed is the gross electrical or mechanical output plus 75 percent of the useful thermal

output measured relative to ISO conditions that is not used to generate additional electrical or mechanical output or to enhance the performance of the unit (i.e., steam delivered to an industrial process) (40 CFR 60.41b) **[Added July 2007; Revised April 2009]**.

- *Gross Useful Output* - the gross useful work performed by the stationary combustion turbine system. For units using the mechanical energy directly or generating only electricity, the gross useful work performed is the gross electrical or mechanical output from the turbine/generator set. For combined heat and power units, the gross useful work performed is the gross electrical or mechanical output plus the useful thermal output (i.e., thermal energy delivered to a process) (40 CFR 60.4420) **[Added April 2009]**.
- *Halogenated Hazardous Air Pollutant (HAP) Solvent* - methylene chloride (CAS No. 75-09-2), perchloroethylene (CAS No. 127-18-4), trichloroethylene (CAS No. 79-01-6), 1,1,1-trichloroethane (CAS No. 71-55-6), carbon tetrachloride (CAS No. 56-23-5), and chloroform (CAS 67-66-3) (40 CFR 63.461).
- *Halogenated Hydrocarbon Detector* - a portable device capable of detecting vapor concentrations of PCE of 25 ppmv and indicating a concentration of 25 ppmv or greater by emitting an audible or visual signal that varies as the concentration changes (40 CFR 63.321) **[Added October 2006]**.
- *Halon* - any of the Class I, Group II substances listed in Appendix A of 40 CFR 82, Subpart A [40 CFR 82.1 through 82.24, see checklist items AE.85.6.US, AE.95.4.US through AE.95.7.US]. This group consists of the three halogenated hydrocarbons known as Halon 1211, Halon 1301, and Halon 2402, and all isomers of these chemicals (40 CFR 82.260) **[Added March 1998]**.
- *Halon Blend* - any mixture or combination of substances that contains two or more halons (40 CFR 82.260) **[Added March 1998]**.
- *Halon-containing Equipment* - equipment used to store, transfer, and/or disperse halon (40 CFR 82.260) **[Added March 1998]**.
- *Halon Product* - any mixture or combination of substances that contains only one halon (e.g., Halon 1301 plus dinitrogen gas (40 CFR 82.260) **[Added March 1998]**.
- *Hand-wipe Cleaning Operation* - the removal of contaminants such as dirt, grease, oil, and coatings from an aerospace vehicle or component by physically rubbing it with a material such as a rag, paper, or cotton swab that has been moistened with a cleaning solvent (40 CFR 63.742) **[Added January 1999]**.
- *HAP* - hazardous air pollutants (40 CFR 63.1583) **[Added January 2000]**.
- *Hazardous Air Pollutant (HAP)* - any air pollutant listed in or pursuant to section 112(b) of the Act [NOTE: See <http://www.epa.gov/ttn/atw/188polls.html>] (40 CFR 63.742, 63.6175, and 63.6675) **[Added January 1999, Citation Revised April 2004]**.
- *HCFC-141b Exemption Allowances* - the privileges granted to a HCFC-141b formulator; an agency, department, or instrumentality of the U.S.; or a non-governmental space vehicle entity by 40 CFR 82, Subpart A [40 CFR 82.1 through 82.24, see checklist items AE.85.6.US, AE.95.4.US through AE.95.7.US] to order production of or to import HCFC-141b, as determined in accordance with 40 CFR 82.16(h) (40 CFR 82.3) **[Added April 2003]**.
- *Heat Input* - heat derived from combustion of fuel in a steam generating unit and does not include the heat derived from preheated combustion air, recirculated flue gases, or exhaust gases from other sources (such as stationary gas turbines, internal combustion engines, and kilns) (40 CFR 60.41c) **[Revised July 2007]**.
- *Heat Input* - heat derived from combustion of fuel in a boiler or process heater and does not include the heat input from preheated combustion air, recirculated flue gases, or exhaust gases from other sources such as gas turbines,

internal combustion engines, kilns, etc (40 CFR 60.41b) [Added October 2004; Revised July 2007; Citation Revised April 2011].

- *Heat Input* - heat derived from combustion of fuel in a boiler or process heater and does not include the heat input from preheated combustion air, recirculated flue gases, returned condensate, or exhaust gases from other sources such as gas turbines, internal combustion engines, kilns, etc (40 CFR 63.7575) [Added April 2013].
- *Heat Input* - heat derived from combustion of fuel in a boiler and does not include the heat input from preheated combustion air, recirculated flue gases, returned condensate, or exhaust gases from other sources such as gas turbines, internal combustion engines, kilns (40 CFR 63.11237) [Revised April 2013].
- *Heat Recovery Steam Generating Unit* - a unit where the hot exhaust gases from the combustion turbine are routed in order to extract heat from the gases and generate steam, for use in a steam turbine or other device that utilizes steam. Heat recovery steam generating units can be used with or without duct burners (40 CFR 60.4420) [Added April 2009].
- *Heat Release Rate* - the steam generating unit design heat input capacity (in MW or Btu/hr) divided by the furnace volume (in cubic meters or cubic feet); the furnace volume is that volume bounded by the front furnace wall where the burner is located, the furnace side waterwall, and extending to the level just below or in front of the first row of convection pass tubes (40 CFR 60.41b) [Added July 2007].
- *Heat Transfer Medium* - any material that is used to transfer heat from one point to another point (40 CFR 60.41b and 60.41c) [Added July 2007].
- *Heating Oil* - any 1, 2, or non-petroleum diesel blend that is sold for use in furnaces, boilers, and similar applications and which is commonly or commercially known or sold as heating oil, fuel oil, and similar trade names, and that is not jet fuel, kerosene, or MVNRLM diesel fuel (40 CFR 80.2(ccc)) [Added July 2006, Revised July 2010].
- *Heavy Gas Oils* - petroleum distillates with an approximate boiling range from 651 °F to 1,000 °F (40 CFR 98.6) [Added January 2010].
- *Heavy Liquid* - includes residual oil and any other liquid fuel not classified as a light liquid (40 CFR 63.7575) [Added April 2013].
- *Heel* - the amount of a controlled substance that remains in a container after it is discharged or off-loaded (that is no more than ten percent of the volume of the container) (40 CFR 82.3) [Added October 2006].
- *Heel* - the amount of gas that remains in a shipping container after it is discharged or off-loaded (that is no more than ten percent of the volume of the container) (40 CFR 98.6) [Added January 2010].
- *High-air Phase* - the stage of the batch operating cycle when the primary chamber reaches and maintains maximum operating temperatures (40 CFR 60.51c and 62.14490) [Added October 2000].
- *High Efficiency Particulate Air (HEPA) Filter* - a filter that has a 99.97 percent reduction efficiency for 0.3 micron aerosol (40 CFR 63.742) [Added January 1999].
- *High Global Warming Potential Hydrofluorocarbons* - any hydrofluorocarbons in a particular end use for which EPA's Significant New Alternatives Policy (SNAP) program has identified other acceptable alternatives that have lower global warming potential. The SNAP list of alternatives is found at 40 CFR part 82, subpart G, with supplemental tables of alternatives available at <http://www.epa.gov/snap/> (48 CFR 2.101(b)(2)) [Added July 2016]

- *High Heat Release Rate* - a heat release rate greater than 730,000 J/sec-m<sup>3</sup> (70,000 Btu/hr-ft<sup>3</sup>) (40 CFR 60.41b) **[Added July 2007]**.
- *High Heat Value (HHV)* - the high or gross heat content of the fuel with the heat of vaporization included. The water is assumed to be in a liquid state (40 CFR 98.6) **[Added January 2010]**.
- *High-pressure Appliance* - an appliance that uses a refrigerant with a liquid phase saturation pressure between 170 psia and 355 psia at 104 °F. Examples include but are not limited to appliances using R-22, R-407A, R-407C, R-410A, and R-502 (40 CFR 82.152) **[Revised April 2004; Revised January 2017]**.
- *High Throughput Transfer Rack* - those transfer racks that transfer into transport vehicles (for existing affected sources) or into transport vehicles and containers (for new affected sources) a total of 11.8 million L/yr or greater of organic liquids (40 CFR 63.2406) **[Added January 2007]**.
- *High Volume Low Pressure (HVLP) Spray Equipment* - spray equipment that is used to apply coating by means of a spray gun that operates at 10.0 psig of atomizing air pressure or less at the air cap (40 CFR 63.742) **[Added January 1999]**.
- *High-volume, Low-pressure (HVLP) Spray Equipment* - spray equipment that is permanently labeled as such and used to apply any coating by means of a spray gun which is designed and operated between 0.1 and 10 pounds per square inch gauge (psig) air atomizing pressure measured dynamically at the center of the air cap and at the air horns (40 CFR 63.11180) **[Added April 2011]**.
- *Hospital* - a facility that provides medical care and treatment for patients who are acutely ill or chronically ill on an inpatient basis under supervision of licensed physicians and under nursing care offered 24 h/day. Hospitals include diagnostic and major surgery facilities but exclude doctor's offices, clinics, or other facilities whose primary purpose is to provide medical services to humans or animals on an outpatient basis (40 CFR 63.10448) **[Added January 2008]**.
- *Hospital* - any facility which has an organized medical staff, maintains at least six inpatient beds, and where the primary function of the institution is to provide diagnostic and therapeutic patient services and continuous nursing care primarily to human inpatients who are not related and who stay on average in excess of 24 h per admission. This definition does not include facilities maintained for the sole purpose of providing nursing or convalescent care to human patients who generally are not acutely ill but who require continuing medical supervision (40 CFR 60.51c and 62.14490) **[Added October 2000]**.
- *Hospital Central Services Staff* - a healthcare professional, including manager and technician, who is either directly involved in or responsible for sterile processing at a hospital (40 CFR 63.10448) **[Added January 2008]**.
- *Hospital/Medical/Infectious Waste Incinerator or HMIWI or HMIWI Unit* - any device that combusts any amount of hospital waste and/or medical/infectious waste (40 CFR 60.51c) **[Added December 1997]**.
- *Hospital/Medical/Infectious Waste Incinerator (HMIWI) or HMIWI Unit* - any device that combusts any amount of hospital waste and/or medical/infectious waste (40 CFR 60.51c and 62.14490) **[Added October 2000]**.
- *Hospital/Medical/Infectious Waste Incinerator Operator or HMIWI Operator* - any person who operates, controls or supervises the day-to-day operation of an HMIWI (40 CFR 62.14490) **[Added October 2000]**.
- *Hospital Waste* - discards generated at a hospital, except unused items returned to the manufacturer. The definition of hospital waste does not include human corpses, remains, and anatomical parts that are intended for interment or cremation (40 CFR 60.51c and 62.14490) **[Added October 2000]**.
- *Hot Water Heater* - a closed vessel with a capacity of no more than 120 U.S. gallons in which water is heated by combustion of gaseous, liquid, or biomass/bio-based solid fuel and is withdrawn for use external to the vessel.

Hot water boilers (i.e., not generating steam) combusting gaseous, liquid, or biomass fuel with a heat input capacity of less than 1.6 million Btu per hour are included in this definition. The 120 U.S. gallon capacity threshold to be considered a hot water heater is independent of the 1.6 MMBtu/hr heat input capacity threshold for hot water boilers. Hot water heater also means a tankless unit that provides on demand hot water (40 CFR 63.7575 and 63.11237) **[Revised April 2013]**.

- *Hot Work* - work involving electric or gas welding, cutting, brazing, or similar flame or spark-producing operations (40 CFR 68.3) **[Added January 2005]**.
- *Hourly Average* - the arithmetic mean of all measurements taken during 1 h. At least two measurements must be taken during the hour (40 CFR 503.41(f)).
- *Hourly Average* - the arithmetic average of at least four CMS data values representing the four 15-minute periods in an hour, or at least two 15-min data values during an hour when CMS calibration, quality assurance, or maintenance activities are being performed (40 CFR 63.7575) **[Added April 2011]**.
- *Hourly Average* - the arithmetic average of at least four CMS data values representing the four 15-minute periods in an hour, or at least two 15-minute data values during an hour when CMS calibration, quality assurance, or maintenance activities are being performed (40 CFR 63.11237) **[Added April 2013]**.
- *Household Waste* - includes material discarded by single and multiple residential dwellings, hotels, motels, and other similar permanent or temporary housing (40 CFR 60.51a).
- *Hybrid Suspension Grate Boiler* - a boiler designed with air distributors to spread the fuel material over the entire width and depth of the boiler combustion zone. The biomass fuel combusted in these units exceeds a moisture content of 40 percent on an as-fired annual heat input basis as demonstrated by monthly fuel analysis. The drying and much of the combustion of the fuel takes place in suspension, and the combustion is completed on the grate or floor of the boiler. Fluidized bed, dutch oven, and pile burner designs are not part of the hybrid suspension grate boiler design category (40 CFR 63.7575) **[Revised April 2013; Revised January 2016]**.
- *Hydrofluorocarbons* - compounds that contain only hydrogen, fluorine, and carbon (48 CFR 2.101(b)(2)) **[Added July 2016]**
- *Hydrofluorocarbons (HFCs)* - a class of GHGs consisting of hydrogen, fluorine, and carbon (40 CFR 98.6) **[Added January 2010]**.
- *Ice Fog* - an atmospheric suspension of highly reflective ice crystals (40 CFR 60.331) **[Added October 2004]**.
- *Idling Mode* - the time period when a solvent-cleaning machine is not actively cleaning parts and the sump heating coils, if present, are turned on (40 CFR 63.461).
- *Idling Mode Cover* - any cover or solvent-cleaning machine design that allows for the cover to shield the cleaning machine openings during the idling mode. A cover that meets this definition can also be used as a working mode cover if that definition is also met (40 CFR 63.461).
- *Immersion Cold Cleaning Machine* - a cold cleaning machine in which the parts are immersed in the solvent when being cleaned. A remote reservoir cold cleaning machine that is also an immersion cold cleaning machine is considered an immersion cold cleaning machine for the purposes of 40 CFR 63, Subpart T [40 CFR 63.460 through 63.470, see checklist items AE.116.1.US through AE.118.7.US] (40 CFR 63.461).
- *Implementing Agency* - the state or local agency that obtains delegation for an accidental release prevention program under 40 CFR 63, Subpart E: *Approval of State Programs and Delegation of Federal Authorities*. The implementing agency may, but is not required to, be the state or local air permitting agency. If no state or local

agency is granted delegation, EPA will be the implementing agency for that state (40 CFR 68.3) [**Added January 2005**].

- *Import* - to land on, bring into, or introduce into, or attempt to land on, bring into, or introduce into any place subject to the jurisdiction of the United States whether or not such landing, bringing, or introduction constitutes an importation within the meaning of the customs laws of the United States, with the following exemptions (40 CFR 82.3) [**Added April 2003**]:
  1. Off-loading used or excess controlled substances or controlled products from a ship during servicing,
  2. Bringing controlled substances into the U.S. from Mexico where the controlled substance had been admitted into Mexico in bond and was of U.S. origin, and
  3. Bringing a controlled product into the U.S. when transported in a consignment of personal or household effects or in a similar non-commercial situation normally exempted from U.S. Customs attention.
- *Import* - to land on, bring into, or introduce into, or attempt to land on, bring into, or introduce into any place subject to the jurisdiction of the United States whether or not such landing, bringing, or introduction constitutes an importation within the meaning of the customs laws of the United States, with the exception of temporary off-loading of products manufactured with or containers containing class I or class II substances from a ship are used for servicing of that ship (40 CFR 82.104(l)) [**Added July 2004**].
- *Import* - to land on, bring into, or introduce into, any place subject to the jurisdiction of the United States whether or not such landing, bringing, or introduction constitutes an importation within the meaning of the customs laws of the United States, with the following exemptions (40 CFR 98.6) [**Added January 2010**]:
  1. Off-loading used or excess fluorinated GHGs or nitrous oxide of U.S. origin from a ship during servicing.
  2. Bringing fluorinated GHGs or nitrous oxide into the U.S. from Mexico where the fluorinated GHGs or nitrous oxide had been admitted into Mexico in bond and were of U.S. origin.
  3. Bringing fluorinated GHGs or nitrous oxide into the U.S. when transported in a consignment of personal or household effects or in a similar non-commercial situation normally exempted from U.S. Customs attention.
  4. Bringing fluorinated GHGs or nitrous into U.S. jurisdiction exclusively for U. S. military purposes.
- *Importer* - any person who imports a controlled substance or a controlled product into the United States. "Importer" includes the person primarily liable for the payment of any duties on the merchandise or an authorized agent acting on his or her behalf. The term also includes, as appropriate (40 CFR 82.3) [**Added April 2003; Revised October 2006**]:
  - 1) The consignee;
  - 2) The importer of record (listed on U.S. Customs Service forms for imported controlled substances, used controlled substances or controlled products);
  - 3) The actual owner; or
  - 4) The transferee, if the right to draw merchandise in a bonded warehouse has been transferred.
- *Importer* - any person who imports a controlled substance, a product containing a controlled substance, a product manufactured with a controlled substance, or any other chemical substance (including a chemical substance shipped as part of a mixture or article), into the United States. "Importer" includes the person primarily liable for the payment of any duties on the merchandise or an authorized agent acting on his or her behalf. The term also includes, as appropriate (40 CFR 82.104(m)) [**Added July 2004**]:
  1. The consignee;
  2. The importer of record listed on U.S. Customs Service forms for the import;
  3. The actual owner if an actual owner's declaration and superseding bond has been filed; or
  4. The transferee, if the right to draw merchandise in a bonded warehouse has been transferred
- *Importer* - any person, company, or organization of record that for any reason brings a product into the United States from a foreign country, excluding introduction into U.S. jurisdiction exclusively for United States military purposes. An importer is the person, company, or organization primarily liable for the payment of any duties on the merchandise or an authorized agent acting on their behalf. The term includes, as appropriate (40 CFR 98.6) [**Added January 2010**]:

1. The consignee.
  2. The importer of record.
  3. The actual owner.
  4. The transferee, if the right to draw merchandise in a bonded warehouse has been transferred.
- *Importer* - the importer of record listed on U.S. Customs Service forms for imported controlled substances, used controlled substances or controlled products (40 CFR 82.3) [**Added April 2003**].
  - *Incineration* - in relation to sewage sludge, the combustion of organic matter and inorganic matter in sewage sludge by high temperatures in an enclosed device (40 CFR 503.41(g)).
  - *Incinerator* - any furnace used in the process of burning solid waste for the purpose of reducing the volume of the waste by removing combustible matter (40 CFR 60.51).
  - *Incinerator Operating Combustion Temperature* - the arithmetic mean of the temperature readings in the hottest zone of the furnace recorded in a day (24 h) when the temperature is averaged and recorded at least hourly during the hours the incinerator operates in a day (40 CFR 503.41) [**Added October 1999**].
  - *Increase the Frequency or Severity of Any Existing Violation of Any Standard in Any Area* - to cause a nonattainment area to exceed a standard more often or to cause a violation at a greater concentration than previously existed and/or would otherwise exist during the future period in question, if the project were not implemented (40 CFR 93.152) [**Added April 2009**].
  - *Indirect Emissions* - those emissions of a criteria pollutant or its precursors that (40 CFR 93.152) [**Added April 2009**]:
    1. Are caused by the Federal action, but may occur later in time and/or may be further removed in distance from the action itself but are still reasonably foreseeable; and
    2. The Federal agency can practicably control and will maintain control over due to a continuing program responsibility of the Federal agency.
  - *Individual Drain System* - a stationary system used to convey wastewater streams or residuals to a remediation material management unit or to discharge or disposal. The term includes hard-piping, all drains and junction boxes, together with their associated sewer lines and other junction boxes (e.g., manholes, sumps, and lift stations) conveying wastewater streams or residuals. For the purpose of 40 CFR 63, Subpart GGGGG [40 CFR 63.7880 through 63.7957, see checklist items AE.300.1.US through AE.300.12.US], an individual drain system is not a drain and collection system that is designed and operated for the sole purpose of collecting rainfall runoff (e.g., stormwater sewer system) and is segregated from all other individual drain systems (40 CFR 63.7957) [**Added April 2004**].
  - *Industrial Boiler* - a boiler used in manufacturing, processing, mining, and refining or any other industry to provide steam, hot water, and/or electricity (40 CFR 63.7575) [**Revised April 2013**].
  - *Industrial Boiler* - a boiler used in manufacturing, processing, mining, and refining or any other industry to provide steam, hot water, and/or electricity (40 CFR 63.11237) [**Added April 2011**].
  - *Industrial Greenhouse Gases* - nitrous oxide or any fluorinated greenhouse gas (40 CFR 98.6) [**Added January 2010**].
  - *Industrial POTW* - a POTW that accepts a waste stream regulated by an industrial NESHAP and provides treatment and controls as an agent for the industrial discharger. The industrial discharger complies with its NESHAP by using the treatment and controls located at the POTW. For example, an industry discharges its benzene-containing waste stream to the POTW for treatment to comply with 40 CFR 61, Subpart FF: *National Emission Standard for Benzene Waste Operations*. This definition does not include POTW treating waste streams not specifically regulated under another NESHAP (40 CFR 63.1583) [**Added January 2000**].

- *Industrial Process Refrigeration* - complex customized appliances that are directly linked to the processes used in, for example, the chemical, pharmaceutical, petrochemical, and manufacturing industries. This sector also includes industrial ice machines, appliances used directly in the generation of electricity, and ice rinks. Where one appliance is used for both industrial process refrigeration and other applications, it will be considered industrial process refrigeration equipment if 50 percent or more of its operating capacity is used for industrial process refrigeration (40 CFR 82.152) **[Revised January 2017]**.
- *Industrial Process Shutdown* - when an industrial process or facility temporarily ceases to operate or manufacture whatever is being produced at that facility (40 CFR 82.152) **[Revised January 2017]**.
- *Industrial Sludge* - the residual, semi-solid material left from industrial wastewater treatment processes or wet air pollution control devices (e.g., wet scrubbers). Industrial sludge includes underflow material collected in primary or secondary clarifiers, settling basins, or precipitation tanks as well as dredged materials from wastewater tanks or impoundments. Industrial sludge also includes the semi-solid materials remaining after these materials are dewatered via a belt process, centrifuge, or similar dewatering process (40 CFR 98.468) **[Added January 2014]**.
- *Industrial User* - a nondomestic source introducing any pollutant or combination of pollutants into a POTW. Industrial users can be commercial or industrial facilities whose wastes enter local sewers (40 CFR 63.1583) **[Added January 2000]**.
- *Industrial Waste Landfill* - any landfill other than a municipal solid waste landfill, a RCRA Subtitle C hazardous waste landfill, or a TSCA hazardous waste landfill, in which industrial solid waste, such as a RCRA Subtitle D wastes (nonhazardous industrial solid waste, defined in 40 CFR 257.2 of this chapter), commercial solid wastes, or conditionally exempt small quantity generator wastes, is placed. An industrial waste landfill includes all disposal areas at the facility (40 CFR 98.348) **[Added January 2011]**.
- *Industrial Wastewater* - water containing wastes from an industrial process. Industrial wastewater includes water which comes into direct contact with or results from the storage, production, or use of any raw material, intermediate product, finished product, by-product, or waste product. Examples of industrial wastewater include, but are not limited to, paper mill white water, wastewater from equipment cleaning, wastewater from air pollution control devices, rinse water, contaminated stormwater, and contaminated cooling water (40 CFR 98.358) **[Added July 2010]**.
- *Industrial Wastewater Treatment Sludge* - solid or semi-solid material resulting from the treatment of industrial wastewater, including but not limited to biosolids, screenings, grit, scum, and settled solids (40 CFR 98.358) **[Added July 2010]**.
- *Infectious Agent* - any organism (such as a virus or bacteria) that is capable of being communicated by invasion and multiplication in body tissues and capable of causing disease or adverse health impacts in humans (40 CFR 60.51c). **[Added December 1997]**
- *Infectious Agent* - any organism (such as a virus or bacteria) that is capable of being communicated by invasion and multiplication in body tissues and capable of causing disease or adverse health impacts in humans (40 CFR 62.14490) **[Added October 2000]**.
- *Inherently Safer Technology or Design* - risk management measures that minimize the use of regulated substances, substitute less hazardous substances, moderate the use of regulated substances, or simplify covered processes in order to make accidental releases less likely, or the impacts of such releases less severe (40 CFR 68.3) **[Added April 2017]**.
- *Initial Startup* - the first time equipment is brought online in a paint stripping or surface coating operation, and paint stripping or surface coating is first performed (40 CFR 63.11180) **[Added April 2011]**.
- *Initial Verification Test* - those leak tests that are conducted after the repair is finished to verify that a leak or leaks have been repaired before refrigerant is added back to the appliance (40 CFR 82.152) **[Revised January 2017]**.

- *Injury* - any effect on a human that results either from direct exposure to toxic concentrations; radiant heat; or overpressures from accidental releases or from the direct consequences of a vapor cloud explosion (such as flying glass, debris, and other projectiles) from an accidental release and that requires medical treatment or hospitalization (40 CFR 68.3) [**Added January 2005**].
- *In-Line Cleaning Machine or Continuous Cleaning Machine* - a solvent-cleaning machine that uses an automated parts handling system, typically a conveyor, to automatically provide a continuous supply of parts to be cleaned. These units are fully enclosed except for the conveyor inlet and exit portals. In-line cleaning machines can be either cold or vapor-cleaning machines (40 CFR 63.461).
- *Inorganic Hazardous Air Pollutant (HAP)* - any HAP that is not organic (40 CFR 63.742) [**Added January 1999**].
- *Inorganic Liquids Service* - that an equipment leak component contains or contacts organic liquids having 5 percent by weight or greater of the organic HAP listed in Table 1 to 40 CFR 63, Subpart EEEE [40 CFR 63.2330 through 63.2406, see checklist items AE.51.1.US through AE.57.15.US] (40 CFR 63.2406) [**Added April 2004**].
- *Installed* - the engine is placed and secured at the location where it is intended to be operated (40 CFR 60.4219 and 60.4248) [**Added July 2011**].
- *Institutional Boiler* - a boiler used in institutional establishments such as, but not limited to, medical centers, nursing homes, research centers, institutions of higher education, elementary and secondary schools, libraries, religious establishments, and governmental buildings to provide electricity, steam, and/or hot water (40 CFR 63.11237) [**Revised April 2013**].
- *Institutional Emergency Stationary RICE* - an emergency stationary RICE used in institutional establishments such as medical centers, nursing homes, research centers, institutions of higher education, correctional facilities, elementary and secondary schools, libraries, religious establishments, police stations, and fire stations (40 CFR 63.6675) [**Added October 2010**].
- *Institutional Facility* - a land-based facility owned and/or operated by an organization having a governmental, educational, civic, or religious purpose such as a school, hospital, prison, military installation, church, or other similar establishment or facility (40 CFR 60.2977) [**Added January 2006**].
- *Institutional Waste* - includes materials discarded by hospitals, schools, nonmanufacturing activities at prisons, and government facilities (40 CFR 60.51a).
- *Institutional Waste* - solid waste (as defined in this subpart) that is combusted at any institutional facility using controlled flame combustion in an enclosed, distinct operating unit: whose design does not provide for energy recovery (as defined in this subpart); operated without energy recovery (as defined in this subpart); or operated with only waste heat recovery (as defined in this subpart). Institutional waste also means solid waste (as defined in this subpart) combusted on site in an air curtain incinerator that is a distinct operating unit of any institutional facility (40 CFR 60.2977) [**Added January 2006**].
- *Institutional Waste Incineration Unit* - any combustion unit that combusts institutional waste (as defined in this subpart) and is a distinct operating unit of the institutional facility that generated the waste. Institutional waste incineration units include field-erected, modular, cyclonic burn barrel, and custom built incineration units operating with starved or excess air, and any air curtain incinerator that is a distinct operating unit of the institutional facility that generated the institutional waste (except those air curtain incinerators listed in 40 CFR 60.2888(b)) (40 CFR 60.2977) [**Added January 2006**].
- *Integrated Gasification Combined Cycle Electric Utility Steam Generating Unit* - a coal-fired electric utility steam generating unit that burns a synthetic gas derived from coal in a combined-cycle gas turbine. No solid coal is directly burned in the unit during operation (40 CFR 60.4420) [**Added April 2009**].

- *Intermediate or Interim Cover* - the placement of material over waste in a landfill for a period of time prior to the disposal of additional waste and/or final closure as defined by state regulation, permit, guidance or written plan, or state accepted best management practice (40 CFR 98.348) **[Added January 2017]**.
- *Intermittent Bleed Pneumatic Devices* - automated flow control devices powered by pressurized natural gas and used for automatically maintaining a process condition such as liquid level, pressure, delta-pressure and temperature. These are snap-acting or throttling devices that discharge all or a portion of the full volume of the actuator intermittently when control action is necessary, but does not bleed continuously (40 CFR 98.6) **[Added January 2014]**.
- *Intermittent HMIWI* - an HMIWI that is designed to allow waste charging, but not ash removal, during combustion (40 CFR 60.51c) **[Added December 1997]**.
- *Intermittent HMIWI* - an HMIWI that is designed to allow waste charging, but not ash removal, during combustion (40 CFR 62.14490) **[Added October 2000]**.
- *Intermittent OSWI Unit* - an OSWI unit that is designed to allow waste charging, but not ash removal, during combustion (40 CFR 60.2977) **[Added January 2006]**.
- *Internal Combustion Engine* - a device in which air enters a combustion chamber, is mixed with fuel, compressed in the chamber, and combusted. Fuel may enter the combustion chamber with the air or be injected into the combustion chamber. Expansion of the hot combustion gases in the chamber rotates a shaft, either through a reciprocating or rotary action. For purposes of 40 CFR 63, Subpart P [40 CFR 63.9280 through 63.9375, see checklist item AE.230.1.US through AE.230.4.US], this definition does not include combustion turbine engines (40 CFR 63.9375) **[Added July 2003]**.
- *Internal Floating Roof* - a cover that rests or floats on the liquid surface (but not necessarily in complete contact with it inside a tank that has a fixed roof) (40 CFR 63.7957) **[Added April 2004]**.
- *Interstate Commerce* - the distribution or transportation of any product between one state, territory, possession or the District of Columbia, and another state, territory, possession or the District of Columbia, or the sale, use or manufacture of any product in more than one state, territory, possession or District of Columbia. The entry points for which a product is introduced into interstate commerce are the release of a product from the facility in which the product was manufactured, the entry into a warehouse from which the domestic manufacturer releases the product for sale or distribution, and at the site of United States Customs clearance (40 CFR 82.104(n)) **[Added July 2004]**.
- *ISO Conditions* - 288° Kelvin, 60 percent relative humidity and 101.3 kilopascals pressure (40 CFR 60/41b and 60.4420) **[Added July 2007, Revised April 2009]**.
- *ISO Standard Day Conditions* – 288 °Kelvin (15 °C), 60 percent relative humidity and 101.3 kPa pressure (40 CFR 60.331, 63.6175 and 63.6675) **[Added April 2004; Revised October 2004]**.
- *Isobutane* - a paraffinic branch chain hydrocarbon with molecular formula C<sub>4</sub>H<sub>10</sub> (40 CFR 98.6) **[Added January 2010]**.
- *Isobutylene* - an olefinic branch chain hydrocarbon with molecular formula C<sub>4</sub>H<sub>8</sub> (40 CFR 98.6) **[Added January 2010]**.
- *Kerosene* - a light petroleum distillate with a maximum distillation temperature of 400 °F at the 10 percent recovery point, a final maximum boiling point of 572 °F, a minimum flash point of 100 °F, and a maximum freezing point of -22 °F. Included are No. 1-K and No. 2-K, distinguished by maximum sulfur content (0.04 and 0.30 percent of total mass, respectively), as well as all other grades of kerosene called range or stove oil. Excluded is kerosene-type jet fuel (see definition herein) (40 CFR 98.6) **[Added January 2010]**.

- *Kerosene-Type Jet Fuel* - a kerosene-based product used in commercial and military turbojet and turboprop aircraft. The product has a maximum distillation temperature of 400 °F at the 10 percent recovery point and a final maximum boiling point of 572 °F. Included are Jet A, Jet A-1, JP-5, and JP-8 (40 CFR 98.6) [**Added January 2010**].
- *Landfill* - an area of land or an excavation in which wastes are placed for permanent disposal and that is not a land application unit, surface impoundment, injection well, or waste pile as those terms are defined under 40 CFR 257.2 (40 CFR 98.6) [**Added January 2010**].
- *Landfill Capacity* - the maximum amount of solid waste a landfill can accept. For the purposes of this subpart, for landfills that have a permit, the landfill capacity can be determined in terms of volume or mass in the most recent permit issued by the state, local, or Tribal agency responsible for regulating the landfill, plus any in-place waste not accounted for in the most recent permit. If the owner or operator chooses to convert from volume to mass to determine its capacity, the calculation must include a site-specific density (40 CFR 98.348) [**Added January 2014**].
- *Landfill Gas* - a gaseous by-product of the land application of municipal refuse typically formed through the anaerobic decomposition of waste materials and composed principally of methane and CO<sub>2</sub> (40 CFR 60.4248, 63.6175, and 63.6675) [**Added April 2004; Revised April 2008**].
- *Landfill Gas* - gas produced as a result of anaerobic decomposition of waste materials in the landfill. Landfill gas generally contains 40 to 60 percent methane on a dry basis, typically less than 1 percent non-methane organic chemicals, and the remainder being carbon dioxide (40 CFR 98.6) [**Added January 2010**].
- *Large Commercial Aircraft* - an aircraft of more than 110,000 lb, maximum certified take-off weight manufactured for non-military use (40 CFR 63.742) [**Added January 2000**].
- *Large HMIWI* (40 CFR 60.51c) [**Added December 1997**]:
  1. except as provided in 2:
    - a. an HMIWI whose maximum design waste burning capacity is more than 500 lb/h
    - b. a continuous or intermittent HMIWI whose maximum charge rate is more than 500 lb/h
    - c. a batch HMIWI whose maximum charge rate is more than 4000 lb/day.
  2. the following are not large HMIWI:
    - a. a continuous or intermittent HMIWI whose maximum charge rate is less than or equal to 500 lb/h
    - b. a batch HMIWI whose maximum charge rate is less than or equal to 4000 lb/day.
- *Large HMIWI* (40 CFR 62.14490) [**Added October 2000**]:
  1. an HMIWI whose maximum design waste burning capacity is more than 500 lb/h; or
  2. a continuous or intermittent HMIWI whose maximum charge rate is more than 500 lb/h; or
  3. a batch HMIWI whose maximum charge rate is more than 4,000 lb/day.
 The following are not large HMIWI:
  1. a continuous or intermittent HMIWI whose maximum charge rate is less than or equal to 500 lb/h; or
  2. a batch HMIWI whose maximum charge rate is less than or equal to 4,000 lb/day.
- *Leachate Recirculation* - the practice of taking the leachate collected from the landfill and reapplying it to the landfill by any of one of a variety of methods, including pre-wetting of the waste, direct discharge into the working face, spraying, infiltration ponds, vertical injection wells, horizontal gravity distribution systems, and pressure distribution systems (40 CFR 98.348) [**Added January 2014**].
- *Lead Additive* - any substance containing lead or lead compounds (40 CFR 80.2(e)) [**Added October 2011**].
- *Leak* - any visible leakage, including misting and clouding (40 CFR 63.742) [**Added January 1999**].
- *Leak Inspection* - the examination of an appliance to determine the location of refrigerant leaks. Potential methods include, but are not limited to, ultrasonic tests, gas-imaging cameras, bubble tests as appropriate, or the use of a

leak detection device operated and maintained according to manufacturer guidelines. Methods that determine whether the appliance is leaking refrigerant but not the location of a leak, such as standing pressure/vacuum decay tests, sight glass checks, viewing receiver levels, pressure checks, and charging charts, must be used in conjunction with methods that can determine the location of a leak (40 CFR 82.152) **[Added January 2017]**.

- *Leak Rate* - the rate at which an appliance is losing refrigerant, measured between refrigerant charges. The leak rate is expressed in terms of the percentage of the appliance's full charge that would be lost over a 12-mo period if the current rate of loss were to continue over that period. The rate must be calculated using one of the following methods. The same method must be used for all appliances subject to the leak repair requirements located at an operating facility (40 CFR 82.152) **[Added April 2005; Revised January 2017]**:

1. Annualizing Method.

- Step 1. Take the number of pounds of refrigerant added to the appliance to return it to a full charge, whether in one addition or if multiple additions related to same leak, and divide it by the number of pounds of refrigerant the appliance normally contains at full charge;
- Step 2. Take the shorter of the number of days that have passed since the last day refrigerant was added or 365 days and divide that number by 365 days;
- Step 3. Take the number calculated in Step 1 and divide it by the number calculated in Step 2; and
- (iv) Step 4. Multiply the number calculated in Step 3 by 100 to calculate a percentage. This method is summarized in the formula represented in the text of 40 CFR 82.152.

2. Rolling Average Method.

- Step 1. Take the sum of the pounds of refrigerant added to the appliance over the previous 365-day period (or over the period that has passed since the last successful follow-up verification test showing all identified leaks in the appliance were repaired, if that period is less than one year);
- Step 2. Divide the result of Step 1 by the pounds of refrigerant the appliance normally contains at full charge; and
- Step 3. Multiply the result of Step 2 by 100 to obtain a percentage. This method is summarized in the formula represented in the text of 40 CFR 82.152.

- *Lean Burn Engine* - any two-stroke or four-stroke spark ignited engine that does not meet the definition of a rich burn engine (40 CFR 60.4248 and 63.6675) **[Added July 2004; Revised April 2008]**.
- *Lean Premix Gas-Fired Stationary Combustion Turbine* - (40 CFR 63.6175) **[Added April 2004]**:
  - 1.a. Each stationary combustion turbine which is equipped only to fire gas using lean premix technology,
  - b. Each stationary combustion turbine which is equipped both to fire gas using lean premix technology and to fire oil, during any period when it is firing gas, and
  - c. Each stationary combustion turbine which is equipped both to fire gas using lean premix technology and to fire oil, and is located at a major source where all new, reconstructed, and existing stationary combustion turbines fire oil no more than an aggregate total of 1000 hours during the calendar year.
- 2. Lean premix gas-fired stationary combustion turbines do not include:
  - a. Any emergency stationary combustion turbine,
  - b. Any stationary combustion turbine located on the North Slope of Alaska, or
  - c. Any stationary combustion turbine burning landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, or any stationary combustion turbine where gasified MSW is used to generate 10 percent or more of the gross heat input on an annual basis.
- *Lean Premix Oil-fired Stationary Combustion Turbine* - (40 CFR 63.6175) **[Added April 2004]**:
  - 1.a. Each stationary combustion turbine which is equipped only to fire oil using lean premix technology, and
  - b. Each stationary combustion turbine which is equipped both to fire oil using lean premix technology and to fire gas, and is located at a major source where all new, reconstructed, and existing stationary combustion turbines fire oil more than an aggregate total of 1000 hours during the calendar year, during any period when it is firing oil.
- 2. Lean premix oil-fired stationary combustion turbines do not include:
  - a. Any emergency stationary combustion turbine, or
  - b. Any stationary combustion turbine located on the North Slope of Alaska.

- *Lean Premix Stationary Combustion Turbine* - any stationary combustion turbine where the air and fuel are thoroughly mixed to form a lean mixture for combustion in the combustor. Mixing may occur before or in the combustion chamber. A unit which is capable of operating in both lean premix and diffusion flame modes is considered a lean premix stationary combustion turbine when it is in the lean premix mode, and it is considered a diffusion flame stationary combustion turbine when it is in the diffusion flame mode (40 CFR 60.331) **[Added October 2004]**.
- *Lean Premix Stationary Combustion Turbine* - any stationary combustion turbine where the air and fuel are thoroughly mixed to form a lean mixture before delivery to the combustor. Mixing may occur before or in the combustion chamber. A lean premixed turbine may operate in diffusion flame mode during operating conditions such as startup and shutdown, extreme ambient temperature, or low or transient load (40 CFR 60.4420) **[Added April 2009]**.
- *Lean Premix Technology* - a configuration of a stationary combustion turbine where the **air and fuel are thoroughly mixed to form a lean mixture for combustion** in the combustor. Mixing may occur before or in the combustion chamber (40 CFR 63.6175) **[Added April 2004]**.
- *LEPC* - local emergency planning committee as established under 42 U.S.C. 11001(c) (40 CFR 68.3) **[Added April 2017]**.
- *Liberated* - released from coal and surrounding rock strata during the mining process. This includes both methane emitted from the ventilation system and methane drained from degasification systems (40 CFR 98.6) **[Added July 2010]**.
- *Light Liquid* - includes distillate oil, biodiesel, or vegetable oil (40 CFR 63.11237) **[Added April 2013]**.
- *Lignite* - coal that is classified as lignite A or B according to the American Society for Testing and Materials (ASTM) standards (40 CFR 60.41a).
- *Lignite* - a type of coal classified as lignite A or lignite B by the American Society of Testing and Materials in ASTM D388 (incorporated by reference, see 40 CFR 60.17) (40 CFR 60.41b) **[Added July 2007]**.
- *Lime* - the generic term for a variety of chemical compounds that are produced by the calcination of limestone or dolomite. These products include but are not limited to calcium oxide, high-calcium quicklime, calcium hydroxide, hydrated lime, dolomitic quicklime, and dolomitic hydrate (40 CFR 98.6) **[Added January 2010]**.
- *Limited Access Space* - internal surfaces or passages of an aerospace vehicle or component that cannot be reached without the aid of an airbrush or a spray gun extension for the application of coatings (40 CFR 63.742) **[Added January 1999]**.
- *Limited-use Boiler* - any boiler that burns any amount of solid or liquid fuels and has a federally enforceable annual capacity factor of no more than 10 percent (40 CFR 63.11237) **[Added April 2013, Revised October 2016]**.
- *Limited-use Boiler or Process Heater* - any boiler or process heater that burns any amount of solid, liquid, or gaseous fuels and has a federally enforceable annual capacity factor of no more than 10 percent (40 CFR 63.7575) **[Revised April 2013; Revised January 2016]**.
- *Limited Use Stationary RICE* - any stationary RICE that operates less than 100 h/yr (40 CFR 63.6675) **[Added July 2004]**.

- *Lip Exhaust* - a device installed at the top of the opening of a solvent-cleaning machine that draws in air and solvent vapor from the freeboard area and ducts the air and vapor away from the solvent-cleaning area (40 CFR 63.461).
- *Liquefied Petroleum Gas* - any liquefied hydrocarbon gas obtained as a by-product in petroleum refining or natural gas production (40 CFR 60.4248 and 63.6675) [**Added July 2004; Revised April 2008**].
- *Liquid Fuel* - includes, but is not limited to, light liquid, heavy liquid, any form of liquid fuel derived from petroleum, used oil, liquid biofuels, biodiesel, vegetable oil, and comparable fuels as defined under 40 CFR 261.38 (40 CFR 63.7575) [**Revised April 2013**].
- *Liquid Fuel* - includes, but is not limited to, distillate oil, residual oil, any form of liquid fuel derived from petroleum, used oil meeting the specification in 40 CFR 279.11, liquid biofuels, biodiesel, and vegetable oil (40 CFR 63.11237) [**Added April 2013, Revised October 2016**].
- *Liquid Fuel* - includes, but is not limited to, light liquid, heavy liquid, any form of liquid fuel derived from petroleum, used oil, liquid biofuels, biodiesel, and vegetable oil (40 CFR 63.7575) [**Revised April 2013; Revised January 2016**].
- *Liquid/Slurry* - a manure management component in which manure is stored as excreted or with some minimal addition of water to facilitate handling and is stored in either tanks or earthen ponds, usually for periods less than 1 yr (40 CFR 98.6) [**Added January 2010**].
- *Load Fraction* - the actual heat input of a boiler or process heater divided by heat input during the performance test that established the minimum sorbent injection rate or minimum activated carbon injection rate, expressed as a fraction (e.g., for 50 percent load the load fraction is 0.5). For boilers and process heaters that cofire natural gas or refinery gas with a solid or liquid fuel, the load fraction is determined by the actual heat input of the solid or liquid fuel divided by heat input of the solid or liquid fuel fired during the performance test (e.g., if the performance test was conducted at 100 percent solid fuel firing, for 100 percent load firing 50 percent solid fuel and 50 percent natural gas the load fraction is 0.5) (40 CFR 63.7575) [**Revised April 2013; Revised January 2016**].
- *Load Fraction* - the actual heat input of a boiler divided by heat input during the performance test that established the minimum sorbent injection rate or minimum activated carbon injection rate, expressed as a fraction (e.g., for 50 percent load the load fraction is 0.5). For boilers that co-fire natural gas with a solid or liquid fuel, the load fraction is determined by the actual heat input of the solid or liquid fuel divided by heat input of the solid or liquid fuel fired during the performance test (e.g., if the performance test was conducted at 100 percent solid fuel firing, for 100 percent load firing 50 percent solid fuel and 50 percent natural gas, the load fraction is 0.5) (40 CFR 63.11237) [**Added April 2013, Revised October 2016**].
- *Local Air Quality Modeling Analysis* - an assessment of localized impacts on a scale smaller than the entire nonattainment or maintenance area, including, for example, congested roadway intersections and highways or transit terminals, which uses an air quality dispersion model to determine the effects of emissions on air quality (40 CFR 93.152) [**Added April 2009**].
- *Low Heat Release Rate* - a heat release rate of 730,000 J/sec-m<sup>3</sup> (70,000 Btu/hr-ft<sup>3</sup>) or less (40 CFR 60.41b) [**Added July 2007**].
- *Low-level Radioactive Waste* - waste material which contains radioactive nuclides emitting primarily beta or gamma radiation, or both, in concentrations or quantities that exceed applicable federal or State standards for unrestricted release. Low-level radioactive waste is not high-level radioactive waste, spent nuclear fuel, or by-product material as defined by the *Atomic Energy Act* of 1954 (42 U.S.C. 2014(e)(2)) (40 CFR 60.51c, 60.2977, 62.14490 and 62.14840) [**Revised January 2004; Revised January 2006**].

- *Low-loss Fitting* - any device that is intended to establish a connection between hoses, appliances, or recovery and/or recycling machines and that is designed to close automatically or to be closed manually when disconnected, minimizing the release of refrigerant from hoses, appliances, and recovery and/or recycling machines (40 CFR 82.152) [**Revised January 2017**].
- *Low-pressure Appliance* - an appliance that uses a refrigerant with a liquid phase saturation pressure below 45 psia at 104 °F. Examples include but are not limited to appliances using R-11, R-123, R-113, and R-245fa (40 CFR 82.152) [**Revised April 2004; Revised January 2017**].
- *Low Throughput Transfer Rack* - those transfer racks that transfer into transport vehicles (for existing affected sources) or into transport vehicles and containers (for new affected sources) less than 11.8 million L/ yr of organic liquids (40 CFR 63.2406) [**Added January 2007**].
- *Lubricants* – includes all grades of lubricating oils, from spindle oil to cylinder oil to those used in greases. Petroleum lubricants may be produced from distillates or residues (40 CFR 98.6) [**Added January 2010**].
- *Mcf* - thousand cubic feet.
- *MMBtu* - million British thermal units.
- *Mscf* - thousand standard cubic feet (40 CFR 98.6) [**Added January 2010; Revised January 2011**].
- *MTBE (Methyl Tertiary Butyl Ether, (CH<sub>3</sub>)<sub>3</sub>COCH<sub>3</sub>)* - an ether as described in “Oxygenates” (40 CFR 98.6) [**Added January 2010**].
- *Maintenance Area* - an area with a maintenance plan approved under section 175A of the Act (40 CFR 93.152) [**Added April 2009**].
- *Maintenance Plan* - a revision to the applicable SIP, meeting the requirements of section 175A of the Act (40 CFR 93.152) [**Added April 2009**].
- *Major Change* - introduction of a new process, process equipment, or regulated substance, an alteration of process chemistry that results in any change to safe operating limits, or other alteration that introduces a new hazard (40 CFR 68.3) [**Added January 2005**].
- *Major Maintenance, Service, or Repair* - any maintenance, service, or repair that involves the removal of any or all of the following appliance components: compressor, condenser, evaporator, or auxiliary heat exchange coil; or any maintenance, service, or repair that involves uncovering an opening of more than 4 in<sup>2</sup> of “flow area” for more than 15 min (40 CFR 82.152) [**Revised October 2003**].
- *Major Source* - in relation to dry cleaning facilities, any dry cleaning facility that emits or has the potential to emit more than 9.1 Mg/yr (10 tons/yr) of perchloroethylene to the atmosphere. In lieu of measuring a facility’s potential to emit perchloroethylene emissions or determining a facility’s potential to emit perchloroethylene emissions, a dry cleaning facility is a major source if (40 CFR 63.321):
  1. it includes only dry-to-dry machines and has a total yearly perchloroethylene consumption greater than 8000 L (2100 gal)
  2. it includes only transfer machine systems or both dry-to-dry and transfer machine systems and has a total yearly perchloroethylene consumption greater than 6800 L (1800 gal).
- *Major Source* - as used in 40 CFR 63, Subpart YYYY [40 CFR 63.6080 through 63.6175, see checklist items AE.20.3.US through AE.20.10.US], shall have the same meaning as in 40 CFR 63.2, except that (40 CFR 63.6175) [**Added April 2004**]:
  1. Emissions from any oil or gas exploration or production well (with its associated equipment (as defined in this section)) and emissions from any pipeline compressor station or pump station shall not be aggregated

- with emissions from other similar units, to determine whether such emission points or stations are major sources, even when emission points are in a contiguous area or under common control;
  - 2. For oil and gas production facilities, emissions from processes, operations, or equipment that are not part of the same oil and gas production facility, as defined in this section, shall not be aggregated;
  - 3. For production field facilities, only HAP emissions from glycol dehydration units, storage vessel with the potential for flash emissions, combustion turbines and reciprocating internal combustion engines shall be aggregated for a major source determination; and
  - 4. Emissions from processes, operations, and equipment that are not part of the same natural gas transmission and storage facility, as defined in this section, shall not be aggregated.
- *Major Source* - as used in 40 CFR 63, Subpart ZZZZ [40 CFR 63.6580 through 63.6675, see checklist items AE.21.1.US through AE.21.10.US], shall have the same meaning as in 40 CFR 63.2, except that (40 CFR 63.6675) **[Added July 2004]**:
    1. Emissions from any oil or gas exploration or production well (with its associated equipment (as defined in 63.6675) and emissions from any pipeline compressor station or pump station shall not be aggregated with emissions from other similar units, to determine whether such emission points or stations are major sources, even when emission points are in a contiguous area or under common control;
    2. For oil and gas production facilities, emissions from processes, operations, or equipment that are not part of the same oil and gas production facility, as defined in 40 CFR 63.1271, Subpart HHH: *National Emission Standards for HAP from Natural Gas Transmission and Storage Facilities*, shall not be aggregated;
    3. For production field facilities, only HAP emissions from glycol dehydration units, storage vessel with the potential for flash emissions, combustion turbines and reciprocating internal combustion engines shall be aggregated for a major source determination; and
    4. Emissions from processes, operations, and equipment that are not part of the same natural gas transmission and storage facility, as defined in 40 CFR 63.1271 of 40 CFR, Subpart HHH: *National Emission Standards for HAP from Natural Gas Transmission and Storage Facilities*, shall not be aggregated.
  - *Major Source for Oil and Natural Gas Production Facilities* - as used in this subpart, shall have the same meaning as in 40 CFR 63.2, except that (40 CFR 63.7575) **[Added April 2013]**.
    1. Emissions from any oil or gas exploration or production well (with its associated equipment, as defined in this section), and emissions from any pipeline compressor station or pump station shall not be aggregated with emissions from other similar units to determine whether such emission points or stations are major sources, even when emission points are in a contiguous area or under common control;
    2. Emissions from processes, operations, or equipment that are not part of the same facility, as defined in this section, shall not be aggregated; and
    3. For facilities that are production field facilities, only HAP emissions from glycol dehydration units and storage vessels with the potential for flash emissions shall be aggregated for a major source determination. For facilities that are not production field facilities, HAP emissions from all HAP emission units shall be aggregated for a major source determination.
  - *Major Source of HAP Emissions* - a contiguous site under common control that emits or has the potential to emit any single HAP at a rate of 10 tons (9.07 megagrams) or more per year or any combination of HAP at a rate of 25 tons (22.68 megagrams) or more per year, except that for oil and gas production facilities, a major source of HAP emissions is determined for each surface site (40 CFR 63.6085(a)) **[Added April 2004]**.
  - *Major Source of HAP Emissions* - any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit any single HAP at a rate of 9.07 megagrams (Mg) (10 tons) or more per year, or emit any combination of HAP at a rate of 22.68 Mg (25 tons) or more per year (40 CFR 63.11170(b)) **[Added April 2011]**.
  - *Malfunction* - any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner which causes or has the potential to cause the emission limitations in this standard to be exceeded. Failures that are caused in part by poor maintenance or careless operation are not malfunctions (40 CFR 63. 301 and 63.6175) **[Added April 2004; Revised July 2006]**.

- *Malfunction* - any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused, in part, by poor maintenance or careless operation are not malfunctions. During periods of malfunction the operator must operate within established parameters as much as **possible, and monitoring of all applicable** operating parameters must continue until all waste has been combusted or until the malfunction ceases, whichever comes first (40 CFR 60.51c and 62.14490) **[Added October 2000]**.
- *Malfunction* -any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operation are not malfunctions (40 CFR 60.2977, 62.14840, 63.6675, and 63.9375) **[Revised January 2004; Revised January 2006]**.
- *Malfunction* - any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner which causes or has the potential to cause the emission limitations in this standard to be exceeded. Failures that are caused in part by poor maintenance or careless operation are not malfunctions (40 CFR 63. 301 and 63.6175) **[Added April 2004; Revised July 2006]**.
- *Malfunction* - any sudden, infrequent, and not reasonably preventable failure of air pollution control and monitoring equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused, in part, by poor maintenance or careless operation are not malfunctions (40 CFR 60.4930) **[Added April 2011]**.
- *Management Practice (MP)* - practices that, although not mandated by law, are encouraged to promote safe operating procedures.
- *Manufactured End Product* - any end product in product and service codes (PSC) 1000-9999, except (48 CFR 2.101(b)(2)) **[Added July 2016]**:
  1. PSC 5510, Lumber and Related Basic Wood Materials;
  2. Product or service group (PSG) 87, Agricultural Supplies;
  3. PSG 88, Live Animals;
  4. PSG 89, Subsistence;
  5. PSC 9410, Crude Grades of Plant Materials;
  6. PSC 9430, Miscellaneous Crude Animal Products, Inedible;
  7. PSC 9440, Miscellaneous Crude Agricultural and Forestry Products
  8. PSC 9610, Ores;
  9. PSC 9620, Minerals, Natural and Synthetic; and
  10. PSC 9630, Additive Metal Materials.
- *Manufactured With a Controlled Substance* - that the manufacturer of the product itself used a controlled substance directly in the product's manufacturing, but the product itself does not contain more than trace quantities of the controlled substance at the point of introduction into interstate commerce. The following situations are excluded from the meaning of the phrase “manufactured with” a controlled substance:
  1. Where a product has not had physical contact with the controlled substance;
  2. Where the manufacturing equipment or the product has had physical contact with a controlled substance in an intermittent manner, not as a routine part of the direct manufacturing process;
  3. Where the controlled substance has been transformed, except for trace quantities; or
  4. Where the controlled substance has been completely destroyed.
- *Manufacturer* - has the meaning given in section 216(1) of the Act. In general, this term includes any person who manufactures a stationary engine for sale in the United States or otherwise introduces a new stationary engine into commerce in the United States. This includes importers who import stationary engines for sale or resale (40 CFR 60.4219) **[Added October 2006]**.

- *Manure Composting* - the biological oxidation of a solid waste including manure usually with bedding or another organic carbon source typically at thermophilic temperatures produced by microbial heat production. There are four types of composting employed for manure management: static, in vessel, intensive windrow and passive windrow. Static composting typically occurs in an enclosed channel, with forced aeration and continuous mixing. In vessel composting occurs in piles with forced aeration but no mixing. Intensive windrow composting occurs in windrows with regular turning for mixing and aeration. Passive windrow composting occurs in windrows with infrequent turning for mixing and aeration (40 CFR 98.6) **[Added January 2010]**.
- *Marine Diesel Engine* - for the purposes of 40 CFR 80, subpart I only, marine diesel engine means a diesel engine installed on a Category 1 (C1) or Category 2 (C2) marine vessel (40 CFR 80.501(h)) **[Added July 2010]**.
- *Mass Burn Refractory Municipal Waste Combustor* - a field erected combustor that combusts municipal solid waste in a refractory wall furnace. Unless otherwise specified, this includes combustions with a cylindrical rotary refractory wall furnace (40 CFR 60.51a and 60.51b).
- *Mass Burn Refractory Municipal Waste Combustion Unit* - a field-erected municipal waste combustion unit that combusts municipal solid waste in a refractory wall furnace. Unless otherwise specified, that includes municipal waste combustion units with a cylindrical rotary refractory wall furnace (40 CFR 60.1465) **[Added April 2001]**.
- *Mass Burn Rotary Waterwall Municipal Waste Combustor* - a field erected combustor that combusts municipal solid waste in a cylindrical rotary waterwall furnace (40 CFR 60.51a).
- *Mass Burn Rotary Waterwall Municipal Waste Combustor* - a field erected combustor that combusts municipal solid waste in a cylindrical rotary waterwall furnace or on a tumbling-tile grate (40 CFR 60.51b) **[Revised October 2001]**.
- *Mass Burn Rotary Waterwall Municipal Waste Combustion Unit* - a field-erected municipal waste combustion unit that combusts municipal solid waste in a cylindrical rotary waterwall furnace (40 CFR 60.1465) **[Added April 2001]**.
- *Mass Burn Waterwall Municipal Waste Combustion Unit* - a field-erected municipal waste combustion unit that combusts municipal solid waste in a waterwall furnace (40 CFR 60.1465) **[Added April 2001]**.
- *Mass-feed Stoker Steam Generating Unit* - a steam generating unit where solid fuel is introduced directly into a retort or is fed directly onto a grate where it is combusted (40 CFR 60.41b) **[Added July 2007]**.
- *Materials Separation Plan* - a plan that identifies both a goal and an approach to separate certain components of municipal solid waste for a given service area in order to make the separated materials available for recycling (40 CFR 60.51b).
- *Materials Separation Plan* - a plan that identifies a goal and an approach for separating certain components of municipal solid waste for a given service area in order to make the separated materials available for recycling. A materials separation plan may include three items (40 CFR 60.1465) **[Added April 2001]**:
  1. Elements such as dropoff facilities, buy-back or deposit-return incentives, curbside pickup programs, or centralized mechanical separation systems.
  2. Different goals or approaches for different subareas in the service area.
  3. No materials separation activities for certain subareas or, if warranted, the entire service area.
- *Materials That Contain HAP or HAP Containing Materials* - for the purposes of this subpart, materials that contain 0.1 percent or more by mass of any individual HAP that is an OSHA defined carcinogen as specified in 29 CFR 1910.1200(d)(4), or 1.0 percent or more by mass for any other individual HAP (40 CFR 63.11180) **[Added April 2011]**.
- *Maximum Charge Rate* (40 CFR 60.51c and 62.14490) **[Added October 2000]**:

1. for continuous and intermittent HMIWI, 110 percent of the lowest 3-h average charge rate measured during the most recent performance test demonstrating compliance with all applicable emission limits.
  2. for batch HMIWI, 110 percent of the lowest daily charge rate measured during the most recent performance test demonstrating compliance with all applicable emission limits.
- *Maximum Demonstrated Load of a Municipal Waste Combustion Unit* - the highest 4-h block arithmetic average municipal waste combustion unit load achieved during 4 consecutive hours in the course of the most recent dioxins/furans stack test that demonstrates compliance with the applicable emission limit for dioxins/furans specified in 40 CFR 60, Subpart AAAA [40 CFR 60.1000 through 60.1465, see checklist items AE.36.17.US through AE.36.28.US] (40 CFR 60.1465) **[Added April 2001]**.
  - *Maximum Demonstrated Temperature of the Particulate Matter Control Device* - the highest 4-h block arithmetic average flue gas temperature measured at the inlet of the particulate matter control device during 4 consecutive hours in the course of the most recent stack test for dioxins/furans emissions that demonstrates compliance with the limits specified in 40 CFR 60, Subpart AAAA [40 CFR 60.1000 through 60.1465, see checklist items AE.36.17.US through AE.36.28.US] (40 CFR 60.1465) **[Added April 2001]**.
  - *Maximum Design Heat Input Capacity* - the ability of a steam generating unit to combust a stated maximum amount of fuel (or combination of fuels) on a steady state basis as determined by the physical design and characteristics of the steam generating unit (40 CFR 60.41c) **[Added July 2007]**.
  - *Maximum Design Waste Burning Capacity* (40 CFR 60.51c) **[Added December 1997]**:
    1. for intermittent and continuous HMIWI
 
$$C = P_v \times 15,000/8500$$
 where,  
 C = HMIWI capacity, lb/h  
 P<sub>v</sub> = primary chamber volume, ft<sup>3</sup>  
 15,000 = primary chamber heat release rate factor, Btu/ft<sup>3</sup>/h  
 8500 = standard waste heating value, Btu/lb
    2. for batch HMIWI
 
$$C = P_v \times 4.5/8$$
 where,  
 C = HMIWI capacity, lb/h  
 P<sub>v</sub> = primary chamber volume, ft<sup>3</sup>  
 4.5 = waste density, lb/ft<sup>3</sup>  
 8 = typical hours of operation of a batch HMIWI, hours.
  - *Maximum Engine Power* - maximum engine power as defined in 40 CFR 1039.801 (40 CFR 60.4219) **[Added October 2006]**.
  - *Maximum Fabric Filter Inlet Temperature* - 110 percent of the lowest 3-h average temperature at the inlet to the fabric filter (taken, at a minimum, once every minute) measured during the most recent performance test demonstrating compliance with the dioxin/furan emission limit (40 CFR 60.51c and 62.14490) **[Added October 2000]**.
  - *Maximum Flue Gas Temperature* - 110 percent of the lowest 3-h average temperature at the outlet from the wet scrubber (taken, at a minimum, once every minute) measured during the most recent performance test demonstrating compliance with the mercury (Hg) emission limit (40 CFR 60.51c and 62.14490) **[Added October 2000]**.
  - *Maximum HAP Vapor Pressure* - the sum of the individual HAP equilibrium partial pressure exerted by remediation material at the temperature equal to either: the monthly average temperature as reported by the National Weather Service when the remediation material is stored or treated at ambient temperature; or the highest calendar-month average temperature of the remediation material when the remediation material is stored at temperatures above the ambient temperature or when the remediation material is stored or treated at temperatures

below the ambient temperature. For the purpose of 40 CFR 63, Subpart GGGGG [40 CFR 63.7880 through 63.7957, see checklist items AE.300.1.US through AE.300.12.US], maximum HAP vapor pressure is determined using the procedures specified in 40 CFR 63.7944 (40 CFR 63.7957) **[Added April 2004]**.

- *Maximum Heat Input Capacity* - the ability of a steam generating unit to combust a stated maximum amount of fuel on a steady state basis, as determined by the physical design and characteristics of the steam generating unit (40 CFR 60.41b) **[Added July 2007]**.
- *Maximum Heat Input Capacity of a Steam Generating Unit* - is determined by operating the facility at maximum capacity for 24 h and using the heat loss method described in Sections 5 and 7.3 of the American Society of Mechanical Engineers (ASME) Power Test Codes 4.1 (see 40 CFR 60.17(h)) no later than 180 days after initial startup of the facility and within 60 days after reaching maximum production rate at which the facility will be operated (40 CFR 60.51a).
- *Maximum Rated Heat Input Capacity* - the hourly heat input to a unit (in mmBtu/hr), when it combusts the maximum amount of fuel per hour that it is capable of combusting on a steady state basis, as of the initial installation of the unit, as specified by the manufacturer (40 CFR 98.6) **[Added January 2010]**.
- *Maximum Rated Input Capacity* - the maximum charging rate of a municipal waste combustor unit expressed in tons per day of municipal solid waste combusted, calculated according to the procedures under 40 CFR 60.58b(j) (40 CFR 98.6) **[Added January 2010]**.
- *Mechanical Integrity* - the process of ensuring that process equipment is fabricated from the proper materials of construction and is properly installed, maintained, and replaced to prevent failures and accidental releases (40 CFR 68.3) **[Added January 2005]**.
- *Mechanical Sanding* - aerospace vehicle or component surface conditioning that uses directional and random orbital abrasive tools and aluminum oxide or nylon abrasive pads for the purpose of corrosion rework, substrate repair, prepaint surface preparation, and other maintenance activities (40 CFR 63.742) **[Added January 1999]**.
- *Medical Treatment* - treatment, other than first aid, administered by a physician or registered professional personnel under standing orders from a physician (40 CFR 68.3) **[Added January 2005]**.
- *Medical/Infectious Waste* - any waste generated in the diagnosis, treatment, or immunization of human beings or animals, in research pertaining thereto, or in the production or testing of biologicals that is listed in paragraphs (1) through (7) of this definition. The definition of medical/infectious waste does not include hazardous waste identified or listed under the regulations in 40 CFR 261; household waste, as defined in 40 CFR 261.4(b)(1); ash from incineration of medical/infectious waste, once the incineration process has been completed; human corpses, remains, and anatomical parts that are intended for interment or cremation; and domestic sewage materials identified in 40 CFR 261.4(a)(1) (40 CFR 60.51c and 62.14490) **[Added October 2000]**.
  1. cultures and stocks of infectious agents and associated biologicals, including: Cultures from medical and pathological laboratories; cultures and stocks of infectious agents from research and industrial laboratories; wastes from the production of biologicals; discarded live and attenuated vaccines; and culture dishes and devices used to transfer, inoculate, and mix cultures
  2. human pathological waste, including tissues, organs, and body parts and body fluids that are removed during surgery or autopsy, or other medical procedures, and specimens of body fluids and their containers
  3. human blood and blood products including:
    - a. liquid waste human blood
    - b. products of blood
    - c. items saturated and/or dripping with human blood; or
    - d. items that were saturated and/or dripping with human blood that are now caked with dried human blood; including serum, plasma, and other blood components, and their containers, which were used or intended for use in either patient care, testing and laboratory analysis or the development of pharmaceuticals. Intravenous bags are also included in this category.

4. sharps that have been used in animal or human patient care or treatment or in medical, research, or industrial laboratories, including hypodermic needles, syringes (with or without the attached needle), Pasteur pipettes, scalpel blades, blood vials, needles with attached tubing, and culture dishes (regardless of presence of infectious agents). Also included are other types of broken or unbroken glassware that were in contact with infectious agents, such as used slides and cover slips
  5. animal waste including contaminated animal carcasses, body parts, and bedding of animals that were known to have been exposed to infectious agents during research (including research in veterinary hospitals), production of biologicals or testing of pharmaceuticals
  6. isolation wastes including biological waste and discarded materials contaminated with blood, excretions, exudates, or secretions from humans who are isolated to protect others from certain highly communicable diseases, or isolated animals known to be infected with highly communicable diseases
  7. unused sharps including the following unused, discarded sharps: hypodermic needles, suture needles, syringes, and scalpel blades.
- *Medical/Infectious Waste* - any waste meeting the definition of “medical/infectious waste” in 40 CFR 60.51c (40 CFR 60.1465) [**Added April 2001**].
  - *Medically Necessary* - circumstances that a hospital central services staff, a hospital administrator, or a physician concludes, based on generally accepted medical practices, necessitate sterilizing without a full load in order to protect human health (40 CFR 63.10448) [**Added January 2008**].
  - *Medium HMIWI* (40 CFR 60.51c) [**Added December 1997**]:
    1. Except as provided in paragraph (2):
      - a. an HMIWI whose maximum design waste burning capacity is more than 200 lb/h but less than or equal to 500 lb/h
      - b. a continuous or intermittent HMIWI whose maximum charge rate is more than 200 lb/h but less than or equal to 500 lb/h
      - c. a batch HMIWI whose maximum charge rate is more than 1600 lb/day but less than or equal to 4000 lb/day.
    2. The following are not medium HMIWI:
      - a. a continuous or intermittent HMIWI whose maximum charge rate is less than or equal to 200 lb/h or more than 500 lb/h
      - b. a batch HMIWI whose maximum charge rate is more than 4000 lb/day or less than or equal to 1600 lb/day.
  - *Medium HMIWI* (40 CFR 62.14490) [**Added October 2000**]:
    1. an HMIWI whose maximum design waste burning capacity is more than 200 lb/h but less than or equal to 500 lb/h; or
    2. a continuous or intermittent HMIWI whose maximum charge rate is more than 200 lb/h but less than or equal to 500 lb/h; or
    3. a batch HMIWI whose maximum charge rate is more than 1,600 lb/day but less than or equal to 4,000 lb/day.

The following are not medium HMIWI:

    1. a continuous or intermittent HMIWI whose maximum charge rate is less than or equal to 200 lb/h or more than 500 lb/h; or
    2. a batch HMIWI whose maximum charge rate is more than 4,000 lb/day or less than or equal to 1,600 lb/day.
  - *Medium-pressure Appliance* - an appliance that uses a refrigerant with a liquid phase saturation pressure between 45 psia and 170 psia at 104 °F. Examples include but are not limited to appliances using R-114, R-124, R-12, R-134a, and R-500 [**Revised April 2004; Revised January 2017**].
  - *Metal Process Furnaces* - a subcategory of process heaters, as defined in this subpart, which include natural gas-fired annealing furnaces, preheat furnaces, reheat furnaces, aging furnaces, heat treat furnaces, and homogenizing furnaces (40 CFR 63.7575) [**Revised April 2013**].

- *Methane Conversion Factor* - the extent to which the CH<sub>4</sub> producing capacity (Bo) is realized in each type of treatment and discharge pathway and system. Thus, it is an indication of the degree to which the system is anaerobic (40 CFR 98.6) **[Added January 2010]**.
- *Methane Correction Factor* - an adjustment factor applied to the methane generation rate to account for portions of the landfill that remain aerobic. The methane correction factor can be considered the fraction of the total landfill waste volume that is ultimately disposed of in an anaerobic state. Managed landfills that have soil or other cover materials have a methane correction factor of 1 (40 CFR 98.6) **[Added January 2010]**.
- *Methanol (CH<sub>3</sub>OH)* - an alcohol as described in “Oxygenates” (40 CFR 98.6) **[Added January 2010]**.
- *Metropolitan Statistical Area* - any areas listed as metropolitan statistical areas in OMB Bulletin No. 05-02 entitled “Update of Statistical Area Definitions and Guidance on Their Uses” dated February 22, 2005 (available on the Web at <http://www.whitehouse.gov/omb/bulletins/>) (40 CFR 60.2977) **[Added January 2006]**.
- *Metropolitan Planning Organization (MPO)* - that organization designated as being responsible, together with the State, for conducting the continuing, cooperative, and comprehensive planning process under 23 U.S.C. 134 and 49 U.S.C. 1607 (40 CFR 93.152) **[Added April 2009]**.
- *Midgrade Gasoline* - has an octane rating greater than or equal to 88 and less than or equal to 90. This definition applies to the midgrade categories of Conventional-Summer, Conventional-Winter, Reformulated-Summer, and Reformulated-Winter. For midgrade categories of RBOB-Summer, RBOB-Winter, CBOB-Summer, and CBOB-Winter, this definition refers to the expected octane rating of the finished gasoline after oxygenate has been added to the RBOB or CBOB (40 CFR 98.6) **[Added January 2010]**.
- *Military Munitions* - all ammunition products and components produced or used by or for the U.S. Department of Defense (DoD) or for the U.S. Armed Services for national defense and security, including military munitions under the control of the Department of Defense, the U.S. Coast Guard, the National Nuclear Security Administration (NNSA), U.S. Department of Energy (DOE), and National Guard personnel. The term military munitions includes: confined gaseous, liquid, and solid propellants, explosives, pyrotechnics, chemical and riot control agents, smokes, and incendiaries used by DoD components, including bulk explosives and chemical warfare agents, chemical munitions, biological weapons, rockets, guided and ballistic missiles, bombs, warheads, mortar rounds, artillery ammunition, small arms ammunition, grenades, mines, torpedoes, depth charges, cluster munitions and dispensers, demolition charges, nonnuclear components of nuclear weapons, wholly inert ammunition products, and all devices and components of any items listed in this definition (40 CFR 63.11180) **[Added April 2011]**.
- *Million Btu (MMBtu)* - one million British thermal units (40 CFR 63.7575) **[Added April 2011]**.
- *Minimum Activated Carbon Injection Rate* - load fraction multiplied by the lowest hourly average activated carbon injection rate measured according to Table 7 to this subpart during the most recent performance test demonstrating compliance with the applicable emission limit (40 CFR 63.7575) **[Revised April 2013]**.
- *Minimum Activated Carbon Injection Rate* - load fraction multiplied by the lowest hourly average activated carbon injection rate measured according to Table 6 to 40 CFR 63, subpart JJJJ during the most recent performance stack test demonstrating compliance with the applicable emission limit (40 CFR 63.11237) **[Revised April 2013]**.
- *Minimum Dioxin/Furan Sorbent Flow Rate* - 90 percent of the highest 3-h average dioxin/furan sorbent flow rate (taken, at a minimum, once every hour) measured during the most recent performance test demonstrating compliance with the dioxin/furan emission limit (40 CFR 60.51c) **[Added December 1997]**.
- *Minimum Dioxin/Furan Sorbent Flow Rate* - 90 percent of the highest 3-h average dioxin/furan sorbent flow rate (taken, at a minimum, once every hour) measured during the most recent performance test demonstrating compliance with the dioxin/furan emission limit (40 CFR 62.14490) **[Added October 2000]**.

- *Minimum Hg Sorbent Flow Rate* - 90 percent of the highest 3-h average Hg sorbent flow rate (taken, at a minimum, once every hour) measured during the most recent performance test demonstrating compliance with the Hg emission limit (40 CFR 60.51c and 62.14490) **[Added October 2000]**.
- *Minimum Hydrogen Chloride (HCl) Sorbent Flow Rate* - 90 percent of the highest 3-h average HCl sorbent flow rate (taken, at a minimum, once every hour) measured during the most recent performance test demonstrating compliance with the HCl emission limit (40 CFR 60.51c) **[Added December 1997]**.
- *Minimum Horsepower or Amperage* - 90 percent of the highest 3-h average horsepower or amperage to the wet scrubber (taken, at a minimum, once every minute) measured during the most recent performance test demonstrating compliance with the applicable emission limits (40 CFR 60.51c and 62.14490) **[Added October 2000]**.
- *Minimum Hydrogen Chloride (HCl) Sorbent Flow Rate* - 90 percent of the highest 3-h average HCl sorbent flow rate (taken, at a minimum, once every hour) measured during the most recent performance test demonstrating compliance with the HCl emission limit (40 CFR 62.14490) **[Added October 2000]**.
- *Minimum Oxygen Level* - the lowest hourly average oxygen level measured according to Table 7 to this subpart during the most recent performance test demonstrating compliance with the applicable emission limit (40 CFR 63.7575) **[Added April 2013]**.
- *Minimum Oxygen Level* - the lowest hourly average oxygen level measured according to Table 6 to 40 CFR 63, subpart JJJJJ during the most recent performance stack test demonstrating compliance with the applicable carbon monoxide emission limit (40 CFR 63.11237) **[Revised April 2013]**.
- *Minimum PM Scrubber Pressure Drop* - the lowest 1-hour average PM scrubber pressure drop measured according to Table 6 to 40 CFR 63, Subpart JJJJJ during the most recent performance stack test demonstrating compliance with the applicable emission limit (40 CFR 63.11237) **[Added April 2011]**.
- *Minimum Pressure Drop* - the lowest hourly average pressure drop measured according to Table 7 of 40 CFR 63, Subpart DDDDD during the most recent performance test demonstrating compliance with the applicable emission limit (40 CFR 63.7575) **[Added April 2011]**.
- *Minimum Pressure Drop Across the Wet Scrubber* - 90 percent of the highest 3-h average pressure drop across the wet scrubber PM control device (taken, at a minimum, once every minute) measured during the most recent performance test demonstrating compliance with the PM emission limit (40 CFR 60.51c and 62.14490) **[Added October 2000]**.
- *Minimum Scrubber Effluent pH* - the lowest hourly average sorbent liquid pH measured at the inlet to the wet scrubber according to Table 7 of 40 CFR 63, Subpart DDDDD during the most recent performance test demonstrating compliance with the applicable hydrogen chloride emission limit (40 CFR 63.7575) **[Added April 2011]**.
- *Minimum Scrubber Liquid Flow Rate* - the lowest hourly average liquid flow rate (e.g., to the PM scrubber or to the acid gas scrubber) measured according to Table 7 to this subpart during the most recent performance stack test demonstrating compliance with the applicable emission limit (40 CFR 63.7575) **[Revised April 2013]**.
- *Minimum Scrubber Liquid Flow Rate* - the lowest hourly average scrubber liquid flow rate (e.g., to the particulate matter scrubber) measured according to Table 6 to 40 CFR 63, subpart JJJJJ during the most recent performance stack test demonstrating compliance with the applicable emission limit (40 CFR 63.11237) **[Revised April 2013]**.
- *Minimum Scrubber Liquor Flow Rate* - 90 percent of the highest 3-h average liquor flow rate at the inlet to the wet scrubber (taken, at a minimum, once every minute) measured during the most recent performance test demonstrating compliance with all applicable emission limits (40 CFR 60.51c) **[Added December 1997]**.

- *Minimum Scrubber Liquor Flow Rate* - 90 percent of the highest 3-h average liquor flow rate at the inlet to the wet scrubber (taken, at a minimum, once every minute) measured during the most recent performance test demonstrating compliance with all applicable emission limits (40 CFR 62.14490) **[Added October 2000]**.
- *Minimum Scrubber Liquor pH* - 90 percent of the highest 3-h average liquor pH at the inlet to the wet scrubber (taken, at a minimum, once every minute) measured during the most recent performance test demonstrating compliance with the HCl emission limit (40 CFR 60.51c and 62.14490) **[Added October 2000]**.
- *Minimum Scrubber Pressure Drop* - the lowest hourly average scrubber pressure drop measured according to Table 7 of 40 CFR 63, Subpart DDDDD during the most recent performance test demonstrating compliance with the applicable emission limit (40 CFR 63.7575) **[Added April 2011]**.
- *Minimum Scrubber Pressure Drop* - the lowest hourly average scrubber pressure drop measured according to Table 6 to 40 CFR 63, subpart JJJJJ during the most recent performance stack test demonstrating compliance with the applicable emission limit (40 CFR 63.11237) **[Added April 2013]**.
- *Minimum Secondary Chamber Temperature* - 90 percent of the highest 3-h average secondary chamber temperature (taken, at a minimum, once every minute) measured during the most recent performance test demonstrating compliance with the PM, CO, or dioxin/furan emission limits (40 CFR 60.51c) **[Added December 1997]**.
- *Minimum Secondary Chamber Temperature* - 90 percent of the highest 3-h average secondary chamber temperature (taken, at a minimum, once every minute) measured during the most recent performance test demonstrating compliance with the PM, CO, or dioxin/furan emission limits (40 CFR 62.14490) **[Added October 2000]**.
- *Minimum Sorbent Flow Rate* - the boiler load (percent) multiplied by the lowest 2-hour average sorbent (or activated carbon) injection rate measured according to Table 6 to 40 CFR 63, Subpart JJJJJ during the most recent performance stack test demonstrating compliance with the applicable emission limits (40 CFR 63.11237) **[Added April 2011]**.
- *Minimum Sorbent Injection Rate* – this means: (40 CFR 63.7575) **[Revised April 2013; Revised January 2016]**.
  1. The load fraction multiplied by the lowest hourly average sorbent injection rate for each sorbent measured according to Table 7 to 40 CFR, Subpart DDDDD during the most recent performance test demonstrating compliance with the applicable emission limits; or
  2. For fluidized bed combustion not using an acid gas wet scrubber or dry sorbent injection control technology to comply with the HCl emission limit,, the lowest average ratio of sorbent to sulfur measured during the most recent performance test.
- *Minimum Sorbent Injection Rate* – under 40 CFR 63, subpart JJJJJ this means: (40 CFR 63.11237) **[Added April 2013]**.
  1. The load fraction multiplied by the lowest hourly average sorbent injection rate for each sorbent measured according to Table 6 to 40 CFR 63, subpart JJJJJ during the most recent performance stack test demonstrating compliance with the applicable emission limits; or
  2. For fluidized bed combustion, the lowest average ratio of sorbent to sulfur measured during the most recent performance test.
- *Minimum Total Secondary Electric Power* - the lowest hourly average total secondary electric power determined from the values of secondary voltage and secondary current to the electrostatic precipitator measured according to Table 7 of 40 CFR 63, Subpart DDDDD during the most recent performance test demonstrating compliance with the applicable emission limits (40 CFR 63.7575) **[Added April 2011]**.

- *Minimum Total Secondary Electric Power* - the lowest hourly average total secondary electric power determined from the values of secondary voltage and secondary current to the electrostatic precipitator measured according to Table 6 to this subpart during the most recent performance stack test demonstrating compliance with the applicable emission limits (40 CFR 63.11237) **[Added April 2013]**.
- *Minimum Voltage Or Amperage* - the lowest 1-hour average total electric power value (secondary voltage x secondary current = secondary electric power) to the electrostatic precipitator measured according to Table 6 to 40 CFR 63, Subpart JJJJJ during the most recent performance stack test demonstrating compliance with the applicable emission limits (40 CFR 63.11237) **[Added April 2011]**.
- *Miscellaneous Parts And/Or Products* - any part or product made of metal or plastic, or combinations of metal and plastic. Miscellaneous parts and/or products include, but are not limited to, metal and plastic components of the following types of products as well as the products themselves: motor vehicle parts and accessories for automobiles, trucks, recreational vehicles; automobiles and light duty trucks at automobile and light duty truck assembly plants; boats; sporting and recreational goods; toys; business machines; laboratory and medical equipment; and household and other consumer products (40 CFR 63.11180) **[Added April 2011]**.
- *Miscellaneous Products* - include all refined petroleum products not defined elsewhere. It includes, but is not limited to, naphtha-type jet fuel (Jet B and JP-4), petrolatum lube refining by-products (aromatic extracts and tars), absorption oils, ram-jet fuel, petroleum rocket fuels, synthetic natural gas feedstocks, waste feedstocks, and specialty oils. It excludes organic waste sludges, tank bottoms, spent catalysts, and sulfuric acid (40 CFR 98.6) **[Added January 2010]**.
- *Miscellaneous Surface Coating Operation* - the collection of equipment used to apply surface coating to miscellaneous parts and/or products made of metal or plastic, including applying cleaning solvents to prepare the surface before coating application, mixing coatings before application, applying coating to a surface, drying or curing the coating after application, and cleaning coating application equipment, but not plating. A single surface coating operation may include any combination of these types of equipment, but always includes at least the point at which a coating material is applied to a given part. A surface coating operation includes all other steps (such as surface preparation with solvent and equipment cleaning) in the affected source where HAP are emitted from the coating of a part. The use of solvent to clean parts (for example, to remove grease during a mechanical repair) does not constitute a miscellaneous surface coating operation if no coatings are applied. A single affected source may have multiple surface coating operations. Surface coatings applied to wood, leather, rubber, ceramics, stone, masonry, or substrates other than metal and plastic are not considered miscellaneous surface coating operations for the purposes of this subpart (40 CFR 63.11180) **[Added April 2011]**.
- *Mitigation or Mitigation System* - specific activities, technologies, or equipment designed or deployed to capture or control substances upon loss of containment to minimize exposure of the public or the environment. Passive mitigation means equipment, devices, or technologies that function without human, mechanical, or other energy input. Active mitigation means equipment, devices, or technologies that need human, mechanical, or other energy input to function (40 CFR 68.3) **[Added January 2005]**.
- *Mixed Fuel-Fired (Pulverized Coal/Refuse-Derived Fuel) Combustion Unit* - a combustion unit that combusts coal and refuse-derived fuel simultaneously, in which pulverized coal is introduced into an air stream that carries the coal to the combustion chamber of the unit where it is combusted in suspension. That includes both conventional pulverized coal and micropulverized coal (40 CFR 60.1465) **[Added April 2001]**.
- *Mobile Equipment* - any device that may be drawn and/or driven on a roadway including, but not limited to, heavy-duty trucks, truck trailers, fleet delivery trucks, buses, mobile cranes, bulldozers, street cleaners, agriculture equipment, motor homes, and other recreational vehicles (including camping trailers and fifth wheels) (40 CFR 63.11180) **[Added April 2011]**.
- *Model Year* - the calendar year in which an engine is manufactured (see ``date of manufacture"), except as follows (40 CFR 60.4219 and 60.4248) **[Added October 2006; Revised July 2011]**:

1. Model year means the annual new model production period of the engine manufacturer in which an engine is manufactured (see “date of manufacture”), if the annual new model production period is different than the calendar year and includes January 1 of the calendar year for which the model year is named. It may not begin before January 2 of the previous calendar year and it must end by December 31 of the named calendar year.
  2. For an engine that is converted to a stationary engine after being placed into service as a nonroad or other non-stationary engine, model year means the calendar year or new model production period in which the engine was manufactured (see “date of manufacture”).
- *Modification* - in relation to new source performance standards (NSPS), any physical or operational change to an existing facility that results in an increase in the emission rate to the atmosphere of any pollutant to which a standard applies except (40 CFR 60.14) **[Added December 1997]**:
    1. maintenance, repair, and replacement which the administrator determines to be routine for a source category
    2. an increase in production rate of an existing facility, if that increase can be accomplished without a capital expenditure on the facility
    3. an increase in the hours of operation
    4. use of an alternate fuel or raw material if, prior to the date any standard under this part becomes applicable to that source type, the existing facility was designed to accommodate that alternate use. A facility will be designed to accommodate an alternative fuel or raw material if that use could be accomplished under the facility’s construction specifications as assessed prior to the change.
    5. the addition or use of any system or device whose primary function is the reduction of air pollutants, except when an emission control system is removed or replaced by a system which the Administrator determines to be less than environmentally beneficial
    6. the relocation or change in ownership of an existing facility.
  - *Modification* - a change to an existing SSI unit later than 21 September 2011 and that meets one of two criteria (40 CFR 60.4930) **[Added April 2011]**:
    1. The cumulative cost of the changes over the life of the unit exceeds 50 percent of the original cost of building and installing the SSI unit (not including the cost of land) updated to current costs (current dollars). To determine what systems are within the boundary of the SSI unit used to calculate these costs, see the definition of SSI unit.
    2. Any physical change in the SSI unit or change in the method of operating it that increases the amount of any air pollutant emitted for which section 129 or section 111 of the Clean Air Act has established standards.
  - *Modification or Modified CISWI Unit* - a CISWI unit you have changed later than promulgation of the final CISWI emission guidelines in 40 CFR 60, Subpart DDDD: Emissions Guidelines and Compliance Times for Commercial and Industrial Solid Waste Incineration Units That Commenced Construction On or Before 30 November 1999 and that meets one of two criteria (40 CFR 62.14840) **[Added January 2004]**:
    1. The cumulative cost of the changes over the life of the unit exceeds 50 percent of the original cost of building and installing the CISWI unit (not including the cost of land) updated to current costs (current dollars). To determine what systems are within the boundary of the CISWI unit used to calculate these costs, see the definition of CISWI unit.
    2. Any physical change in the CISWI unit or change in the method of operating it that increases the amount of any air pollutant emitted for which section 129 or section 111 of the *Clean Air Act* has established standards.
  - *Modification or Modified HMIWI* - any change to an HMIWI unit after the effective date of these standards such that (40 CFR 60.51c):
    1. The cumulative costs of the modifications, over the life of the unit, exceed 50 per centum of the original cost of the construction and installation of the unit (not including the cost of any land purchased in connection with such construction or installation) updated to current costs, or
    2. The change involves a physical change in or change in the method of operation of the unit which increases the amount of any air pollutant emitted by the unit for which standards have been established under section 129 or section 111.

- *Modification or Modified HMIWI* - any change to an HMIWI unit after 16 March 1998, such that (40 CFR 62.14490) **[Added October 2000]**:
  1. the cumulative costs of the modifications, over the life of the unit, exceed 50 per centum of the original cost of the construction and installation of the unit (not including the cost of any land purchased in connection with such construction or installation) updated to current costs, or
  2. the change involves a physical change in or change in the method of operation of the unit which increases the amount of any air pollutant emitted by the unit for which standards have been established under section 129 or section 111.
- *Modification or Modified Municipal Waste Combustion Unit* - a municipal waste combustion unit that has changed after 6 June 2001 and that meets one of two criteria (40 CFR 60.1465) **[Added April 2001]**:
  1. The cumulative cost of the changes over the life of the unit exceeds 50 percent of the original cost of building and installing the unit (not including the cost of land) updated to current costs.
  2. Any physical change in the municipal waste combustion unit or change in the method of operating it that increases the emission level of any air pollutant for which new source performance standards have been established under section 129 or section 111 of the CAA. Increases in the emission level of any air pollutant are determined when the municipal waste combustion unit operates at 100 percent of its physical load capability and are measured downstream of all air pollution control devices. Load restrictions based on permits or other nonphysical operational restrictions cannot be considered in the determination.
- *Modification or Modified Unit* - an incineration unit you have changed on or after 16 June 2006 and that meets one of two criteria: (40 CFR 60.2977) **[Added January 2006]**.
  1. The cumulative cost of the changes over the life of the unit exceeds 50 percent of the original cost of building and installing the unit (not including the cost of land) updated to current costs (current dollars). For an OSWI unit, to determine what systems are within the boundary of the unit used to calculate these costs, see the definition of OSWI unit.
  2. Any physical change in the unit or change in the method of operating it that increases the amount of any air pollutant emitted for which section 129 or section 111 of the Clean Air Act has established standards.
- *Modular Excess-Air Municipal Waste Combustion Unit* - a municipal waste combustion unit that combusts municipal solid waste, is not field-erected, and has multiple combustion chambers, all of which are designed to operate at conditions with combustion air amounts in excess of theoretical air requirements (40 CFR 60.1465) **[Added April 2001]**.
- *Modular Starved-Air Municipal Waste Combustion Unit* - a municipal waste combustion unit that combusts municipal solid waste, is not field-erected, and has multiple combustion chambers in which the primary combustion chamber is designed to operate at substoichiometric conditions (40 CFR 60.1465) **[Added April 2001]**.
- *Monthly Throughput* - the total volume of gasoline that is loaded into all gasoline storage tanks during a month, as calculated on a rolling 30-day average (40 CFR 63.11132) **[Added April 2008]**.
- *Mothball* - to evacuate refrigerant from an appliance, or the affected isolated section or component of an appliance, to at least atmospheric pressure, and to temporarily shut down that appliance (40 CFR 82.152) **[Added January 2017]**
- *Motor Gasoline (Finished)* - a complex mixture of volatile hydrocarbons, with or without additives, suitably blended to be used in spark ignition engines. Motor gasoline includes conventional gasoline, reformulated gasoline, and all types of oxygenated gasoline. Gasoline also has seasonal variations in an effort to control ozone levels. This is achieved by lowering the Reid Vapor Pressure (RVP) of gasoline during the summer driving season. Depending on the region of the country the RVP is lowered to below 9.0 psi or 7.8 psi. The RVP may be further lowered by state regulations (40 CFR 98.6) **[Added January 2010]**.

- *Motor Vehicle* - any self-propelled vehicle, including, but not limited to, automobiles, light duty trucks, golf carts, vans, and motorcycles (40 CFR 63.11180) **[Added April 2011]**.
- *Motor Vehicle Air-Conditioner (MVAC)* - mechanical vapor compression refrigeration equipment used to cool the driver's or passenger's compartment of any motor vehicle. This definition is not intended to encompass hermetically sealed refrigeration systems used on motor vehicles for refrigerated cargo and the air conditioning systems on passenger buses using HCFC-22 refrigerant (40 CFR 82.32(d)) **[Revised December 1997]**.
- *Motor Vehicle And Mobile Equipment Surface Coating* - the spray application of coatings to assembled motor vehicles or mobile equipment. For the purposes of this subpart, it does not include the surface coating of motor vehicle or mobile equipment parts or subassemblies at a vehicle assembly plant or parts manufacturing plant (40 CFR 63.11180) **[Added April 2011]**.
- *Motor Vehicle Diesel Fuel* - any diesel fuel or other distillate fuel that is used, intended for use, or made available for use in motor vehicles or motor vehicle engines (40 CFR 80.2(y)) **[Added October 2011]**.
- *Motor Vehicle Disposal Facility* - any commercial facility that engages in the disposal (which includes dismantling, crushing, or recycling) of MVACs or MVAC-like appliances, including but not limited to automotive recycling facilities, scrap yards, landfills, and salvage yards engaged in such operations. Motor vehicle repair and/or servicing facilities, including collision repair facilities, are not considered motor vehicle disposal facilities (40 CFR 82.32(I)) **[Added December 1997]**.
- *Muck Cooker* - a device for heating perchloroethylene-laden waste material to volatilize and recover perchloroethylene (40 CFR 63.321).
- *Multiple Hearth Incinerator* - a circular steel furnace that contains a number of solid refractory hearths and a central rotating shaft; rabble arms that are designed to slowly rake the sludge on the hearth are attached to the rotating shaft. Dewatered sludge enters at the top and proceeds downward through the furnace from hearth to hearth, pushed along by the rabble arms (40 CFR 60.4930) **[Added April 2011]**.
- *Municipal-type Solid Waste* - refuse, more than 50 percent of which is waste consisting of a mixture of paper, wood, yard wastes, food wastes, plastics, leather, rubber, and other combustible materials, and noncombustible materials such as glass and rock (40 CFR 60.41b) **[Added July 2007]**.
- *Municipal Solid Waste or Municipal-Type Solid Waste* - household, commercial/retail, and/or institutional waste. Household waste includes materials discarded by single and multiple residential dwellings, hotels, motels, and other similar permanent or temporary housing establishments or facilities. Commercial/retail waste includes materials discarded by stores, offices, restaurants, warehouses, nonmanufacturing activities at industrial facilities, and other similar establishments or facilities. Institutional waste includes material discarded by schools, nonmedical waste discarded by hospitals, material discarded by nonmanufacturing activities at prisons and government facilities, and material discarded by other similar establishments. Household, commercial/retail, and institutional waste does not include used oil; sewage sludge; wood pallets; construction, renovation, and demolition wastes (which includes but is not limited to railroad ties and telephone poles); clean wood; industrial process or manufacturing wastes; medical waste; or motor vehicles. Household, commercial/retail, and institutional waste does include: yard waste; refused derived fuel; and motor vehicle maintenance materials limited to vehicle batteries and tires except as specified in 40 CFR 60.50a(c) and 60.50b(g) (40 CFR 60.51a and 60.51b).
- *Municipal Solid Waste or Municipal-Type Solid Waste* - household, commercial/retail, or institutional waste. Household waste includes material discarded by residential dwellings, hotels, motels, and other similar permanent or temporary housing. Commercial/retail waste includes material discarded by stores, offices, restaurants, warehouses, nonmanufacturing activities at industrial facilities, and other similar establishments or facilities. Institutional waste includes materials discarded by schools, by hospitals (nonmedical), by nonmanufacturing activities at prisons and government facilities, and other similar establishments or facilities. Household, commercial/retail, and institutional waste does include yard waste and refuse-derived fuel. Household,

commercial/retail, and institutional waste does not include used oil; sewage sludge; wood pallets; construction, renovation, and demolition wastes (which include railroad ties and telephone poles); clean wood; industrial process or manufacturing wastes; medical waste; or motor vehicles (including motor vehicle parts or vehicle fluff) (40 CFR 60.1465) [**Added April 2001**].

- *Municipal Solid Waste* - as used in this subpart is as defined in 40 CFR 60.1465 of 40 CFR 60, Subpart AAAA [40 CFR 60.1000 through 60.1465, see checklist items AE.36.17.US through AE.36.28.US] (40 CFR 63.6175) [**Added April 2004**].
- *Municipal Solid Waste* - refuse (and refuse-derived fuel) collected from the general public and from residential, commercial, institutional, and industrial sources consisting of paper, wood, yard wastes, food wastes, plastics, leather, rubber, and other combustible materials and non-combustible materials such as metal, glass and rock, provided that: (1) the term does not include industrial process wastes or medical wastes that are segregated from such other wastes; and (2) an incineration unit shall not be considered to be combusting municipal solid waste for purposes of this subpart if it combusts a fuel feed stream, 30 percent or less of the weight of which is comprised, in aggregate, of municipal solid waste, as determined by 40 CFR 60.2887(b) (40 CFR 60.2977) [**Added January 2006**].
- *Municipal Solid Waste (MSW)* - solid phase household, commercial/retail, and/or institutional waste. Household waste includes material discarded by single and multiple residential dwellings, hotels, motels, and other similar permanent or temporary housing establishments or facilities. Commercial/retail waste includes material discarded by stores, offices, restaurants, warehouses, non-manufacturing activities at industrial facilities, and other similar establishments or facilities. Institutional waste includes material discarded by schools, nonmedical waste discarded by hospitals, material discarded by non-manufacturing activities at prisons and government facilities, and material discarded by other similar establishments or facilities. Household, commercial/retail, and institutional wastes include yard waste, refuse-derived fuel, and motor vehicle maintenance materials. Insofar as there is separate collection, processing and disposal of industrial source waste streams consisting of used oil, wood pallets, construction, renovation, and demolition wastes (which includes, but is not limited to, railroad ties and telephone poles), paper, clean wood, plastics, industrial process or manufacturing wastes, medical waste, motor vehicle parts or vehicle fluff, or used tires that do not contain hazardous waste identified or listed under 42 U.S.C. Sec. 6921, such wastes are not municipal solid waste. However, such wastes qualify as municipal solid waste where they are collected with other municipal solid waste or are otherwise combined with other municipal solid waste for processing and/or disposal (40 CFR 98.6) [**Added January 2010; Revised January 2011**].
- *Municipal Solid Waste Landfill or MSW Landfill* - an entire disposal facility in a contiguous geographical space where household waste is placed in or on land. An MSW landfill may also receive other types of RCRA Subtitle D wastes (40 CFR 257.2) such as commercial solid waste, nonhazardous sludge, conditionally exempt small quantity generator waste, and industrial solid waste. Portions of an MSW landfill may be separated by access roads, public roadways, or other public right-of-ways. An MSW landfill may be publicly or privately owned (40 CFR 98.6) [**Added January 2010**].
- *Municipal Waste Combustion Plant* - one or more municipal waste combustion units at the same location as specified under Applicability (40 CFR 60.1015(a) and (b)) (40 CFR 60.1465) [**Added April 2001**].
- *Municipal Waste Combustion Plant Capacity* - the aggregate municipal waste combustion capacity of all municipal waste combustion units at the plant that are subject to 40 CFR 60, Subpart Ea [40 CFR 60.50a through 60.59a, see checklist items AE.35.1.US through AE.35.3.US]. Subpart Eb [40 CFR 60.50b through 60.59b, see checklist items AE.36.1.US through AE.36.16.US] or Subpart AAAA [40 CFR 60.1000 through 60.1465, see checklist items AE.36.17.US through AE.36.28.US] (40 CFR 60.1465) [**Added April 2001**].
- *Municipal Waste Combustion Unit* - any setting or equipment that combusts solid, liquid, or gasified municipal solid waste including, but not limited to, field-erected combustion units (with or without heat recovery), modular combustion units (starved-air or excess-air), boilers (for example, steam generating units), furnaces (whether suspension-fired, grate-fired, mass-fired, air curtain incinerators, or fluidized bed-fired), and

pyrolysis/combustion units. Two criteria further define municipal waste combustion units (40 CFR 60.1465) **[Added April 2001]**:

1. Municipal waste combustion units do not include pyrolysis or combustion units located at a plastics or rubber recycling unit as specified under Applicability (40 CFR 60.1020(h) and (i)). Municipal waste combustion units also do not include cement kilns that combust municipal solid waste as specified under Applicability (40 CFR 60.1020(j)). Municipal waste combustion units also do not include internal combustion engines, gas turbines, or other combustion devices that combust landfill gases collected by landfill gas collection systems.
  2. The boundaries of a municipal waste combustion unit are defined as follows. The municipal waste combustion unit includes, but is not limited to, the municipal solid waste fuel feed system, grate system, flue gas system, bottom ash system, and the combustion unit water system. The municipal waste combustion unit does not include air pollution control equipment, the stack, water treatment equipment, or the turbine-generator set. The municipal waste combustion unit boundary starts at the municipal solid waste pit or hopper and extends through three areas:
    - a. The combustion unit flue gas system, which ends immediately after the heat recovery equipment or, if there is no heat recovery equipment, immediately after the combustion chamber.
    - b. The combustion unit bottom ash system, which ends at the truck loading station or similar equipment that transfers the ash to final disposal. It includes all ash handling systems connected to the bottom ash handling system.
    - c. The combustion unit water system, which starts at the feed water pump and ends at the piping that exits the steam drum or superheater.
- *Municipal Waste Combustion Unit* - for the purpose of this subpart and 40 CFR 60, subpart FFFF, any setting or equipment that combusts municipal solid waste (as defined in this subpart) including, but not limited to, field-erected, modular, cyclonic burn barrel, and custom built incineration units (with or without energy recovery) operating with starved or excess air, boilers, furnaces, pyrolysis/combustion units, and air curtain incinerators (except those air curtain incinerators listed in 40 CFR 60.2888(b)) (40 CFR 60.2977) **[Added January 2006]**.
  - *Municipal Waste Combustor, MWC, or Municipal Waste Combustor Unit* - any setting or equipment that combusts solid, liquid, gasified MSW including, but not limited to, field erected incinerators (with or without heat recovery), modular incinerators (starved air or excess air), boilers (i.e., steam generating units), furnaces (whether suspension fired, grate-fired, mass-fired, air curtain incinerators, or fluidized bed-fired), and pyrolysis/combustion units. MWCs do not include pyrolysis/combustion units located at plastics/rubber recycling units. MWCs do not include cement kilns firing MSW. MWCs do not include internal combustion engines, gas turbines, or other combustion devices that combust landfill gases collected by landfill gas collection systems (40 CFR 60.51b) **[Added December 1997]**.
  - *Municipal Wastewater Treatment Plant* - a series of treatment processes used to remove contaminants and pollutants from domestic, business, and industrial wastewater collected in city sewers and transported to a centralized wastewater treatment system such as a publicly owned treatment works (POTW) (40 CFR 98.6) **[Added July 2010]**.
  - *MVAC-like Appliance* - a mechanical vapor compression, open-drive compressor appliance with a full charge of 20 lbs or less of refrigerant used to cool the driver's or passenger's compartment of off-road vehicles or equipment. This includes, but is not limited to, the air-conditioning equipment found on agricultural or construction vehicles. This definition is not intended to cover appliances using R-22 refrigerant **[Revised October 2003; Revised January 2017]**.
  - *NAICS* - North American Industry Classification System (40 CFR 68.3) **[Added January 2005]**.
  - *NFPA* - the National Fire Protection Association (40 CFR 68.3) **[Added January 2005]**.
  - *NIST* - the United States National Institute of Standards and Technology.

- *N<sub>2</sub>O* - nitrous oxide.
- *Naphthas* (< 401 °F) - a generic term applied to a petroleum fraction with an approximate boiling range between 122 °F and 400 °F. The naphtha fraction of crude oil is the raw material for gasoline and is composed largely of paraffinic hydrocarbons (40 CFR 98.6) [**Added January 2010**].
- *National Ambient Air Quality Standards (NAAQS)* - those standards established pursuant to section 109 of the Act and include standards for carbon monoxide (CO), lead (Pb), nitrogen dioxide, ozone, particulate matter (PM-10), and sulfur dioxide (40 CFR 93.152) [**Added April 2009**].
- *Natural Draft Opening* - any opening in a room, building, or total enclosure that remains open during operation of the facility and that is not connected to a duct in which a fan is installed. The rate and direction of the natural draft through such an opening is a consequence of the difference in pressures on either side of the wall containing the opening (40 CFR 63.742) [**Added January 1999**].
- *Natural Gas* - a naturally occurring fluid mixture of hydrocarbons (e.g., methane, ethane, or propane) produced in geological formations beneath the Earth's surface that maintains a gaseous state at standard atmospheric temperature and pressure under ordinary conditions. Additionally, natural gas must either be composed of at least 70 percent methane by volume or have a gross calorific value between 950 and 1,100 British thermal units (Btu) per standard cubic foot. Natural gas does not include the following gaseous fuels: landfill gas, digester gas, refinery gas, sour gas, blast furnace gas, coal-derived gas, producer gas, coke oven gas, or any gaseous fuel produced in a process which might result in highly variable sulfur content or heating value (40 CFR 60.4420) [**Added April 2009**].
- *Natural Gas* - a fluid mixture of hydrocarbons (e.g., methane, ethane, or propane), composed of at least 70 percent methane by volume or that has a gross calorific value between 35 and 41 megajoules (MJ) per dry standard cubic meter (950 and 1,100 Btu per dry standard cubic foot), that maintains a gaseous state under ISO conditions. In addition, natural gas contains 20.0 grains or less of total sulfur per 100 standard cubic feet. Finally, natural gas does not include the following gaseous fuels: landfill gas, digester gas, refinery gas, sour gas, blast furnace gas, coal-derived gas, producer gas, coke oven gas, or any gaseous fuel produced in a process which might result in highly variable sulfur content or heating value (40 CFR 60.41) [**Added January 2012; Revised April 2012**].
- *Natural Gas* – this means (40 CFR 60.41b and 60.41c) [**Added July 2007; Revised April 2009**]:
  1. A naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane; or
  2. Liquefied petroleum gas, as defined by the American Society for Testing and Materials in ASTM D1835 (incorporated by reference, see 40 CFR 60.17); or
  3. A mixture of hydrocarbons that maintains a gaseous state at ISO conditions. Additionally, natural gas must either be composed of at least 70 percent methane by volume or have a gross calorific value between 34 and 43 megajoules (MJ) per dscm (910 and 1,150 Btu/dscf).
- *Natural Gas* - a naturally occurring mixture of hydrocarbon and non-hydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane. Natural gas may be field quality or pipeline quality (40 CFR 98.6) [**Added January 2010; Revised January 2011**].
- *Natural Gas* - a naturally occurring fluid mixture of hydrocarbons (e.g., methane, ethane, or propane) produced in geological formations beneath the Earth's surface that maintains a gaseous state at standard atmospheric temperature and pressure under ordinary conditions. Natural gas contains 20.0 grains or less of total sulfur per 100 scf. Equivalents of this in other units are as follows: 0.068 weight percent total sulfur, 680 parts ppmw total sulfur, and 338 ppmv at 20 °C total sulfur. Additionally, natural gas must either be composed of at least 70 percent methane by volume or have a gross calorific value between 950 and 1100 Btu/scf. Natural gas does not include the following gaseous fuels: landfill gas, digester gas, refinery gas, sour gas, blast furnace gas, coal-derived gas, producer gas, coke oven gas, or any gaseous fuel produced in a process which might result in highly variable sulfur content or heating value (40 CFR 60.331) [**Added October 2004**].

- *Natural Gas* - a naturally occurring mixture of hydrocarbon and non-hydrocarbon gases found in geologic formations beneath the Earth's surface, of which the principal constituent is methane. May be field or pipeline quality. For the purposes of 40 CFR 63, Subpart YYYYY [40 CFR 63.6080 through 63.6175, see checklist items AE.20.3.US through AE.20.10.US], the definition of natural gas includes similarly constituted fuels such as field gas, refinery gas, and syngas (40 CFR 63.6175) **[Added April 2004]**.
- *Natural Gas*: (40 CFR 63.7575) **[Revised April 2013]**.
  1. A naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane; or
  2. Liquefied petroleum gas, as defined in ASTM D1835 (incorporated by reference, see 40 CFR 63.14); or
  3. A mixture of hydrocarbons that maintains a gaseous state at ISO conditions. Additionally, natural gas must either be composed of at least 70 percent methane by volume or have a gross calorific value between 35 and 41 megajoules (MJ) per dry standard cubic meter (950 and 1,100 Btu per dry standard cubic foot); or
  4. Propane or propane derived synthetic natural gas. Propane means a colorless gas derived from petroleum and natural gas, with the molecular structure C<sub>3</sub>H<sub>8</sub>.
- *Natural Gas*: (40 CFR 63.11237) **[Revised April 2013]**.
  1. A naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane; or
  2. Liquefied petroleum gas, as defined by the American Society for Testing and Materials in ASTM D1835 (incorporated by reference, see 40 CFR 63.14); or
  3. A mixture of hydrocarbons that maintains a gaseous state at ISO conditions (i.e., a temperature of 288 Kelvin, a relative humidity of 60 percent, and a pressure of 101.3 kilopascals). Additionally, natural gas must either be composed of at least 70 percent methane by volume or have a gross calorific value between 35 and 41 megajoules (MJ) per dry standard cubic meter (950 and 1,100 Btu per dry standard cubic foot); or
  4. Propane or propane-derived synthetic natural gas. Propane means a colorless gas derived from petroleum and natural gas, with the molecular structure C<sub>3</sub>H<sub>8</sub>.
- *Natural Gas Liquids (NGLs)* - those hydrocarbons in natural gas that are separated from the gas as liquids through the process of absorption, condensation, adsorption, or other methods. Generally, such liquids consist of ethane, propane, butanes, and pentanes plus. Bulk NGLs refers to mixtures of NGLs that are sold or delivered as undifferentiated product from natural gas processing plants (40 CFR 98.6) **[Added January 2010; Revised January 2011]**.
- *Natural Gas Processing Plant (Gas Plant)* - any processing site engaged in the extraction of natural gas liquids from field gas, fractionation of mixed natural gas liquids to natural gas products, or both, classified as North American Industrial Classification System (NAICS) code 21112 (previously Standard Industrial Classification (SIC) code 1321) (40 CFR 68.3) **[Added January 2005]**.
- *Natural Gas Transmission* - the pipelines used for the long distance transport of **natural gas (excluding processing)**. Specific equipment used in natural gas transmission includes the land, mains, valves, meters, boosters, regulators, storage vessels, dehydrators, compressors, and their driving units and appurtenances, and equipment used transporting gas from a production plant, delivery point of purchased gas, gathering system, storage area, or other wholesale source of gas to one or more distribution area(s). Natural gas transmission and storage facility means any grouping of equipment where natural gas is processed, compressed, or stored prior to entering a pipeline to a local distribution company or (if there is no local distribution company) to a final end user. Examples of a facility for this source category are: an underground natural gas storage operation; or a natural gas compressor station that receives natural gas via pipeline, from an underground natural gas storage operation, or from a natural gas processing plant. The emission points associated with these phases include, but are not limited to, process vents. Processes that may have vents include, but are not limited to, dehydration and compressor station engines. Facility, for the purpose of a major source determination, means natural gas transmission and storage equipment that is located inside the boundaries of an individual surface site (as defined in this section) and is connected by ancillary equipment, such as gas flow lines or power lines. Equipment that is

part of a facility will typically be located within close proximity to other equipment located at the same facility. Natural gas transmission and storage equipment or groupings of equipment located on different gas leases, mineral fee tracts, lease tracts, subsurface unit areas, surface fee tracts, or surface lease tracts shall not be considered part of the same facility (40 CFR 63.6175) [**Added April 2004**].

- *Natural Gasoline* - a mixture of liquid hydrocarbons (mostly pentanes and heavier hydrocarbons) extracted from natural gas. It includes isopentane (40 CFR 98.6) [**Added January 2010**].
- *New* - in relation to a perchloroethylene dry cleaning facility, commenced construction or reconstruction on or after 9 December 1991 (40 CFR 63.321).
- *New* - in relation to solvent-cleaning machines, any solvent-cleaning machine the construction or reconstruction of which is commenced after 29 November 1993 (40 CFR 63.461).
- *New Affected Source* – in relation to engine test cells, an affected source is new if you commenced construction of the affected source after 14 May 14, 2002 (40 CFR 63.9290(a)(2)) [**Added July 2003**].
- *New Sewage Sludge Incineration Unit* - a SSI unit the construction of which is commenced after October 14, 2010 which would be applicable to such unit or a modified solid waste incineration unit (40 CFR 60.4930) [**Added April 2011**].
- *New Site Remediation Sources*- the facility commenced construction or reconstruction of the affected source on or after 30 July 2002. An affected source is reconstructed if it meets the definition of reconstruction in 40 CFR 63.2 (40 CFR 63.7882(b)) [**Added April 2004**].
- *New Stationary RICE* - in relation to the NESHAPS for stationary RICE, this is defined as follows (40 CFR 63.6590(a)(2)) [**Added April 2013**]:
  1. a stationary RICE with a site rating > 500 brake HP located at a major source of HAP emissions is new if construction of the stationary RICE started on or after 19 December 2002
  2. a stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions is new if construction of the stationary RICE started on or after 12 June 2006
  3. a stationary RICE located at an area source of HAP emissions is new if construction of the stationary RICE started on or after 12 June 2006.
- *Nitrogen Excreted* - the nitrogen that is excreted by livestock in manure and urine (40 CFR 98.6) [**Added January 2010**].
- *Nitric Acid Production Unit* - any facility producing nitric acid which is 30 to 70 percent in strength by either the pressure or atmospheric pressure process (40 CFR 60.70).
- *No Detectable Organic Emissions* - no escape of organics to the atmosphere as determined using the procedure specified in 40 CFR 63.694(k) (40 CFR 63.7957) [**Added April 2004**].
- *Non-chemical Based Depainting Equipment* - any depainting equipment or technique, including, but not limited to, media blasting equipment, that can depaint an aerospace vehicle or component in the absence of a chemical stripper. This definition does not include mechanical sanding or hand sanding (40 CFR 63.742) [**Added January 1999**].
- *Non-crude Feedstocks* - any petroleum product or natural gas liquid that enters the refinery to be further refined or otherwise used on site (40 CFR 98.6) [**Added January 2010; Revised January 2011**].
- *Non-HAP Material* -, for the purposes of 40 CFR Subpart GG, a primer, topcoat, specialty coating, chemical milling maskant, cleaning solvent, or stripper that contains no more than 0.1 percent by mass of any individual

organic HAP that is an Occupational Safety and Health Administration-defined carcinogen as specified in 29 CFR 1910.1200(d)(4) and no more than 1.0 percent by mass for any other individual HAP (40 CFR 63.472) **[Added January 2016]**.

- *Non-HAP Solvent* - for the purposes of this subpart, a solvent (including thinners and cleaning solvents) that contains less than 0.1 percent by mass of any individual HAP that is an OSHA-defined carcinogen as specified in 29 CFR 1910.1200(d)(4) and less than 1.0 percent by mass for any other individual HAP (40 CFR 63.11180) **[Added April 2011]**.
- *Non-industrial POTW* - a POTW that does not meet the definition of an industrial POTW (40 CFR 63.1583) **[Added January 2000]**.
- *Non-petroleum diesel (NP diesel)* - a diesel fuel that contains at least 80 percent mono-alkyl esters of long chain fatty acids derived from vegetable oils or animal fats (40 CFR 80.2(sss)) **[Added July 2006]**.
- *Nonattainment Area* - an area designated as nonattainment under section 107 of the Act and described in 40 CFR 81 (40 CFR 93.152) **[Added April 2009]**.
- *Noncontinental Area* - the State of Hawaii, the Virgin Islands, Guam, American Samoa, the Commonwealth of Puerto Rico, or the Northern Mariana Islands (40 CFR 60.41b, 60.41c. and 60.4420) **[Added July 2007, Revised April 2009]**.
- *Nonregenerative Carbon Adsorber* - a carbon adsorber vessel in which the spent carbon bed does not undergo carbon regeneration in the adsorption vessel (40 CFR 63.742) **[Added January 1999]**.
- *Nonroad (NR) Diesel Fuel* - any NRLM diesel fuel that is not "locomotive or marine (LM) diesel fuel." (40 CFR 80.2(ooo)) **[Added October 2011]**.
- *Nonroad, Locomotive, or Marine (NRLM) Diesel Fuel* - any diesel fuel or other distillate fuel that is used, intended for use, or made available for use, as a fuel in any nonroad diesel engines, including locomotive and marine diesel engines, except the following (40 CFR 80.2(nnn)) ((40 CFR 80.2(uuu)) **[Added July 2010]**:
  1. Distillate fuel with a T90 at or above 700 F that is used only in Category 2 and 3 marine engines is not NRLM diesel fuel, and ECA marine fuel is not NRLM diesel fuel (note that fuel that conforms to the requirements of NRLM diesel fuel is excluded from the definition of "ECA marine fuel" in this section without regard to its actual use). Use the distillation test method specified in 40 CFR 1065.1010 to determine the T90 of the fuel. NR diesel fuel and LM diesel fuel are subcategories of NRLM diesel fuel.
  2. Any diesel fuel that is sold for use in stationary engines that are required to meet the requirements of 40 CFR 80.510(a) and/or (b), when such provisions are applicable to nonroad engines, shall be considered NRLM diesel fuel.
- *Non-selective Catalytic Reduction (NSCR)* - an add-on catalytic NO<sub>x</sub> control device for rich burn engines that, in a two-step reaction, promotes the conversion of excess oxygen, NO<sub>x</sub>, CO, and volatile organic compounds (VOC) into CO<sub>2</sub>, nitrogen, and water (40 CFR 63.6675) **[Added July 2004]**.
- *Normal Operating Characteristics and Conditions* - appliance operating temperatures, pressures, fluid flows, speeds, and other characteristics, including full charge of the appliance, that would be expected for a given process load and ambient condition during normal operation. Normal operating characteristics and conditions are marked by the absence of atypical conditions affecting the operation of the appliance (40 CFR 82.152) **[Added January 2017]**
- *Normally Containing a Quantity of Refrigerant* - containing the quantity of refrigerant within the appliance or appliance component when the appliance is operating with a full charge of refrigerant (40 CFR 82.152).

- *North American Industry Classification System (NAICS) Code(s)* - the six-digit code(s) that represents the product(s)/activity(s)/service(s) at a facility or supplier as listed in the Federal Register and defined in "North American Industrial Classification System Manual 2007," available from the U.S. Department of Commerce, National Technical Information Service, Alexandria, VA 22312, phone (703) 605-6000 or (800) 553-6847. <http://www.census.gov/eos/www/naics/> (40 CFR 98.6) **[Added October 2010]**.
- *North Slope of Alaska* - the area north of the Arctic Circle (latitude 66.5 degrees North) (40 CFR 63.6175) **[Added April 2004]**.
- *Offshore Platform Gas Turbines* - any stationary gas turbine located on a platform in an ocean (40 CFR 60.331) **[Added October 2004]**.
- *Offsite* - areas beyond the property boundary of the stationary source, and areas within the property boundary to which the public has routine and unrestricted access during or outside business hours (40 CFR 68.3) **[Added January 2005]**.
- *Oil* - crude oil or petroleum or a liquid fuel derived from crude oil or petroleum, including distillate and residual oil (40 CFR 60.41b and 60.41c) **[Added July 2007]**.
- *Oil and Gas Production Facility* - as used in 40 CFR 63, Subpart ZZZZ [40 CFR 63.6580 through 63.6675, see checklist items AE.21.1.US through AE.21.10.US] means any grouping of equipment where hydrocarbon liquids are processed, upgraded (i.e., remove impurities or other constituents to meet contract specifications), or stored prior to the point of custody transfer; or where natural gas is processed, upgraded, or stored prior to entering the natural gas transmission and storage source category. For purposes of a major source determination, facility (including a building, structure, or installation) means oil and natural gas production and processing equipment that is located within the boundaries of an individual surface site as defined in this section. Equipment that is part of a facility will typically be located within close proximity to other equipment located at the same facility. Pieces of production equipment or groupings of equipment located on different oil and gas leases, mineral fee tracts, lease tracts, subsurface or surface unit areas, surface fee tracts, surface lease tracts, or separate surface sites, whether or not connected by a road, waterway, power line or pipeline, shall not be considered part of the same facility. Examples of facilities in the oil and natural gas production source category include, but are not limited to, well sites, satellite tank batteries, central tank batteries, a compressor station that transports natural gas to a natural gas processing plant, and natural gas processing plants (40 CFR 63.6175 and 63.6675) **[Added April 2004]**.
- *Oil-Fired Unit* - a stationary combustion unit that derives more than 50 percent of its annual heat input from the combustion of fuel oil, and the remainder of its annual heat input from the combustion of natural gas or other gaseous fuels (40 CFR 98.6) **[Added January 2010]**.
- *Oil Subcategory* - includes any boiler that burns any liquid fuel and is not in either the biomass or coal subcategories. Gas-fired boilers that burn liquid fuel only during periods of gas curtailment, gas supply interruptions, startups, or for periodic testing are not included in this definition. Periodic testing on liquid fuel shall not exceed a combined total of 48 hours during any calendar year (40 CFR 63.11237) **[Revised April 2013]**.
- *Oil-water Separator* - a separator as defined for 40 CFR 63, Subpart GGGGG [40 CFR 63.7880 through 63.7957, see checklist items AE.300.1.US through AE.300.12.US] that is used to separate oil from water (40 CFR 63.7957) **[Added April 2004]**.
- *One-time Expansion Device* - an appliance that relies on the one-time release of its refrigerant charge to the environment in order to provide a cooling effect (40 CFR 82.152) **[Revised April 2004]**.
- *On-Site or On Site* - with respect to records required to be maintained by 40 CFR 63, Subpart EEEE [63.2330 through 63.2406, see checklist items AE.57.1.US through AE.57.15.US] or required by another subpart referenced by 40 CFR 63, Subpart EEEE, that records are stored at a location within a major source which encompasses the affected source. Onsite includes, but is not limited to, storage at the affected source to which the

records pertain, storage in central files elsewhere at the major source, or electronically available at the site (40 CFR 63.2406) **[Added April 2004]**.

- *One-time Expansion Device* - an appliance that relies on the release of its refrigerant charge to the environment in order to provide a cooling effect. These are typically single releases but could also include products that are designed to release refrigerant to the environment through multiple individual charges **[Revised April 2004; Revised January 2017]**.
- *Opacity* - the degree to which emissions reduce the transmission of light and obscure the view of an object in the background (40 CFR 60.2, 63.7575, and 63.11237) **[Revised October 2004; Revised Citation April 2011]**.
- *Open-Ended Valve or Lines (OELs)* - any valve, except pressure relief valves, having one side of the valve seat in contact with process fluid and one side open to atmosphere, either directly or through open piping (40 CFR 98.6) **[Added January 2010]**.
- *Open Top Vapor-cleaning machine* - a batch solvent-cleaning machine that has its upper surface open to the air and boils solvents to create solvent vapor used to clean and/or dry parts (40 CFR 63.461).
- *Opening an Appliance* - any maintenance, service, repair, or disposal of an appliance that would release any refrigerant in the appliance to the atmosphere. Connecting and disconnecting hoses and gauges to measure pressures, add refrigerant, or recover refrigerant from the appliance are not considered “opening an appliance” **[Revised April 2004; Revised January 2017]**.
- *Operating Day* - a 24-h period between 12:00 midnight and the following midnight during which any amount of hospital waste or medical/infectious waste is combusted at any time in the HMIWI (40 CFR 60.51c and 62.14490) **[Added October 2000]**.
- *Operating Day* - a 24-hour period between 12 midnight and the following midnight during which any fuel is combusted at any time in the boiler or process heater unit. It is not necessary for fuel to be combusted for the entire 24-h period. For calculating rolling average emissions, an operating day does not include the hours of operation during startup or shutdown (40 CFR 63.7575) **[Added April 2011; Revised January 2016]**.
- *Operating Day* - a 24-h period between 12:00 midnight and the following midnight during which any amount of sewage sludge is combusted at any time in the SSI unit (40 CFR 60.4930) **[Added April 2011]**.
- *Operating Day* - a 24-h period between 12 midnight and the following midnight during which any fuel is combusted at any time in the boiler unit. It is not necessary for fuel to be combusted for the entire 24-hour period (40 CFR 63.11237) **[Added April 2013]**.
- *Operating Hours* - the duration of time in which a process or process unit is utilized; this excludes shutdown, maintenance, and standby (40 CFR 98.6) **[Added January 2010]**.
- *Operating Parameter Value* - a minimum or maximum value established for a control device or process parameter which, if achieved by itself or in combination with one or more other operating parameter values, determines that an owner or operator has complied with an applicable emission limitation (40 CFR 63.742) **[Added January 1999]**.
- *Operating Parameter Value* - a minimum or maximum value established for a control device or treatment process parameter which, if achieved by itself or in combination with one or more other operating parameter values, determines that an owner or operator has complied with an applicable emissions limitation or standard (40 CFR 63.7957) **[Added April 2004]**.
- *Operation* - the period during which waste is combusted in the incinerator excluding periods of startup or shutdown (40 CFR 60.51c and 62.14490) **[Added October 2000]**.

- *Operational Change* - for purposes of 40 CFR 98.3(b), a change in the type of feedstock or fuel used, a change in operating hours, or a change in process production rate (40 CFR 98.6) **[Added January 2010]**.
- *Operator* - any person who operates or supervises a facility or supplier (40 CFR 98.6) **[Added January 2010]**.
- *Organic Hazardous Air Pollutant (HAP)* - any HAP that is organic (40 CFR 63.742) **[Added January 1999]**.
- *Organic Liquid* (40 CFR 63.2406) **[Added April 2004]**.
  1. Any non-crude oil liquid or liquid mixture that contains 5 percent by weight or greater of the organic HAP
  2. Any crude oils downstream of the first point of custody transfer.
  3. Organic liquids for purposes of 40 CFR 63, Subpart EEEE [40 CFR 63.2330 through 63.2406, see checklist items AE.57.1.US through AE.57.15.US] do not include the following liquids:
    - a. Gasoline (including aviation gasoline), kerosene (No. 1 distillate oil), diesel (No. 2 distillate oil), asphalt, and heavier distillate oils and fuel oils;
    - b. Any fuel consumed or dispensed on the plant site directly to users (such as fuels for fleet refueling or for refueling marine vessels that support the operation of the plant);
    - c. Hazardous waste;
    - d. Wastewater;
    - e. Ballast water; or
    - f. Any non-crude oil liquid with an annual average true vapor pressure less than 0.7 kilopascals (0.1 psia).
- *Organic Liquids Distribution (OLD) Operation* - the combination of activities and equipment used to store or transfer organic liquids into, out of, or within a plant site regardless of the specific activity being performed. Activities include, but are not limited to, storage, transfer, blending, compounding, and packaging (40 CFR 63.2406) **[Added April 2004]**.
- *Organic-water Separator* - a separator as defined for 40 CFR 63, Subpart GGGGG [40 CFR 63.7880 through 63.7957, see checklist items AE.300.1.US through AE.300.12.US] that is used to separate organics from water (40 CFR 63.7957) **[Added April 2004]**.
- *Other Combustor* - a unit designed to burn solid fuel that is not classified as a dutch oven, fluidized bed, fuel cell, hybrid suspension grate boiler, pulverized coal boiler, stoker, sloped grate, or suspension boiler as defined in this subpart (40 CFR 63.7575) **[Added April 2013]**.
- *Other Gas 1 Fuel* - a gaseous fuel that is not natural gas or refinery gas and does not exceed a maximum concentration of 40 micrograms/cubic meters of mercury (40 CFR 63.7575) **[Revised April 2013]**.
- *Other Internal Combustion Engine* - any internal combustion engine, except combustion turbines, which is not a reciprocating internal combustion engine or rotary internal combustion engine (40 CFR 60.4219) **[Added October 2006]**.
- *Other Oils (> 401 °F)* - oils with a boiling range equal to or greater than 401 °F that are generally intended for use as a petrochemical feedstock and are not defined elsewhere (40 CFR 98.6) **[Added January 2010]**.
- *Other Solid Waste Incineration (OSWI) Unit* - either a very small municipal waste combustion unit or an institutional waste incineration unit, as defined in this subpart. Unit types listed in 40 CFR 60.2887 as being excluded from the subpart are not OSWI units subject to this subpart. While not all OSWI units will include all of the following components, an OSWI unit includes, but is not limited to, the municipal or institutional solid waste feed system, grate system, flue gas system, waste heat recovery equipment, if any, and bottom ash system. The OSWI unit does not include air pollution control equipment or the stack. The OSWI unit boundary starts at the municipal or institutional waste hopper (if applicable) and extends through two areas: (40 CFR 60.2977) **[Added January 2006]**.
  1. The combustion unit flue gas system, which ends immediately after the last combustion chamber or after the waste heat recovery equipment, if any; and

2. The combustion unit bottom ash system, which ends at the truck loading station or similar equipment that transfers the ash to final disposal. The OSWI unit includes all ash handling systems connected to the bottom ash handling system.
- *Owner* - any person who has legal or equitable title to, has a leasehold interest in, or control of a facility or supplier, except a person whose legal or equitable title to or leasehold interest in the facility or supplier arises solely because the person is a limited partner in a partnership that has legal or equitable title to, has a leasehold interest in, or control of the facility or supplier shall not be considered an “owner” of the facility or supplier (40 CFR 98.6) [Added January 2010].
  - *Owner or Operator* - any person who owns, leases, operates, controls, or supervises a stationary source (40 CFR 68.3) [Added January 2005].
  - *Oxidation Catalyst* - an add-on catalytic control device that controls CO and VOC by oxidation (40 CFR 63.6675) [Added July 2004].
  - *Oxidation Catalyst Emission Control Device* - an emission control device that incorporates catalytic oxidation to reduce CO emissions (40 CFR 63.6175) [Added April 2004].
  - *Oxygen Analyzer System* - all equipment required to determine the oxygen content of a gas stream and used to monitor oxygen in the boiler or process heater flue gas, boiler or process heater, firebox, or other appropriate location. This definition includes oxygen trim systems. The source owner or operator must install, calibrate, maintain, and operate the oxygen analyzer system in accordance with the manufacturer's recommendations (40 CFR 63.7575) [Added April 2013].
  - *Oxygen Analyzer System* - all equipment required to determine the oxygen content of a gas stream and used to monitor oxygen in the boiler flue gas, boiler firebox, or other appropriate intermediate location. This definition includes oxygen trim systems (40 CFR 63.11237) [Added April 2013].
  - *Oxygen Trim System* - a system of monitors that is used to maintain excess air at the desired level in a combustion device over its operating load range. A typical system consists of a flue gas oxygen and/or CO monitor that automatically provides a feedback signal to the combustion air controller or draft controller (40 CFR 63.7575) [Added April 2013; Revised January 2016].
  - *Oxygen Trim System* - a system of monitors that is used to maintain excess air at the desired level in a combustion device over its operating load range. A typical system consists of a flue gas oxygen and/or carbon monoxide monitor that automatically provides a feedback signal to the combustion air controller or draft controller (40 CFR 63.11237) [Added October 2016].
  - *Oxygenate* - any substance which, when added to gasoline, increases the oxygen content of that gasoline. Lawful use of any of the substances or any combination of these substances requires that they be “substantially similar” under section 211(f)(1) of the Clean Air Act, or be permitted under a waiver granted by the Administrator under the authority of section 211(f)(4) of the Clean Air Act (40 CFR 80.2(jj)) [Added October 2011].
  - *Oxygenate Blender* - any person who owns, leases, operates, controls, or supervises an oxygenate blending facility, or who owns or controls the blendstock or gasoline used or the gasoline produced at an oxygenate blending facility (40 CFR 80.2(mm) and 80.1500) [Added October 2011].
  - *Oxygenate Blending Facility* - any facility (including a truck) at which oxygenate is added to gasoline or blendstock, and at which the quality or quantity of gasoline is not altered in any other manner except for the addition of deposit control additives (40 CFR 80.2(ll) and 80.1500) [Added October 2011].
  - *Oxygenated Gasoline* - gasoline which contains a measurable amount of oxygenate (40 CFR 80.2(rr)) [Added October 2011].

- *Oxygenates* - substances which, when added to gasoline, increase the oxygen content of the gasoline. Common oxygenates are ethanol, methyl tertiary butyl ether (MTBE), ethyl tertiary butyl ether (ETBE), tertiary amyl methyl ether (TAME), diisopropyl ether (DIPE), and methanol (40 CFR 98.6) [**Added January 2010**].
- *PADD* - for the purposes of 40 CFR 80, Subpart I only, the following definitions of PADDs apply (40 CFR 80.502(f)) [**Added July 2006**]:
  1. The following States are included in PADD I: Connecticut; Delaware; District of Columbia; Florida; Georgia; Maine; Maryland; Massachusetts; New Hampshire; New Jersey; New York; North Carolina; Pennsylvania; Rhode Island; South Carolina; Vermont; Virginia; West Virginia
  2. The following States are included in PADD II: Illinois; Indiana; Iowa; Kansas; Kentucky; Michigan; Minnesota; Missouri; Nebraska; North Dakota; Ohio; Oklahoma; South Dakota; Tennessee; Wisconsin
  3. The following States are included in PADD III: Alabama; Arkansas; Louisiana; Mississippi; New Mexico; Texas
  4. The following States are included in PADD IV: Colorado; Idaho; Montana; Utah; Wyoming
  5. The following States are included in PADD V: Alaska; Arizona; California; Hawaii; Nevada; Oregon; Washington
  6. The following areas are included in PADD VI: U.S. Virgin Islands and Commonwealth of Puerto Rico
- *POTW Treatment Plant* - that portion of the POTW which is designed to provide treatment (including recycling and reclamation) of municipal sewage and industrial waste (40 CFR 63.1583) [**Added January 2000**].
- *Paint Stripping And/Or Miscellaneous Surface Coating Source or Facility* - any shop, business, location, or parcel of land where paint stripping or miscellaneous surface coating operations are conducted (40 CFR 63.11180) [**Added April 2011**].
- *Paint Stripping* - the removal of dried coatings from wood, metal, plastic, and other substrates. A single affected source may have multiple paint stripping operations (40 CFR 63.11180) [**Added April 2011**].
- *Painter* - any person who spray applies coating (40 CFR 63.11180) [**Added April 2011**].
- *Particulate Matter or PM* - the total particulate matter emitted from an HMIWI as measured by USEPA Reference Method 5 or USEPA Reference Method 29 (40 CFR 62.14490) [**Added October 2000**].
- *Particulate Matter* - total particulate matter emitted from municipal waste combustion units as measured using USEPA Reference Method 5 in Appendix A of 40 CFR 60 and the procedures specified in 40 CFR 60.1300 (40 CFR 60.1465) [**Added April 2001**].
- *Particulate Matter* - total particulate matter emitted from OSWI units as measured by Method 5 or Method 29 of appendix A 40 CFR 60 (40 CFR 60.2977) [**Added January 2006**].
- *Particulate Matter* - total particulate matter emitted from CISWI units as measured by Method 5 or Method 29 of 40 CFR 60, Appendix A (40 CFR 62.14840) [**Added January 2004**].
- *Particulate Matter (PM)* - any finely divided solid or liquid material, other than uncombined water, as measured by the test methods specified under 40 CFR 63, Subpart DDDDD or JJJJJ, or an approved alternative method (40 CFR 63.7575) [**Added April 2011**].
- *Particulate Matter (PM)* - any finely divided solid or liquid material, other than uncombined water, as measured by the test methods specified under this subpart, or an approved alternative method (40 CFR 63.11237) [**Revised April 2013**].
- *Particulate Matter Emissions* - any airborne finely divided solid or liquid material, except uncombined water, emitted to the ambient air (40 CFR 60.2).

- *Parts Reclamation Unit* - a unit that burns coatings off parts (e.g., tools, equipment) so that the parts can be reconditioned and reused (40 CFR 62.14840) [**Added January 2004**].
- *Passive Measures* - risk management measures that use design features that reduce either the frequency or consequence of the hazard without human, mechanical, or other energy input. Examples of passive measures include pressure vessel designs, dikes, berms, and blast walls (40 CFR 68.3) [**Added April 2017**].
- *Passive Vent* - a pipe or a system of pipes that allows landfill gas to flow naturally, without the use of a fan or similar mechanical draft equipment, to the surface of the landfill where an opening or pipe (vent) allows for the free flow of landfill gas to the atmosphere or to a passive vent flare without diffusion through the top layer of surface soil (40 CFR 98.348) [**Added January 2017**].
- *Pasture/Range/Paddock* - the manure from pasture and range grazing animals is allowed to lie as deposited, and is not managed (40 CFR 98.6) [**Added January 2010**].
- *Pathological Waste* - waste material consisting of only human or animal remains, anatomical parts, and/or tissue, the bags/containers used to collect and transport the waste material, and animal bedding (if applicable) (40 CFR 60.51c, 60.2977, 62.14490, and 62.14840) [**Revised January 2004**].
- *PCE Gas Analyzer* - a flame ionization detector, photoionization detector, or infrared analyzer capable of detecting vapor concentrations of PCE of 25 ppmv (40 CFR 63.321) [**Added October 2006**].
- *Peak Load* - 100 percent of the manufacturer's design capacity of the gas turbine at ISO standard day conditions (40 CFR 60.331 and 60.4420) [**Added October 2004, Revised April 2009**].
- *Peaking Unit or Engine* - any standby engine intended for use during periods of high demand that are not emergencies (40 CFR 63.6675) [**Added July 2004**].
- *Pentanes Plus or C5+* - a mixture of hydrocarbons that is a liquid at ambient temperature and pressure, and consists mostly of pentanes (five carbon chain) and higher carbon number hydrocarbons. Pentanes plus includes, but is not limited to, normal pentane, isopentane, hexanes-plus (natural gasoline), and plant condensate (40 CFR 98.6) [**Added January 2010**].
- *Percent Load* - the fractional power of an engine compared to its maximum manufacturer's design capacity at engine site conditions. Percent load may range between 0 percent to above 100 percent (40 CFR 63.6675) [**Added July 2004**].
- *Perceptible Leaks* - any perchloroethylene vapor or liquid leaks that are obvious from (40 CFR 63.321):
  1. the odor of perchloroethylene
  2. visual observation, such as pools or droplets of liquid
  3. the detection of gas flow by passing the fingers over the surface of the equipment.
- *Perchloroethylene Consumption* - the total volume of perchloroethylene purchased based upon purchase receipts or other reliable measures (40 CFR 63.321).
- *Perfluorocarbons or PFCs* - a class of greenhouse gases consisting on the molecular level of carbon and fluorine (40 CFR 98.6) [**Added January 2010**].
- *Performance Testing* - the collection of data resulting from the execution of a test method used (either by stack testing or fuel analysis) to demonstrate compliance with a relevant emission standard (40 CFR 63.11237) [**Added April 2011**].
- *Period of Gas Curtailment or Supply Interruption* - a period of time during which the supply of gaseous fuel to an affected boiler or process heater is restricted or halted for reasons beyond the control of the facility. The act of

entering into a contractual agreement with a supplier of natural gas established for curtailment purposes does not constitute a reason that is under the control of a facility for the purposes of this definition. An increase in the cost or unit price of natural gas due to normal market fluctuations not during periods of supplier delivery restriction does not constitute a period of natural gas curtailment or supply interruption. On-site gaseous fuel system emergencies or equipment failures qualify as periods of supply interruption when the emergency or failure is beyond the control of the facility (40 CFR 63.7575) **[Revised April 2013]**.

- *Period of Gas Curtailment or Supply Interruption* - a period of time during which the supply of gaseous fuel to an affected boiler is restricted or halted for reasons beyond the control of the facility. The act of entering into a contractual agreement with a supplier of natural gas established for curtailment purposes does not constitute a reason that is under the control of a facility for the purposes of this definition. An increase in the cost or unit price of natural gas due to normal market fluctuations not during periods of supplier delivery restriction does not constitute a period of natural gas curtailment or supply interruption. On-site gaseous fuel system emergencies or equipment failures qualify as periods of supply interruption when the emergency or failure is beyond the control of the facility (40 CFR 63.11237) **[Revised April 2013]**.
- *Permitting Authority* - one of the following (40 CFR 63.2406) **[Added April 2004]**:
  1. The State Air Pollution Control Agency, local agency, or other agency authorized by the EPA Administrator to carry out a permit program under 40 CFR 70; or
  2. The EPA Administrator, in the case of EPA-implemented permit programs under title V of the CAA (42 U.S.C. 7661) and 40 CFR 71.
- *Petrochemical* - methanol, acrylonitrile, ethylene, ethylene oxide, ethylene dichloride, and any form of carbon black (40 CFR 98.6) **[Added January 2010]**.
- *Petrochemical Feedstocks* - feedstocks derived from petroleum for the manufacture of chemicals, synthetic rubber, and a variety of plastics. This category is usually divided into naphthas less than 401 °F and other oils greater than 401 °F (40 CFR 98.6) **[Added January 2010]**.
- *Petroleum* - oil removed from the earth and the oil derived from tar sands and shale (40 CFR 98.6) **[Added January 2010]**
- *Petroleum Coke* - a black solid residue, obtained mainly by cracking and carbonizing of petroleum derived feedstocks, vacuum bottoms, tar and pitches in processes such as delayed coking or fluid coking. It consists mainly of carbon (90 to 95 percent), has low ash content, and may be used as a feedstock in coke ovens. This product is also known as marketable coke or catalyst coke (40 CFR 98.6) **[Added January 2010]**.
- *Petroleum Dry Cleaner* - a dry cleaning facility that uses petroleum solvent in a combination of washers, dryers, filters, stills, and settling tanks (40 CFR 60.621).
- *Petroleum Product* - all refined and semi-refined products that are produced at a refinery by processing crude oil and other petroleum-based feedstocks, including petroleum products derived from co-processing biomass and petroleum feedstock together, but not including plastics or plastic products. Petroleum products may be combusted for energy use, or they may be used either for non-energy processes or as non-energy products. The definition of petroleum product for importers and exporters excludes waxes (40 CFR 98.6) **[Added January 2010]**.
- *Petroleum Refinery* - industrial plants as classified by the Department of Commerce under Standard Industrial Classification (SIC) Code 29 (40 CFR 60.41b) **[Added July 2007]**.
- *Petroleum Refining Process Unit* - a process unit used in an establishment primarily engaged in petroleum refining as defined in NAICS code 32411 for petroleum refining (formerly SIC code 2911) and used for the following: Producing transportation fuels (such as gasoline, diesel fuels, and jet fuels), heating fuels (such as kerosene, fuel gas distillate, and fuel oils), or lubricants; Separating petroleum; or Separating, cracking, reacting, or reforming intermediate petroleum streams. Examples of such units include, but are not limited to, petroleum based solvent

units, alkylation units, catalytic hydrotreating, catalytic hydrorefining, catalytic hydrocracking, catalytic reforming, catalytic cracking, crude distillation, lube oil processing, hydrogen production, isomerization, polymerization, thermal processes, and blending, sweetening, and treating processes. Petroleum refining process units include sulfur plants (40 CFR 68.3) **[Added January 2005]**.

- *Physical Address* - with respect to a United States parent company as defined in this section means the street address, city, state and zip code of that company's physical location (40 CFR 98.6) **[Added October 2010]**.
- *Pile Burner* - a boiler design incorporating a design where the anticipated biomass fuel has a high relative moisture content. Grates serve to support the fuel, and underfire air flowing up through the grates provides oxygen for combustion, cools the grates, promotes turbulence in the fuel bed, and fires the fuel. The most common form of pile burning is the dutch oven (40 CFR 63.7575) **[Added April 2013]**.
- *Pit Storage Below Animal Confinement (Deep Pits)* - the collection and storage of manure typically below a slatted floor in an enclosed animal confinement facility. This usually occurs with little or no added water for periods less than 1 yr (40 CFR 98.6) **[Added January 2010]**.
- *Plant Code* - either of the following (40 CFR 98.6) **[Added January 2014]**:
  1. The Plant ID code assigned by the Department of Energy's Energy Information Administration. The Energy Information Administration Plant ID code is also referred to as the "ORIS code", "ORISPL code", "Facility ID", or "Facility code", among other names.
  2. If a Plant ID code has not been assigned by the Department of Energy's Energy Information Administration, then plant code means a code beginning with "88" assigned by the EPA's Clean Air Markets Division for electronic reporting.
- *Plant Site* - all contiguous or adjoining surface property that is under common control, including surface properties that are separated only by a road or other public right-of-way. Common control includes surface properties that are owned, leased, or operated by the same entity, parent entity, subsidiary, or any combination (40 CFR 63.2406) **[Added April 2004]**.
- *Plastic* - refers to substrates containing one or more resins and may be solid, porous, flexible, or rigid. Plastics include fiber reinforced plastic composites (40 CFR 63.11180) **[Added April 2011]**.
- *Plastics or Rubber Recycling Unit* - an integrated processing unit for which plastics, rubber, or rubber tires are the only feed materials (incidental contaminants may be in the feed materials). The feed materials are processed and marketed to become input feedstock for chemical plants or petroleum refineries. The following three criteria further define a plastics or rubber recycling unit (40 CFR 60.1465) **[Added April 2001]**:
  1. Each calendar quarter, the combined weight of the feed stock that a plastics or rubber recycling unit produces must be more than 70 percent of the combined weight of the plastics, rubber, and rubber tires that recycling unit processes.
  2. The plastics, rubber, or rubber tires fed to the recycling unit may originate from separating or diverting plastics, rubber, or rubber tires from municipal or industrial solid waste. The feed materials may include manufacturing scraps, trimmings, and off-specification plastics, rubber, and rubber tire discards.
  3. The plastics, rubber, and rubber tires fed to the recycling unit may contain incidental contaminants (for example, paper labels on plastic bottles or metal rings on plastic bottle caps).
- *PM<sub>10</sub>* - particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (40 CFR 58.1).
- *Population* - the public (40 CFR 68.3) **[Added January 2005]**.
- *Portable* - designed and capable of being carried or moved from one location to another. Indications of portability include but are not limited to wheels, skids, carrying handles, dolly, trailer, or platform. Equipment is not portable if any one of the following conditions exists (40 CFR 98.6) **[Added January 2010]**:

1. The equipment is attached to a foundation.
  2. The equipment or a replacement resides at the same location for more than 12 consecutive months.
  3. The equipment is located at a seasonal facility and operates during the full annual operating period of the seasonal facility, remains at the facility for at least 2 yr, and operates at that facility for at least 3 mo each year.
  4. The equipment is moved from one location to another in an attempt to circumvent the portable residence time requirements of this definition.
- *Potential Hydrogen Chloride Emissions* - the level of emissions from a municipal waste combustion unit that would occur from combusting municipal solid waste without emission controls for acid gases (40 CFR 60.1465) **[Added April 2001]**.
  - *Potential Mercury Emissions* - the level of emissions from a municipal waste combustion unit that would occur from combusting municipal solid waste without controls for mercury emissions (40 CFR 60.1465) **[Added April 2001]**.
  - *Potential Sulfur Dioxide Emission Rate* - the theoretical SO<sub>2</sub> emissions (nanograms per joule (ng/J) or lb/MMBtu heat input) that would result from combusting fuel in an uncleaned state and without using emission control systems (40 CFR 60.41c) **[Added July 2007, Citation Revised April 2009]**.
  - *Potential Sulfur Dioxide Emission Rate* - the theoretical SO<sub>2</sub> emissions (nanograms per joule (ng/J) or lb/MMBtu heat input) that would result from combusting fuel in an uncleaned state and without using emission control systems. For gasified coal or oil that is desulfurized prior to combustion, the Potential sulfur dioxide emission rate is the theoretical SO<sub>2</sub> emissions (ng/J or lb/MMBtu heat input) that would result from combusting fuel in a cleaned state without using any post combustion emission control systems (40 CFR 60.41b) **[Added April 2009]**.
  - *Potential Sulfur Dioxide Emissions* - the level of emissions from a municipal waste combustion unit that would occur from combusting municipal solid waste without emission controls for acid gases (40 CFR 60.1465) **[Added April 2001]**.
  - *Potential to Emit* - the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the stationary source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable (40 CFR 63.9375) **[Added July 2003]**.
  - *Potential to Emit* - the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the stationary source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable. For oil and natural gas production facilities subject to 40 CFR 63, Subpart HH, the potential to emit provisions in 40 CFR 63.760(a) may be used. For natural gas transmission and storage facilities subject to 40 CFR 63, Subpart HHH, the maximum annual facility gas throughput for storage facilities may be determined according to 40 CFR 63.1270(a)(1) and the maximum annual throughput for transmission facilities may be determined according to 40 CFR 63.1270(a)(2) (40 CFR 63.6175 and 63.6675) **[Added April 2004]**.
  - *Potentially Available* - that adequate information exists to make a determination that the substitute is technologically feasible, environmentally acceptable and economically viable (40 CFR 82.104(p)) **[Added July 2004]**
  - *Poultry Manure With Litter* - a manure management system component that is similar to cattle and swine deep bedding except usually not combined with a dry lot or pasture. The system is typically used for poultry breeder flocks and for the production of meat type chickens (broiler) and other fowl (40 CFR 98.6) **[Added January 2010]**.

- *Poultry Manure Without Litter* - a manure management system component that may manage manure in a liquid form, similar to open pits in enclosed animal confinement facilities. These systems may alternatively be designed and operated to dry manure as it accumulates. The latter is known as a high-rise manure management system and is a form of passive windrow manure composting when designed and operated properly (40 CFR 98.6) [**Added January 2010**].
- *Power Input to the Electrostatic Precipitator* - the product of the test-run average secondary voltage and the test-run average secondary amperage to the electrostatic precipitator collection plates (40 CFR 60.4930) [**Added April 2011**].
- *Practicability* - the capability of being successfully accomplished within a reasonable time, accounting for economic, environmental, legal, social, and technological factors. Environmental factors would include consideration of potential transferred risks for new risk reduction measures (40 CFR 68.3) [**Added April 2017**].
- *Precision of a Measurement at a Specified Level (e.g., one percent of full scale or one percent of the value measured)* - that 95 percent of repeat measurements made by a device or technique are within the range bounded by the mean of the measurements plus or minus the specified level (40 CFR 98.6) [**Added January 2010**].
- *Precursors of a Criteria Pollutant* - these are (40 CFR 93.152) [**Added April 2009**]:
  1. For ozone, nitrogen oxides (NO<sub>x</sub>), unless an area is exempted from NO<sub>x</sub> requirements under section 182(f) of the Act, and volatile organic compounds (VOC).
  2. For PM-10, those pollutants described in the PM-10 nonattainment area applicable SIP as significant contributors to the PM-10 levels.
  3. For PM<sub>2.5</sub>:
    - a. Sulfur dioxide in all PM<sub>2.5</sub> nonattainment and maintenance areas,
    - b. Nitrogen oxides in all PM<sub>2.5</sub> nonattainment and maintenance areas unless both the State and EPA determine that it is not a significant precursor, and
    - c. Volatile organic compounds (VOC) and ammonia only in PM<sub>2.5</sub> nonattainment or maintenance areas where either the State or EPA determines that they are significant precursors.
- *Premium Grade Gasoline* - gasoline having an antiknock index, i.e., octane rating, greater than 90. This definition applies to the premium grade categories of Conventional-Summer, Conventional-Winter, Reformulated-Summer, and Reformulated-Winter. For premium grade categories of RBOB-Summer, RBOB-Winter, CBOB-Summer, and CBOB-Winter, this definition refers to the expected octane rating of the finished gasoline after oxygenate has been added to the RBOB or CBOB (40 CFR 98.6) [**Added January 2010**].
- *Pressure Relief Device or Pressure Relief Valve or Pressure Safety Valve* - a safety device used to prevent operating pressures from exceeding the maximum allowable working pressure of the process equipment. A common pressure relief device is but not limited to a spring loaded pressure relief valve. Devices that are actuated either by a pressure of less than or equal to 2.5 psig or by a vacuum are not pressure relief devices (40 CFR 98.6) [**Added January 2010**].
- *Primary Chamber* - the chamber in an HMIWI that receives waste material, in which the waste is ignited, and from which ash is removed (40 CFR 60.51c and 62.14490) [**Added October 2000**].
- *Primary Fuel* - the fuel that provides the greatest percentage of the annual heat input to a stationary fuel combustion unit (40 CFR 98.6) [**Added January 2011**].
- *Primer* - the first layer and any subsequent layers of identically formulated coating applied to the surface of an aerospace vehicle or component. Primers are typically used for corrosion prevention, protection from the environment, functional fluid resistance, and adhesion of subsequent coatings. Coatings that are defined as specialty coatings are not included under this definition (40 CFR 63.742) [**Added January 1999**].
- *Principal Display Panel (PDP)* - the entire portion of the surface of a product, container or its outer packaging that is most likely to be displayed, shown, presented, or examined under customary conditions of retail sale. The

area of the PDP is not limited to the portion of the surface covered with existing labeling; rather it includes the entire surface, excluding flanges, shoulders, handles, or necks (40 CFR 82.104(q)) **[Added July 2004]**

- *Procedural Measures* - risk management measures such as policies, operating procedures, training, administrative controls, and emergency response actions to prevent or minimize incidents (40 CFR 68.3) **[Added April 2017]**.
- *Process* - any activity involving a regulated substance including any use, storage, manufacturing, handling, or on-site movement of such substances, or combination of these activities. For the purposes of this definition, any group of vessels that are interconnected, or separate vessels that are located such that a regulated substance could be involved in a potential release, shall be considered a single process (40 CFR 68.3) **[Added January 2005]**.
- *Process Change* - a significant permit revision, but only with respect to those pollutant-specific emission units for which the proposed permit revision is applicable, including but not limited to (40 CFR 60.4930) **[Added April 2011]**:
  1. A change in the process employed at the wastewater treatment facility associated with the affected SSI unit (e.g., the addition of tertiary treatment at the facility, which changes the method used for disposing of process solids and processing of the sludge prior to incineration).
  2. A change in the air pollution control devices used to comply with the emission limits for the affected SSI unit (e.g., change in the sorbent used for activated carbon injection).
- *Process Emissions* - the emissions from industrial processes (e.g., cement production, ammonia production) involving chemical or physical transformations other than fuel combustion. For example, the calcination of carbonates in a kiln during cement production or the oxidation of methane in an ammonia process results in the release of process CO<sub>2</sub> emissions to the atmosphere. Emissions from fuel combustion to provide process heat are not part of process emissions, whether the combustion is internal or external to the process equipment (40 CFR 98.6) **[Added January 2010]**.
- *Process Heater* - a device that is primarily used to heat a material to initiate or promote a chemical reaction in which the material participates as a reactant or catalyst (40 CFR 60.41b and 60.41c) **[Added July 2007]**.
- *Process Heater* - an enclosed device using controlled flame, and the unit's primary purpose is to transfer heat indirectly to a process material (liquid, gas, or solid) or to a heat transfer material (e.g., glycol or a mixture of glycol and water) for use in a process unit, instead of generating steam. Process heaters are devices in which the combustion gases do not come into direct contact with process materials. A device combusting solid waste, as defined in 40 CFR 241.3 of this chapter, is not a process heater unless the device is exempt from the definition of a solid waste incineration unit as provided in section 129(g)(1) of the Clean Air Act. Process heaters do not include units used for comfort heat or space heat, food preparation for on-site consumption, or autoclaves. Waste heat process heaters are excluded from this definition (40 CFR 63.7575) **[Revised April 2013]**.
- *Process Heater* - an enclosed device using controlled flame, and the unit's primary purpose is to transfer heat indirectly to a process material (liquid, gas, or solid) or to a heat transfer material (e.g., glycol or a mixture of glycol and water) for use in a process unit, instead of generating steam. Process heaters are devices in which the combustion gases do not come into direct contact with process materials. Process heaters include units that heat water/water mixtures for pool heating, sidewalk heating, cooling tower water heating, power washing, or oil heating (40 CFR 63.11237) **[Added April 2013]**.
- *Process Stub* - a length of tubing that provides access to the refrigerant inside a small appliance or room air-conditioner and can be resealed at the conclusion of repair or service (40 CFR 82.152).
- *Process Unit* - the equipment assembled and connected by pipes and ducts to process raw materials and to manufacture either a final product or an intermediate used in the onsite production of other products. The process unit also includes the purification of recovered byproducts (40 CFR 98.6) **[Added January 2010]**.

- *Process Vent* - any open-ended pipe, stack, duct, or other opening intended to allow the passage of gases, vapors, or fumes to the atmosphere and this passage is caused by mechanical means (such as compressors, vacuum-producing systems or fans) or by process-related means (such as volatilization produced by heating). For the purposes of 40 CFR 63, Subpart GGGGG [40 CFR 63.7880 through 63.7957, see checklist items AE.300.1.US through AE.300.12.US], a process vent is neither a safety device (as defined in this section) nor a stack, duct or other opening used to exhaust combustion products from a boiler, furnace, heater, incinerator, or other combustion device (40 CFR 63.7957) **[Added April 2004]**.
- *Process Vent* - a gas stream that (40 CFR 98.6) **[Added January 2010]**:
  1. is discharged through a conveyance to the atmosphere either directly or after passing through a control device;
  2. originates from a unit operation, including but not limited to reactors (including reformers, crackers, and furnaces, and separation equipment for products and recovered byproducts); and
  3. contains or has the potential to contain GHG that is generated in the process. Process vent does not include safety device discharges, equipment leaks, gas streams routed to a fuel gas system or to a flare, discharges from storage tanks.
- *Produced Water* - water extracted from the earth from an oil or natural gas production well, or that is separated from oil or natural gas after extraction (40 CFR 68.3) **[Added January 2005]**.
- *Product* - an item or category of items manufactured from raw or recycled materials, or other products, which is used to perform a function or task (40 CFR 82.104(r)) **[Added July 2004]**
- *Product Containing* - a product including, but not limited to, containers, vessels, or pieces of equipment, that physically holds a controlled substance at the point of sale to the ultimate consumer which remains within the product (40 CFR 82.104(s)) **[Added July 2004]**
- *Production Field Facility* - those oil and gas production facilities located prior to the point of custody transfer (40 CFR 63.6175 and 63.6675) **[Added April 2004]**.
- *Production Well* - any hole drilled in the earth from which crude oil, condensate, or field natural gas is extracted (40 CFR 63.6175 and 63.6675) **[Added April 2004]**.
- *Products* - has the same meaning as supplies (48 CFR 2.101(b)(2)) **[Added July 2016]**.
- *Promotional Printed Material* - any informational or advertising material (including, but not limited to, written advertisements, brochures, circulars, desk references and fact sheets) that is prepared by the manufacturer for display or promotion concerning a product or container, and that does not accompany the product to the consumer (40 CFR 82.104(t)) **[Added July 2004]**
- *Propane* - a colorless gas derived from petroleum and natural gas, with the molecular structure C<sub>3</sub>H<sub>8</sub> (40 CFR 63.6675) **[Added July 2004]**.
- *Propane* - a paraffinic hydrocarbon with molecular formula C<sub>3</sub>H<sub>8</sub> (40 CFR 98.6) **[Added January 2010]**.
- *Propylene* - an olefinic hydrocarbon with molecular formula C<sub>3</sub>H<sub>6</sub> (40 CFR 98.6) **[Added January 2010]**.
- *Protective Oil* - organic material that is applied to metal for the purpose of providing lubrication or protection from corrosion without forming a solid film. This definition of protective oil includes, but is not limited to, lubricating oils, evaporative oils (including those that evaporate completely), and extrusion oils (40 CFR 63.11180) **[Added April 2011]**.
- *Public* - any person except employees or contractors at the stationary source (40 CFR 68.3) **[Added January 2005]**.

- *Public Receptor* - offsite residences, institutions (e.g., schools, hospitals), industrial, commercial, and office buildings, parks, or recreational areas inhabited or occupied by the public at any time without restriction by the stationary source where members of the public could be exposed to toxic concentrations, radiant heat, or overpressure, as a result of an accidental release (40 CFR 68.3) **[Added January 2005]**.
- *Pulverized Coal Boiler* - a boiler in which pulverized coal or other solid fossil fuel is introduced into an air stream that carries the coal to the combustion chamber of the boiler where it is fired in suspension (40 CFR 63.7575) **[Added April 2011]**.
- *Publication Rotogravure Printing* - any number of rotogravure printing units capable of printing simultaneously on the same continuous web or substrate and includes any associated device for continuous cutting and folding the printed web, where the following sellable paper products are printed: catalogues; direct mail advertisements; display advertisements; magazines; miscellaneous advertisements including brochures, pamphlets, catalogue sheets, circular folders, and announcements; newspapers; periodicals; and telephone and other directories (40 CFR 60.431).
- *Publicly Owned Treatment Works (POTW)* - a treatment works, as that term is defined by section 112(e)(5) of the CAA, which is owned by a municipality (as defined by section 502(4) of the *Clean Water Act (CWA)*), a state, an intermunicipal or interstate agency, or any department, agency, or instrumentality of the Federal Government. This definition includes any intercepting sewers, outfall sewers, sewage collection systems, pumping, power, and other equipment. The wastewater treated by these facilities is generated by industrial, commercial, and domestic sources. As used in this regulation, the term POTW refers to both any publicly owned treatment works which is owned by a state, municipality, or intermunicipal or interstate agency and therefore eligible to receive grant assistance under the Subchapter II of the CWA, and any federally owned treatment works as that term is described in section 3023 of the *Solid Waste Disposal Act* (40 CFR 63.1583) **[Added January 2000]**.
- *Pulp and Paper Mills* - industrial plants that are classified by the Department of Commerce under North American Industry Classification System (NAICS) Code 322 or Standard Industrial Classification (SIC) Code 26 (40 CFR 60.41b) **[Added July 2007]**.
- *Pulverized Coal-Fired Steam Generating Unit* - a steam generating unit in which pulverized coal is introduced into an air stream that carries the coal to the combustion chamber of the steam generating unit where it is fired in suspension. This includes both conventional pulverized coal-fired and micropulverized coal-fired steam generating units. Residual oil means crude oil, fuel oil numbers 1 and 2 that have a nitrogen content greater than 0.05 weight percent, and all fuel oil numbers 4, 5 and 6, as defined by the American Society of Testing and Materials in ASTM D396 (incorporated by reference, see 40 CFR 60.17) (40 CFR 60.41b) **[Added July 2007]**.
- *Pyrolysis* - the endothermic gasification of hospital waste and/or medical/infectious waste using external energy (40 CFR 60.51c and 62.14490) **[Added December 1997; Revised October 2000]**.
- *Pyrolysis/Combustion Unit* - a unit that produces gases, liquids, or solids by heating municipal solid waste. The gases, liquids, or solids produced are combusted and the emissions vented to the atmosphere (40 CFR 60.1465) **[Added April 2001]**.
- *Pyrolysis/Combustion Unit* - a unit that produces gases, liquids, or solids through the heating of municipal solid waste, and the gases, liquids, or solids produced are combusted and emissions vented to the atmosphere (40 CFR 60.51b) **[Added December 1997]**.
- *Qualified Energy Assessor*: (40 CFR 63.7575 and 63.11237) **[Revised April 2013]**.
  1. Someone who has demonstrated capabilities to evaluate energy savings opportunities for steam generation and major energy using systems, including, but not limited to:
    - a. Boiler combustion management.
    - b. Boiler thermal energy recovery, including
      - i. Conventional feed water economizer,

- ii. Conventional combustion air preheater, and
    - iii. Condensing economizer.
  - c. Boiler blowdown thermal energy recovery.
  - d. Primary energy resource selection, including
    - i. Fuel (primary energy source) switching, and
    - ii. Applied steam energy versus direct-fired energy versus electricity.
  - e. Insulation issues.
  - f. Steam trap and steam leak management.
  - g. Condensate recovery.
  - h. Steam end-use management.
2. Capabilities and knowledge includes, but is not limited to:
- a. Background, experience, and recognized abilities to perform the assessment activities, data analysis, and report preparation.
  - b. Familiarity with operating and maintenance practices for steam or process heating systems.
  - c. Additional potential steam system improvement opportunities including improving steam turbine operations and reducing steam demand.
  - d. Additional process heating system opportunities including effective utilization of waste heat and use of proper process heating methods.
  - e. Boiler-steam turbine cogeneration systems.
  - f. Industry specific steam end-use systems.
- *Quality Control Activities* – surface coating or paint stripping activities that meet all of the following criteria (40 CFR 63.11180) **[Added April 2011]**:
    - 1. The activities associated with a surface coating or paint stripping operation are intended to detect and correct defects in the final product by selecting a limited number of samples from the operation, and comparing the samples against specific performance criteria.
    - 2. The activities do not include the production of an intermediate or final product for sale or exchange for commercial profit; for example, parts that are surface coated or stripped are not sold and do not leave the facility.
    - 3. The activities are not a normal part of the surface coating or paint stripping operation; for example, they do not include color matching activities performed during a motor vehicle collision repair.
    - 4. The activities do not involve surface coating or stripping of the tools, equipment, machinery, and structures that comprise the infrastructure of the affected facility and that are necessary for the facility to function in its intended capacity; that is, the activities are not facility maintenance.
  - *RBOB-Summer (Reformulated Blendstock for Oxygenate Blending)* - a petroleum product which, when blended with a specified type and percentage of oxygenate, meets the definition of Reformulated-Summer (40 CFR 98.6) **[Added January 2010]**.
  - *RBOB-Winter (Reformulated Blendstock for Oxygenate Blending)* - a petroleum product which, when blended with a specified type and percentage of oxygenate, meets the definition of Reformulated-Winter (40 CFR 98.6) **[Added January 2010]**.
  - *Rack Reclamation Unit* - a unit that burns the coatings off racks used to hold small items for application of a coating. The unit burns the coating overspray off the rack so the rack can be reused (40 CFR 62.14840) **[Added January 2004]**.
  - *Radioactive Mixed Waste* - a material that contains both hazardous waste subject to RCRA and source, special nuclear, or by-product material subject to the *Atomic Energy Act of 1954* (40 CFR 63.7957) **[Added April 2004]**.
  - *Radionuclide* - a type of atom which spontaneously undergoes radioactive decay (40 CFR 61.91(c)) **[Added July 2006]**.

- *Radionuclide* - a type of atom which spontaneously undergoes radioactive decay (40 CFR 61.101) [**Added July 2004**].
- *Radome* - the non-metallic protective housing for electromagnetic transmitters and receivers (e.g., radar, electronic countermeasures, etc.) (40 CFR 63.742) [**Added January 1999**].
- *Rated Power* - the maximum power output of an engine in use (40 CFR 63.9375) [**Added July 2003**].
- *Reasonably Foreseeable Emissions* - projected future indirect emissions that are identified at the time the conformity determination is made; the location of such emissions is known and the emissions are quantifiable, as described and documented by the Federal agency based on its own information and after reviewing any information presented to the Federal agency (40 CFR 93.152) [**Added April 2009**].
- *Reciprocating Internal Combustion Engine* - any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work (40 CFR 60.4219) [**Added October 2006**].
- *Reclaim* - to reprocess recovered refrigerant to all of the specifications in appendix A of this subpart (based on AHRI Standard 700-2016, Specifications for Refrigerants) that are applicable to that refrigerant and to verify that the refrigerant meets these specifications using the analytical methodology prescribed in section 5 of appendix A of this subpart (40 CFR 82.152) [**Added January 2017**].
- *Reclaimer* - a machine used to remove perchloroethylene from articles by tumbling them in a heated air stream (40 CFR 63.321).
- *Reconstructed Affected Source* – in relation to engine test cells, an affected source is reconstructed if you meet the definition of reconstruction in 40 CFR 63.2 and reconstruction is commenced after 14 May 2002. Changes made to an existing affected source primarily for the purpose of complying with revisions to engine testing requirements under 40 CFR 80, 86, 89, 90, 91, or 92 are not considered a modification or reconstruction. In addition, passive measurement and control instrumentation and electronics are not included as part of any affected source reconstruction evaluation (40 CFR 63.9290(a)(3)) [**Added July 2003**].
- *Reconstructed Stationary RICE* - in relation to the NESHAPS for stationary RICE, this is defined as follows (40 CFR 63.6590(a)(3)) [**Added April 2013**]:
  1. a stationary RICE with a site rating of > 500 brake HP located at a major source of HAP emissions is reconstructed if the definition of reconstruction in 40 CFR 63.2 is met and reconstruction commenced on or after 19 December 2002
  2. a stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions is reconstructed if the definition of reconstruction in 40 CFR 63.2 is met and reconstruction is commenced on or after 12 June 2006
  3. a stationary RICE located at an area source of HAP emissions is reconstructed if the definition of reconstruction in 40 CFR 63.2 is met and reconstruction is commenced on or after 12 June 2006.)
- *Reconstruction* - rebuilding a municipal waste combustion unit and meeting two criteria (40 CFR 60.1465) [**Added April 2001**]:
 

The reconstruction begins after June 6, 2001.

The cumulative cost of the construction over the life of the unit exceeds 50 percent of the original cost of building and installing the municipal waste combustion unit (not including land) updated to current costs (current dollars). To determine what systems are within the boundary of the municipal waste combustion unit used to calculate those costs, see the definition in this section of “municipal waste combustion unit.”
- *Reconstruction* - rebuilding an incineration unit and meeting two criteria (40 CFR 60.2977) [**Added January 2006**]:
  1. The reconstruction begins on or after 16 June 2006.

2. The cumulative cost of the construction over the life of the incineration unit exceeds 50 percent of the original cost of building and installing the unit (not including land) updated to current costs (current dollars). For an OSWI unit, to determine what systems are within the boundary of the unit used to calculate these costs, see the definition of OSWI unit.
- *Reconstruction* - in relation to perchloroethylene drycleaners, it means replacement of a washer, dryer, or reclaimer, or replacement of any components of a dry cleaning system to such an extent that the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable new source (40 CFR 63.321).
  - *Reconstruction* - the replacement of components of an affected or a previously unaffected stationary source such that (40 CFR 63.1583) **[Added January 2000]**:
    1. The fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable new source; and
    2. It is technologically and economically feasible for the reconstructed source to meet the relevant standards established by the Administrator (or a state) pursuant to section 112 of the Act. Upon reconstruction, an affected source, or a stationary source that becomes an affected source, is subject to relevant standards for new sources, including compliance dates, irrespective of any change in emissions of HAP from that source.
  - *Reconstruction* - rebuilding a CISWI unit and meeting two criteria (40 CFR 62.14840) **[Added January 2004]**:
    1. The reconstruction begins on or after promulgation of the final CISWI emission guidelines in 40 CFR 60, Subpart DDDD: Emissions Guidelines and Compliance Times for Commercial and Industrial Solid Waste Incineration Units That Commenced Construction On or Before 30 November 1999.
    2. The cumulative cost of the construction over the life of the incineration unit exceeds 50 percent of the original cost of building and installing the CISWI unit (not including land) updated to current costs (current dollars). To determine what systems are within the boundary of the CISWI unit used to calculate these costs, see the definition of CISWI unit.
  - *Recover* - to remove refrigerant in any condition from an appliance and to store it in an external container without necessarily testing or processing it in any way (40 CFR 82.152) **[Added January 2017]**.
  - *Recovery Device* - an individual unit of equipment capable of and normally used for the purpose of recovering chemicals for fuel value, use, or reuse. Examples of equipment that may be recovery devices include absorbers, carbon adsorbers, condensers, oil-water separators, or organic-water separators or organic removal devices such as decanters, strippers, or thin-film evaporation units (40 CFR 63.742) **[Added January 1999]**.
  - *Recovery Efficiency* - the percentage of refrigerant in an appliance that is recovered by a piece of recovery and/or recycling equipment (40 CFR 82.152) **[Revised January 2017]**.
  - *Recycle* - referring to refrigerant, means to extract refrigerant from an appliance (except MVACs) and clean it for reuse in equipment of the same owner without meeting all of the requirements for reclamation. In general, recycled refrigerant is cleaned using oil separation and single or multiple passes through devices, such as replaceable core filter-driers, which reduce moisture, acidity, and particulate matter (40 CFR 82.152) **[Added January 2017]**.
  - *Refinery Gas* - any gas that is generated at a petroleum refinery and is combusted. Refinery gas includes natural gas when the natural gas is combined and combusted in any proportion with a gas generated at a refinery. Refinery gas includes gases generated from other facilities when that gas is combined and combusted in any proportion with gas generated at a refinery (40 CFR 63.7575) **[Added April 2011]**.
  - *Reformulated Gasoline* - any gasoline whose formulation has been certified under 40 CFR 80.40, and which meets each of the standards and requirements prescribed under 40 CFR 80.41 (40 CFR 80.2(ee)) **[Added January 2006]**.

- *Reformulated Gasoline Credit* - the unit of measure for the paper transfer of benzene content resulting from reformulated gasoline which contains less than 0.95 volume percent benzene (40 CFR 80.1(ii)) **[Added April 2006]**.
- *Reformulated—Summer* - refers to finished gasoline formulated for use in motor vehicles, the composition and properties of which meet the requirements of the reformulated gasoline regulations promulgated by the U.S. Environmental Protection Agency under 40 CFR 80.40 and 40 CFR 80.41, and summer RVP standards required under 40 CFR 80.27 or as specified by the state. Reformulated gasoline excludes Reformulated Blendstock for Oxygenate Blending (RBOB) as well as other blendstock (40 CFR 98.6) **[Added January 2010]**.
- *Reformulated—Winter* - refers to finished gasoline formulated for use in motor vehicles, the composition and properties of which meet the requirements of the reformulated gasoline regulations promulgated by the U.S. Environmental Protection Agency under 40 CFR 80.40 and 40 CFR 80.41, but which do not meet summer RVP standards required under 40 CFR 80.27 or as specified by the state. Note: This category includes Oxygenated Fuels Program Reformulated Gasoline (OPRG). Reformulated gasoline excludes Reformulated Blendstock for Oxygenate Blending (RBOB) as well as other blendstock (40 CFR 98.6) **[Added January 2010]**.
- *Refractory Unit or Refractory Wall Furnace* - a municipal waste combustion unit that has no energy recovery (such as through a waterwall) in the furnace of the municipal waste combustion unit (40 CFR 60.1465) **[Added April 2001]**.
- *Refrigerant* - for purposes of this subpart, any substance, including blends and mixtures, consisting in part or whole of a class I or class II ozone-depleting substance or substitute that is used for heat transfer purposes and provides a cooling effect (40 CFR 82.152) **[Added January 2017]**.
- *Refrigerant Circuit* - the parts of an appliance that are normally connected to each other (or are separated only by internal valves) and are designed to contain refrigerant (40 CFR 82.152) **[Added January 2017]**.
- *Refrigerated Condenser* - a vapor recovery system into which an air-perchloroethylene gas-vapor stream is routed and the perchloroethylene is condensed by cooling the gas-vapor stream (40 CFR 63.321).
- *Refuse-Derived Fuel* - combustible or organic portion of municipal waste that has been separated out and processed for use as fuel (40 CFR 60.51a).
- *Refuse Derived Fuel* - a type of municipal solid waste produced by processing municipal solid waste through shredding and size classification. This includes all classes of refuse-derived fuel including low-density fluff refuse-derived fuel through densified refuse derived fuel and pelletized refuse- derived fuel (40 CFR 60.51b).
- *Refuse-Derived Fuel* - a type of municipal solid waste produced by processing municipal solid waste through shredding and size classification. That includes all classes of refuse-derived fuel including two fuels (40 CFR 60.1465, 60.2977, and 62.14840) **[Added April 2001; Revised January 2004]**:
  1. Low-density fluff refuse-derived fuel through densified refuse-derived fuel.
  2. Pelletized refuse-derived fuel.
- *Regenerative Cycle Combustion Turbine* - any stationary combustion turbine which recovers heat from the combustion turbine exhaust gases to preheat the inlet combustion air to the combustion turbine (40 CFR 60.4420) **[Added April 2009]**.
- *Regenerative Cycle Gas Turbine* - any stationary gas turbine which recovers heat from the gas turbine exhaust gases to preheat the inlet combustion air to the gas turbine (40 CFR 60.331) **[Added October 2004]**.
- *Regenerative/Recuperative Cycle Stationary Combustion Turbine* - any stationary combustion turbine that recovers heat from the stationary combustion turbine exhaust gases using an exhaust heat exchanger to preheat the combustion air entering the combustion chamber of the stationary combustion turbine (40 CFR 63.6175) **[Added April 2004]**.

- *Regional Water and/or Wastewater Projects* – these include construction, operation, and maintenance of water or wastewater conveyances, water or wastewater treatment facilities, and water storage reservoirs which affect a large portion of a nonattainment or maintenance area (40 CFR 93.152) **[Added April 2009]**.
- *Regionally Significant Action* - a Federal action for which the direct and indirect emissions of any pollutant represent 10 percent or more of a nonattainment or maintenance area's emission inventory for that pollutant (40 CFR 93.152) **[Added April 2009]**.
- *Regular Grade Gasoline* - gasoline having an antiknock index, i.e., octane rating, greater than or equal to 85 and less than 88. This definition applies to the regular grade categories of Conventional-Summer, Conventional-Winter, Reformulated-Summer, and Reformulated-Winter. For regular grade categories of RBOB-Summer, RBOB-Winter, CBOB-Summer, and CBOB-Winter, this definition refers to the expected octane rating of the finished gasoline after oxygenate has been added to the RBOB or CBOB (40 CFR 98.6) **[Added January 2010]**.
- *Regulated Gas Stream* - an offgas stream that is routed to a boiler or process heater for the purpose of achieving compliance with a standard under another subpart of this part or part 60, part 61, or part 65 of this chapter (40 CFR 63.7575) **[Added April 2013]**.
- *Regulated Gas Stream* - an offgas stream that is routed to a boiler for the purpose of achieving compliance with a standard under another subpart of 40 CFR 63 or part 60, part 61, or part 65 of this chapter (40 CFR 63.11237) **[Added April 2013]**.
- *Regulated Substance* - any substance listed pursuant to section 112(r)(3) of the *Clean Air Act* as amended, in 40 CFR 68.130 (40 CFR 68.3) **[Added January 2005]**.
- *Regulatory Control Periods* - has the same meaning as defined in 40 CFR 80.27(a)(2)(ii) or in any State Implementation Plan (SIP) approved or promulgated under Sections 110 or 172 of the *Clean Air Act* (40 CFR 80.1500) **[Added October 2011]**.
- *Remediation Material* - a material that contains one or more of the HAP listed in Table 1 of 40 CFR 63, Subpart GGGGG [40 CFR 63.7880 through 63.7957, see checklist items AE.300.1.US through AE.300.12.US], and this material is one of the following (40 CFR 63.7957) **[Added April 2004]**:
  1. A material found in naturally occurring media such as soil, groundwater, surface water, sediments, or a mixture of such materials with liquids, sludges, or solids which is inseparable by simple mechanical removal processes and is made up primarily of media. This material does not include debris as defined in 40 CFR 268.2.
  2. A material found in intact or substantially intact containers, tanks, storage piles, or other storage units that requires clean up because this material poses a reasonable potential threat to contaminating media. Examples of these materials include, but are not limited to, solvents, oils, paints, and other volatile or semi-volatile organic liquids found in buried drums, cans, or other containers; gasoline, fuel oil, or other fuels in leaking underground storage tanks; and solid materials containing volatile or semi-volatile organics in unused or abandoned piles. Remediation material is not a waste or residue generated by routine equipment maintenance activities performed at a facility such as, but not limited to, tank bottoms and sludges removed during tank cleanouts; sludges and sediments removed from active wastewater treatment tanks, surface impoundments, or lagoons; spent catalyst removed from process equipment; residues removed from air pollution control equipment; and debris removed during heat exchanger and pipeline cleanouts.
- *Remediation Material Management Unit* - a tank, container, surface impoundment, oil-water separator, organic-water separator, or transfer system used to remove, destroy, degrade, transform, immobilize, or otherwise manage remediation material (40 CFR 63.7957) **[Added April 2004]**.
- *Remediation Material Service* - any time when a pump, compressor, agitator, pressure relief device, sampling connection system, open-ended valve or line, valve, connector, or instrumentation system contains or contacts remediation material (40 CFR 63.7957) **[Added April 2004]**.

- *Remote Reservoir Cold Cleaning Machine* - any device in which liquid solvent is pumped to a sink- like work area that drains solvent back into an enclosed container while parts are being cleaned, allowing no solvent to pool in the work area (40 CFR 63.461).
- *Remote Areas of Alaska* - areas of Alaska that meet either paragraph (1) or (2) of this definition (40 CFR 63.4219) **[Added October 2016]**.
  1. Areas of Alaska that are not accessible by the Federal Aid Highway System (FAHS).
  2. Areas of Alaska that meet all of the following criteria:
    - a. The only connection to the FAHS is through the Alaska Marine Highway System, or the stationary CI ICE operation is within an isolated grid in Alaska that is not connected to the statewide electrical grid referred to as the Alaska Railbelt Grid.
    - b. At least 10 percent of the power generated by the stationary CI ICE on an annual basis is used for residential purposes.
    - c. The generating capacity of the source is less than 12 megawatts, or the stationary CI ICE is used exclusively for backup power for renewable energy.
- *Remote Reservoir Continuous Web Cleaning Machine* - a continuous web cleaning machine in which there is no exposed solvent sump. In these units, the solvent is pumped from an enclosed chamber and is typically applied to the continuous web part through a nozzle or series of nozzles. The solvent then drains from the part and is collected and recycled through the sump, allowing no solvent to pool in the work or cleaning area (40 CFR 63.461) **[Added October 1999]**.
- *Remote Stationary RICE* - stationary RICE meeting any of the following criteria (40 CFR 63.6675) **[Added April 2013]**:
  1. Stationary RICE located in an offshore area that is beyond the line of ordinary low water along that portion of the coast of the United States that is in direct contact with the open seas and beyond the line marking the seaward limit of inland waters.
  2. Stationary RICE located on a pipeline segment that meets both of the criteria in paragraphs (2)(i) and (ii) of this definition.
    - (i) A pipeline segment with 10 or fewer buildings intended for human occupancy and no buildings with four or more stories within 220 yards (200 meters) on either side of the centerline of any continuous 1-mile (1.6 kilometers) length of pipeline. Each separate dwelling unit in a multiple dwelling unit building is counted as a separate building intended for human occupancy.
    - (ii) The pipeline segment does not lie within 100 yards (91 meters) of either a building or a small, well-defined outside area (such as a playground, recreation area, outdoor theater, or other place of public assembly) that is occupied by 20 or more persons on at least 5 days a week for 10 weeks in any 12-month period. The days and weeks need not be consecutive. The building or area is considered occupied for a full day if it is occupied for any portion of the day.
    - (iii) For purposes of this paragraph (2), the term pipeline segment means all parts of those physical facilities through which gas moves in transportation, including but not limited to pipe, valves, and other appurtenance attached to pipe, compressor units, metering stations, regulator stations, delivery stations, holders, and fabricated assemblies. Stationary RICE located within 50 yards (46 meters) of the pipeline segment providing power for equipment on a pipeline segment are part of the pipeline segment. Transportation of gas means the gathering, transmission, or distribution of gas by pipeline, or the storage of gas. A building is intended for human occupancy if its primary use is for a purpose involving the presence of humans.

Stationary RICE that are not located on gas pipelines and that have 5 or fewer buildings intended for human occupancy and no buildings with four or more stories within a 0.25 mile radius around the engine. A building is intended for human occupancy if its primary use is for a purpose involving the presence of humans.
- *Rendered Animal Fat, or Tallow* - fats extracted from animals which are generally used as a feedstock in making biodiesel (40 CFR 98.6) **[Added January 2010]**.

- *Replacement In Kind* - a replacement that satisfies the design specifications (40 CFR 68.3) [**Added January 2005**].
- *Reporting Year* – effective 1 January 2018, this is the calendar year during which the GHG data are required to be collected for purposes of the annual GHG report. For example, reporting year 2014 is 1 January 2014 through 31 December 2014, and the annual report for reporting year 2014 is submitted to EPA on 31 March 2015 (40 CFR 98.6) [**Added January 2017**].
- *Research and Development* - an operation whose primary purpose is for research and development of new processes and products, that is conducted under the close supervision of technically trained personnel, and is not involved in the manufacture of final or intermediate products for commercial purposes, except in a de minimis manner (40 CFR 63.742) [**Added January 1999**].
- *Research and Development* - those activities conducted in process units or at laboratory bench-scale settings whose purpose is to conduct research and development for new processes, technologies, or products and whose purpose is not for the manufacture of products for commercial sale, except in a de minimis manner (40 CFR 98.6) [**Added January 2010**].
- *Research and Development Facility* - laboratory and pilot plant operations whose primary purpose is to conduct research and development into new processes and products, where the operations are under the close supervision of technically trained personnel, and which are not engaged in the manufacture of products for commercial sale, except in a de minimis manner (40 CFR 63.2406) [**Added April 2004**].
- *Research And Laboratory Activities* - surface coating or paint stripping activities that meet one of the following criteria (40 CFR 63.11180) [**Added April 2011**]:
  1. Conducted at a laboratory to analyze air, soil, water, waste, or product samples for contaminants, or environmental impact.
  2. Activities conducted to test more efficient production processes, including alternative paint stripping or surface coating materials or application methods, or methods for preventing or reducing adverse environmental impacts, provided that the activities do not include the production of an intermediate or final product for sale or exchange for commercial profit.
  3. Activities conducted at a research or laboratory facility that is operated under the close supervision of technically trained personnel, the primary purpose of which is to conduct research and development into new processes and products and that is not engaged in the manufacture of products for sale or exchange for commercial profit.
- *Research or Laboratory Facility* - any stationary source whose primary purpose is to conduct research and development into new processes and products, where such source is operated under the close supervision of technically trained personnel and is not engaged in the manufacture of products for commercial sale in commerce, except in a de minimis matter (40 CFR 63.6175) [**Added April 2004**].
- *Residence* – any home, house, apartment building, or other place of dwelling which is occupied during any portion of the relevant year (40 CFR 61.91(d)) [**Added July 2006**].
- *Residence* - any dwelling or housing in which people reside excluding short-term housing that is occupied by the same person for a period of less than 180 days (such as a hotel room) (40 CFR 63.321) [**Added October 2006**].
- *Residential Boiler* - a boiler used to provide heat and/or hot water and/or as part of a residential combined heat and power system. This definition includes boilers located at an institutional facility (e.g., university campus, military base, church grounds) or commercial/industrial facility (e.g., farm) used primarily to provide heat and/or hot water for: (40 CFR 63.7575 and 63.11237) [**Added April 2013**].

1. A dwelling containing four or fewer families; or

2. A single unit residence dwelling that has since been converted or subdivided into condominiums or apartments.
- *Residential/Commercial/Institutional Emergency Stationary RICE* - an emergency stationary RICE used in residential establishments such as homes or residences, commercial establishments such as office buildings, hotels, or stores, or institutional establishments such as medical centers, research centers, and institutions of higher education (40 CFR 63.6675) **[Added April 2010]**.
  - *Residential Emergency Stationary RICE* - an emergency stationary RICE used in residential establishments such as homes or apartment buildings (40 CFR 63.6675) **[Added October 2010]**.
  - *Residual Fuel Oil No. 5 (Navy Special)* - a classification for the heavier fuel oil generally used in steam powered vessels in government service and inshore power plants. It has a minimum flash point of 131 °F (40 CFR 98.6) **[Added January 2010]**.
  - *Residual Fuel Oil No. 6 (a.k.a. Bunker C)* - a classification for the heavier fuel oil generally used for the production of electric power, space heating, vessel bunkering and various industrial purposes. It has a minimum flash point of 140 °F (40 CFR 98.6) **[Added January 2010]**.
  - *Residual Oil* - crude oil, fuel oil that does not comply with the specifications under the definition of distillate oil, and all fuel oil numbers 4, 5, and 6, as defined by the American Society for Testing and Materials in ASTM D396 (incorporated by reference, see 40 CFR 60.17) (40 CFR 60.41c) **[Added July 2007]**.
  - *Residual Oil* - crude oil, fuel oil that does not comply with the specifications under the definition of distillate oil, and all fuel oil numbers 4, 5, and 6, as defined by the American Society of Testing and Materials in ASTM D396-10 (incorporated by reference, see 40 CFR 63.14(b)) (40 CFR 63.7575 and 63.11237) **[Added April 2013]**.
  - *Residuum* - residue from crude oil after distilling off all but the heaviest components, with a boiling range greater than 1,000 °F (40 CFR 98.6) **[Added January 2010]**.
  - *Responsible Official* - responsible official as defined in 40 CFR 70.2 and 40 CFR 71.2, as applicable (40 CFR 63.2406) **[Added April 2004]**.
  - *Responsible Official* - responsible official as defined in 40 CFR 70.2 (40 CFR 63.6675, 63.7575, 63.7957, 63.9375, and 63.11237) **[Added April 2004; Citation Revised April 2011]**.
  - *Retail Facility* - a stationary source at which more than one-half of the income is obtained from direct sales to end users or at which more than one-half of the fuel sold, by volume, is sold through a cylinder exchange program (40 CFR 68.3) **[Added January 2005]**.
  - *Retail Outlet* - any establishment at which gasoline, diesel fuel, methanol, natural gas or liquefied petroleum gas is sold or offered for sale for use in motor vehicles or nonroad engines, including locomotive engines or marine engines (40 CFR 80.2(j) and 80.1500) **[Added October 2011]**.
  - *Retailer* - any person who owns, leases, operates, controls, or supervises a retail outlet (40 CFR 80.2(k) and 80.1500) **[Added October 2011]**.
  - *Retailer* - a person to whom a product is delivered or sold, if such delivery or sale is for purposes of sale or distribution in commerce to consumers who buy such product for purposes other than resale (40 CFR 82.104(u)) **[Added July 2004]**
  - *Retire* - when referring to an appliance, means the removal of the refrigerant and the disassembly or impairment of the refrigerant circuit such that the appliance as a whole is rendered unusable by any person in the future (40 CFR 82.152) **[Added January 2017]**.

- *Retrofit* - to convert an appliance from one refrigerant to another refrigerant. Retrofitting includes the conversion of the appliance to achieve system compatibility with the new refrigerant and may include, but is not limited to, changes in lubricants, gaskets, filters, driers, valves, o-rings or appliance components (40 CFR 82.152) **[Added January 2017]**.
- *Rich Burn Engine* - any four-stroke spark ignited engine where the manufacturer's recommended operating air/fuel ratio divided by the stoichiometric air/fuel ratio at full load conditions is less than or equal to 1.1. Engines originally manufactured as rich burn engines, but modified prior to 19 December 2002 with passive emission control technology for NO<sub>x</sub> (such as pre-combustion chambers) will be considered lean burn engines. Also, existing engines where there are no manufacturer's recommendations regarding air/fuel ratio will be considered a rich burn engine if the excess oxygen content of the exhaust at full load conditions is less than or equal to 2 percent (40 CFR 63.6675) **[Added July 2004]**.
- *Risk Specific Concentration* - the allowable increase in the average daily ground level ambient air concentrations for a pollutant from the incineration of sewage sludge at or beyond the property line of the site where the sewage sludge incinerator is located (40 CFR 503.41(i)).
- *Road Oil* - any heavy petroleum oil, including residual asphaltic oil used as a dust palliative and surface treatment on roads and highways. It is generally produced in six grades, from 0, the most liquid, to 5, the most viscous (40 CFR 98.6) **[Added January 2010]**.
- *Rocket Engine* - a device consisting of a combustion chamber in which materials referred to as propellants, which provide both the fuel and the oxygen for combustion, are burned. Combustion gases escape through a nozzle, providing thrust (40 CFR 63.9375) **[Added July 2003]**.
- *Rolling Average* - the average of all data collected during the applicable averaging period. For demonstration of compliance with a CO CEMS-based emission limit based on CO concentration a 30-day (10-day) rolling average is comprised of the average of all the hourly average concentrations over the previous 720 (240) operating hours calculated each operating day. To demonstrate compliance on a 30-day rolling average basis for parameters other than CO, you must indicate the basis of the 30-day rolling average period you are using for compliance, as discussed in 40 CFR 63.7545(e)(2)(iii). If you indicate the 30 operating day basis, you must calculate a new average value each operating day and shall include the measured hourly values for the preceding 30 operating days. If you select the 720 operating hours basis, you must average of all the hourly average concentrations over the previous 720 operating hours calculated each operating day (40 CFR 63.7575) **[Added January 2016]**.
- *Room Enclosure* - a stationary structure that encloses a transfer machine system and is vented to a carbon adsorber or an equivalent control device during operation of the transfer machine system (40 CFR 63.321).
- *Root Cause* - a fundamental, underlying, system-related reason why an incident occurred (40 CFR 68.3) **[Added April 2017]**.
- *Rotary Internal Combustion Engine* - any internal combustion engine which uses rotary motion to convert heat energy into mechanical work (40 CFR 60.4219) **[Added October 2006]**.
- *SF<sub>6</sub>* - sulfur hexafluoride.
- *Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)*. Signed on August 10, 2005 SAFETEA-LU authorizes the Federal surface transportation programs for highways, highway safety, and transit for the 5-yr period 2005-2009. SAFETEA-LU includes the following **[Added October 2005]**:
  1. Significant new environmental requirements for the Statewide and Metropolitan Planning process.
  2. Modifications intended to provide greater flexibility in transportation planning and air quality conformity, without reducing protection for air quality.
- *Safety Device* - a closure device such as a pressure relief valve, frangible disc, fusible plug, or any other type of device that functions exclusively to prevent physical damage or permanent deformation to a unit or its air emission

control equipment by venting gases or vapors directly to the atmosphere during unsafe conditions resulting from an unplanned, accidental, or emergency event (40 CFR 63.2406) **[Added April 2004]**.

- *Safety Device* - a closure device such as a pressure relief valve, frangible disc, fusible plug, or any other type of device which functions to prevent physical damage or permanent deformation to equipment by venting gases or vapors during unsafe conditions resulting from an unplanned, accidental, or emergency event. For the purpose of 40 CFR 63, Subpart GGGGG [40 CFR 63.7880 through 63.7957, see checklist items AE.300.1.US through AE.300.12.US], a safety device is not used for routine venting of gases or vapors from the vapor headspace underneath a cover such as during filling of the unit or to adjust the pressure in this vapor headspace in response to normal daily diurnal ambient temperature fluctuations. A safety device is designed to remain in a closed position during normal operations and open only when the internal pressure, or another relevant parameter, exceeds the device threshold setting applicable to the equipment as determined by the owner or operator based on manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, combustible, explosive, reactive, or hazardous materials (40 CFR 63.7957) **[Added April 2004]**.
- *Safety Device* - a closure device such as a pressure relief valve, frangible disc, fusible plug, or any other type of device which functions exclusively to prevent physical damage or permanent deformation to a unit or its air emission control equipment by venting gases or vapors directly to the atmosphere during unsafe conditions resulting from an unplanned, accidental, or emergency event. A safety device is not used for routine venting of gases or vapors from the vapor headspace underneath a cover such as during filling of the unit or to adjust the pressure in response to normal daily diurnal ambient temperature fluctuations. A safety device is designed to remain in a closed position during normal operations and open only when the internal pressure, or another relevant parameter, exceeds the device threshold setting applicable to the air emission control equipment as determined by the owner or operator based on manufacturer recommendations, applicable regulations, fire protection and prevention codes and practices, or other requirements for the safe handling of flammable, combustible, explosive, reactive, or hazardous materials (40 CFR 98.6) **[Added January 2010]**.
- *Same Location* - the same or contiguous property that is under common ownership or control including properties that are separated only by a street, road, highway, or other public right of way. Common ownership or control includes properties that are owned, leased, or operated by the same entity, parent entity, subsidiary, subdivision, or any combination thereof including any municipality or other governmental unit (40 CFR 60.51b).
- *Same Location* - the same or contiguous properties under common ownership or control, including those separated only by a street, road, highway, or other public right-of-way. Common ownership or control includes properties that are owned, leased, or operated by the same entity, parent entity, subsidiary, subdivision, or any combination thereof. Entities may include a municipality, other governmental unit, or any quasi-governmental authority (for example, a public utility district or regional authority for waste disposal) (40 CFR 60.1465) **[Added April 2001]**.
- *Seasonal Boiler* - a boiler that undergoes a shutdown for a period of at least 7 consecutive months (or 210 consecutive days) each 12-mo period due to seasonal conditions, except for periodic testing. Periodic testing shall not exceed a combined total of 15 days during the 7-mo shutdown. This definition only applies to boilers that would otherwise be included in the biomass subcategory or the oil subcategory (40 CFR 63.11237) **[Added April 2013]**.
- *Seasonal Variance* - the removal of refrigerant from an appliance due to a change in ambient conditions caused by a change in season, followed by the subsequent addition of an amount that is less than or equal to the amount of refrigerant removed in the prior change in season, where both the removal and addition of refrigerant occurs within one consecutive 12-month period (40 CFR 82.152) **[Added January 2017]**
- *Second Calendar Half* - the period that starts on July 1 and ends on December 31 in any year (40 CFR 60.1465) **[Added April 2001]**.
- *Secondary Chamber* - a component of the HMIWI that receives combustion gases from the primary chamber and in which the combustion process is completed (40 CFR 60.51c and 62.14490) **[Added October 2000]**.

- *Secondary Material* - the material as defined in 40 CFR 241.2 of this chapter (40 CFR 63.7575) [**Added April 2013**].
- *Secondary Treatment* - treatment processes, typically biological, designed to reduce the concentrations of dissolved and colloidal organic matter in wastewater (40 CFR 63.1583) [**Added January 2000**].
- *Self-contained Recovery Equipment* - refrigerant recovery and/or recycling equipment that is capable of removing the refrigerant from an appliance without the assistance of components contained in the appliance (40 CFR 82.152) [**Revised January 2017**].
- *Self-priming Topcoat* - a topcoat that is applied directly to an uncoated aerospace vehicle or component for purposes of corrosion prevention, environmental protection, and functional fluid resistance. More than one layer of identical coating formulation may be applied to the vehicle or component (40 CFR 63.742) [**Added January 1999**].
- *Semi-aqueous Cleaning Solvent* - a solution in which water is a primary ingredient (60 percent of the solvent solution as applied must be water) (40 CFR 63.742) [**Added January 1999**].
- *Semi-refined Petroleum Product* - all oils requiring further processing. Included in this category are unfinished oils which are produced by the partial refining of crude oil and include the following: naphthas and lighter oils; kerosene and light gas oils; heavy gas oils; and residuum, and all products that require further processing or the addition of blendstocks (40 CFR 98.6) [**Added January 2010**].
- *Self-sealing Valve* - a valve affixed to a container of refrigerant that automatically seals when not dispensing refrigerant and meets or exceeds established performance criteria as identified in 40 CFR 82.154(c)(2) (40 CFR 82.152) [**Added January 2017**].
- *Sendout* - in the context of a local distribution company, the total deliveries of natural gas to customers over a specified time interval (typically hour, day, month, or year). Sendout is the sum of gas received through the city gate, gas withdrawn from on-system storage or peak shaving plants, and gas produced and delivered into the distribution system; and is net of any natural gas injected into on-system storage. It comprises gas sales, exchange, deliveries, gas used by company, and unaccounted for gas. Sendout is measured at the city gate station, and other on-system receipt points from storage, peak shaving, and production (40 CFR 98.6) [**Added January 2010**].
- *Sensor* - a device that measures a physical quantity/quality or the change in a physical quantity/quality, such as temperature, pressure, flow rate, pH, or liquid level (40 CFR 98.6) [**Added January 2010**].
- *Separator* - a remediation material management unit, generally a tank, used to separate oil or organics from water. A separator consists of not only the separation unit but also the forebay and other separator basins, skimmers, weirs, grit chambers, sludge hoppers, and bar screens that are located directly after the individual drain system and prior to any additional treatment units such as an air flotation unit clarifier or biological treatment unit. Examples of a separator include, but are not limited to, an API separator, parallel-plate interceptor, and corrugated-plate interceptor with the associated ancillary equipment (40 CFR 63.7957) [**Added April 2004**].
- *Service Involving Refrigerant* - any service during which discharge or release of refrigerant from the MVAC or MVAC-like appliance to the atmosphere can reasonably be expected to occur. Service involving refrigerant includes any service in which an MVAC or MVAC-like appliance is charged with refrigerant but no other service involving refrigerant is performed (i.e., a top-off) (40 CFR 82.32(h)) [**Added December 1997**].
- *Sewage Sludge* - solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works. Sewage sludge includes, but is not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment processes; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incineration unit or grit and screenings generated during preliminary treatment of domestic sewage in a treatment works (40 CFR 60.4930) [**Added April 2011**].

- *Sewage Sludge Feed Rate* - either the average daily amount of sewage sludge fired in all sewage sludge incinerators within the property line of the site where the sewage sludge incinerators are located for the numbers of days in a 365-day period that each sewage sludge incinerator operates, or the average daily design capacity for all sewage sludge incinerators within the property line of the site where the sewage sludge incinerators are located (40 CFR 503.41(j)).
- *Sewage Sludge Feed Rate* - the rate at which sewage sludge is fed into the incinerator unit (40 CFR 60.4930) **[Added April 2011]**.
- *Sewage Sludge Incineration (SSI) Unit* - an incineration unit combusting sewage sludge for the purpose of reducing the volume of the sewage sludge by removing combustible matter. Sewage sludge incineration unit designs include fluidized bed and multiple hearth. A SSI unit also includes, but is not limited to, the sewage sludge feed system, auxiliary fuel feed system, grate system, flue gas system, waste heat recovery equipment, if any, and bottom ash system. The SSI unit includes all ash handling systems connected to the bottom ash handling system. The combustion unit bottom ash system ends at the truck loading station or similar equipment that transfers the ash to final disposal. The SSI unit does not include air pollution control equipment or the stack (40 CFR 60.4930) **[Added April 2011]**.
- *Sewage Sludge Incinerator* - an enclosed device in which only sewage sludge and auxiliary fuel are fired (40 CFR 503.41(k)).
- *Shift Supervisor* - the person who is in direct charge and control of operating a municipal waste combustion unit and who is responsible for onsite supervision, technical direction, management, and overall performance of the municipal waste combustion unit during an assigned shift (40 CFR 60.1465) **[Added April 2001]**.
- *Shutdown* - the period of time after all waste has been combusted in the primary chamber. For continuous HMIWI, shutdown must commence no less than 2 hours after the last charge to the incinerator. For intermittent HMIWI, shutdown must commence no less than 4 hours after the last charge to the incinerator. For batch HMIWI, shutdown must commence no less than 5 hours after the high-air phase of combustion has been completed (40 CFR 62.14490) **[Added October 2000]**.
- *Shutdown* - the period of time after all waste has been combusted in the primary chamber. For continuous OSWI, shutdown shall commence no less than 2 h after the last charge to the incinerator. For intermittent OSWI, shutdown shall commence no less than 4 h after the last charge to the incinerator. For batch OSWI, shutdown shall commence no less than 5 h after the high-air phase of combustion has been completed (40 CFR 60.2977) **[Added January 2006]**.
- *Shutdown* - the period of time after all waste has been combusted in the primary chamber (40 CFR 62.14840) **[Added January 2004]**.
- *Shutdown* - the cessation of operation of an OLD affected source, or portion thereof (other than as part of normal operation of a batch-type operation), including equipment required or used to comply with 40 CFR 63, Subpart EEEE, or the emptying and degassing of a storage tank. Shutdown as defined here includes, but is not limited to, events that result from periodic maintenance, replacement of equipment, or repair (40 CFR 63.2406) **[Added April 2004; Revised January 2007]**.
- *Shutdown* - the period in which cessation of operation of a boiler is initiated for any purpose. Shutdown begins when the boiler no longer supplies useful thermal energy (such as steam or hot water) for heating, cooling, or process purposes or generates electricity, or when no fuel is being fed to the boiler, whichever is earlier. Shutdown ends when the boiler no longer supplies useful thermal energy (such as steam or hot water) for heating, cooling, or process purposes or generates electricity, and no fuel is being combusted in the boiler (40 CFR 63.11237) **[Added April 2013, Revised October 2016]**.
- *Shutdown* - the cessation of operation of an emission source for any purpose (40 CFR 98.6) **[Added January 2010]**.

- *Shutdown* - the period of time after all sewage sludge has been combusted in the primary chamber (40 CFR 60.4930) **[Added April 2011]**.
- *Shutdown* - the period in which cessation of operation of a boiler or process heater is initiated for any purpose. Shutdown begins when the boiler or process heater no longer supplies useful thermal energy (such as heat or steam) for heating, cooling, or process purposes and/or generates electricity or when no fuel is being fed to the boiler or process heater, whichever is earlier. Shutdown ends when the boiler or process heater no longer supplies useful thermal energy (such as steam or heat) for heating, cooling, or process purposes and/or generates electricity, and no fuel is being combusted in the boiler or process heater (40 CFR 62.7575) **[Added January 2016]**.
- *Silicon Carbide* - an artificial abrasive produced from silica sand or quartz and petroleum coke (40 CFR 98.6) **[Added January 2010]**.
- *Simple Cycle Combustion Turbine* - any stationary combustion turbine which does not recover heat from the combustion turbine exhaust gases to preheat the inlet combustion air to the combustion turbine, or which does not recover heat from the combustion turbine exhaust gases for purposes other than enhancing the performance of the combustion turbine itself (40 CFR 60.4420) **[Added April 2009]**.
- *Simple Cycle Gas Turbine* - any stationary gas turbine which does not recover heat from the gas turbine exhaust gases to preheat the inlet combustion air to the gas turbine, or which does not recover heat from the gas turbine exhaust gases to heat water or generate steam (40 CFR 60.331) **[Added October 2004]**.
- *Simple Cycle Stationary Combustion Turbine* - any stationary combustion turbine that does not recover heat from the stationary combustion turbine exhaust gases (40 CFR 63.6175) **[Added April 2004]**.
- *Site-rated HP* - the maximum manufacturer's design capacity at engine site conditions (40 CFR 63.6675) **[Added July 2004]**.
- *Site Remediation* - one or more activities or processes used to remove, destroy, degrade, transform, immobilize, or otherwise manage remediation material. The monitoring or measuring of contamination levels in environmental media using wells or by sampling is not considered to be a site remediation (40 CFR 63.7957) **[Added April 2004]**.
- *Site Remediation Sources* –40 CFR 63, Subpart GGGGG [40 CFR 63.7880 through 63.7957, see checklist items AE.300.1.US through AE.300.12.US] applies to each new, reconstructed, or existing affected source for site remediation as designated in the following (40 CFR 63.7882(a)) **[Added April 2004]**:
  1. Process vents. The affected source is the entire group of process vents associated with the in-situ and ex-situ remediation processes used at your site to remove, destroy, degrade, transform, or immobilize hazardous substances in the remediation material subject to remediation. Examples of such in-situ remediation processes include, but are not limited to, soil vapor extraction and bioremediation processes. Examples of such ex-situ remediation processes include but are not limited to, thermal desorption, bioremediation, and air stripping processes.
  2. Remediation material management units. Remediation material management unit means a tank, surface impoundment, container, oil-water separator, organic-water separator, or transfer system, as defined in 40 CFR 63.7957, and is used at your site to manage remediation material. The affected source is the entire group of remediation material management units used for the site remediations at your site. For the purpose of 40 CFR 63, Subpart GGGGG [40 CFR 63.7880 through 63.7957, see checklist items AE.300.1.US through AE.300.12.US], a tank or container that is also equipped with a vent that serves as a process vent, as defined in 40 CFR 63.7957, is not a remediation material management unit, but instead this unit is considered to be a process vent affected source under paragraph 1.
  3. Equipment leaks. The affected source is the entire group of equipment components (pumps, valves, etc.) used to manage remediation materials and meeting both of the conditions specified in paragraphs a and b. If either of these conditions do not apply to an equipment component, then that component is not part of the affected source for equipment leaks.

- a. The equipment component contains or contacts remediation material having a concentration of total HAP listed in Table 1 of 40 CFR 63, Subpart GGGGG [40 CFR 63.7880 through 63.7957, see checklist items AE.300.1.US through AE.300.12.US] equal to or greater than 10 percent by weight.
  - b. The equipment component is intended to operate for 300 h or more during a calendar year in remediation material service, as defined in 40 CFR 63.7957.
- *Sloped Grate* - a unit where the solid fuel is fed to the top of the grate from where it slides downwards; while sliding the fuel first dries and then ignites and burns. The ash is deposited at the bottom of the grate. Fluidized bed, dutch oven, pile burner, hybrid suspension grate, suspension burners, and fuel cells are not considered to be a sloped grate design (40 CFR 63.7575) [**Added April 2013**].
- *Sludge* - sludge as defined in 40 CFR 260.10 (40 CFR 63.7957) [**Added April 2004**].
- *Small Appliance* - any appliance that is fully manufactured, charged, and hermetically sealed in a factory with 5 lbs or less of refrigerant, including, but not limited to, refrigerators and freezers (designed for home, commercial, or consumer use), medical or industrial research refrigeration equipment, room air conditioners (including window air conditioners, portable air conditioners, and packaged terminal air heat pumps), dehumidifiers, under-the-counter ice makers, vending machines, and drinking water coolers (40 CFR 82.152) [**Revised October 2003; Revised January 2017**].
- *Small HMIWI* (40 CFR 60.51c and 62.14490) [**Added October 2000**]:
  - 1. Except as provided in paragraph (2):
    - a. an HMIWI whose maximum design waste burning capacity is less than or equal to 200 lb/h
    - b. a continuous or intermittent HMIWI whose maximum charge rate is less than or equal to 200 lb/h
    - c. a batch HMIWI whose maximum charge rate is less than 1600 lb/day.
  - 2. The following are not small HMIWI:
    - a. a continuous or intermittent HMIWI whose maximum charge rate is more than 200 lb/h
    - b. a batch HMIWI whose maximum charge rate is more than 1600 lb/day.
- *Small Rural HMIWI* - a small HMIWI which is located more than 50 miles from the boundary of the nearest Standard Metropolitan Statistical Area and which burns less than 2,000 pounds per week of hospital waste and medical/ infectious waste (40 CFR 62.14490) [**Added October 2000**].
- *Softener* - a liquid that is applied to an aerospace vehicle or component to degrade coatings such as primers, topcoats, and specialty coatings specifically as a preparatory step to subsequent depainting by non-chemical based depainting equipment. Softeners may contain VOC but shall not contain any HAP as determined from MSDS's or manufacturer supplied information (40 CFR 63.742) [**Added January 1999; Revised January 2016**].
- *Soil* - unconsolidated earth material composing the superficial geologic strata (material overlying bedrock), consisting of clay, silt, sand, or gravel size particles (sizes as classified by the U.S. Soil Conservation Service), or a mixture of such materials with liquids, sludges, or solids which is inseparable by simple mechanical removal processes and is made up primarily of soil (40 CFR 63.7957) [**Added April 2004**].
- *Solid Fossil Fuel* - includes, but is not limited to, coal, coke, petroleum coke, and tire derived fuel (40 CFR 63.7575 and 63.11237) [**Revised April 2013**].
- *Solid Fuel* - any solid fossil fuel or biomass or bio-based solid fuel (40 CFR 63.7575 and 63.11237) [**Revised April 2013**].
- *Solid Storage* - the storage of manure, typically for a period of several months, in unconfined piles or stacks. Manure is able to be stacked due to the presence of a sufficient amount of bedding material or loss of moisture by evaporation (40 CFR 98.6) [**Added January 2010**].
- *Solid Waste* - any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous

material resulting from industrial, commercial, mining, agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges which are point sources subject to permits under section 402 of the Federal Water Pollution Control Act, as amended (86 Stat. 880), or source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954, as amended (68 Stat. 923). For purposes of 40 CFR 62, Subpart III [40 CFR 62.14500 through 62.14840, see checklist items AE.26.1.US through AE.26.10.US] and 40 CFR 60, Subpart DDDD: *Emissions Guidelines and Compliance Times for Commercial and Industrial Solid Waste Incineration Units That Commenced Construction On or Before 30 November 1999*, only, solid waste does not include the waste burned in the fifteen types of units described in 40 CFR 60.2555 and 40 CFR 62.14525 (40 CFR 62.14840) [Added January 2004].

- *Solid Waste* - any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges that are point sources subject to permits under section 402 of the Federal Water Pollution Control Act, as amended (33 U.S.C. 1342), or source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954, as amended (42 U.S.C. 2014) (40 CFR 60.2977) [Added January 2006].
- *Solid Waste* - any garbage, refuse, sewage sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges which are point sources subject to permits under section 402 of the Federal Water Pollution Control Act, as amended (33 U.S.C. 1342), or source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954, as amended (42 U.S.C. 2014) (40 CFR 60.4930) [Added April 2011].
- *Solids* - the non-volatile portion of the coating that, after drying, makes up the dry film (40 CFR 63.742) [Added January 1999].
- *Solvent* - a fluid containing organic compounds used to perform paint stripping, surface prep, or cleaning of surface coating equipment (40 CFR 63.11180) [Added April 2011].
- *Solvent/Air Interface* - for a vapor-cleaning machine, the location of contact between the concentrated solvent vapor layer and the air. This location of contact is defined as the in-line height of the primary condenser coils. For a cold cleaning machine, it is the location of contact between the liquid solvent and the air (40 CFR 63.461).
- *Solvent-cleaning Machine* - any device or piece of equipment that uses halogenated HAP solvent liquid or vapor to remove soils from the surface of materials. Types of solvent-cleaning machines include, but are not limited to, batch vapor, in-line vapor, in-line cold, and batch cold solvent-cleaning machines. Buckets, pails, and beakers with capacities of 7.6 L (2 gal) or less are not considered solvent-cleaning machines (40 CFR 63.461).
- *Solvent Yellow 124* - Nethyl-N-[2-[1-(2-methylpropoxy)ethoxyl]-4-phenylazo]-benzeneamine (40 CFR 80.2(rrr)) [Added October 2011].
- *Sour Gas* - any gas that contains significant concentrations of hydrogen sulfide. Sour gas may include untreated fuel gas, amine stripper off-gas, or sour water stripper gas (40 CFR 98.6) [Added January 2010].
- *Source Facility* - the location at which a used controlled substance was recovered from a piece of equipment, including the name of the company responsible for, or owning the piece of equipment, a contact person at the location, the mailing address for that specific location, and a phone number and a fax number for the contact person at the location (40 CFR 82.3) [Added April 2003].

- *Space Vehicle* - a man-made device, either manned or unmanned, designed for operation beyond earth's atmosphere. This definition includes integral equipment such as models, mock-ups, prototypes, molds, jigs, tooling, hardware jackets, and test coupons. Also included is auxiliary equipment associated with test, transport, and storage, which, through contamination, can compromise the space vehicle performance (40 CFR 63.742) **[Added January 1999]**.
- *Space Vehicle* - a man-made device, either manned or unmanned, designed for operation beyond earth's atmosphere. This definition includes integral equipment such as models, mock-ups, prototypes, molds, jigs, tooling, hardware jackets, and test coupons. Also included is auxiliary equipment associated with tests, transport, and storage, which through contamination can compromise the space vehicle performance (40 CFR 82.3) **[Added April 2003]**.
- *Space Vehicle* - vehicles designed to travel beyond the limit of the earth's atmosphere, including but not limited to satellites, space stations, and the Space Shuttle System (including orbiter, external tanks, and solid rocket boosters) (40 CFR 63.11180) **[Added April 2011]**.
- *Spare Parts* - those parts that are supplied by a manufacturer to another manufacturer, distributor, or retailer, for purposes of replacing similar parts with such parts in the repair of a product (40 CFR 82.104(v)) **[Added July 2004]**
- *Spark Ignition* - relating to a gasoline, natural gas, or liquefied petroleum gas fueled engine or any other type of engine with a spark plug (or other sparking device) and with operating characteristics significantly similar to the theoretical Otto combustion cycle. Spark ignition engines usually use a throttle to regulate intake air flow to control power during normal operation. Dual-fuel engines in which a liquid fuel (typically diesel fuel) is used for CI and gaseous fuel (typically natural gas) is used as the primary fuel at an annual average ratio of less than 2 parts diesel fuel to 100 parts total fuel on an energy equivalent basis are spark ignition engines (40 CFR 60.4219) **[Added October 2006]**.
- *Spark Ignition* - relating to either: A gasoline-fueled engine; or any other type of engine with a spark plug (or other sparking device) and with operating characteristics significantly similar to the theoretical Otto combustion cycle. Spark ignition engines usually use a throttle to regulate intake air flow to control power during normal operation. Dual-fuel engines in which a liquid fuel (typically diesel fuel) is used for CI and gaseous fuel (typically natural gas) is used as the primary fuel at an annual average ratio of less than 2 parts diesel fuel to 100 parts total fuel on an energy equivalent basis are spark ignition engines (40 CFR 63.6675) **[Added April 2008; Revised April 2011]**.
- *Special Naphthas* - all finished products with the naphtha boiling range (290° to 470 °F) that are generally used as paint thinners, cleaners or solvents. These products are refined to a specified flash point. Special naphthas include all commercial hexane and cleaning solvents conforming to ASTM Specification D1836-07, Standard Specification for Commercial Hexanes, and D235-02 (Reapproved 2007), Standard Specification for Mineral Spirits (Petroleum Spirits) (Hydrocarbon Dry Cleaning Solvent), respectively. Naphthas to be blended or marketed as motor gasoline or aviation gasoline, or that are to be used as petrochemical and synthetic natural gas (SNG) feedstocks are excluded (40 CFR 98.6) **[Added January 2010]**.
- *Specialty Coating* - a coating that, even though it meets the definition of a primer, topcoat, or self-priming topcoat, has additional performance criteria beyond those of primers, topcoats, and self-priming topcoats for specific applications. These performance criteria may include, but are not limited to, temperature or fire resistance, substrate compatibility, antireflection, temporary protection or marking, sealing, adhesively joining substrates, or enhanced corrosion protection. Individual specialty coatings are defined in Appendix A to 40 CFR 63, Subpart GG [40 CFR 63.741 through 63.759, see checklist items AE.170.1.US through AE.170.13.US] and in the CTG for Aerospace Manufacturing and Rework Operations (EPA 453/R-97-004) (40 CFR 63.742) **[Added January 1999]**.
- *Spot Stripping* - the depainting of an area where it is not technically feasible to use a nonchemical depainting technique (40 CFR 63.742) **[Added January 1999]**.

- *Spray-applied Coating Operations* - coatings that are applied using a hand-held device that creates an atomized mist of coating and deposits the coating on a substrate. For the purposes of this subpart, spray-applied coatings do not include the following materials or activities (40 CFR 63.11180) **[Added April 2011]**:
  1. Coatings applied from a hand-held device with a paint cup capacity that is equal to or less than 3.0 fluid ounces (89 cubic centimeters).
  2. Surface coating application using powder coating, hand-held, non-refillable aerosol containers, or non-atomizing application technology, including, but not limited to, paint brushes, rollers, hand wiping, flow coating, dip coating, electrodeposition coating, web coating, coil coating, touch-up markers, or marking pens.
  3. Thermal spray operations (also known as metallizing, flame spray, plasma arc spray, and electric arc spray, among other names) in which solid metallic or non-metallic material is heated to a molten or semi-molten state and propelled to the work piece or substrate by compressed air or other gas, where a bond is produced upon impact.
- *Spray-applied Coating Operation* - coatings that are applied using a device that creates an atomized mist of coating and deposits the coating on a substrate. For the purposes of this subpart, spray-applied coatings do not include the following materials or activities (40 CFR 63.742) **[Added January 2016]**:
  1. Coatings applied from a hand-held device with a paint cup capacity that is equal to or less than 3.0 fluid ounces (89 cubic centimeters) in which no more than 3.0 fluid ounces of coating is applied in a single application (*i.e.*, the total volume of a single coating formulation applied during any one day to any one aerospace vehicle or component). Under this definition, the use of multiple small paint cups and the refilling of a small paint cup to spray apply more than 3.0 fluid ounces of a coating is a spray-applied coating operation. Under this definition, the use of a paint cup liner in a reusable holder or cup that is designed to hold a liner with a capacity of more than 3.0 fluid ounces is a spray-applied coating operation.
  2. Application of coating using powder coating, hand-held nonrefillable aerosol containers, or nonatomizing application technology, including but not limited to paint brushes, rollers, flow coating, dip coating, electrodeposition coating, web coating, coil coating, touch-up markers, marking pens, trowels, spatulas, daubers, rags, sponges, mechanically and/or pneumatic-driven syringes, and inkjet machines.
  3. Application of adhesives, sealants, maskants, caulking materials, and inks.
- *Spray Gun* - a device that atomizes a coating or other material and projects the particulates or other material onto a substrate (40 CFR 63.742) **[Added January 1999]**.
- *Spreader Stoker, Mixed Fuel-Fired (Coal/Refuse-Derived Fuel) Combustion Unit* - a municipal waste combustion unit that combusts coal and refuse-derived fuel simultaneously, in which coal is introduced to the combustion zone by a mechanism that throws the fuel onto a grate from above. Combustion takes place both in suspension and on the grate (40 CFR 60.1465) **[Added April 2001]**.
- *Squeegee System* - a system that uses a series of pliable surfaces to remove the solvent film from the surfaces of the continuous web part. These pliable surfaces, called squeegees, are typically made of rubber or plastic media, and need to be periodically replaced to ensure continued proper function (40 CFR 63.461) **[Added October 1999]**.
- *Stabilization Process* - any physical or chemical process used to either reduce the mobility of contaminants in media or eliminate free liquids as determined by Test Method 9095--Paint Filter Liquids Test in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication No. SW-846, Third Edition, September 1986, as amended by Update I, November 15, 1992. (As an alternative, you may use any more recent, updated version of Method 9095 approved by the EPA). A stabilization process includes mixing remediation material with binders or other materials, and curing the resulting remediation material and binder mixture. Other synonymous terms used to refer to this process are fixation or solidification. A stabilization process does not include the adding of absorbent materials to the surface of remediation material, without mixing, agitation, or subsequent curing, to absorb free liquid (40 CFR 63.7957) **[Added April 2004]**.

- *Standard Conditions* - a temperature of 20 °C and a pressure of 101.3 kPa (40 CFR 60.51c, 60.2977, and 62.14490) **[Added October 2000]**.
- *Standard Conditions* - when referring to units of measure, means a temperature of 68 °F (20 °C) and a pressure of 1 atmosphere (101.3 kilopascals) (40 CFR 62.14840) **[Added January 2004]**.
- *Standard Conditions or Standard Temperature and Pressure (STP)* – either 60° or 68° Fahrenheit and 14.7 pounds per square inch absolute (40 CFR 98.6) **[Added January 2010; Revised January 2011]**.
- *Standard Conditions When Referring to Units of Measure* - a temperature of 20 °C and a pressure of 101.3 kilopascals (40 CFR 60.1465) **[Added April 2001]**.
- *Standard Metropolitan Statistical Area or SMSA* - any areas listed in OMB Bulletin No. 93-17 entitled “Revised Statistical Definitions for Metropolitan Areas” dated June 30, 1993. This information can also be obtained from the nearest Metropolitan Planning Organization (40 CFR 62.14490) **[Added October 2000]**.
- *Startup* - the period of time between the activation, including the firing of fuels (e.g., natural gas or distillate oil), of the system and the first feed to the unit (40 CFR 60.4930) **[Added April 2011]**.
- *Startup* – one of the following (40 CFR 63.7575) **[Added April 2013; Revised January 2016]**:
  1. either the first-ever firing of fuel in a boiler or process heater for the purpose of supplying useful thermal energy heating and/or producing electricity, or for any other purpose, or the firing of fuel in a boiler after a shutdown event for any purpose. Startup ends when any of the useful thermal energy from the boiler or process heater is supplied for heating, and/or producing electricity, or for any other purpose; or
  2. the period in which operation of a boiler or process heater is initiated for any purpose. Startup begins with either the first-ever firing of fuel in a boiler or process heater for the purpose of supplying useful thermal energy (such as steam or heat) for heating, cooling or process purposes, or producing electricity, or the firing of fuel in a boiler or process heater for any purpose after a shutdown event. Startup ends four hours after when the boiler or process heater supplies useful thermal energy (such as heat or steam) for heating, cooling, or process purposes, or generates electricity, whichever is earlier.
- *Startup* – for 40 CFR 63, Subpart JJJJJ (40 CFR 63.11237) **[Added April 2013, Revised October 2016]**:
  1. Either the first-ever firing of fuel in a boiler for the purpose of supplying useful thermal energy (such as steam or hot water) for heating and/or producing electricity, or for any other purpose, or the firing of fuel in a boiler after a shutdown event for any purpose. Startup ends when any of the useful thermal energy (such as steam or hot water) from the boiler is supplied for heating and/or producing electricity, or for any other purpose, or
  2. The period in which operation of a boiler is initiated for any purpose. Startup begins with either the first-ever firing of fuel in a boiler for the purpose of supplying useful thermal energy (such as steam or hot water) for heating, cooling or process purposes or producing electricity, or the firing of fuel in a boiler for any purpose after a shutdown event. Startup ends 4 hours after when the boiler supplies useful thermal energy (such as steam or hot water) for heating, cooling, or process purposes or generates electricity, whichever is earlier.
- *Startup Period* - the period of time between the activation of the system and the first charge to the OSWI unit. For batch OSWI, startup means the period of time between activation of the system and ignition of the waste (40 CFR 60.2977) **[Added January 2006]**.
- *State or Local Regulation* - a regulation at the State or local level that requires a hospital to reduce the quantity of ethylene oxide emissions from ethylene oxide sterilization units (40 CFR 63.10448) **[Added January 2008]**.
- *Stationary Combustion Turbine* - all equipment, including but not limited to the turbine, the fuel, air, lubrication and exhaust gas systems, control systems (except emissions control equipment), heat recovery system, and any ancillary components and sub-components comprising any simple cycle stationary combustion turbine, any

regenerative/recuperative cycle stationary combustion turbine, any combined cycle combustion turbine, and any combined heat and power combustion turbine based system. Stationary means that the combustion turbine is not self propelled or intended to be propelled while performing its function. It may, however, be mounted on a vehicle for portability (40 CFR 60.4420) [**Added April 2009**].

- *Stationary Gas Turbine* - any simple cycle gas turbine, regenerative cycle gas turbine or any gas turbine portion of a combined cycle steam/electric generating system that is not self propelled. It may, however, be mounted on a vehicle for portability (40 CFR 60.331) [**Added October 2004**].
- *Stationary Internal Combustion Engine* - any internal combustion engine, except combustion turbines, that converts heat energy into mechanical work and is not mobile. Stationary ICE differ from mobile ICE in that a stationary internal combustion engine is not a nonroad engine as defined at 40 CFR 1068.30 (excluding paragraph (2)(ii) of that definition), and is not used to propel a motor vehicle, aircraft, or a vehicle used solely for competition. Stationary ICE include reciprocating ICE, rotary ICE, and other ICE, except combustion turbines (40 CFR 60.4219 and 60.4248) [**Added October 2006; Revised July 2011**].
- *Stationary Internal Combustion Engine Test Cell/Stand* - an engine test cell/stand, as defined in 40 CFR 63, Subpart P [40 CFR 63.9280 through 63.9375, see checklist item AE.230.1.US through AE.230.4.US], that tests stationary ICE (40 CFR 60.4248) [**Added July 2011**].
- *Stationary Reciprocating Internal Combustion Engine (RICE)* - any reciprocating internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition (40 CFR 63.6675) [**Added July 2004**].
- *Stationary RICE Test Cell/Stand* - an engine test cell/stand, as defined in 40 CFR 63, Subpart P [40 CFR 63.9280 through 63.9375, see checklist item AE.230.1.US through AE.230.4.US], that tests stationary RICE (40 CFR 63.6675) [**Added July 2004**].
- *Stationary Source* - any buildings, structures, equipment, installations, or substance emitting stationary activities which belong to the same industrial group, which are located on one or more contiguous properties, which are under the control of the same person (or persons under common control), and from which an accidental release may occur. The term stationary source does not apply to transportation, including storage incident to transportation, of any regulated substance or any other extremely hazardous substance under the provisions of this part. A stationary source includes transportation containers used for storage not incident to transportation and transportation containers connected to equipment at a stationary source for loading or unloading. Transportation includes, but is not limited to, transportation subject to oversight or regulation under 49 CFR 192, 193, or 195, or a state natural gas or hazardous liquid program for which the state has in effect a certification to DOT under 49 U.S.C. section 60105. A stationary source does not include naturally occurring hydrocarbon reservoirs. Properties shall not be considered contiguous solely because of a railroad or pipeline right-of-way (40 CFR 68.3) [**Added January 2005**].
- *Startup* - the period of time between the activation of the system and the first charge to the unit. For batch HMIWI, startup means the period of time between activation of the system and ignition of the waste (40 CFR 60.51c and 62.14490) [**Added October 2000**].
- *Startup* - the setting in operation of an OLD affected source, or portion thereof, for any purpose. Startup also includes the placing in operation of any individual piece of equipment required or used to comply with this 40 CFR 63, Subpart E [40 CFR 63.2330 through 63.2406, see checklist items AE.57.1.US through AE.57.15.US], including, but not limited to, control devices and monitors (40 CFR 63.2406) [**Added April 2004**].
- *Startup Period* - the period when a municipal waste combustion unit begins the continuous combustion of municipal solid waste. It does not include any warmup period during which the municipal waste combustion unit

combusts fossil fuel or other solid waste fuel but receives no municipal solid waste (40 CFR 60.1465) [**Added April 2001**].

- *Startup Period* - the period of time between the activation of the system and the first charge to the unit (40 CFR 62.14840) [**Added January 2004**].
- *Stationary* - that the combustion turbine is not self propelled or intended to be propelled while performing its function. Stationary combustion turbines do not include turbines located at a research or laboratory facility, if research is conducted on the turbine itself and the turbine is not being used to power other applications at the research or laboratory facility (40 CFR 63.6175) [**Added April 2004**].
- *Stationary Combustion Turbine* - all equipment, including but not limited to the turbine, the fuel, air, lubrication and exhaust gas systems, control systems (except emissions control equipment), and any ancillary components and sub-components comprising any simple cycle stationary combustion turbine, any regenerative/recuperative cycle stationary combustion turbine, the combustion turbine portion of any stationary cogeneration cycle combustion system, or the combustion turbine portion of any stationary combined cycle steam/electric generating system (40 CFR 63.6175) [**Added April 2004**].
- *Stationary Combustion Turbine* - all equipment, including but not limited to the turbine, the fuel, air, lubrication and exhaust gas systems, control systems (except emissions control equipment), and any ancillary components and sub-components comprising any simple cycle stationary combustion turbine, any regenerative/recuperative cycle stationary combustion turbine, the combustion turbine portion of any stationary cogeneration cycle combustion system, or the combustion turbine portion of any stationary combined cycle steam/electric generating system. Stationary means that the combustion turbine is not self propelled or intended to be propelled while performing its function, although it may be mounted on a vehicle for portability or transportability. Stationary combustion turbines covered by 40 CFR 63, Subpart YYYYY [40 CFR 63.6080 through 63.6175, see checklist items AE.20.3.US through AE.20.10.US] include simple cycle stationary combustion turbines, regenerative/recuperative cycle stationary combustion turbines, cogeneration cycle stationary combustion turbines, and combined cycle stationary combustion turbines. Stationary combustion turbines subject to 40 CFR 63, Subpart YYYYY do not include turbines located at a research or laboratory facility, if research is conducted on the turbine itself and the turbine is not being used to power other applications at the research or laboratory facility (40 CFR 63.6085(a)) [**Added April 2004**].
- *Stationary Gas Turbines* - any simple cycle gas turbine, regenerative cycle gas turbine, or any gas turbine portion of a combined cycle steam/electric generating system that is not self-propelled. It may be mounted on a vehicle for portability (40 CFR 60.331).
- *Steam Generating Unit* - any furnace, boiler, or other device used for combusting fuel for the purpose of producing steam (including fossil fuel-fired steam generators associated with combined cycle gas turbines) nuclear steam generators are not included (40 CFR 60.41a).
- *Steam Generating Unit* - a device that combusts any fuel or byproduct/waste and produces steam or heats water or heats any heat transfer medium. This term includes any municipal-type solid waste incinerator with a heat recovery steam generating unit or any steam generating unit that combusts fuel and is part of a cogeneration system or a combined cycle system. This term does not include process heaters as they are defined in 40 CFR 60, Subpart Db (40 CFR 60.41b) [**Added April 2009**].
- *Steam Generating Unit* - a device that combusts any fuel and produces steam or heats water or heats any heat transfer medium. This term includes any duct burner that combusts fuel and is part of a combined cycle system. This term does not include process heaters as defined in 40 CFR 60, Subpart Dc (40 CFR 60.41c) [**Added April 2009**].
- *Steam Reforming* - a catalytic process that involves a reaction between **natural gas or other light hydrocarbons and steam**. The result is a mixture of hydrogen, carbon monoxide, carbon dioxide, and water (40 CFR 98.6) [**Added January 2010**].

- *Sterilization Facility* - the group of ethylene oxide sterilization units at a hospital using ethylene oxide gas or an ethylene oxide/inert gas mixture for the purpose of sterilizing (40 CFR 63.10448) **[Added January 2008]**.
- *Sterilization Process* - any time when ethylene oxide is removed from the sterilization unit or combination sterilization unit through the sterilization unit vent (40 CFR 63.10448) **[Added January 2008]**.
- *Sterilization Unit* - any enclosed vessel that is filled with ethylene oxide gas or an ethylene oxide/inert gas mixture for the purpose of sterilizing. As used in this subpart, the term includes combination sterilization units (40 CFR 63.10448) **[Added January 2008]**.
- *Stoichiometric* - the theoretical air-to-fuel ratio required for complete combustion (40 CFR 63.6675) **[Added July 2004]**.
- *Stoker* - a unit consisting of a mechanically operated fuel feeding mechanism, a stationary or moving grate to support the burning of fuel and admit under-grate air to the fuel, an overfire air system to complete combustion, and an ash discharge system. This definition of stoker includes air swept stokers. There are two general types of stokers: Underfeed and overfeed. Overfeed stokers include mass feed and spreader stokers. Fluidized bed, dutch oven, pile burner, hybrid suspension grate, suspension burners, and fuel cells are not considered to be a stoker design (40 CFR 63.7575) **[Revised April 2013]**.
- *Stoker (Refuse-Derived Fuel) Combustion Unit* - a steam generating unit that combusts refuse-derived fuel in a semisuspension combusting mode, using air-fed distributors (40 CFR 60.1465) **[Added April 2001]**.
- *Stoker/Sloped Grate/Other Unit Designed to Burn Kiln Dried Biomass* - the unit is in the units designed to burn biomass/bio-based solid subcategory that is either a stoker, sloped grate, or other combustor design and is not in the stoker/sloped grate/other units designed to burn wet biomass subcategory(40 CFR 63.7575) **[Added April 2013]**.
- *Stoker/Sloped Grate/Other Unit Designed to Burn Wet Biomass* - the unit is in the units designed to burn biomass/bio-based solid subcategory that is either a stoker, sloped grate, or other combustor design and any of the biomass/bio-based solid fuel combusted in the unit exceeds 20 percent moisture on an annual heat input basis (40 CFR 63.7575) **[Added April 2013]**.
- *Storage Tank* - a stationary unit that is constructed primarily of nonearthen materials (such as wood, concrete, steel, or reinforced plastic) that provide structural support and is designed to hold a bulk quantity of liquid. Storage tanks do not include (40 CFR 63.2406) **[Added April 2004]**:
  1. Units permanently attached to conveyances such as trucks, trailers, rail cars, barges, or ships;
  2. Pressure vessels designed to operate in excess of 204.9 kilopascals and without emissions to the atmosphere;
  3. Bottoms receiver tanks;
  4. Surge control vessels;
  5. Vessels storing wastewater; or
  6. Reactor vessels associated with a manufacturing process unit.
- *Storage Tank* - a vessel (excluding sumps) that is designed to contain an accumulation of crude oil, condensate, intermediate hydrocarbon liquids, or produced water and that is constructed entirely of non-earthen materials (e.g., wood, concrete, steel, plastic) that provide structural support (40 CFR 98.6) **[Added January 2010]**.
- *Storage Vessel With the Potential for Flash Emissions* - any storage vessel that contains a hydrocarbon liquid with a stock tank gas-to-oil ratio equal to or greater than 0.31 m<sup>3</sup>/L and an American Petroleum Institute gravity equal to or greater than 40° and an actual annual average hydrocarbon liquid throughput equal to or greater than 79,500 L/day. Flash emissions occur when dissolved hydrocarbons in the fluid evolve from solution when the fluid pressure is reduced (40 CFR 63.6175 and 63.6675) **[Added April 2004]**.
- *Stripper* - a liquid that is applied to an aerospace vehicle or component to remove permanent coatings such as primers, topcoats, and specialty coatings (40 CFR 63.742) **[Added January 1999; Revised January 2016]**.

- *Submerged Filling* - for the purposes of 40 CFR 63, Subpart CCCCCC, the filling of a gasoline storage tank through a submerged fill pipe whose discharge is no more than the applicable distance specified in 40 CFR 63.11117(b) from the bottom of the tank. Bottom filling of gasoline storage tanks is included in this definition (40 CFR 63.11132) [**Added April 2008**].
- *Substitute* - any chemical or product, whether existing or new, that is used as a refrigerant to replace a class I or II ozone-depleting substance. Examples include, but are not limited to hydrofluorocarbons, perfluorocarbons, hydrofluoroolefins, hydrofluoroethers, hydrocarbons, ammonia, carbon dioxide, and blends thereof. As used in this subpart, the term “exempt substitutes” refers to certain substitutes when used in certain end-uses that are specified in 40 CFR 82.154(a)(1) as exempt from the venting prohibition and the requirements of this subpart, and the term “non-exempt substitutes” refers to all other substitutes and end-uses not so specified in 40 CFR 82.154(a)(1) (40 CFR 82.152) [**Revised April 2004; Revised January 2017**].
- *Suitable Replacement Refrigerant* - for the purpose of 82.156(i)(7)(i) (see checklist item AE.19.18.US), this is a refrigerant that is acceptable under section 612(c) of the CAAA90 and all regulations promulgated under that section, compatible with other materials with which it may come into contact, and able to achieve the temperatures required for the affected industrial process in a technically feasible manner (40 CFR 82.152).
- *Sulfur Percentage* - the percentage of sulfur in diesel fuel by weight, as determined using the applicable sampling and testing methodologies set forth in 40 CFR 80.580 (40 CFR 80.2(bb)) [**Added October 2011**].
- *Sulfur Recovery Plant* - all process units which recover sulfur or produce sulfuric acid from hydrogen sulfide (H<sub>2</sub>S) and/or sulfur dioxide (SO<sub>2</sub>) from a common source of sour gas at a petroleum refinery. The sulfur recovery plant also includes sulfur pits used to store the recovered sulfur product, but it does not include secondary sulfur storage vessels or loading facilities downstream of the sulfur pits. For example, a Claus sulfur recovery plant includes: reactor furnace and waste heat boiler, catalytic reactors, sulfur pits, and, if present, oxidation or reduction control systems, or incinerator, thermal oxidizer, or similar combustion device. Multiple sulfur recovery units are a single sulfur recovery plant only when the units share the same source of sour gas. Sulfur recovery units that receive source gas from completely segregated sour gas treatment systems are separate sulfur recovery plants.
- *Supplemental Fuel* - a fuel burned within a petrochemical process that is not produced within the process itself (40 CFR 98.6) [**Added January 2010**].
- *Supplier* - a producer, importer, or exporter in any supply category included in Table A-5 (see Appendix 1-40), as defined by the corresponding subpart of 40 CFR 98. (40 CFR 98.6) [**Added January 2010; Revised January 2012**].
- *Surface Preparation* - the removal of contaminants from the surface of an aerospace vehicle or component, or the activation or reactivation of the surface in preparation for the application of a coating (40 CFR 63.742) [**Added January 1999**].
- *Surface Preparation Or Surface Prep* - use of a cleaning material on a portion of or all of a substrate prior to the application of a coating (40 CFR 63.11180) [**Added April 2011**].
- *Surface Site* - any combination of one or more graded pad sites, gravel pad sites, foundations, platforms, or the immediate physical location upon which equipment is physically affixed (40 CFR 63.6675) [**Added July 2004**].
- *Sulfuric Acid Production Unit* - any facility producing sulfuric acids by the contact process by burning elemental sulfur, alkylation acid, hydrogen sulfide, organic sulfides and mercaptans, or acid sludge, but does not include facilities where conversion to sulfuric acid is used primarily as a means of preventing emissions to the atmosphere of SO<sub>2</sub> or other sulfur compounds (40 CFR 60.81).
- *Superheated Part Technology* - a system that is part of the continuous web cleaning process that heats the continuous web part either directly or indirectly to a temperature above the boiling point of the cleaning solvent.

This could include a process step, such as a tooling die that heats the part as it is processed, as long as the part remains superheated through the cleaning machine (40 CFR 63.461) [Added October 1999].

- *Superheated Vapor System* - a system that heats the solvent vapor either passively or actively, to a temperature above the solvents boiling point. Parts are held in the superheated vapor before exiting the machine to evaporate the liquid solvent on them. Hot vapor recycle is an example of a superheated vapor system (40 CFR 63.461).
- *Supplemental Printed Material* - any informational material (including, but not limited to, package inserts, fact sheets, invoices, material safety data sheets, procurement and specification sheets, or other material) which accompanies a product or container to the consumer at the time of purchase (40 CFR 82.104(w)) [Added July 2004]
- *Surface Impoundment* - a unit that is a natural topographical depression, man-made excavation, or diked area formed primarily of earthen materials (although it may be lined with man-made materials), which is designed to hold an accumulation of liquids. Examples of surface impoundments include holding, storage, settling, and aeration pits, ponds, and lagoons (40 CFR 63.7957) [Added April 2004].
- *Surface Site* - any combination of one or more graded pad sites, gravel pad sites, foundations, platforms, or the immediate physical location upon which equipment is physically affixed (40 CFR 63.6175) [Added April 2004].
- *Surge Control Vessel* - feed drums, recycle drums, and intermediate vessels. Surge control vessels are used within chemical manufacturing processes when in-process storage, mixing, or management of flow rates or volumes is needed to assist in production of a product (40 CFR 63.2406) [Added January 2007].
- *Suspension Burner* - a unit designed to fire dry biomass/biobased solid particles in suspension that are conveyed in an airstream to the furnace like pulverized coal. The combustion of the fuel material is completed on a grate or floor below. The biomass/biobased fuel combusted in the unit shall not exceed 20 percent moisture on an annual heat input basis. Fluidized bed, dutch oven, pile burner, and hybrid suspension grate units are not part of the suspension burner subcategory (40 CFR 63.7575) [Added April 2013].
- *System-Dependent Recovery Equipment* - refrigerant recovery equipment that requires the assistance of components contained in an appliance to remove the refrigerant from the appliance (40 CFR 82.152).
- *System Mothballing* - the intentional shutting down of a refrigeration appliance undertaken for an extended period of time by the owners or operators of the facility, where the refrigerant has been evacuated from the appliance or the affected isolated section of the appliance, at least to atmospheric pressure (40 CFR 82.152).
- *System Receiver* - the isolated portion of the appliance, or a specific vessel within the appliance, that is used to hold the refrigerant charge during the servicing or repair of that appliance (40 CFR 82.152) [Added January 2017].
- *TAME* - tertiary amyl methyl ether,  $(\text{CH}_3)_2(\text{C}_2\text{H}_5)(\text{COCH}_3)$  (40 CFR 98.6) [Added January 2010].
- *Tank* - a stationary unit that is constructed primarily of nonearthen materials (such as wood, concrete, steel, fiberglass, or plastic) which provide structural support and is designed to hold an accumulation of liquids or other materials (40 CFR 63.7957) [Added April 2004].
- *Tank Car* - a car designed to carry liquid freight by rail, and including a permanently attached tank (40 CFR 63.2406) [Added April 2004].
- *Tank Truck* - a truck and/or trailer used to transport or cause the transportation of gasoline or diesel fuel, that meets the definition of motor vehicle in section 216(2) of the Act (40 CFR 80.2(ss)) [Added October 2011].

- *Target HAP* - compounds of chromium (Cr), lead (Pb), manganese (Mn), nickel (Ni), or cadmium (Cd) (40 CFR 63.11180) **[Added April 2011]**.
- *Target HAP Containing Coating* - a spray-applied coating that contains any individual target HAP that is an Occupational Safety and Health Administration (OSHA)–defined carcinogen as specified in 29 CFR 1910.1200(d)(4) at a concentration greater than 0.1 percent by mass, or greater than 1.0 percent by mass for any other individual target HAP compound. For the purpose of determining whether materials you use contain the target HAP compounds, you may rely on formulation data provided by the manufacturer or supplier, such as the material safety data sheet (MSDS), as long as it represents each target HAP compound in the material that is present at 0.1 percent by mass or more for OSHA-defined carcinogens as specified in 29 CFR 1910.1200(d)(4) and at 1.0 percent by mass or more for other target HAP compounds (40 CFR 63.11180) **[Added April 2011]**.
- *Technician* - any person who in the course of maintenance, service, or repair of an appliance (except MVACs) could be reasonably expected to violate the integrity of the refrigerant circuit and therefore release refrigerants into the environment. Technician also means any person who in the course of disposal of an appliance (except small appliances, MVACs, and MVAC-like appliances) could be reasonably expected to violate the integrity of the refrigerant circuit and therefore release refrigerants from the appliances into the environment. Activities reasonably expected to violate the integrity of the refrigerant circuit include but are not limited to: Attaching or detaching hoses and gauges to and from the appliance; adding or removing refrigerant; adding or removing components; and cutting the refrigerant line. Activities such as painting the appliance, rewiring an external electrical circuit, replacing insulation on a length of pipe, or tightening nuts and bolts are not reasonably expected to violate the integrity of the refrigerant circuit. Activities conducted on appliances that have been properly evacuated pursuant to 40 CFR 82.156 are not reasonably expected to release refrigerants unless the activity includes adding refrigerant to the appliance. Technicians could include but are not limited to installers, contractor employees, in-house service personnel, and owners and/or operators of appliances (40 CFR 82.152) **[Revised April 2004; Revised January 2017]**.
- *Technician* - any person who performs testing, maintenance, service, or repair that could reasonably be expected to release halons from equipment into the atmosphere. Technician also means any person who performs disposal of equipment that could reasonably be expected to release halons from the equipment into the atmosphere. Technician includes, but is not limited to, installers, contractor employees, in-house service personnel, and, in some cases, owners (40 CFR 82.260) **[Added March 1998]**.
- *Temperature Monitoring Device* - a piece of equipment used to monitor temperature and having an accuracy of  $\pm 1$  percent of the temperature being monitored expressed in degrees Celsius ( $^{\circ}\text{C}$ ) or  $\pm 1.2$   $^{\circ}\text{C}$ , whichever value is greater (40 CFR 63.7957) **[Added April 2004]**.
- *Temporary Boiler* - any gaseous or liquid fuel-fired steam generating unit that is designed to, and is capable of, being carried or moved from one location to another by means of, for example, wheels, skids, carrying handles, dollies, trailers, or platforms. A steam generating unit is not a temporary boiler if any one of the following conditions exists (40 CFR 60.40b and 60.41b) **[Added January 2012; Citation Revised April 2012]**:
  1. The equipment is attached to a foundation.
  2. The steam generating unit or a replacement remains at a location for more than 180 consecutive days. Any temporary boiler that replaces a temporary boiler at a location and performs the same or similar function will be included in calculating the consecutive time period.
  3. The equipment is located at a seasonal facility and operates during the full annual operating period of the seasonal facility, remains at the facility for at least 2 years, and operates at that facility for at least 3 mo each year.
  4. The equipment is moved from one location to another in an attempt to circumvent the residence time requirements of this definition.
- *Temporary Boiler* - a steam generating unit that combusts natural gas or distillate oil with a potential  $\text{SO}_2$  emissions rate no greater than 26 ng/J (0.060 lb/MMBtu), and the unit is designed to, and is capable of, being carried or moved from one location to another by means of, for example, wheels, skids, carrying handles, dollies,

trailers, or platforms. A steam generating unit is not a temporary boiler if any one of the following conditions exists (40 CFR 60.40c and 60.41c) **[Added January 2012; Citation Revised April 2012]**:

1. The equipment is attached to a foundation.
  2. The steam generating unit or a replacement remains at a location for more than 180 consecutive days. Any temporary boiler that replaces a temporary boiler at a location and performs the same or similar function will be included in calculating the consecutive time period.
  3. The equipment is located at a seasonal facility and operates during the full annual operating period of the seasonal facility, remains at the facility for at least 2 yr, and operates at that facility for at least 3 mo each year.
  4. The equipment is moved from one location to another in an attempt to circumvent the residence time requirements of this definition.
- *Temporary Boiler* - any gaseous or liquid fuel boiler or process heater that is designed to, and is capable of, being carried or moved from one location to another by means of, for example, wheels, skids, carrying handles, dollies, trailers, or platforms. A boiler is not a temporary boiler or process heater if any one of the following conditions exists (40 CFR 63.7575 and 63.11237) **[Revised April 2013]**.
    1. The equipment is attached to a foundation.
    2. The boiler or process heater or a replacement remains at a location within the facility and performs the same or similar function for more than 12 consecutive months, unless the regulatory agency approves an extension. An extension may be granted by the regulating agency upon petition by the owner or operator of a unit specifying the basis for such a request. Any temporary boiler or process heater that replaces a temporary boiler or process heater at a location and performs the same or similar function will be included in calculating the consecutive time period.
    3. The equipment is located at a seasonal facility and operates during the full annual operating period of the seasonal facility, remains at the facility for at least 2 yr, and operates at that facility for at least 3 mo each year.
    4. The equipment is moved from one location to another within the facility but continues to perform the same or similar function and serve the same electricity, process heat, steam, and/or hot water system in an attempt to circumvent the residence time requirements of this definition.
  - *Temporary Total Enclosure* - a total enclosure that is constructed for the sole purpose of measuring the emissions from an affected source that are not delivered to an emission control device. A temporary total enclosure must be constructed and ventilated (through stacks suitable for testing) so that it has minimal impact on the performance of the permanent emission capture system. A temporary total enclosure will be assumed to achieve total capture of fugitive emissions if it conforms to the requirements found in 40 CFR 63.750(g)(4) and if all natural draft openings are at least four duct or hood equivalent diameters away from each exhaust duct or hood. Alternatively, the owner or operator may apply to the Administrator for approval of a temporary enclosure on a case-by-case basis (40 CFR 63.742) **[Added January 1999]**.
  - *Third-party Audit* - a compliance audit conducted pursuant to the requirements of 40 CFR 68.59 and/or 40 CFR 68.80, performed or led by an entity (individual or firm) meeting the competency and independence described in 40 CFR 68.59(c) or 40 CFR 68.80(c) (40 CFR 68.3) **[Added April 2017]**. *Threshold Quantity* - the quantity specified for regulated substances pursuant to section 112(r)(5) of the Clean Air Act as amended, listed in 40 CFR 68.130 and determined to be present at a stationary source as specified in 40 CFR 68.115 (40 CFR 68.3) **[Added January 2005]**.
  - *Topcoat* - a coating that is applied over a primer on an aerospace vehicle or component for appearance, identification, camouflage, or protection. Coatings that are defined as specialty coatings are not included under this definition (40 CFR 63.742) **[Added January 1999]**.
  - *Total Actual Annual Facility-Level Organic Liquid Loading Volume* - the total facility-level actual volume of organic liquid loaded for transport within or out of the facility through transfer racks that are part of the affected source into transport vehicles (for existing affected sources) or into transport vehicles and containers (for new

affected sources) based on a 3-year rolling average, calculated annually (40 CFR 63.2406) [Added January 2007].

1. For existing affected sources, each 3-yr rolling average is based on actual facility-level loading volume during each CY (January 1 through December 31) in the 3-yr period. For CY 2004 only (the first year of the initial 3-year rolling average), if an owner or operator of an affected source does not have actual loading volume data for the time period from 1 January 2004, through 2 February 2004 (the time period prior to the effective date of the OLD NESHAP), the owner or operator shall compute a facility-level loading volume for this time period as follows: At the end of the 2004 CY, the owner or operator shall calculate a daily average facility-level loading volume (based on the actual loading volume for 3 February 2004, through 31 December 2004) and use that daily average to estimate the facility-level loading volume for the period of time from 1 January 2004, through 2 February 2004. The owner or operator shall then sum the estimated facility-level loading volume from 1 January 2004, through 2 February 2004, and the actual facility-level loading volume from 3 February 2004, through 31 December 2004, to calculate the annual facility-level loading volume for CY 2004.
2. For new affected sources, the 3-yr rolling average is calculated as an average of three 12-mo periods. An owner or operator must select as the beginning calculation date with which to start the calculations as either the initial startup date of the new affected source or the first day of the calendar month following the month in which startup occurs. Once selected, the date with which the calculations begin cannot be changed.

(NOTE: The initial 3-yr rolling average is based on the projected maximum facility-level annual loading volume for each of the 3 yr following the selected beginning calculation date. The second 3-yr rolling average is based on actual facility-level loading volume for the first year of operation plus a new projected maximum facility-level annual loading volume for second and third years following the selected beginning calculation date. The third 3-yr rolling average is based on actual facility-level loading volume for the first 2 yr of operation plus a new projected maximum annual facility-level loading volume for the third year following the beginning calculation date. Subsequent 3-yr rolling averages are based on actual facility-level loading volume for each year in the 3-yr rolling average.)

- *Total Enclosure* - a permanent structure that is constructed around a gaseous emission source so that all gaseous pollutants emitted from the source are collected and ducted through a control device, such that 100% capture efficiency is achieved. There are no fugitive emissions from a total enclosure. The only openings in a total enclosure are forced makeup air and exhaust ducts and any natural draft openings such as those that allow raw materials to enter and exit the enclosure for processing. All access doors or windows are closed during routine operation of the enclosed source. Brief, occasional openings of such doors or windows to accommodate process equipment adjustments are acceptable, but if such openings are routine or if an access door remains open during the entire operation, the access door must be considered a natural draft opening. The average inward face velocity across the natural draft openings of the enclosure must be calculated including the area of such access doors. The drying oven itself may be part of the total enclosure. An enclosure that meets the requirements found in 40 CFR 63.750(g)(4) is a permanent total enclosure (40 CFR 63.742) [Added January 1999].
- *Total Mass Dioxins/Furans or Total Mass* - the total mass of tetra-through octachlorinated dibenzo-p-dioxins and dibenzofurans as determined using USEPA Reference Method 23 in Appendix A of 40 CFR 60 and the procedures specified in 40 CFR 60.1300 (40 CFR 60.1465) [Added April 2001].
- *Total of Direct and Indirect Emissions* - the sum of direct and indirect emissions increases and decreases caused by the Federal action; i.e., the "net" emissions considering all direct and indirect emissions. The portion of emissions which are exempt or presumed to conform under 40 CFR 93.153(c), (d), (e), or (f) are not included in the "total of direct and indirect emissions." The "total of direct and indirect emissions" includes emissions of criteria pollutants and emissions of precursors of criteria pollutants (40 CFR 93.152) [Added April 2009].
- *Total Selected Metals (TSM)* - the sum of the following metallic hazardous air pollutants: arsenic, beryllium, cadmium, chromium, lead, manganese, nickel and selenium (40 CFR 63.7575) [Added April 2013].
- *Touch-up and Repair Operation* - that portion of the coating operation that is the incidental application of coating used to cover minor imperfections in the coating finish or to achieve complete coverage. This definition includes out-of-sequence or out-of-cycle coating (40 CFR 63.742) [Added January 1999].

- *Trace Concentrations* - concentrations of less than 0.1 percent by mass of the process stream (40 CFR 98.6) **[Added January 2010]**.
- *Traditional Fuel* - the fuel as defined in 40 CFR 241.2 of this chapter (40 CFR 63.7575) **[Added April 2013]**.
- *Transfer Efficiency* - the amount of coating solids adhering to the object being coated divided by the total amount of coating solids sprayed, expressed as a percentage. Coating solids means the nonvolatile portion of the coating that makes up the dry film (40 CFR 63.11180) **[Added April 2011]**.
- *Transfer Machine System* - a multiple-machine dry cleaning operation in which washing and drying are performed in different machines. Examples include, but are not limited to (40 CFR 63.321):
  1. a washer and dryer
  2. a washer and reclaimer
  3. a dry-to-dry machine and reclaimer.
- *Transfer Rack* - a single system used to load organic liquids into, or unload organic liquids out of, transport vehicles or containers. It includes all loading and unloading arms, pumps, meters, shutoff valves, relief valves, and other piping and equipment necessary for the transfer operation. Transfer equipment and operations that are physically separate (i.e., do not share common piping, valves, and other equipment) are considered to be separate transfer racks (40 CFR 63.2406) **[Added April 2004; Revised January 2007]**.
- *Transfer System* - a stationary system for which the predominant function is to convey liquids or solid materials from one point to another point within a waste management operation or recovery operation. For the purpose of 40 CFR 63, Subpart GGGGG (40 CFR 63.7880 through 63.7957, see checklist items AE.300.1.US through AE.300.12.US), the conveyance of material using a container (as defined for 40 CFR 63, Subpart GGGGG) or a self-propelled vehicle (e.g., a front-end loader) is not a transfer system. Examples of a transfer system include but are not limited to a pipeline, an individual drain system, a gravity-operated conveyor (such as a chute), and a mechanically-powered conveyor (such as a belt or screw conveyor) (40 CFR 63.7957) **[Added April 2004; Revised January 2007]**.
- *Transform* - to use and entirely consume (except for trace quantities) a controlled substance in the manufacture of other chemicals for commercial purposes (40 CFR 82.3) **[Added April 2003]**.
- *Transform* - to use and entirely consume a class I or class II substance, except for trace quantities, by changing it into one or more substances not subject to 40 CFR 82, Subpart E [40 CFR 82.100 through 82.124, see checklist item AE.85.7.US] in the manufacturing process of a product or chemical (40 CFR 82.104(x)) **[Added July 2004]**
- *Transform* - to use and entirely consume (except for trace concentrations) nitrous oxide or fluorinated GHGs in the manufacturing of other chemicals for commercial purposes. Transformation does not include burning of nitrous oxide (40 CFR 98.6) **[Added January 2010]**.
- *Transport Vehicle* - a cargo tank or tank car (40 CFR 63.2406) **[Added April 2004]**.
- *Transshipment* - the continuous shipment of nitrous oxide or a fluorinated GHG from a foreign state of origin through the United States or its territories to a second foreign state of final destination, as long as the shipment does not enter into United States jurisdiction. A transshipment, as it moves through the United States or its territories, cannot be re-packaged, sorted or otherwise changed in condition (40 CFR 98.6) **[Added January 2010]**.
- *Tribal Plan* - a plan submitted by a Tribal Authority pursuant to 40 CFR parts 9, 35, 49, 50, and 81 that implements and enforces 40 CFR 60, Subpart DDDD: *Emissions Guidelines and Compliance Times for Commercial and Industrial Solid Waste Incineration Units That Commenced Construction On or Before 30 November 1999* (40 CFR 62.14840) **[Added January 2004]**.

- *Treatment Process* - a process in which remediation material is physically, chemically, thermally, or biologically treated to destroy, degrade, or remove hazardous air pollutants contained in the material. A treatment process can be composed of a single unit (e.g., a steam stripper) or a series of units (e.g., a wastewater treatment system). A treatment process can be used to treat one or more remediation material streams at the same time (40 CFR 63.7957) [**Added April 2004**].
- *Truck Bed Liner Coating* - any coating, excluding color coats, labeled and formulated for application to a truck bed to protect it from surface abrasion (40 CFR 63.11180) [**Added April 2011**].
- *Truck Loading Terminal* - any facility that dyes (nonroad, locomotive, or marine) NRLM diesel fuel or ECA marine fuel, pays taxes on motor vehicle diesel fuel per IRS code (26 CFR 48), or adds a fuel marker pursuant to 40 CRR 80.510 to heating oil and delivers diesel fuel or heating oil into trucks for delivery to retail or ultimate consumer locations (40 CFR 80.502(c)) [**Added July 2006, Revised July 2010**].
- *Tumbling-Tile* - a grate tile hinged at one end and attached to a ram at the other end. When the ram extends, the grate tile rotates around the hinged end (40 CFR 60.51b) [**Added October 2001**].
- *Tune-up* - adjustments made to a boiler or process heater in accordance with the procedures outlined in 40 CFR 63.7540(a)(10) (i.e., Major Source ICI Boiler NESHAPs) (40 CFR 63.7575) [**Revised April 2013**].
- *Tune-up* - adjustments made to a boiler in accordance with the procedures outlined in 40 CFR 63.11223(b) (i.e., Area Source ICI Boiler NESHAPs) (40 CFR 63.11237) [**Added April 2013**].
- *Turbines Employed in Oil/Gas Production or Oil/Gas Transportation* - any stationary gas turbine used to provide power to extract crude oil/natural gas from the earth or to move crude oil/natural gas, or products refined from these substances through pipelines (40 CFR 60.331) [**Added October 2004**].
- *Twenty-four Hour Daily Average or 24-h Daily Average* - either the arithmetic mean or geometric mean (as specified) of all hourly emission concentrations when the municipal waste combustion unit operates and combusts municipal solid waste measured during the 24 hours between 12:00 midnight and the following midnight (40 CFR 60.1465) [**Added April 2001**].
- *Two-Stage Filter System* - a dry particulate filter system using two layers of filter media to remove particulate. The first stage is designed to remove the bulk of the particulate and a higher efficiency second stage is designed to remove smaller particulate (40 CFR 63.742) [**Added January 1999**].
- *Two-stroke Engine* - a type of engine which completes the power cycle in single crankshaft revolution by combining the intake and compression operations into one stroke and the power and exhaust operations into a second stroke. This system requires auxiliary scavenging and inherently runs lean of stoichiometric (40 CFR 63.6675) [**Added July 2004**].
- *Type I Etchant* - a chemical milling etchant that contains varying amounts of dissolved sulfur and does not contain amines (40 CFR 63.742) [**Added January 1999**].
- *Type II Etchant* - a chemical milling etchant that is a strong sodium hydroxide solution containing amines (40 CFR 63.742) [**Added January 1999**].
- *Type Size* - the actual height of the printed image of each capital letter as it appears on a label (40 CFR 82.104(y)) [**Added July 2004**].
- *Typical Meteorological Conditions* - the temperature, wind speed, cloud cover, and atmospheric stability class, prevailing at the site based on data gathered at or near the site or from a local meteorological station (40 CFR 68.3) [**Added January 2005**].

- *Ultimate Analysis* - the determination of the percentages of carbon, hydrogen, nitrogen, sulfur, and chlorine and (by difference) oxygen in the gaseous products and ash after the complete combustion of a sample of an organic material (40 CFR 98.6) **[Added January 2010]**.
- *Ultimate Consumer* - the first commercial or non-commercial purchaser of a container or product that is not intended for re-introduction into interstate commerce as a final product or as part of another product (40 CFR 82.104(z)) **[Added July 2004]**
- *Ultra Low Sulfur Liquid Fuel* - a distillate oil that has less than or equal to 15 ppm sulfur (40 CFR 63.7575) **[Added April 2013]**.
- *Ultra-Low-Sulfur Liquid Fuel* - a distillate oil that has less than or equal to 15 parts per million (ppm) sulfur (40 CFR 63.11237) **[Added October 2016]**.
- *Unexpended HCFC-141b Exemption Allowances* - HCFC-141b exemption allowances that have not been used. A person's unexpended HCFC-141b exemption allowances are the total of the quantity of the HCFC-141b exemption allowances the person has authorization under 40 CFR 82.16(h) to hold for that control period, minus the quantity of HCFC-141b that the person has had produced or has had imported at that time during the same control period (40 CFR 82.3) **[Added April 2003]**.
- *Unfinished Oils* - all oils requiring further processing, except those requiring only mechanical blending (40 CFR 98.6) **[Added January 2010]**.
- *Uninstalled Engine* - an engine not installed in, or an integrated part of, the final product (40 CFR 63.9375) **[Added July 2003]**.
- *Unit Designed To Burn Biomass/Bio-Based Solid Subcategory* - includes any boiler or process heater that burns at least 10 percent biomass or bio-based solids on an annual heat input basis in combination with solid fossil fuels, liquid fuels, or gaseous fuels (40 CFR 63.7575) **[Added April 2011]**.
- *Unit Designed to Burn Coal/Solid Fossil Fuel Subcategory* - includes any boiler or process heater that burns any coal or other solid fossil fuel alone or at least 10 percent coal or other solid fossil fuel on an annual heat input basis in combination with liquid fuels, gaseous fuels, or less than 10 percent biomass and bio-based solids on an annual heat input basis (40 CFR 63.7575) **[Added April 2011]**.
- *Unit Designed to Burn Gas 1 Subcategory* - includes any boiler or process heater that burns only natural gas, refinery gas, and/or other gas 1 fuels. Gaseous fuel boilers and process heaters that burn liquid fuel for periodic testing of liquid fuel, maintenance, or operator training, not to exceed a combined total of 48 hours during any calendar year, are included in this definition. Gaseous fuel boilers and process heaters that burn liquid fuel during periods of gas curtailment or gas supply interruptions of any duration are also included in this definition (40 CFR 63.7575) **[Revised April 2013]**.
- *Unit Designed to Burn Gas 2 (Other) Subcategory* - includes any boiler or process heater that is not in the unit designed to burn gas 1 subcategory and burns any gaseous fuels either alone or in combination with less than 10 percent coal/solid fossil fuel, and less than 10 percent biomass/bio-based solid fuel on an annual heat input basis, and no liquid fuels. Gaseous fuel boilers and process heaters that are not in the unit designed to burn gas 1 subcategory and that burn liquid fuel for periodic testing of liquid fuel, maintenance, or operator training, not to exceed a combined total of 48 hours during any calendar year, are included in this definition. Gaseous fuel boilers and process heaters that are not in the unit designed to burn gas 1 subcategory and that burn liquid fuel during periods of gas curtailment or gas supply interruption of any duration are also included in this definition (40 CFR 63.7575) **[Added April 2013]**.
- *Unit Designed to Burn Heavy Liquid Subcategory* - a unit in the unit designed to burn liquid subcategory where at least 10 percent of the heat input from liquid fuels on an annual heat input basis comes from heavy liquids (40 CFR 63.7575) **[Added April 2013]**.

- *Unit Designed to Burn Light Liquid Subcategory* - a unit in the unit designed to burn liquid subcategory that is not part of the unit designed to burn heavy liquid subcategory (40 CFR 63.7575) **[Added April 2013]**.
- *Unit Designed to Burn Liquid Subcategory* - includes any boiler or process heater that burns any liquid fuel, but less than 10 percent coal/solid fossil fuel and less than 10 percent biomass/bio-based solid fuel on an annual heat input basis, either alone or in combination with gaseous fuels. Units in the unit design to burn gas 1 or unit designed to burn gas 2 (other) subcategories that burn liquid fuel for periodic testing of liquid fuel, maintenance, or operator training, not to exceed a combined total of 48 hours during any calendar year are not included in this definition. Units in the unit design to burn gas 1 or unit designed to burn gas 2 (other) subcategories during periods of gas curtailment or gas supply interruption of any duration are also not included in this definition (40 CFR 63.7575) **[Revised April 2013]**.
- *Unit Designed To Burn Liquid Fuel That Is A Non-continental Unit* - an industrial, commercial, or institutional boiler or process heater meeting the definition of the unit designed to burn liquid subcategory located in the State of Hawaii, the Virgin Islands, Guam, American Samoa, the Commonwealth of Puerto Rico, or the Northern Mariana Islands (40 CFR 63.7575) **[Revised April 2013]**.
- *Unit Designed To Burn Solid Fuel Subcategory* - any boiler or process heater that burns only solid fuels or at least 10 percent solid fuel on an annual heat input basis in combination with liquid fuels or gaseous fuels (40 CFR 63.7575) **[Revised April 2013]**.
- *Unit Operating Day* - a 24-h period between 12:00 midnight and the following midnight during which any fuel is combusted at any time in the unit. It is not necessary for fuel to be combusted continuously for the entire 24-h period (40 CFR 60.331 and 60.4420) **[Added October 2004, Citation Revised April 2009]**.
- *Unit Operating Hour* - a clock hour during which any fuel is combusted in the affected unit. If the unit combusts fuel for the entire clock hour, it is considered to be a full unit operating hour. If the unit combusts fuel for only part of the clock hour, it is considered to be a partial unit operating hour (40 CFR 60.331 and 60.4420) **[Added October 2004, Citation Revised April 2009]**.
- *United States* - the 50 states, the District of Columbia, and U.S. possessions and territories (40 CFR 98.6) **[Added January 2010]**.
- *United States Parent Company(s)* – the highest-level United States company(s) with an ownership interest in the facility or supplier as of December 31 of the year for which data are being reported (40 CFR 98.6) **[Added October 2010; Revised January 2012]**.
- *Unleaded Gasoline* - gasoline which is produced without the use of any lead additive and which contains not more than 0.05 gram of lead per gallon and not more than 0.005 gram of phosphorus per gallon (40 CFR 80.2(g)) **[Added October 2011]**.
- *Untreated Lumber* - wood or wood products that have been cut or shaped and include wet, air-dried, and kiln-dried wood products. Untreated lumber does not include wood products that have been painted, pigment-stained, or pressure-treated by compounds such as chromate copper arsenate, pentachlorophenol, and creosote (40 CFR 60.1465) **[Added April 2001]**.
- *Use Of A Class II Controlled Substance* - for the purposes of 40 CFR 82.15, includes but is not limited to, use in a manufacturing process, use in manufacturing a product, intermediate uses such as formulation or packaging for other subsequent uses, and use in maintaining, servicing, or repairing an appliance or other piece of equipment. Use of a class II controlled substance also includes use of that controlled substance when it is removed from a container used for the transportation or storage of the substance but does not include use of a manufactured product containing a controlled substance (40 CFR 82.3) **[Added January 2015]**.
- *Used Oil* - a petroleum-derived or synthetically-derived oil whose physical properties have changed as a result of handling or use, such that the oil cannot be used for its original purpose. Used oil consists primarily of automotive

oils (e.g., used motor oil, transmission oil, hydraulic fluids, brake fluid, etc.) and industrial oils (e.g., industrial engine oils, metalworking oils, process oils, industrial grease, etc) (40 CFR 98.6) **[Added January 2011]**.

- *Useful Thermal Energy* - energy (i.e., steam, hot water, or process heat) that meets the minimum operating temperature, flow, and/or pressure required by any energy use system that uses energy provided by the affected boiler or process heater (40 CFR 63.7575) **[Added January 2016]**.
- *Useful Thermal Energy* - energy (i.e., steam or hot water) that meets the minimum operating temperature, flow, and/or pressure required by any energy use system that uses energy provided by the affected boiler (40 CFR 63.11237) **[Added October 2016]**.
- *Useful Thermal Output* - the thermal energy made available for use in any industrial or commercial process, or used in any heating or cooling application, i.e., total thermal energy made available for processes and applications other than electrical or mechanical generation. Thermal output for this subpart means the energy in recovered thermal output measured against the energy in the thermal output at 15° C and 101.325 kilopascals of pressure (40 CFR 60.4420) **[Added April 2009]**.
- *Valve* - any device for halting or regulating the flow of a liquid or gas through a passage, pipeline, inlet, outlet, or orifice; including, but not limited to, gate, globe, plug, ball, butterfly and needle valves (40 CFR 98.6) **[Added January 2010]**.
- *Vapor Balance System* - a combination of pipes and hoses that create a closed system between the vapor spaces of an unloading gasoline cargo tank and a receiving storage tank such that vapors displaced from the storage tank are transferred to the gasoline cargo tank being unloaded (40 CFR 63.11132) **[Added April 2008]**.
- *Vapor Balancing System* - (1) A piping system that collects organic HAP vapors displaced from transport vehicles or containers during loading and routes the collected vapors to the storage tank from which the liquid being loaded originated or to another storage tank connected to a common header. For containers, the piping system must route the displaced vapors directly to the appropriate storage tank or to another storage tank connected to a common header in order to qualify as a vapor balancing system; or (2) a piping system that collects organic HAP vapors displaced from the loading of a storage tank and routes the collected vapors to the transport vehicle from which the storage tank is filled (40 CFR 63.2406) **[Added April 2004; Revised January 2007]**.
- *Vapor Barrier Enclosure* - a room that encloses a dry cleaning system and is constructed of vapor barrier material that is impermeable to perchloroethylene. The enclosure shall be equipped with a ventilation system that exhausts outside the building and is completely separate from the ventilation system for any other area of the building. The exhaust system shall be designed and operated to maintain negative pressure and a ventilation rate of at least one air change per five minutes. The vapor barrier enclosure shall be constructed of glass, plexiglass, polyvinyl chloride, PVC sheet 22 mil thick (0.022 in.), sheet metal, metal foil face composite board, or other materials that are impermeable to perchloroethylene vapor. The enclosure shall be constructed so that all joints and seams are sealed except for inlet make-up air and exhaust openings and the entry door (40 CFR 63.321) **[Added October 2006]**.
- *Vapor-cleaning Machine* - a batch or in-line solvent-cleaning machine that boils liquid solvent generating solvent vapor that is used as a part of the cleaning or drying cycle (40 CFR 63.461).
- *Vapor Collection System* - any equipment located at the source (i.e., at the OLD operation) that is not open to the atmosphere; that is composed of piping, connections, and, if necessary, flow-inducing devices; and that is used for (40 CFR 63.2406) **[Added April 2004; Revised January 2007]**:
  1. Containing and conveying vapors displaced during the loading of transport vehicles to a control device;
  2. Containing and directly conveying vapors displaced during the loading of containers; or
  3. Vapor balancing. This does not include any of the vapor collection equipment that is installed on the transport vehicle.

- *Vapor Leak* - a PCE vapor concentration exceeding 25 ppmv (50 ppmv as methane) as indicated by a halogenated hydrocarbon detector or PCE gas analyzer (40 CFR 63.321) **[Added October 2006]**.
- *Vapor-Tight* - equipment that allows no loss of vapors. Compliance with vapor-tight requirements can be determined by checking to ensure that the concentration at a potential leak source is not equal to or greater than 100 percent of the Lower Explosive Limit (LEL) when measured with a combustible gas detector, calibrated with propane, at a distance of 1 in from the source (40 CFR 63.11132) **[Added April 2008]**.
- *Vapor-tight Transport Vehicle* - a transport vehicle that has been demonstrated to be vapor-tight. To be considered vapor-tight, a transport vehicle equipped with vapor collection equipment must undergo a pressure change of no more than 250 pascals (1 in of water) within 5 min after it is pressurized to 4,500 pascals (18 in. of water). This capability must be demonstrated annually using the procedures specified in EPA Method 27 of 40 CFR 60, appendix A. For all other transport vehicles, vapor tightness is demonstrated by performing the U.S. DOT pressure test procedures for tank cars and cargo tanks (40 CFR 63.2406) **[Added April 2004]**.
- *Vegetable Oil* - oils extracted from vegetation (40 CFR 63.7575 and 63.11237) **[Added April 2013]**.
- *Vegetable Oil* - oils extracted from vegetation that are generally used as a feedstock in making biodiesel (40 CFR 98.6) **[Added January 2010]**.
- *Ventilation System* - a system that is used to control the concentration of methane and other gases within mine working areas through mine ventilation, rather than a mine degasification system. A ventilation system consists of fans that move air through the mine workings to dilute methane concentrations. This includes all ventilation shafts and wells at the underground coal mine (40 CFR 98.6) **[Added July 2010]**.
- *Very High-pressure Appliance* - an appliance that uses a refrigerant with a critical temperature below 104 °F or with a liquid phase saturation pressure above 355 psia at 104 °F. Examples include but are not limited to appliances using R-13, R-23, R-503, R-508A, and R-508B (40 CFR 82.152) **[Revised April 2004; Revised January 2017]**.
- *Very Low Sulfur Oil* - for units constructed, reconstructed, or modified on or before 28 February 2005, oil that contains no more than 0.5 weight percent sulfur or that, when combusted without SO<sub>2</sub> emission control, has a SO<sub>2</sub> emission rate equal to or less than 215 ng/J (0.5 lb/MMBtu) heat input. For units constructed, reconstructed, or modified after 28 February 2005 and not located in a noncontinental area, very low sulfur oil means oil that contains no more than 0.30 weight percent sulfur or that, when combusted without SO<sub>2</sub> emission control, has a SO<sub>2</sub> emission rate equal to or less than 140 ng/J (0.32 lb/MMBtu) heat input. For units constructed, reconstructed, or modified after 28 February 2005 and located in a noncontinental area, very low sulfur oil means oil that contains no more than 0.5 weight percent sulfur or that, when combusted without SO<sub>2</sub> emission control, has a SO<sub>2</sub> emission rate equal to or less than 215 ng/J (0.50 lb/MMBtu) heat input (40 CFR 60.41b) **[Added April 2006; Revised April 2009]**.
- *Very Small Municipal Waste Combustion Unit* - any municipal waste combustion unit that has the capacity to combust less than 35 tons per day of municipal solid waste or refuse-derived fuel, as determined by the calculations in 40 CFR 60.2975 (40 CFR 60.2977) **[Added January 2006]**.
- *Vessel* - any reactor, tank, drum, barrel, cylinder, vat, kettle, boiler, pipe, hose, or other container (40 CFR 68.3) **[Added January 2005]**.
- *Ventilation Hole or Shaft* - a vent hole or shaft employed at an underground coal mine to serve as the outlet or conduit to move air from the ventilation system out of the mine (40 CFR 98.6) **[Added July 2010; Revised January 2014]**
- *Ventilation System* - a system that is used to control the concentration of methane and other gases within mine working areas through mine ventilation, rather than a mine degasification system. A ventilation system consists

of fans that move air through the mine workings to dilute methane concentrations (40 CFR 98.6) **[Added July 2010; Revised January 2014]**.

- *VHAP Service* - a piece of equipment that either contains or contacts a fluid (liquid or gas) that is at least 10 percent by weight a volatile hazardous air pollutant (VHAP) (40 CFR 61.241).
- *VOC Service* - in relationship to fugitive emissions, this is when a piece of equipment contains or contacts a process fluid that is at least 10 percent VOC by weight (40 CFR 61.241).
- *Volatile Hazardous Air Pollutant (VHAP)* - a substance regulated under 40 CFR 61, Subpart V [40 CFR 61.240 through 61.247, see checklist items AE.65.1.US through AE.65.5.US], for which a standard for equipment leaks of the substance has been proposed and promulgated. Benzene and vinyl chloride are VHAPs (40 CFR 61.241).
- *Volatile Organic Compound (VOC)* - any compound of carbon, excluding CO, CO<sub>2</sub>, carbonic acid, metallic carbides, or carbonates, and ammonium carbonate, that participates in atmospheric photochemical reactions. See the text of 40 CFR 51.100 for a lengthy list of organic compounds which have been determined to have negligible photochemical reactivity (40 CFR 51.100(s)) **[Revised April 2013]**.
- *Volatile Organic Compound (VOC)* - any compound defined as VOC in 40 CFR 51.100. This includes any organic compound other than those determined by the USEPA to be an exempt solvent. For purposes of determining compliance with emission limits, VOC will be measured by the approved test methods. Where such a method also inadvertently measures compounds that are exempt solvent, an owner or operator may exclude these exempt solvents when determining compliance with an emission standard (40 CFR 63.742) **[Added January 1999]**.
- *Volatile Organic Hazardous Air Pollutant (VOHAP) Concentration* - the fraction by weight of the HAP listed in Table 1 of 40 CFR 63, Subpart GGGGG [40 CFR 63.7880 through 63.7957, see checklist items AE.300.1.US through AE.300.12.US] that are contained in the remediation material as measured using Method 305, 40 CFR 63, appendix A and expressed in terms of parts per million (ppm). As an alternative to using Method 305, 40 CFR 63, appendix A, you may determine the HAP concentration of the remediation material using any one of the other test methods specified in 40 CFR 63.694(b)(2)(ii). When a test method specified in 40 CFR 63.694(b)(2)(ii) other than Method 305 in 40 CFR 63, appendix A is used to determine the speciated HAP concentration of the contaminated material, the individual compound concentration may be adjusted by the corresponding fm305 listed in Table 1 of 40 CFR 63, Subpart GGGGG [40 CFR 63.7880 through 63.7957, see checklist items AE.300.1.US through AE.300.12.US] to determine a VOHAP concentration (40 CFR 63.7957) **[Added April 2004]**.
- *Volatile Solids* - the organic material in livestock manure and consist of both biodegradable and non-biodegradable fractions (40 CFR 98.6) **[Added January 2010]**.
- *Voluntary Certification Program* - a technician testing program operated by a person before that person obtained approval of a technician certification program (40 CFR 82.152).
- *Voluntary Consensus Standards or VCS* - technical standards (e.g., materials specifications, test methods, sampling procedures, business practices) developed or adopted by one or more voluntary consensus bodies. EPA/Office of Air Quality Planning and Standards, by precedent, has only used VCS that are written in English. Examples of VCS bodies are: American Society of Testing and Materials (ASTM 100 Barr Harbor Drive, P.O. Box CB700, West Conshohocken, Pennsylvania 19428-B2959, (800) 262-1373, <http://www.astm.org>), American Society of Mechanical Engineers (ASME ASME, Three Park Avenue, New York, NY 10016-5990, (800) 843-2763, <http://www.asme.org>), International Standards Organization (ISO 1, ch. de la Voie-Creuse, Case postale 56, CH-1211 Geneva 20, Switzerland, +41 22 749 01 11, <http://www.iso.org/iso/home.htm>), Standards Australia (AS Level 10, The Exchange Centre, 20 Bridge Street, Sydney, GPO Box 476, Sydney NSW 2001, + 61 2 9237 6171 <http://www.stadards.org.au>), British Standards Institution (BSI, 389 Chiswick High Road, London, W4 4AL, United Kingdom, +44 (0)20 8996 9001, <http://www.bsigroup.com>), Canadian Standards Association (CSA 5060 Spectrum Way, Suite 100, Mississauga, Ontario L4W 5N6, Canada, 800-463-6727, <http://www.csa.ca>), European Committee for Standardization (CEN CENELEC Management Centre Avenue Marnix 17 B-1000

Brussels, Belgium +32 2 550 08 11, <http://www.cen.eu/cen>), and German Engineering Standards (VDI VDI Guidelines Department, P.O. Box 10 11 39 40002, Duesseldorf, Germany, +49 211 6214-230, <http://www.vdi.eu>). The types of standards that are not considered VCS are standards developed by: The United States, e.g., California (CARB) and Texas (TCEQ); industry groups, such as American Petroleum Institute (API), Gas Processors Association (GPA), and Gas Research Institute (GRI); and other branches of the U.S. government, e.g., Department of Defense (DOD) and Department of Transportation (DOT). This does not preclude EPA from using standards developed by groups that are not VCS bodies within their rule. When this occurs, EPA has done searches and reviews for VCS equivalent to these non-EPA methods (40 CFR 63.7575) [**Added April 2011**].

- *Voluntary Consensus Standards (VCS)* - technical standards (e.g., materials specifications, test methods, sampling procedures, business practices) developed or adopted by one or more voluntary consensus bodies. EPA/Office of Air Quality Planning and Standards, by precedent, has only used VCS that are written in English. Examples of VCS bodies are: American Society of Testing and Materials (ASTM, 100 Barr Harbor Drive, P.O. Box CB700, West Conshohocken, Pennsylvania 19428-B2959, (800) 262-1373, <http://www.astm.org>), American Society of Mechanical Engineers (ASME, Three Park Avenue, New York, NY 10016-5990, (800) 843-2763, <http://www.asme.org>), International Standards Organization (ISO 1, ch. de la Voie-Creuse, Case postale 56, CH-1211 Geneva 20, Switzerland, +41 22 749 01 11, <http://www.iso.org/iso/home.htm>), Standards Australia (AS Level 10, The Exchange Centre, 20 Bridge Street, Sydney, GPO Box 476, Sydney NSW 2001, +61 2 9237 6171 <http://www.standards.org.au>), British Standards Institution (BSI, 389 Chiswick High Road, London, W4 4AL, United Kingdom, +44 (0)20 8996 9001, <http://www.bsigroup.com>), Canadian Standards Association (CSA, 5060 Spectrum Way, Suite 100, Mississauga, Ontario L4W 5N6, Canada, 800-463-6727, <http://www.csa.ca>), European Committee for Standardization (CEN CENELEC Management Centre Avenue Marnix 17 B-1000 Brussels, Belgium +32 2 55008 11, <http://www.cen.eu/cen>), and German Engineering Standards (VDI Guidelines Department, P.O. Box 10 11 39 40002, Duesseldorf, Germany, +49 211 6214-230, <http://www.vdi.eu>). The types of standards that are not considered VCS are standards developed by: the United States, e.g., California Air Resources Board (CARB) and Texas Commission on Environmental Quality (TCEQ); industry groups, such as American Petroleum Institute (API), Gas Processors Association (GPA), and Gas Research Institute (GRI); and other branches of the U.S. Government, e.g., Department of Defense (DOD) and Department of Transportation (DOT). This does not preclude EPA from using standards developed by groups that are not VCS bodies within their rule. When this occurs, EPA has done searches and reviews for VCS equivalent to these non-EPA methods (40 CFR 63.11237) [**Added April 2013, Revised October 2016**].
- *Warning Label* - the warning statement required by section 611 of the Act. The term warning statement shall be synonymous with warning label for purposes of this subpart (40 CFR 82.104(aa)) [**Added July 2004**]
- *Washer* - a machine used to clean articles by immersing them in perchloroethylene. This includes a dry-to-dry machine when used with a reclaimers (40 CFR 63.321).
- *Waste* - for purposes of 40 CFR 82, Subpart E [40 CFR 82.100 through 82.124, see checklist item AE.85.7.US], items or substances that are discarded with the intent that such items or substances will serve no further useful purpose (40 CFR 82.104(bb)) [**Added July 2004**]
- *Waste and Wastewater* - a material, or spent or used water or waste, generated from residential, industrial, commercial, mining, or agricultural operations or from community activities that contain dissolved or suspended matter, and that is discarded, discharged, or is being accumulated, stored, or physically, chemically, thermally, or biologically treated in a POTW (40 CFR 63.1583) [**Added January 2000**].
- *Waste Heat Boiler* - a device that recovers normally unused energy (i.e., hot exhaust gas) and converts it to usable heat. Waste heat boilers are also referred to as heat recovery steam generators. Waste heat boilers are heat exchangers generating steam from incoming hot exhaust gas from an industrial (e.g., thermal oxidizer, kiln, furnace) or power (e.g., combustion turbine, engine) equipment. Duct burners are sometimes used to increase the temperature of the incoming hot exhaust gas (40 CFR 63.7575 and 63.11237) [**Revised April 2013**].

- *Waste Heat Process Heater* - an enclosed device that recovers normally unused energy (i.e., hot exhaust gas) and converts it to usable heat. Waste heat process heaters are also referred to as recuperative process heaters. This definition includes both fired and unfired waste heat process heaters (40 CFR 63.7575) [**Revised April 2013**].
- *Waste Heat Recovery* - the process of recovering heat from the combustion flue gases outside of the combustion firebox by convective heat transfer only (40 CFR 60.2977) [**Added January 2006**].
- *Waste Stream* - industrial solid waste material that is generated by a specific manufacturing process or client. For wastes generated at the facility that includes the industrial waste landfill, a waste stream is the industrial solid waste material generated by a specific processing unit at that facility. For industrial solid wastes that are received from off-site facilities, a waste stream can be defined as each waste shipment or group of waste shipments received from a single client or group of clients that produce industrial solid wastes with similar waste properties (40 CFR 98.468) [**Added July 2010**].
- *Wastewater Treatment System* - the collection of all processes that treat or remove pollutants and contaminants, such as soluble organic matter, suspended solids, pathogenic organisms, and chemicals from wastewater prior to its reuse or discharge from the facility (40 CFR 98.358) [**Added July 2010**].
- *Water Separator* - any device used to recover perchloroethylene from a water-perchloroethylene mixture (40 CFR 63.321).
- *Waterborne (Water-Reducible) Coating* - any coating that contains more than 5 percent water by weight as applied in its volatile fraction (40 CFR 63.742) [**Added January 1999**].
- *Waterfall Furnace* - a combustion unit having energy (heat) recovery in the furnace (i.e., radiant heat transfer section of the combustor (40 CFR 60.51b).
- *Waterwall Furnace* - a municipal waste combustion unit that has energy (heat) recovery in the furnace (for example, radiant heat transfer section) of the combustion unit (40 CFR 60.1465) [**Added April 2001**].
- *Waterwash System* - a control system that utilizes flowing water to remove particulate emissions from the exhaust air stream in spray coating application or dry media blast depainting operations (40 CFR 63.742) [**Added January 1999**].
- *Waxes* - a solid or semi-solid material at 77 °F consisting of a mixture of hydrocarbons obtained or derived from petroleum fractions, or through a Fischer-Tropsch type process, in which the straight chained paraffin series predominates. This includes all marketable wax, whether crude or refined, with a congealing point between 80 (or 85) and 240 °F and a maximum oil content of 50 weight percent (40 CFR 98.6) [**Added January 2010**].
- *Wet Scrubber* - an add-on air pollution control device that utilizes an alkaline scrubbing liquor to collect particulate matter (including nonvaporous metals and condensed organics) and/or to absorb and neutralize acid gases (40 CFR 60.51c, 62.14490, and 62.14840) [**Added October 2000; Revised January 2004**].
- *Wet Scrubber* - an add-on air pollution control device that utilizes an aqueous or alkaline scrubbing liquor to collect particulate matter (including nonvaporous metals and condensed organics) and/or to absorb and neutralize acid gases (40 CFR 60.2977) [**Added January 2006**].
- *Wet Scrubber* - an add-on air pollution control device that utilizes an aqueous or alkaline scrubbing liquid to collect particulate matter (including nonvaporous metals and condensed organics) and/or to absorb and neutralize acid gases (40 CFR 60.4930) [**Added April 2011**].
- *Wet Scrubber* - any add-on air pollution control device that mixes an aqueous stream or slurry with the exhaust gases from a boiler or process heater to control emissions of particulate matter or to absorb and neutralize acid

gases, such as hydrogen chloride. A wet scrubber creates an aqueous stream or slurry as a byproduct of the emissions control process (40 CFR 63.7575) [**Added April 2011**].

- *Wet Scrubber* - any add-on air pollution control device that mixes an aqueous stream or slurry with the exhaust gases from a boiler to control emissions of particulate matter or to absorb and neutralize acid gases, such as hydrogen chloride. A wet scrubber creates an aqueous stream or slurry as a byproduct of the emissions control process (40 CFR 63.11237) [**Added April 2013**].
- *Wholesale Purchaser-Consumer* - any person that is an ultimate consumer of gasoline, diesel fuel, methanol, natural gas, or liquified petroleum gas and which purchases or obtains gasoline, diesel fuel, natural gas or liquified petroleum gas from a supplier for use in motor vehicles or nonroad engines, including locomotive engines or marine engines and, in the case of gasoline, diesel fuel, methanol or liquified petroleum gas, receives delivery of that product into a storage tank of at least 550-gal capacity substantially under the control of that person (40 CFR 80.2(o) and 80.1500) [**Revised October 2011**].
- *Wholesaler* - a person to whom a product is delivered or sold, if such delivery or sale is for purposes of sale or distribution to retailers who buy such product for purposes of resale (40 CFR 82.104(cc)) [**Added July 2004**].
- *Wood Residuals* - materials recovered from three principal sources: Municipal solid waste (MSW); construction and demolition debris; and primary timber processing. Wood residuals recovered from MSW include wooden furniture, cabinets, pallets and containers, scrap lumber (from sources other than construction and demolition activities), and urban tree and landscape residues. Wood residuals from construction and demolition debris originate from the construction, repair, remodeling and demolition of houses and non-residential structures. Wood residuals from primary timber processing include bark, sawmill slabs and edgings, sawdust, and peeler log cores. Other sources of wood residuals include, but are not limited to, railroad ties, telephone and utility poles, pier and dock timbers, wastewater process sludge from paper mills, trim, sander dust, and sawdust from wood products manufacturing (including resinated wood product residuals), and logging residues (40 CFR 98.6) [**Added January 2011**].
- *Wood Waste* - untreated wood and untreated wood products, including tree stumps (whole or chipped), trees, tree limbs (whole or chipped), bark, sawdust, chips, scraps, slabs, millings, and shavings. Wood waste does not include (40 CFR 62.14840) [**Added January 2004**]:
  1. Grass, grass clippings, bushes, shrubs, and clippings from bushes and shrubs from residential, commercial/retail, institutional, or industrial sources as part of maintaining yards or other private or public lands
  2. Construction, renovation, or demolition wastes
  3. Clean lumber.
- *Wood Waste* - untreated wood and untreated wood products, including tree stumps (whole or chipped), trees, tree limbs (whole or chipped), bark, sawdust, chips, scraps, slabs, millings, and shavings. Wood waste does not include (40 CFR 60.2977) [**Added January 2006**]:
  1. Grass, grass clippings, bushes, shrubs, and clippings from bushes and shrubs from residential, commercial/retail, institutional, or industrial sources as part of maintaining yards or other private or public lands.
  2. Construction, renovation, or demolition wastes.
  3. Clean lumber.
  4. Treated wood and treated wood products, including wood products that have been painted, pigment-stained, or pressure treated by compounds such as chromate copper arsenate, pentachlorophenol, and creosote, or manufactured wood products that contain adhesives or resins (e.g., plywood, particle board, flake board, and oriented strand board).
- *Wool Fiberglass* - fibrous glass of random texture, including fiberglass insulation, and other products listed in NAICS 327993 (40 CFR 98.6) [**Added January 2010**].

- *Work Practice Standard* - any design, equipment, work practice, or operational standard, or combination thereof, that is promulgated pursuant to section 112(h) of the CAA (40 CFR 63.2406, 63.7575, 63.7957, and 63.11237) **[Added April 2004; Revised October 2004; Citation Revised April 2011]**.
- *Working Capacity* - for the purposes of subpart TT [Industrial Waste Landfills] 40 CFR 98, means the maximum volume or mass of waste that is actually placed in the landfill from an individual or representative type of container (such as a tank, truck, or roll-off bin) used to convey wastes to the landfill, taking into account that the container may not be able to be 100 percent filled and/or 100 percent emptied for each load (40 CFR 98.6) **[Added July 2010]**.
- *Working Capacity* - the maximum volume or mass of waste that is actually placed in the landfill from an individual or representative type of container (such as a tank, truck, or roll-off bin) used to convey wastes to the landfill, taking into account that the container may not be able to be 100 percent filled and/or 100 percent emptied for each load (40 CFR 98.348) **[Added January 2011]**.
- *Working Mode* - the time period when the solvent-cleaning machine is actively cleaning parts (40 CFR 63.461).
- *Working Mode Cover* - any cover or solvent-cleaning machine design that allows the cover to shield the cleaning machine openings from outside air disturbances while parts are being cleaned in the cleaning machine. A cover that is used during the working mode is opened only during parts entry and removal. A cover that meets this definition can also be used as an idling mode cover if that definition is also met (40 CFR 63.461).
- *Worst-Case Release* - the release of the largest quantity of a regulated substance from a vessel or process line failure that results in the greatest distance to an endpoint defined in 40 CFR 68.22(a) (40 CFR 68.3) **[Added January 2005]**.
- *Yard Waste* - grass, grass clippings, bushes, shrubs, and clippings from bushes and shrubs that are generated by residential, commercial/retail, institutional, and/or industrial sources as a part of maintenance activities associated with yards or other private or public lands. Yard waste does not include construction, renovation, and demolition wastes which are exempt from the definition of municipal solid waste in this section. Yard waste does not include clean wood (40 CFR 60.51b).
- *Yard Waste* - grass, grass clippings, bushes, shrubs, and clippings from bushes and shrubs. They come from residential, commercial/retail, institutional, or industrial sources as part of maintaining yards or other private or public lands. Yard waste does not include (40 CFR 60.1440 and 60.1455) **[Added April 2001]**:
  1. construction, renovation, and demolition wastes that are exempt from the definition of "municipal solid waste" in 40 CFR 60.1465
  2. clean wood that is exempt from the definition of "municipal solid waste" in 40 CFR 60.1465.
- *Yard Waste* - grass, grass clippings, bushes, shrubs, and clippings from bushes and shrubs. Yard waste comes from residential, commercial/retail, institutional, or industrial sources as part of maintaining yards or other private or public lands. Yard waste does not include two items (40 CFR 60.2977) **[Added January 2006]**:
  1. Construction, renovation, and demolition wastes.
  2. Clean lumber.
- *Yard Waste* - grass, grass clippings, bushes, shrubs, and clippings from bushes and shrubs from residential, commercial/retail, institutional, or industrial sources as part of maintaining yards or other private or public lands (40 CFR 62.14840) **[Added January 2004]**.

## F. Records To Review

- State and local air pollution control regulations
- Emissions inventory
- All air pollution source permits

- Plans and procedures applicable to air pollution control
- Emission monitoring records
- Opacity records
- Notices of violation (NOVs) from regulatory authorities
- Instrument calibration and maintenance records
- Reports/complaints concerning air quality
- Air Emergency Episode Plan
- State and/or Federal regulatory inspections
- Regulatory inspection reports
- Documentation of preventive measure or action
- Results of air sampling at the conclusion of response action
- Pollution prevention management plan
- Training and certification records for federal employees who reclaim/recycle refrigerant.

#### **G. Physical Features To Inspect**

- All air pollution sources (fuel burners, incinerators, VOC sources, etc.)
- Air pollution monitoring and control devices
- Air emission stacks
- Air intake vents.

## Potential Air Pollution Sources

<p><b>Heat/Steam/Energy Production</b></p> <ul style="list-style-type: none"> <li>• coal-fired power plants</li> <li>• package boilers</li> <li>• diesel generators</li> <li>• emergency generators</li> <li>• peak shaving generators</li> <li>• turbines</li> </ul> <p><b>Petroleum Product Storage and Transport</b></p> <ul style="list-style-type: none"> <li>• tank farms</li> <li>• gasoline service stations</li> <li>• loading racks</li> <li>• tanker transfer</li> <li>• underground storage tanks</li> <li>• aboveground storage tanks</li> </ul> <p><b>Graphic Arts</b></p> <ul style="list-style-type: none"> <li>• letterpress</li> <li>• rotogravure</li> <li>• offset lithography</li> <li>• silkscreening</li> </ul> <p><b>Degreasing Operations</b></p> <ul style="list-style-type: none"> <li>• vapor degreasers</li> <li>• cold solvent-cleaning</li> <li>• solvent dip tanks</li> </ul> <p><b>Surface Coating Operations</b></p> <ul style="list-style-type: none"> <li>• paint booths</li> <li>• metal parts coating lines</li> <li>• furniture refinishing</li> <li>• architectural coatings</li> <li>• traffic striping</li> </ul> <p><b>Firing Ranges</b></p> <ul style="list-style-type: none"> <li>• artillery</li> <li>• small caliber weapons</li> </ul>	<p><b>Waste Disposal</b></p> <ul style="list-style-type: none"> <li>• incineration of medical/pathological or hazardous waste</li> <li>• open burning/open detonation</li> <li>• landfills</li> <li>• surface impoundment</li> <li>• landfarms/bioremediation</li> </ul> <p><b>Additional Sources</b></p> <ul style="list-style-type: none"> <li>• air-conditioning/refrigeration shops</li> <li>• pesticide/herbicide applications</li> <li>• asphalt production</li> <li>• wastewater treatment plants</li> <li>• controlled forest and agricultural burning</li> <li>• firefighter training burns</li> <li>• smoke generators</li> <li>• engine test cells/dynamometers</li> <li>• ethylene oxide sterilizers</li> <li>• laboratory hood vents</li> <li>• sandblasting operations</li> <li>• woodworking operations</li> <li>• quarries</li> <li>• plastics production</li> <li>• explosive and munitions production</li> <li>• acid production</li> <li>• forging and annealing operation</li> <li>• metal treatment and plating</li> <li>• waferboard manufacturing</li> <li>• foam packing operations</li> <li>• unpaved roads</li> <li>• storage piles</li> <li>• storage silos</li> <li>• paint stripping operations</li> <li>• dry cleaning operations</li> <li>• photoprocessing operations</li> <li>• training aid support centers (TASC)</li> <li>• chemical recycling and recovery</li> <li>• jet engine test cells</li> </ul>
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## H. Guidance for Air Emissions Management Checklist Users

	REFER TO CHECKLIST ITEMS:
All Facilities	AE.1.1.US through AE.1.18.US
Missing, Risk Management, and Positive Checklist Items	AE.2.1.US through AE.2.3.US
Steam Generators	AE.10.1.US through AE.10.18.US
Mercury-Budget Trading Program	AE.12.1.US through AE.12.11.US
Fuel Burning Equipment	AE.15.1.US through AE.15.17.US
Gas Turbines	AE.20.1.US through AE.20.13.US
Internal Combustion Engines	AE.21.1.US through AE.21.30.US
Miscellaneous Incinerators	AE.25.1.US through AE.25.19.US
Existing Commercial and Industrial Solid Waste Incinerators (CISWI)	AE.26.1.US through AE.26.10.US
Medical Waste Incinerators	
General	AE.30.1.US. through AE.30.12.US
Monitoring	AE.32.1.US through AE.32.3.US
Reporting/Recordkeeping Requirements	AE.34.1.US through AE.34.7.US
Municipal Waste Combustors	AE.35.1.US through AE.35.3.US
New Municipal Waste Combustors	AE.36.1.US through AE.36.28.US
Sewage Sludge Incinerators	AE.45.1.US through AE.45.15.US
Thermal Processing Facilities	AE.50.1.US and AE.50.2.US
Gasoline/Fuels	AE.55.1.US through AE.55.14.US
Organic Liquids Distribution (Non-Gasoline)	AE.57.1.US through AE.57.16.US
Printing Presses and Graphic Arts	AE.60.1.US
Fugitive Emissions	AE.65.1.US through AE.65.7.US
Dry Cleaning Operations	
Petroleum Solvent Dry Cleaning	AE.70.1.US
Perchloroethylene Dry Cleaning	AE.75.1.US through AE.75.15.US
Acid Production Units	AE.80.1.US and AE.80.2.US
CFCs and Halons	
Purchasing/Procurement	AE.85.1.US through AE.85.9.US
Repair/Recycling	AE.90.1.US through AE.90.26.US
Recordkeeping	AE.95.1.US through AE.95.9.US

Coating Operations	AE.100.1.US through AE.100.8.US
Degreasing Operations	
General	AE.115.1.US and AE.115.2.US
Cold Cleaning	AE.116.1.US through AE.116.3.US
Vapor Cleaning	AE.117.1.US through AE.117.12.US
Reporting	AE.118.1.US through AE.118.7.US
Ethylene Oxide Sources	AE.150.1.US through AE.150.3.US
Aerospace Manufacturing/Rework Facilities	
General	AE.170.1.US through AE.170.13.US
Monitoring	AE.171.1.US through AE.171.3.US
Reporting/Recordkeeping Requirements	AE.172.1.US through AE.172.11.US
Wastewater Treatment	
General	AE.180.1.US and AE.180.2.US
Reporting/Recordkeeping Requirements	AE.190.1.US through AE.190.3.US
Greenhouse Gas Emissions	
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Engine Test Cells	
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Monitoring	AE.240.1.US through AE.240.3.US
Documentation	AE.250.1.US through AE.250.3.US
Remediation Site Emissions	
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Process Vents	AE.305.1.US through AE.305.4.US
Material Management Units	AE.307.1.US
Equipment Leak Sources	AE.309.1.US
Containers	AE.313.1.US through AE.313.4.US
Surface Impoundments	AE.315.1.US through AE.315.4.US
Separators	AE.317.1.US through AE.317.4.US
Transfer Systems	AE.319.1.US through AE.319.4.US
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<p><b>AE.1.4.US.</b> This checklist item was moved to AE.1.9.US through AE.1.15.US [Revised July 1999; Revised January 2005; Moved January 2014].</p> <p><b>AE.1.5.US.</b> Federal actions must conform to applicable implementation plans (40 CFR 93.150, 93.151, 93.153(a) through 93.153(e), 93.153(i), 93.153(k), 93.154, and 93.157) [Added April 2009].</p>	<p>(NOTE: This checklist item was moved and expanded to AE.1.9.US through AE.1.15.US.)</p> <p>Verify that no department, agency or instrumentality of the Federal Government engages in, supports in any way or provides financial assistance for, license or permit, or approve any activity which does not conform to an applicable implementation plan (i.e., the State Implementation Plan [SIP]).</p> <p>Verify that the determination that a Federal action conforms to the applicable implementation plan is done.</p> <p>(NOTE: Where multiple Federal agencies have jurisdiction for various aspects of a project, a Federal agency may choose to adopt the analysis of another Federal agency or develop its own analysis in order to make its conformity determination.)</p> <p>(NOTE: The conformity status of a Federal action automatically lapses 5 years from the date a final conformity determination is reported under 40 CFR 93.155 [see checklist item AE.1.7.US], unless the Federal action has been completed or a continuous program has been commenced to implement that Federal action within a reasonable time. Ongoing Federal activities at a given site showing continuous progress are not new actions and do not require periodic redeterminations so long as such activities are within the scope of the final conformity determination reported under 40 CFR 93.155 [see checklist item AE.1.7.US]. If, after the conformity determination is made, the Federal action is changed so that there is an increase in the total of direct and indirect emissions, above the levels detailed in this checklist item, a new conformity determination is required.)</p> <p>(NOTE: The requirement to make a determination that a Federal action conforms to the applicable implementation plan does not include the following situations:</p> <ul style="list-style-type: none"> <li>– National Environmental Policy Act (NEPA) analysis was completed as evidenced by a final environmental assessment (EA), environmental impact statement (EIS), or finding of no significant impact (FONSI) that was prepared prior to 31 January 1994</li> <li>– prior to 31 January 1994: <ul style="list-style-type: none"> <li>– an environmental analysis was commenced or a contract was awarded to develop the specific environmental analysis</li> <li>– sufficient environmental analysis was completed by 15 March 1994 so that the Federal agency may determine that the Federal action is in conformity with the specific requirements and the purposes of the applicable SIP pursuant to the agency's affirmative obligation under section 176(c) of the Clean Air Act (Act)</li> <li>– written determination of conformity under section 176(c) of the Act has been made by the Federal agency responsible for the Federal action by 15 March 1994.)</li> </ul> </li> </ul>

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	<p>(NOTE: A determination that an action is in conformance with the applicable implementation plan does not exempt the action from any other requirements of the applicable implementation plan, NEPA, or the CAA.)</p> <p>(NOTE: The Federal conformity rules under 40 CFR 93, Subpart B, in addition to any existing applicable State requirements, establish the conformity criteria and procedures necessary to meet the Act requirements until such time as the required conformity SIP revision is approved by EPA.)</p> <p>Verify that conformity determinations for Federal actions related to transportation plans, programs, and projects developed, funded, or approved under title 23 U.S.C. or the Federal Transit Act (49 U.S.C. 1601 et seq.) meet the procedures and criteria of 40 CFR 51, subpart T, instead of the procedures set forth in 40 CFR 93, Subpart B.</p> <p>Verify that, for Federal actions not related to activities developed, funded, or approved under the Federal Transit Act, a conformity determination is done for each criteria pollutant or precursor where the total of direct and indirect emissions of the criteria pollutant or precursor in a nonattainment or maintenance area caused by a Federal action would equal or exceed any of the following rates:</p> <ul style="list-style-type: none"> <li>– rates in nonattainment area (NAA): <ul style="list-style-type: none"> <li>– ozone (VOCs or NOX), serious NAA’s: 50 tons/yr</li> <li>– ozone (VOCs or NOX), severe NAA’s: 25 tons/yr</li> <li>– ozone (VOCs or NOX), extreme NAA’s: 10 tons/yr</li> <li>– other ozone NAA’s outside an ozone transport region: 50 tons/yr</li> <li>– other ozone NAA’s inside an ozone transport region, VOC: 50 tons/yr</li> <li>– other ozone NAA’s inside an ozone transport region, NOX: 100 tons/yr</li> <li>– carbon monoxide, all NAA’s: 100 tons/yr</li> <li>– SO<sub>2</sub> or NO<sub>2</sub>, All NAA’s: 100 tons/yr</li> <li>– PM-10, moderate NAA’s: 100 tons/yr</li> <li>– PM-10, serious NAA’s: 70 tons/year</li> <li>– PM 2.5, direct emissions: 100 tons/yr</li> <li>– PM 2.5, SO<sub>2</sub>: 100 tons/yr</li> <li>– PM 2.5, NOX (unless determined not to be a significant precursor): 100 tons/yr</li> <li>– PM 2.5, VOC or ammonia (if determined to be significant precursor): 100 tons/yr</li> <li>– Pb, all NAA’s: 25 tons/yr.</li> </ul> </li> <li>– rates in maintenance areas: <ul style="list-style-type: none"> <li>– ozone (NOX, SO<sub>2</sub>, or NO<sub>2</sub>), all maintenance areas: 100 tons/yr</li> <li>– ozone (VOCs), maintenance area inside an ozone transport region: 50 tons/yr</li> <li>– ozone (VOCs) maintenance area outside an ozone transport region: 100 tons/yr</li> <li>– carbon monoxide, all maintenance areas: 100 tons/yr</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– PM-10, all maintenance areas: 100 tons/yr</li> <li>– PM 2.5, direct emissions: 100 tons/yr</li> <li>– PM 2.5, SO<sub>2</sub>: 100 tons/yr</li> <li>– PM 2.5, NO<sub>x</sub> (unless determined not to be a significant precursor): 100 tons/yr</li> <li>– PM<sub>2.5</sub>, VOC or ammonia (if determines to be significant precursors): 100 tons/yr</li> <li>– Pb, all maintenance areas: 25 tons/yr.</li> </ul> <p>(NOTE: The requirement for conformity determination does not apply to the following Federal actions:</p> <ul style="list-style-type: none"> <li>– actions where the total of direct and indirect emissions are below the specified emissions levels</li> <li>– actions which would result in no emissions increase or an increase in emissions that is clearly de minimis: <ul style="list-style-type: none"> <li>– judicial and legislative proceedings</li> <li>– continuing and recurring activities such as permit renewals where activities conducted will be similar in scope and operation to activities currently being conducted</li> <li>– rulemaking and policy development and issuance</li> <li>– routine maintenance and repair activities, including repair and maintenance of administrative sites, roads, trails, and facilities</li> <li>– civil and criminal enforcement activities, such as investigations, audits, inspections, examinations, prosecutions, and the training of law enforcement personnel</li> <li>– administrative actions such as personnel actions, organizational changes, debt management or collection, cash management, internal agency audits, program budget proposals, and matters relating to the administration and collection of taxes, duties and fees</li> <li>– the routine, recurring transportation of materiel and personnel</li> <li>– routine movement of mobile assets, such as ships and aircraft, in home port reassignments and stations (when no new support facilities or personnel are required) to perform as operational groups and/or for repair or overhaul</li> <li>– maintenance dredging and debris disposal where no new depths are required, applicable permits are secured, and disposal will be at an approved disposal site</li> <li>– actions, such as the following, with respect to existing structures, properties, facilities and lands where future activities conducted will be similar in scope and operation to activities currently being conducted at the existing structures, properties, facilities, and lands; for example, relocation of personnel, disposition of federally-owned existing structures, properties, facilities, and lands, rent subsidies, operation and maintenance cost subsidies, the exercise of receivership or conservatorship authority, assistance in purchasing structures, and the production of coins and currency</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– the granting of leases, licenses such as for exports and trade, permits, and easements where activities conducted will be similar in scope and operation to activities currently being conducted</li> <li>– planning, studies, and provision of technical assistance</li> <li>– routine operation of facilities, mobile assets and equipment</li> <li>– transfers of ownership, interests, and titles in land, facilities, and real and personal properties, regardless of the form or method of the transfer</li> <li>– the designation of empowerment zones, enterprise communities, or viticultural areas</li> <li>– actions by any of the Federal banking agencies or the Federal Reserve Banks, including actions regarding charters, applications, notices, licenses, the supervision or examination of depository institutions or depository institution holding companies, access to the discount window, or the provision of financial services to banking organizations or to any department, agency or instrumentality of the United States</li> <li>– actions by the Board of Governors of the Federal Reserve System or any Federal Reserve Bank necessary to effect monetary or exchange rate policy</li> <li>– actions that implement a foreign affairs function of the United States</li> <li>– actions (or portions thereof) associated with transfers of land, facilities, title, and real properties through an enforceable contract or lease agreement where the delivery of the deed is required to occur promptly after a specific, reasonable condition is met, such as promptly after the land is certified as meeting the requirements of CERCLA, and where the Federal agency does not retain continuing authority to control emissions associated with the lands, facilities, title, or real properties</li> <li>– transfers of real property, including land, facilities, and related personal property from a Federal entity to another Federal entity and assignments of real property, including land, facilities, and related personal property from a Federal entity to another Federal entity for subsequent deeding to eligible applicants</li> <li>– actions by the Department of the Treasury to effect fiscal policy and to exercise the borrowing authority of the United States.</li> <li>– actions where the emissions are not reasonably foreseeable, such as the following: <ul style="list-style-type: none"> <li>– initial Outer Continental Shelf lease sales which are made on a broad scale and are followed by exploration and development plans on a project level</li> <li>– electric power marketing activities that involve the acquisition, sale and transmission of electric energy</li> </ul> </li> <li>– actions which implement a decision to conduct or carry out a conforming program such as prescribed burning actions which are consistent with a conforming land management plan.)</li> </ul> <p>(NOTE: A conformity determination is not required for the following Federal actions [or portion thereof]:</p>

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<p><b>AE.1.6.US.</b> When certain parameters are met, Federal actions can be presumed to conform with the applicable</p>	<ul style="list-style-type: none"> <li>– the portion of an action that includes major new or modified stationary sources that require a permit under the new source review (NSR) program [section 173 of the Act] or the prevention of significant deterioration program [title I, part C of the Act]</li> <li>– actions in response to emergencies or natural disasters such as hurricanes, earthquakes, etc., which are commenced on the order of hours or days after the emergency or disaster and, if applicable, which meet the requirements for Federal actions which are part of a continuing response (see below)</li> <li>– research, investigations, studies, demonstrations, or training [unless otherwise exempted] where no environmental detriment is incurred and/or, the particular action furthers air quality research, as determined by the State agency primarily responsible for the applicable SIP</li> <li>– alteration and additions of existing structures as specifically required by new or existing applicable environmental legislation or environmental regulations [e.g., hush houses for aircraft engines and scrubbers for air emissions]</li> <li>– direct emissions from remedial and removal actions carried out under CERCLA and associated regulations to the extent such emissions either comply with the substantive requirements of the PSD/NSR permitting program or are exempted from other environmental regulation under the provisions of CERCLA and applicable regulations issued under CERCLA.)</li> </ul> <p>(NOTE: Federal actions which are part of a continuing response to an emergency or disaster and which are to be taken more than 6 mo after the commencement of the response to the emergency or disaster are exempt from the requirement to perform a conformity determination only if:</p> <ul style="list-style-type: none"> <li>– the Federal agency taking the actions makes a written determination that, for a specified period not to exceed an additional 6 mo, it is impractical to prepare the conformity analyses which would otherwise be required and the actions cannot be delayed due to overriding concerns for public health and welfare, national security interests and foreign policy commitments</li> <li>– for actions which are to be taken after the written determination of impracticality, the Federal agency makes a new determination.)</li> </ul> <p>(NOTE: When the total of direct and indirect emissions of any pollutant from a Federal action does not equal or exceed the rates specified above in this checklist item, but represents 10 percent or more of a nonattainment or maintenance area's total emissions of that pollutant, the action is defined as a regionally significant action and the requirements of 40 CFR 93.150 and 40 CFR 93.155 through 93.160 apply for the Federal action.)</p> <p>(NOTE: These requirements apply in all nonattainment and maintenance areas.)</p> <p>Verify that Federal agencies meet the following criteria for establishing activities that are presumed to conform by fulfilling one of the following requirements:</p>

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<p>implementation plans (40 CFR 93.153(g) through 893.153(j)) [Added April 2009].</p>	<ul style="list-style-type: none"> <li>– clearly demonstrate using appropriate methods that the total of direct and indirect emissions from the type of activities which would be presumed to conform would not:               <ul style="list-style-type: none"> <li>– cause or contribute to any new violation of any standard in any area</li> <li>– interfere with provisions in the applicable SIP for maintenance of any standard</li> <li>– increase the frequency or severity of any existing violation of any standard in any area</li> <li>– delay timely attainment of any standard or any required interim emission reductions or other milestones in any area including, where applicable, emission levels specified in the applicable SIP for purposes of one of the following:                   <ul style="list-style-type: none"> <li>– a demonstration of reasonable further progress</li> <li>– a demonstration of attainment</li> <li>– a maintenance plan</li> </ul> </li> </ul> </li> <li>– the Federal agency provides documentation that the total of direct and indirect emissions from such future actions would be below the emission rates for a conformity determination, based, for example, on similar actions taken over recent years.</li> </ul> <p>Verify that, in addition to meeting the above criteria for establishing exemptions, the following procedures are followed to presume that activities will conform:</p> <ul style="list-style-type: none"> <li>– the Federal agency identifies through publication in the Federal Register its list of proposed activities that are presumed to conform and the basis for the presumptions</li> <li>– the Federal agency notifies the appropriate EPA Regional Office(s), State and local air quality agencies and, where applicable, the agency designated under section 174 of the Act and the MPO and provides at least 30 days for the public to comment on the list of proposed activities presumed to conform</li> <li>– the Federal agency documents its response to all the comments received and makes the comments, response, and final list of activities available to the public upon request</li> <li>– the Federal agency publishes the final list of activities in the Federal Register.</li> </ul> <p>(NOTE: Where an action otherwise presumed to conform is a regionally significant action or does not meet the criteria for establishing activities that are presumed to conform, that action shall not be presumed to conform and the requirements of 40 CFR 93.150 [see checklist item AE.1.5.US. and 40 CFR 93.155 through 40 CFR 93.160 shall apply for the Federal action.)</p>
<p><b>AE.1.7.US.</b> When making a conformity determination, certain actions are required on the part of the Federal agency</p>	<p>(NOTE: See AE.1.5.US for details on when a conformity determination is required.)</p> <p>Verify that a Federal agency making a conformity determination under 40 CFR 93.158 provides to the appropriate EPA Regional Office(s), State and local air</p>

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<p>(40 CFR 93.155 and 93.156) [Added April 2009].</p> <p><b>AE.1.8.US.</b> Owners or operators of facilities subject to regulation under 40 CFR 60 must fulfill specific notification and recordkeeping requirements (40 CFR 60.7) [Added April 2011].</p>	<p>quality agencies and, where applicable, affected Federal land managers, the agency designated under section 174 of the Act and the MPO a 30 day notice which describes the proposed action and the Federal agency's draft conformity determination on the action.</p> <p>Verify that the Federal agency notifies the appropriate EPA Regional Office(s), State and local air quality agencies and, where applicable, affected Federal land managers, the agency designated under section 174 of the Clean Air Act and the MPO within 30 days after making a final conformity determination.</p> <p>Verify that, upon request by any person regarding a specific Federal action, a Federal agency makes available for review its draft conformity determination with supporting materials which describe the analytical methods and conclusions relied upon in making the applicability analysis and draft conformity determination.</p> <p>Verify that a Federal agency makes public its draft conformity determination by placing a notice by prominent advertisement in a daily newspaper of general circulation in the area affected by the action and by providing 30 days for written public comment prior to taking any formal action on the draft determination.</p> <p>(NOTE: This comment period may be concurrent with any other public involvement, such as occurs in the NEPA process.)</p> <p>Verify that a Federal agency documents its response to all the comments received on its draft conformity determination and makes the comments and responses available, upon request by any person regarding a specific Federal action, within 30 days of the final conformity determination.</p> <p>Verify that a Federal agency makes public its final conformity determination for a Federal action by placing a notice by prominent advertisement in a daily newspaper of general circulation in the area affected by the action within 30 days of the final conformity determination.</p> <p>(NOTE: See the text of 40 CFR 93.158 and 93.159 for details on the criteria for determining conformity and the procedures for conformity determinations.)</p> <p>(NOTE: Examples of facilities regulated under 40 CFR 60 include: steam generators, incinerators, nitric acid plants, storage vessels for petroleum liquids, wastewater treatment plants, municipal waste combustors, municipal solid waste landfills, gas turbines, and bulk gasoline terminals.)</p> <p>Verify that owners or operators of facilities regulated under 40 CFR 60 furnish the Administrator written notification or, if acceptable to both the Administrator and the owners or operators of a source, electronic notification, as follows:</p>

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	<ul style="list-style-type: none"> <li>– a notification of the date construction (or reconstruction as defined under 40 CFR 60.15) of an affected facility is commenced postmarked no later than 30 days after commencement</li> <li>– a notification of the actual date of initial startup of an affected facility postmarked within 15 days after initial startup</li> <li>– a notification of any physical or operational change to an existing facility which may increase the emission rate of any air pollutant to which a standard applies, unless that change is specifically exempted under an applicable subpart or in § 60.14, and: <ul style="list-style-type: none"> <li>– the notice is postmarked 60 days or as soon as practicable before the change is commenced</li> <li>– the notice includes information describing the precise nature of the change, present and proposed emission control systems, productive capacity of the facility before and after the change, and the expected completion date of the change</li> </ul> </li> <li>– a notification (postmarked not less than 30 days prior) of the date upon which demonstration of the continuous monitoring system performance commences</li> <li>– a notification of the anticipated date for conducting required opacity observations, and: <ul style="list-style-type: none"> <li>– including, if appropriate, a request for the Administrator to provide a visible emissions reader during a performance test</li> <li>– the notification is postmarked not less than 30 days prior to such date</li> </ul> </li> <li>– a notification (postmarked not less than 30 days prior to the performance test) that continuous opacity monitoring system data results will be used to determine compliance with the applicable opacity standard during a the required performance test in lieu of Method 9 observation data.</li> </ul> <p>(NOTE: The requirement for notification of the date of construction (or reconstruction does not apply in the case of mass-produced facilities which are purchased in completed form.)</p> <p>Verify that owners or operators maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected facility; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative.</p> <p>Verify that, each owner or operator required to install a continuous monitoring device submits excess emissions and monitoring systems performance report (excess emissions are defined in applicable subparts) and-or summary report form to the Administrator semiannually, except when one of the following applies:</p> <ul style="list-style-type: none"> <li>– more frequent reporting is specifically required by an applicable subpart</li> <li>– the Administrator, on a case-by-case basis, determines that more frequent reporting is necessary to accurately assess the compliance status of the source.</li> </ul>

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	<p>Verify that excess emissions reports are postmarked by the 30<sup>th</sup> day following the end of each six mo period and written reports of excess emissions include the following information:</p> <ul style="list-style-type: none"> <li>– the magnitude of excess emissions computed in accordance with 40 CFR 60.13(h), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions</li> <li>– the process operating time during the reporting period</li> <li>– specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the affected facility</li> <li>– the nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted</li> <li>– the date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments</li> <li>– when no excess emissions have occurred or the continuous monitoring system(s) have not been inoperative, repaired, or adjusted, such information is stated in the report.</li> </ul> <p>Verify that the summary report form contains the information is in the format shown in 40 CFR 60.7, Figure 1 (see text) unless otherwise specified by the Administrator.</p> <p>Verify that one summary report form is submitted for each pollutant monitored at each affected facility.</p> <p>(NOTE: If the total duration of excess emissions for the reporting period is less than 1 percent of the total operating time for the reporting period and CMS downtime for the reporting period is less than 5 percent of the total operating time for the reporting period, only the summary report form shall be submitted and the excess emission report need not be submitted unless requested by the Administrator.)</p> <p>(NOTE: If the total duration of excess emissions for the reporting period is 1 percent or greater of the total operating time for the reporting period or the total CMS downtime for the reporting period is 5 percent or greater of the total operating time for the reporting period, the summary report form and the excess emission report are both submitted.)</p> <p>(NOTE: An owner or operator who is required by an applicable 40 CFR 60 subpart to submit excess emissions and monitoring systems performance reports (and summary reports) on a quarterly (or more frequent) basis may reduce the frequency of reporting for that standard to semiannual if the following conditions are met:</p> <ul style="list-style-type: none"> <li>– for 1 full year (e.g., 4 quarterly or 12 monthly reporting periods) the affected facility's excess emissions and monitoring systems reports submitted to comply with a standard under 40 CFR 60 continually demonstrate that the facility is in compliance with the applicable standard</li> </ul>

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	<ul style="list-style-type: none"> <li>– the owner or operator continues to comply with all required recordkeeping and monitoring requirements</li> <li>– the Administrator does not object to a reduced frequency of reporting for the affected facility.</li> </ul> <p>(NOTE: The frequency of reporting of excess emissions and monitoring systems performance (and summary) reports may be reduced only after the owner or operator notifies the Administrator in writing of his or her intention to make such a change and the Administrator does not object to the intended change. In the absence of a notice of disapproval within 45 days, approval is automatically granted. As soon as monitoring data indicate that the affected facility is not in compliance with any emission limitation or operating parameter specified in the applicable standard, the frequency of reporting shall revert to the frequency specified in the applicable standard, and the owner or operator shall submit an excess emissions and monitoring systems performance report (and summary report, if required) at the next appropriate reporting period following the noncomplying event. After demonstrating compliance with the applicable standard for another full year, the owner or operator may again request approval from the Administrator to reduce the frequency of reporting.)</p> <p>Verify that owners or operators maintain a file of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by 40 CFR 60 recorded in a permanent form suitable for inspection.</p> <p>Verify that the file of records is retained for at least 2 yr following the date of such measurements, maintenance, reports, and records.</p> <p>Verify that, instead of complying with the above data maintenance requirements, owners or operators required to install a continuous emissions monitoring system (CEMS) where the CEMS installed is automated, and where the calculated data averages do not exclude periods of CEMS breakdown or malfunction retain the most recent consecutive three averaging periods of subhourly measurements and a file that contains a hard copy of the data acquisition system algorithm used to reduce the measured data into the reportable form of the standard.</p> <p>Verify that, instead of complying with the above data maintenance requirements, owners or operators required to install a CEMS where the measured data is manually reduced to obtain the reportable form of the standard, and where the calculated data averages do not exclude periods of CEMS breakdown or malfunction retains all subhourly measurements for the most recent reporting period for 120 days from the date of the most recent summary or excess emission report submitted to the Administrator.</p>

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<p><b>AE.1.9.US.</b> Owners or operators of a stationary source with greater than the threshold quantity of a regulated substances must submit a RMP and perform the associated analysis and documentation (40 CFR 68.10(a) through 68.10(e), 68.10(j), and 68.12(a), 68.42, 68.150(e), 68.150(f), 68.155, 68.168, 68.180, 68.190, 68.195, and 68.200) [Added January 2014; Revised April 2017; Revised July 2017].</p>	<p>(NOTE: Individual subparts of this 40 CFR 60 may include specific provisions which clarify or make inapplicable the provisions set forth in this checklist item.)</p> <p>(NOTE: The effective date of the Risk Management Program Amendments published in the Federal Register on 13 January 2017 (82 FR 4594) and incorporated into this checklist item as part of the June 2017 edition has been delayed until 19 February 2019.)</p> <p>(NOTE: See Appendix 1-1a for a list of the regulated substances and their threshold quantities. The requirements in this checklist item must be met by one of the following dates:</p> <ul style="list-style-type: none"> <li>– 3 yr after the date on which a regulated substance is first listed under 40 CFR 68.130</li> <li>– the date on which a regulated substance is first present above a threshold quantity in a process</li> <li>– for any revisions to 40 CFR 68, 19 June 2017.)</li> </ul> <p>Verify that the owner or operator of a stationary source submits a single Risk Management Plan (RMP) (see 40 CFR 68.150 to 68.185) which includes a registration that reflects all covered processes.</p> <p>(NOTE: The required evaluation processes and content requirements for the RMP depend on whether the process is eligible for Program 1 requirements [see checklist item AE.1.10.US], Program 2 requirements [see checklist items AE.1.11.US, AE.1.12.US and AE.1.15.US], or Program 3 requirements [see checklist items AE.1.13.US, AE.1.14.US, and AE.1.15.US].)</p> <p>(NOTE: The provisions of 40 CFR 68 do not apply to an Outer Continental Shelf (OCS) source, as defined in 40 CFR 55.2.)</p> <p>(NOTE: The RMP shall exclude classified information. Subject to appropriate procedures to protect such information from public disclosure, classified data or information excluded from the RMP may be made available in a classified annex to the RMP for review by Federal and state representatives who have received the appropriate security clearances.)</p> <p>(NOTE: See the text of 40 CFR 68.151 and 68.152 for procedures for asserting that information submitted in the RMP is entitled to protection as confidential business information.)</p> <p>Verify that the owner or operator provides in the RMP an executive summary that includes a brief description of the following elements:</p> <ul style="list-style-type: none"> <li>– the accidental release prevention and emergency response policies at the stationary source</li> <li>– the stationary source and regulated substances handled</li> </ul>

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	<ul style="list-style-type: none"> <li>– the general accidental release prevention program and chemical-specific prevention steps</li> <li>– the 5 yr accident history including all accidental releases from covered processes that resulted in deaths, injuries, or significant property damage on site, or known offsite deaths, injuries, evacuations, sheltering in place, property damage, or environmental damage, including:               <ul style="list-style-type: none"> <li>– date, time, and approximate duration of the release</li> <li>– chemical(s) released</li> <li>– estimated quantity released in pounds and, for mixtures containing regulated toxic substances, percentage concentration by weight of the released regulated toxic substance in the liquid mixture</li> <li>– five- or six-digit NAICS code that most closely corresponds to the process</li> <li>– the type of release event and its source</li> <li>– weather conditions, if known</li> <li>– on-site impacts</li> <li>– known offsite impacts</li> <li>– initiating event and contributing factors if known</li> <li>– whether offsite responders were notified if known</li> <li>– operational or process changes that resulted from investigation of the release and that have been made by the time this information is submitted</li> </ul> </li> <li>– the emergency response program</li> <li>– planned changes to improve safety.</li> </ul> <p>Verify that the owner or operator completes a single registration form and includes it in the RMP and the form covers all regulated substances handled in covered processes.</p> <p>(NOTE: See the text of 40 CFR 68.160(b) for details on what is included on the registration form.)</p> <p>(NOTE: Submissions may be done through EPA’s RMP*eSubmit. See <a href="http://www2.epa.gov/rmp/rmpesubmit">http://www2.epa.gov/rmp/rmpesubmit</a>.)</p> <p>Verify that the owner or operator includes in the RMP following information:</p> <ul style="list-style-type: none"> <li>– name, organizational affiliation, phone number, and email address of local emergency planning and response organizations with which the stationary source last coordinated emergency response efforts</li> <li>– the date of the most recent coordination with the local emergency response organizations</li> <li>– a list of Federal or state emergency plan requirements to which the stationary source is subject</li> <li>– whether the facility is a responding stationary source or a non-responding stationary source</li> <li>– for non-responding stationary sources</li> </ul>

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	<ul style="list-style-type: none"> <li>– for stationary sources with any regulated toxic substance held in a process above the threshold quantity, whether the stationary source is included in the community emergency response plan</li> <li>– for stationary sources with only regulated flammable substances held in a process above the threshold quantity, the date of the most recent coordination with the local fire department</li> <li>– what mechanisms are in place to notify the public and emergency responders when there is a need for emergency response</li> <li>– the date of the most recent notification exercise</li> <li>– for responding stationary sources:               <ul style="list-style-type: none"> <li>– the date of the most recent review and update of the emergency response plan</li> <li>– the date of the most recent notification exercise</li> <li>– the date of the most recent field exercise</li> <li>– the date of the most recent tabletop exercise.</li> </ul> </li> </ul> <p>Verify that the owner or operator reviews and update the RMP submits it in the method and format to the central point specified by EPA as of the date of submission.</p> <p>Verify that the owner or operator of a stationary source revises and updates the RMP submitted as follows:</p> <ul style="list-style-type: none"> <li>– at least once every 5 yr from the date of its initial submission or most recent update, whichever is later</li> <li>– no later than 3 yr after a newly regulated substance is first listed by EPA</li> <li>– no later than the date on which a new regulated substance is first present in an already covered process above a threshold quantity</li> <li>– no later than the date on which a regulated substance is first present above a threshold quantity in a new process</li> <li>– within 6 mo of a change that requires a revised PHA or hazard review</li> <li>– within 6 mo of a change that requires a revised offsite consequence analysis</li> <li>– within 6 mo of a change that alters the Program level that applied to any covered process.</li> </ul> <p>Verify that the data for any new accidental release meeting the reporting criteria is submitted within 6 mo or by the time the RMP is updated, whichever is earlier.</p> <p>Verify that any change in emergency contact information is submitted as a correction within 1 month of the change.</p> <p>Verify that, if a stationary source is no longer subject to 40 CFR 68, the owner or operator submits a de-registration to EPA within 6 mo indicating that the stationary source is no longer covered.</p> <p>(NOTE: Prior to de-registration the owner or operator shall meet applicable reporting and incident investigation requirements.)</p>

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<p><b>AE.1.10.US.</b> Owners or operators of a stationary source which are required to submit a single RMP and are Program 1 eligible must meet specific requirements (40 CFR 68.10(f), 68.10(i), 68.12(b), and 68.200) [Added January 2014; Citation Revised April 2017].</p>	<p>Verify that records are kept for 5 yr.</p> <p>Verify that, by 14 June 2018 the owner or operator of a stationary source complies with the emergency response coordination activities in 40 CFR 68.93 (see checklist item AE.1.15.US).</p> <p>Verify that, within 3 yr of when the owner or operator determines that the stationary source is subject to the emergency response program requirements of 40 CFR 68.95 (see checklist item AE.1.15.US), the owner or operator develops and implements an emergency response program in accordance with 40 CFR 68.95.</p> <p>Verify that, by 15 March 2021, the owner or operator complies with the following provisions promulgated on 13 January 2017:</p> <ul style="list-style-type: none"> <li>– third-party audit provisions (see checklist item AE.1.17.US)</li> <li>– incident investigation root cause analysis provisions (see checklist item AE.1.14.US)</li> <li>– safer technology and alternatives analysis provisions (see checklist item AE.1.14.US)</li> <li>– emergency response exercise provisions of 40 CFR 68.96 (see checklist item AE.1.15.US)</li> <li>– availability of the RMP and chemical hazard information as detailed in 40 CFR 68.210(b) through (e) (see text).</li> </ul> <p>(NOTE: See checklist item AE.1.9.US for information on which stationary sources are required to submit RMP.)</p> <p>(NOTE: A covered process is eligible for Program 1 requirements if it meets all of the following requirements:</p> <ul style="list-style-type: none"> <li>– for the 5 yr prior to the submission of an RMP, the process has not had an accidental release of a regulated substance where exposure to the substance, its reaction products, overpressure generated by an explosion involving the substance, or radiant heat generated by a fire involving the substance led to any of the following offsite: <ul style="list-style-type: none"> <li>– death</li> <li>– injury</li> <li>– response or restoration activities for an exposure of an environmental receptor</li> </ul> </li> <li>– the distance to a toxic or flammable endpoint for a worst-case release assessment is less than the distance to any public receptor</li> <li>– emergency response procedures have been coordinated between the stationary source and local emergency planning and response organizations.)</li> </ul>

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<p><b>AE.1.11.US.</b> Owners or operators of a stationary source which are required to submit a single RMP and are Program 2 eligible must meet management requirements (40 CFR 68.10(g), 68.10(i), 68.12(c), 68.15, 68.20, 68.36, 68.39, and 68.200) [Added January 2014; Revised April 2017; Revised July 2017].</p>	<p>Verify that owners or operators of stationary sources eligible for Program 1 requirements meet the requirements for submitting a single RMP (see checklist item AE.1.9.US.) and:</p> <ul style="list-style-type: none"> <li>– analyze the worst-case release scenario for the process(es)</li> <li>– document that the nearest public receptor is beyond the distance to a toxic or flammable endpoint</li> <li>– submit in the RMP the worst-case release scenario</li> <li>– complete the five-year accident history for the process and submit it in the RMP</li> <li>– ensure that response actions have been coordinated with local emergency planning and response agencies</li> <li>– certify in the RMP the following: “Based on the criteria in 40 CFR 68.10, the distance to the specified endpoint for the worst-case accidental release scenario for the following process(es) is less than the distance to the nearest public receptor: [list process(es)]. Within the past five years, the process(es) has (have) had no accidental release that caused offsite impacts provided in the risk management program rule (40 CFR 68.10(b)(1)). No additional measures are necessary to prevent offsite impacts from accidental releases. In the event of fire, explosion, or a release of a regulated substance from the process(es), entry within the distance to the specified endpoints may pose a danger to public emergency responders. Therefore, public emergency responders should not enter this area except as arranged with the emergency contact indicated in the RMP. The undersigned certifies that, to the best of my knowledge, information, and belief, formed after reasonable inquiry, the information submitted is true, accurate, and complete. [Signature, title, date signed].”</li> </ul> <p>Verify that, if at any time a covered process no longer meets the eligibility criteria of its Program level, the owner or operator complies with the requirements of the new Program level that applies to the process and update the RMP.</p> <p>Verify that records are kept for 5 yr.</p> <p>(NOTE: The effective date of the Risk Management Program Amendments published in the Federal Register on 13 January 2017 (82 FR 4594) and incorporated into this checklist item as part of the June 2017 edition has been delayed until 19 February 2019.)</p> <p>(NOTE: See checklist item AE.1.9.US for information on which stationary sources are required to submit RMP.)</p> <p>(NOTE: A covered process is eligible for Program 2 requirements if it does not meet the eligibility requirements for either Program 1 [see checklist item AE.1.10.US] or Program 3 [see checklist item AE.1.13.US].)</p>

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	<p>Verify that owners or operators of stationary sources eligible for Program 2 requirements meet the requirements for submitting a single RMP (see checklist item AE.1.9.US.) and:</p> <ul style="list-style-type: none"> <li>– develop and implement a management system</li> <li>– conduct a hazard assessment, including: <ul style="list-style-type: none"> <li>– offsite consequence analysis (see text of 40 CFR 68.22 for details)</li> <li>– worst case release scenario analysis (see text of 40 CFR 68.25 for details)</li> <li>– alternative release scenario alternatives (see text of 40 CFR 68.29 for details)</li> </ul> </li> <li>– implement the Program 2 prevention steps or implement the Program 3 prevention steps</li> <li>– coordinate response actions with local emergency planning and response agencies as provided in 40 CFR 68.93 (see checklist item AE.1.15.US)</li> <li>– develop and implement an emergency response program, and conduct exercises, as provided in 40 CFR 68.90 to 68.96 (see checklist item AE.1.15.US)</li> <li>– submit as part of the RMP the data on prevention program elements for Program 2 processes as listed in 40 CFR 68.170 (see text).</li> </ul> <p>Verify that the owner or operator reviews and updates the offsite consequence analyses at least once every 5 yr.</p> <p>Verify that, if changes in processes, quantities stored or handled, or any other aspect of the stationary source might reasonably be expected to increase or decrease the distance to the endpoint by a factor of two or more, the owner or operator completes a revised analysis within 6 mo of the change and submits a revised RMP.</p> <p>Verify that the owner or operator maintains the following records on the offsite consequence analyses:</p> <ul style="list-style-type: none"> <li>– for worst-case scenarios, a description of the vessel or pipeline and substance selected as worst case, assumptions and parameters used, and the rationale for selection; assumptions shall include use of any administrative controls and any passive mitigation that were assumed to limit the quantity that could be released; documentation includes the anticipated effect of the controls and mitigation on the release quantity and rate</li> <li>– for alternative release scenarios, a description of the scenarios identified, assumptions and parameters used, and the rationale for the selection of specific scenarios; assumptions shall include use of any administrative controls and any mitigation that were assumed to limit the quantity that could be released; documentation includes the effect of the controls and mitigation on the release quantity and rate</li> <li>– documentation of estimated quantity released, release rate, and duration of release</li> <li>– methodology used to determine distance to endpoints</li> </ul>

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<p><b>AE.1.12.US.</b> Owners or operators of a stationary source which are required to submit a single RMP and are Program 2 eligible must meet specific prevention program requirements (40 CFR 68.10(g), 68.48 through 68.58, and 68.60) [Added January 2014; Revised April 2017; Revised July 2017].</p>	<p>– data used to estimate population and environmental receptors potentially affected.</p> <p>Verify that the owner or operator of a stationary source with processes subject to Program 2 develops a management system to oversee the implementation of the risk management program elements.</p> <p>Verify that the owner or operator has assigned a qualified person or position that has the overall responsibility for the development, implementation, and integration of the RMP elements.</p> <p>(NOTE: When responsibility for implementing individual requirements of 40 CFR 68 is assigned to persons other than the person identified by the owner or operator, the names or positions of these people must be documented and the lines of authority defined through an organization chart or similar document.)</p> <p>Verify that, if at any time a covered process no longer meets the eligibility criteria of its Program level, the owner or operator complies with the requirements of the new Program level that applies to the process and update the RMP.</p> <p>Verify that records are kept for 5 yr.</p> <p>(NOTE: The effective date of the Risk Management Program Amendments published in the Federal Register on 13 January 2017 (82 FR 4594) and incorporated into this checklist item as part of the June 2017 edition has been delayed until 19 February 2019.)</p> <p>(NOTE: See checklist item AE.1.9.US for information on which stationary sources are required to submit RMP.)</p> <p>(NOTE: A covered process is eligible for Program 2 requirements if it does not meet the eligibility requirements for either Program 1 [see checklist item AE.1.10.US] or Program 3 [see checklist item AE.1.13.US].)</p> <p>Verify that the owner or operator of a stationary source with processes subject to Program 2 compiles and maintain the following up-to-date safety information related to the regulated substances, processes, and equipment:</p> <ul style="list-style-type: none"> <li>– Safety Data Sheets (SDS) that meet the requirements of 29 CFR 1910.1200(g)</li> <li>– maximum intended inventory of equipment in which the regulated substances are stored or processed</li> <li>– safe upper and lower temperatures, pressures, flows, and compositions</li> <li>– equipment specifications</li> <li>– codes and standards used to design, build, and operate the process.</li> </ul> <p>Verify that the owner or operator of a stationary source with processes subject to Program 2 ensure that the process is designed in compliance with recognized and generally accepted good engineering practices.</p>

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	<p>(NOTE: Compliance with Federal or state regulations that address industry-specific safe design or with industry-specific design codes and standards may be used to demonstrate compliance.)</p> <p>Verify that the safety information is updated if a major change occurs that makes the information inaccurate.</p> <p>Verify that the owner or operator of a stationary source with processes subject to Program 2 conducts and documents a review identifying the following:</p> <ul style="list-style-type: none"> <li>– the hazards associated with the process and regulated substances</li> <li>– opportunities for equipment malfunctions or human errors that could cause an accidental release, including findings from incident investigations</li> <li>– the safeguards used or needed to control the hazards or prevent equipment malfunction or human error</li> <li>– any steps used or needed to detect or monitor releases.</li> </ul> <p>(NOTE: The owner or operator may use checklists developed by persons or organizations knowledgeable about the process and equipment as a guide to conducting the review. For processes designed to meet industry standards or Federal or state design rules, the hazard review shall, by inspecting all equipment, determine whether the process is designed, fabricated, and operated in accordance with the applicable standards or rules.)</p> <p>Verify that problem identified in the review are resolved in a timely manner and the review is updated at least once every 5 yr.</p> <p>Verify that reviews are also conducted whenever a major change in the process occurs and all issues identified in the review are resolved before startup of the changed process.</p> <p>Verify that the owner or operator of a stationary source with processes subject to Program 2 prepares written operating procedures that provide clear instructions or steps for safely conducting activities associated with each covered process consistent with the safety information for that process and address the following:</p> <ul style="list-style-type: none"> <li>– initial startup</li> <li>– normal operations</li> <li>– temporary operations</li> <li>– emergency shutdown and operations</li> <li>– normal shutdown</li> <li>– startup following a normal or emergency shutdown or a major change that requires a hazard review</li> <li>– consequences of deviations and steps required to correct or avoid deviations</li> <li>– equipment inspections.</li> </ul>

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	<p>(NOTE: Operating procedures or instructions provided by equipment manufacturers or developed by persons or organizations knowledgeable about the process and equipment may be used as a basis for a stationary source's operating procedures.)</p> <p>Verify that the operating procedures are updated, if necessary, whenever a major change occurs and prior to startup of the changed process.</p> <p>Verify that the owner or operator of a stationary source with processes subject to Program 2 ensures that each employee presently involved in operating a process, and each employee newly assigned to a covered process has been trained or tested competent in the operating procedures that pertain to their duties.</p> <p>(NOTE: For those employees already operating a process on 21 June 1999, the owner or operator may certify in writing that the employee has the required knowledge, skills, and abilities to safely carry out the duties and responsibilities as provided in the operating procedures.)</p> <p>Verify that refresher training is provided at least every 3 yr, and more often if necessary, to each employee involved in operating a process to ensure that the employee understands and adheres to the current operating procedures of the process.</p> <p>(NOTE: The owner or operator, in consultation with the employees operating the process, shall determine the appropriate frequency of refresher training. The owner or operator may use training conducted under Federal or state regulations or under industry-specific standards or codes or training conducted by covered process equipment vendors to demonstrate compliance with this section to the extent that the training meets the requirements outlined in this checklist item.)</p> <p>Verify that employees involved in operating a process are trained in any updated or new procedures prior to startup of a process after a major change.</p> <p>(NOTE: For the purposes of compliance with training requirements, the term "employee" also includes supervisors responsible for directing process operations.)</p> <p>Verify that the owner or operator of a stationary source with processes subject to Program 2 prepares and implements procedures to maintain the on-going mechanical integrity of the process equipment.</p> <p>(NOTE: The owner or operator may use procedures or instructions provided by covered process equipment vendors or procedures in Federal or state regulations or industry codes as the basis for stationary source maintenance procedures.)</p> <p>Verify that the owner or operator trains or causes to be trained each employee involved in maintaining the on-going mechanical integrity of the process.</p>

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	<p>(NOTE: To ensure that the employee can perform the job tasks in a safe manner, each such employee shall be trained in the hazards of the process, in how to avoid or correct unsafe conditions, and in the procedures applicable to the employee's job tasks. Any maintenance contractor shall ensure that each contract maintenance employee is trained to perform the maintenance procedures.)</p> <p>Verify that the owner or operator performs or causes to be performed inspections and tests on process equipment.</p> <p>(NOTE: Inspection and testing procedures shall follow recognized and generally accepted good engineering practices. The frequency of inspections and tests of process equipment shall be consistent with applicable manufacturers' recommendations, industry standards or codes, good engineering practices, and prior operating experience.)</p> <p>Verify that the owner or operator certifies that they have evaluated compliance with the provisions of 40 CFR 63, Subpart C (Program 2 Prevention Program) for each covered process, at least every 3 yr to verify that the developed procedures and practices are adequate and are being followed.</p> <p>Verify that the compliance audit is conducted by at least one person knowledgeable in the process and the owner or operator develops a report of the audit findings.</p> <p>Verify that the owner or operator promptly determines and documents an appropriate response to each of the findings of the compliance audit and documents that deficiencies have been corrected.</p> <p>Verify that the owner or operator retains the two (2) most recent compliance audit reports.</p> <p>(NOTE: The requirement for retaining compliance audit reports does not apply to any compliance audit report that is more than 5 yr old.)</p> <p>Verify that, when one of the following conditions applies a third-party audit is conducted:</p> <ul style="list-style-type: none"> <li>– an accidental release that resulted in deaths, injuries, or significant property damage on site or offsite deaths, injuries, evacuations, sheltering in place, property damage, or environmental damage from a covered process at a stationary source has occurred</li> <li>– an implementing agency requires a third-party audit due to conditions at the stationary source that could lead to an accidental release of a regulated substance, or when a previous third-party audit failed to meet the competency or independence criteria of 40 CFR 68.59(c) [see checklist item AE.1.17.US].</li> </ul> <p>Verify that, if a third party audit is required due to an accidental release, the third part audit is completed within 12 mo of the release.</p>

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	<p>(NOTE: See checklist item AE.1.17.US for details on third party audits as described in 40 CFR 68.59)</p> <p>Verify that the owner or operator of a stationary source with processes subject to Program 2 investigates each incident that meets one of the following:</p> <ul style="list-style-type: none"> <li>– the incident resulted in, or could reasonably have resulted in a catastrophic release (including when the affected process is decommissioned or destroyed following, or as the result of, an incident)</li> <li>– the incident could reasonably have resulted in a catastrophic release (i.e., was a near miss).</li> </ul> <p>Verify that an incident investigation is initiated as promptly as possible, but not later than 48 h following the incident.</p> <p>Verify that an incident investigation team is established and consists of at least one person knowledgeable in the process involved and other persons with appropriate knowledge and experience to thoroughly investigate and analyze the incident.</p> <p>Verify that a report is prepared at the conclusion of the investigation and is completed within 12 mo of the incident, unless the implementing agency approves, in writing, an extension of time.</p> <p>Verify that the incident investigation report includes:</p> <ul style="list-style-type: none"> <li>– date, time, and location of incident</li> <li>– date investigation began</li> <li>– a description of the incident, in chronological order, providing all relevant facts</li> <li>– the name and amount of the regulated substance involved in the release (e.g., fire, explosion, toxic gas loss of containment) or near miss and the duration of the event</li> <li>– the consequences, if any, of the incident including, but not limited to: injuries, fatalities, the number of people evacuated, the number of people sheltered in place, and the impact on the environment</li> <li>– emergency response actions taken</li> <li>– the factors that contributed to the incident including the initiating event, direct and indirect contributing factors, and root causes determined by conducting an analysis for each incident using a recognized method</li> <li>– any recommendations resulting from the investigation and a schedule for addressing them.</li> </ul> <p>Verify that a summary was prepared at the conclusion of the investigation and included at a minimum:</p> <ul style="list-style-type: none"> <li>– date of incident</li> <li>– date investigation began</li> </ul>

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<p><b>AE.1.13.US.</b> Owners or operators of a stationary source which are required to submit a single RMP and are Program 3 eligible must meet specific requirements (40 CFR 68.10(h), 68.10(e), 68.12(d), 68.15, 68.20, 68.36, 68.39, and 68.200) [Added January 2014; Revised April 2017; Revised July 2017].</p>	<ul style="list-style-type: none"> <li>– a description of the incident;</li> <li>– the factors that contributed to the incident</li> <li>– any recommendations resulting from the investigation.</li> </ul> <p>Verify that investigation findings and recommendations are promptly addressed and resolved and resolutions and corrective actions are documented.</p> <p>Verify that the findings are reviewed with all affected personnel whose job tasks are affected by the findings.</p> <p>Verify that investigation reports are retained for 5 yr.</p> <p>(NOTE: The effective date of the Risk Management Program Amendments published in the Federal Register on 13 January 2017 (82 FR 4594) and incorporated into this checklist item as part of the June 2017 edition has been delayed until 19 February 2019.)</p> <p>(NOTE: See checklist item AE.1.9.US for information on which stationary sources are required to submit RMP.)</p> <p>(NOTE: A covered process is eligible for Program 3 requirements if the process does not meet the requirements for Program 1 [see checklist item AE.1.10.US] and if either of the following conditions is met:</p> <ul style="list-style-type: none"> <li>– the process is in NAICS code 32211, 32411, 32511, 325181, 325188, 325192, 325199, 325211, 325311, or 32532</li> <li>– the process is subject to the OSHA process safety management standard, 29 CFR 1910.119.)</li> </ul> <p>Verify that owners or operators of stationary sources eligible for Program 3 requirements meet the requirements for submitting a single RMP (see checklist item AE.1.9.US.) and:</p> <ul style="list-style-type: none"> <li>– develop and implement a management system</li> <li>– conduct a hazard assessment, including: <ul style="list-style-type: none"> <li>– offsite consequence analysis (see text of 40 CFR 68.22 for details)</li> <li>– worst case release scenario analysis (see text of 40 CFR 68.25 for details)</li> <li>– alternative release scenario alternatives (see text of 40 CFR 68.29 for details)</li> </ul> </li> <li>– implement the required prevention requirements</li> <li>– coordinate response actions with local emergency planning and response agencies as provided in 40 CFR 68.93 (see checklist item AE.1.15.US)</li> <li>– develop and implement an emergency response program, and conduct exercises, as provided in 40 CFR 68.90 to 68.96 (see checklist item AE.1.15.US)</li> </ul>

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	<p>– submit as part of the RMP the data on prevention program elements for Program 3 processes as detailed in 40 CFR 68.175 (see text).</p> <p>Verify that the owner or operator reviews and updates the offsite consequence analyses at least once every 5 yr.</p> <p>Verify that, if changes in processes, quantities stored or handled, or any other aspect of the stationary source might reasonably be expected to increase or decrease the distance to the endpoint by a factor of two or more, the owner or operator completes a revised analysis within 6 mo of the change and submits a revised RMP.</p> <p>Verify that the owner or operator maintains the following records on the offsite consequence analyses:</p> <ul style="list-style-type: none"> <li>– for worst-case scenarios, a description of the vessel or pipeline and substance selected as worst case, assumptions and parameters used, and the rationale for selection; assumptions shall include use of any administrative controls and any passive mitigation that were assumed to limit the quantity that could be released; documentation includes the anticipated effect of the controls and mitigation on the release quantity and rate</li> <li>– for alternative release scenarios, a description of the scenarios identified, assumptions and parameters used, and the rationale for the selection of specific scenarios; assumptions shall include use of any administrative controls and any mitigation that were assumed to limit the quantity that could be released; documentation includes the effect of the controls and mitigation on the release quantity and rate</li> <li>– documentation of estimated quantity released, release rate, and duration of release</li> <li>– methodology used to determine distance to endpoints</li> <li>– data used to estimate population and environmental receptors potentially affected.</li> </ul> <p>Verify that the owner or operator of a stationary source with processes subject to Program 3 develops a management system to oversee the implementation of the risk management program elements.</p> <p>Verify that the owner or operator has assigned a qualified person or position that has the overall responsibility for the development, implementation, and integration of the RMP elements.</p> <p>(NOTE: When responsibility for implementing individual requirements of 40 CFR 68 is assigned to persons other than the person identified by the owner or operator, the names or positions of these people must be documented and the lines of authority defined through an organization chart or similar document.)</p>

<p style="text-align: center;"><b>COMPLIANCE CATEGORY</b>  <b>AIR EMISSIONS MANAGEMENT</b>  <b>U.S. TEAM Guide</b></p>	
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<p><b>AE.1.14.US.</b> Owners or operators of a stationary source which are required to submit a single RMP and are Program 3 eligible must meet prevention program requirements (40 CFR 68.10(h), 68.65 through 68.79, and 68.81 through 68.87) [Added January 2014; Revised April 2017; Revised July 2017].</p>	<p>Verify that, if at any time a covered process no longer meets the eligibility criteria of its Program level, the owner or operator complies with the requirements of the new Program level that applies to the process and update the RMP.</p> <p>Verify that records are kept for 5 yr.</p> <p>(NOTE: The effective date of the Risk Management Program Amendments published in the Federal Register on 13 January 2017 (82 FR 4594) and incorporated into this checklist item as part of the June 2017 edition has been delayed until 19 February 2019.)</p> <p>(NOTE: See checklist item AE.1.9.US for information on which stationary sources are required to submit RMP.)</p> <p>(NOTE: A covered process is eligible for Program 3 requirements if the process does not meet the requirements for Program 1 [see checklist item AE.1.10.US] and if either of the following conditions is met:</p> <ul style="list-style-type: none"> <li>– the process is in NAICS code 32211, 32411, 32511, 325181, 325188, 325192, 325199, 325211, 325311, or 32532</li> <li>– the process is subject to the OSHA process safety management standard, 29 CFR 1910.119.)</li> </ul> <p>Verify that the owner or operator of a stationary source with processes subject to Program 3 completes a compilation of written process safety information before conducting any process hazard analysis required by the rule and keeps the process safety information up-to-date.</p> <p>(NOTE: The compilation of written process safety information is to enable the owner or operator and the employees involved in operating the process to identify and understand the hazards posed by those processes involving regulated substances.)</p> <p>Verify that the process safety information includes information pertaining to the hazards of the regulated substances used or produced by the process, information pertaining to the technology of the process, and information pertaining to the equipment in the process.</p> <p>Verify that the information pertaining to the hazards of the regulated substances in the process consists of at least the following:</p> <ul style="list-style-type: none"> <li>– toxicity information</li> <li>– permissible exposure limits</li> <li>– physical data</li> <li>– reactivity data</li> <li>– corrosivity data</li> <li>– thermal and chemical stability data</li> </ul>

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	<p>– hazardous effects of inadvertent mixing of different materials that could foreseeably occur.</p> <p>(NOTE: Safety Data Sheets (SDS) meeting the requirements of 29 CFR 1910.1200(g) may be used to comply with this requirement to the extent they contain the required information.)</p> <p>Verify that information concerning the technology of the process includes at least the following:</p> <ul style="list-style-type: none"> <li>– a block flow diagram or simplified process flow diagram</li> <li>– process chemistry</li> <li>– maximum intended inventory</li> <li>– safe upper and lower limits for such items as temperatures, pressures, flows or compositions</li> <li>– an evaluation of the consequences of deviations.</li> </ul> <p>(NOTE: Where the original technical information no longer exists, this information may be developed in conjunction with the process hazard analysis in sufficient detail to support the analysis.)</p> <p>Verify that information pertaining to the equipment in the process include:</p> <ul style="list-style-type: none"> <li>– materials of construction</li> <li>– piping and instrument diagrams (P&amp;ID's)</li> <li>– electrical classification</li> <li>– relief system design and design basis</li> <li>– ventilation system design</li> <li>– design codes and standards employed</li> <li>– material and energy balances for processes built after 21 June 1999</li> <li>– safety systems (e.g. interlocks, detection or suppression systems).</li> </ul> <p>Verify that the owner or operator documents that equipment complies with recognized and generally accepted good engineering practices.</p> <p>Verify that, for existing equipment designed and constructed in accordance with codes, standards, or practices that are no longer in general use, the owner or operator determines and documents that the equipment is designed, maintained, inspected, tested, and operating in a safe manner.</p> <p>Verify that the owner or operator performs an initial process hazard analysis (hazard evaluation) on processes covered by 40 CFR 68 (see checklist item AE.1.9.US).</p> <p>Verify that the process hazard analysis is appropriate to the complexity of the process and identifies, evaluates, and controls the hazards involved in the process.</p>

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	<p>Verify that the owner or operator determines and documents the priority order for conducting process hazard analyses based on a rationale which includes such considerations as extent of the process hazards, number of potentially affected employees, age of the process, and operating history of the process.</p> <p>(NOTE: Process hazards analyses completed to comply with 29 CFR 1910.119(e) are acceptable as initial process hazards analyses. These process hazard analyses shall be updated and revalidated, based on their completion date.)</p> <p>Verify that the owner or operator uses one or more of the following methodologies that are appropriate to determine and evaluate the hazards of the process being analyzed:</p> <ul style="list-style-type: none"> <li>– what-if</li> <li>– checklist</li> <li>– what-if/checklist;</li> <li>– hazard and operability study (HAZOP)</li> <li>– failure mode and effects analysis (FMEA)</li> <li>– fault tree analysis</li> <li>– an appropriate equivalent methodology.</li> </ul> <p>Verify that the process hazard analysis addresses:</p> <ul style="list-style-type: none"> <li>– the hazards of the process</li> <li>– the findings from all required incident investigations as well as any other potential failure scenarios</li> <li>– engineering and administrative controls applicable to the hazards and their interrelationships such as appropriate application of detection methodologies to provide early warning of releases (Acceptable detection methods might include process monitoring and control instrumentation with alarms, and detection hardware such as hydrocarbon sensors.)</li> <li>– consequences of failure of engineering and administrative controls</li> <li>– stationary source siting</li> <li>– human factors</li> <li>– a qualitative evaluation of a range of the possible safety and health effects of failure of controls</li> <li>– for processes in NAICS 322, 324, and 325, safer technology and alternative risk management measures applicable to eliminating or reducing risk from process hazards.</li> </ul> <p>(NOTE: The owner or operator shall consider, in the following order of preference inherently safer technology or design, passive measures, active measures, and procedural measures. A combination of risk management measures may be used to achieve the desired risk reduction. The owner or operator shall determine the practicability of the inherently safer technologies and designs considered.)</p>

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	<p>Verify that the process hazard analysis is performed by a team with expertise in engineering and process operations, and the team includes at least one employee who has experience and knowledge specific to the process being evaluated.</p> <p>Verify also that one member of the team is knowledgeable in the specific process hazard analysis methodology being used.</p> <p>Verify that the owner or operator establishes a system to promptly address the team's findings and recommendations; assure that the recommendations are resolved in a timely manner and that the resolution is documented; document what actions are to be taken; complete actions as soon as possible; develop a written schedule of when these actions are to be completed; communicate the actions to operating, maintenance and other employees whose work assignments are in the process and who may be affected by the recommendations or actions.</p> <p>Verify that, at least every 5 yr after the completion of the initial process hazard analysis, the process hazard analysis is updated and revalidated by a team to assure that the process hazard analysis is consistent with the current process.</p> <p>(NOTE: Updated and revalidated process hazard analyses completed to comply with 29 CFR 1910.119(e) are acceptable.)</p> <p>Verify that the owner or operator retains process hazards analyses and updates or revalidations for each covered processes as well as the documented resolution of recommendations for the life of the process.</p> <p>Verify that the owner or operator develops and implements written operating procedures that provide clear instructions for safely conducting activities involved in each covered process consistent with the process safety information and addresses at least the following elements:</p> <ul style="list-style-type: none"> <li>– steps for each operating phase: <ul style="list-style-type: none"> <li>– initial startup</li> <li>– normal operations</li> <li>– temporary operations</li> <li>– emergency shutdown including the conditions under which emergency shutdown is required, and the assignment of shutdown responsibility to qualified operators to ensure that emergency shutdown is executed in a safe and timely manner</li> <li>– emergency operations</li> <li>– normal shutdown</li> <li>– startup following a turnaround, or after an emergency shutdown.</li> </ul> </li> <li>– operating limits: <ul style="list-style-type: none"> <li>– consequences of deviation</li> <li>– steps required to correct or avoid deviation</li> </ul> </li> <li>– safety and health considerations:</li> </ul>

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	<ul style="list-style-type: none"> <li>– properties of, and hazards presented by, the chemicals used in the process</li> <li>– precautions necessary to prevent exposure, including engineering controls, administrative controls, and personal protective equipment</li> <li>– control measures to be taken if physical contact or airborne exposure occurs</li> <li>– quality control for raw materials and control of hazardous chemical inventory levels</li> <li>– any special or unique hazards.</li> <li>– safety systems and their functions.</li> </ul> <p>Verify that operating procedures are readily accessible to employees who work in or maintain a process.</p> <p>Verify that the operating procedures are reviewed as often as necessary to assure that they reflect current operating practice, including changes that result from changes in process chemicals, technology, and equipment, and changes to stationary sources.</p> <p>Verify that the owner or operator certifies annually that the operating procedures are current and accurate.</p> <p>Verify that the owner or operator develops and implements safe work practices to provide for the control of hazards during operations such as lockout/tagout; confined space entry; opening process equipment or piping; and control over entrance into a stationary source by maintenance, contractor, laboratory, or other support personnel. These safe work practices shall apply to employees and contractor employees.</p> <p>Verify that each employee presently involved in operating a process, and each employee before being involved in operating a newly assigned process, are trained in an overview of the process and in the operating procedures.</p> <p>Verify that the training includes emphasis on the specific safety and health hazards, emergency operations including shutdown, and safe work practices applicable to the employee's job tasks.</p> <p>Verify that refresher training is provided at least every 3 yr, and more often if necessary, to each employee involved in operating a process to assure that the employee understands and adheres to the current operating procedures of the process.</p> <p>Verify that the owner or operator prepares a record which contains the identity of the employee, the date of training, and the means used to verify that the employee understood the training.</p>

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	<p>(NOTE: For the purposes of training requirements, the term “employee” also includes supervisors with process operational responsibilities.)</p> <p>Verify that the owner or operator establishes and implement written procedures to maintain the on-going integrity of the process equipment.</p> <p>(NOTE: As used in this checklist item, process equipment includes” pressure vessels and storage tanks; piping systems [including piping components such as valves]; relief and vent systems and devices; emergency shutdown systems; controls [including monitoring devices and sensors, alarms, and interlocks] and, pumps.)</p> <p>Verify that each employee involved in maintaining the on-going integrity of process equipment is trained in an overview of that process and its hazards and in the procedures applicable to the employee's job tasks to assure that the employee can perform the job tasks in a safe manner.</p> <p>Verify that inspections and tests are performed on process equipment and follow recognized and generally accepted good engineering practices.</p> <p>(NOTE: The frequency of inspections and tests of process equipment shall be consistent with applicable manufacturers' recommendations and good engineering practices, and more frequently if determined to be necessary by prior operating experience.)</p> <p>Verify that each inspection and test that has been performed on process equipment is documented and that the documentation identifies the date of the inspection or test, the name of the person who performed the inspection or test, the serial number or other identifier of the equipment on which the inspection or test was performed, a description of the inspection or test performed, and the results of the inspection or test.</p> <p>Verify that deficiencies in equipment that are outside acceptable limits (defined by the process safety information) are corrected before further use or in a safe and timely manner when necessary means are taken to assure safe operation.</p> <p>(NOTE: In the construction of new plants and equipment, the owner or operator shall assure that equipment as it is fabricated is suitable for the process application for which they will be used. Appropriate checks and inspections shall be performed to assure that equipment is installed properly and consistent with design specifications and the manufacturer's instructions.)</p> <p>Verify that the owner or operator assures that maintenance materials, spare parts and equipment are suitable for the process application for which they will be used.</p> <p>Verify that the owner or operator has established and implemented written procedures to manage changes (except for “replacements in kind”) to process</p>

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	<p>chemicals, technology, equipment, and procedures; and, changes to stationary sources that affect a covered process.</p> <p>Verify that the written procedures assure that the following considerations are addressed prior to any change:</p> <ul style="list-style-type: none"> <li>– the technical basis for the proposed change</li> <li>– impact of change on safety and health</li> <li>– modifications to operating procedures</li> <li>– necessary time period for the change</li> <li>– authorization requirements for the proposed change.</li> </ul> <p>Verify that employees involved in operating a process and maintenance and contract employees whose job tasks will be affected by a change in the process are informed of, and trained in, the change prior to start-up of the process or affected part of the process.</p> <p>Verify that if a change results in a change in the process safety information or the operating procedures or practices, the process safety information or operating procedures or practices are updated accordingly.</p> <p>Verify that the owner or operator performs a pre-startup safety review for new stationary sources and for modified stationary sources when the modification is significant enough to require a change in the process safety information and the pre-startup safety review confirms that prior to the introduction of regulated substances to a process:</p> <ul style="list-style-type: none"> <li>– construction and equipment is in accordance with design specifications</li> <li>– safety, operating, maintenance, and emergency procedures are in place and are adequate</li> <li>– for new stationary sources, a process hazard analysis has been performed and recommendations have been resolved or implemented before startup; and modified stationary sources meet the requirements concerning the management of change</li> <li>– training of each employee involved in operating a process has been completed.</li> </ul> <p>Verify that the owner or operator certifies that they have evaluated compliance with the provisions of 40 CFR 68 at least every 3 yr to verify that required developed procedures and practices are adequate and are being followed.</p> <p>Verify that the compliance audit is conducted by at least one person knowledgeable in the process and a report of the findings of the audit is developed.</p> <p>Verify that the owner or operator promptly determines and documents an appropriate response to each of the findings of the compliance audit, and document that deficiencies have been corrected.</p>

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	<p>Verify that a third-party audit is conducted if one of the following occurs:</p> <ul style="list-style-type: none"> <li>– an accidental release that resulted in deaths, injuries, or significant property damage on site or offsite deaths, injuries, evacuations, sheltering in place, property damage, or environmental damage from a covered process at a stationary source has occurred</li> <li>– an implementing agency requires a third-party audit due to conditions at the stationary source that could lead to an accidental release of a regulated substance, or when a previous third-party audit failed to meet the competency or independence criteria of 40 CFR 68.80(c) (see checklist item AE.1.18.US).</li> </ul> <p>Verify that, for third party audits due to an accidental release from a covered process at a stationary source, the audit and audit report is completed within 12 mo of the release.</p> <p>(NOTE: Requirements for conducting a third party audit can be found at 40 CFR 68.80 [see checklist item AE.1.18.US].)</p> <p>Verify that the owner or operator retains the two (2) most recent compliance audit reports.</p> <p>Verify that the owner or operator investigates each incident which met either of the following parameters:</p> <ul style="list-style-type: none"> <li>– the incident resulted in a catastrophic release (including when the affected process is decommissioned or destroyed following, or as the result of, an incident</li> <li>– the incident could reasonably have resulted in a catastrophic release (i.e., was a near miss).</li> </ul> <p>Verify that an incident investigation team is established and consists of at least one person knowledgeable in the process involved, including a contract employee if the incident involved work of the contractor, and other persons with appropriate knowledge and experience to thoroughly investigate and analyze the incident.</p> <p>Verify that the report prepared at the conclusion of the investigation includes at a minimum:</p> <ul style="list-style-type: none"> <li>– date, time, and location of incident</li> <li>– date investigation began</li> <li>– a description of the incident, in chronological order, providing all the facts</li> <li>– the factors that contributed to the incident</li> <li>– the name and amount of the regulated substance involved in the release (e.g., fire, explosion, toxic gas loss of containment) or near miss and the duration of the event</li> </ul>

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	<ul style="list-style-type: none"> <li>– the consequences, if any, of the incident including, but not limited to: injuries, fatalities, the number of people evacuated, the number of people sheltered in place, and the impact on the environment</li> <li>– emergency response actions taken</li> <li>– the factors that contributed to the incident including the initiating event, direct and indirect contributing factors, and root causes determined by conducting an analysis for each incident using a recognized method</li> <li>– any recommendations resulting from the investigation, and a schedule for addressing them.</li> </ul> <p>(NOTE: The report shall be completed within 12 mo of the incident, unless the implementing agency approves, in writing, an extension of time.)</p> <p>Verify that the owner or operator establishes a system to promptly address and resolve the incident report findings and recommendations and resolutions and corrective actions are documented.</p> <p>Verify that the report is reviewed with all affected personnel whose job tasks are relevant to the incident findings including contract employees where applicable.</p> <p>Verify that incident investigation reports are retained for 5 yr.</p> <p>Verify that the owner or operator has developed a written plan of action regarding the implementation of the employee participation required by this checklist item.</p> <p>Verify that employees and their representatives are consulted on the conduct and development of process hazards analyses and on the development of the other elements of process safety management.</p> <p>Verify that all employees and their representatives are provided with access to process hazard analyses and to all other information required to be developed under 40 CFR 68.</p> <p>Verify that the owner or operator issues a hot work permit for hot work operations conducted on or near a covered process and the permit documents that the fire prevention and protection requirements in 29 CFR 1910.252(a) have been implemented prior to beginning the hot work operations; it shall indicate the date(s) authorized for hot work; and identify the object on which hot work is to be performed.</p> <p>Verify that the hot work permit is kept on file until completion of the hot work operations.</p> <p>Verify that, when selecting a contractor, the owner or operator obtains and evaluates information regarding the contract owner or operator's safety performance and programs.</p>

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<p><b>AE.1.15.US.</b> Owners or operators of a stationary source which are required to submit a single RMP and are Program 2 or Program 3 eligible must meet specific emergency response requirements (40 CFR 68.90, 68.93, 68.95, and 68.96) [Added January 2014;</p>	<p>(NOTE: As used in this checklist item, “contractors” are those contractors performing maintenance or repair, turnaround, major renovation, or specialty work on or adjacent to a covered process. It does not apply to contractors providing incidental services which do not influence process safety, such as janitorial work, food and drink services, laundry, delivery or other supply services.)</p> <p>Verify that the owner or operator has informed the contract owner or operator of known potential fire, explosion, or toxic release hazards related to the contractor's work and the process and has explained to the contract owner or operator the applicable provisions of 40 CFR 68, subpart E.</p> <p>Verify that the owner or operator has developed and implemented safe work practices consistent with 40 CFR 68.69(d), to control the entrance, presence, and exit of the contract owner or operator and contract employees in covered process areas.</p> <p>Verify that the owner or operator periodically evaluates the performance of the contract owner or operator in fulfilling their obligations.</p> <p>(NOTE: The following are the responsibilities of the contract owner or operator:</p> <ul style="list-style-type: none"> <li>– assure that each contract employee is trained in the work practices necessary to safely perform his/her job</li> <li>– assure that each contract employee is instructed in the known potential fire, explosion, or toxic release hazards related to his/her job and the process, and the applicable provisions of the emergency action plan</li> <li>– document that each contract employee has received and understood the training required by 40 CFR 68</li> <li>– prepare a record which contains the identity of the contract employee, the date of training, and the means used to verify that the employee understood the training</li> <li>– assure that each contract employee follows the safety rules of the stationary source including the safe work practices required by 40 CFR 68.69(d)</li> <li>– advise the owner or operator of any unique hazards presented by the contract owner or operator's work, or of any hazards found by the contract owner or operator's work.)</li> </ul> <p>(NOTE: The effective date of the Risk Management Program Amendments published in the Federal Register on 13 January 2017 (82 FR 4594) and incorporated into this checklist item as part of the June 2017 edition has been delayed until 19 February 2019.)</p> <p>(NOTE: See checklist item AE.1.9.US for information on which stationary sources are required to submit RMP. For Program 2 eligibility parameters see AE.1.11.US. For Program 3 eligibility parameters see checklist item AE.1.13.US.)</p>

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<b>Revised April 2017; Revised July 2017].</b>	<p>(NOTE: The owner or operator of a stationary source whose employees will not respond to accidental releases of regulated substances need not develop and implement an emergency response program if:</p> <ul style="list-style-type: none"> <li>– for stationary sources with any regulated toxic substance held in a process above the threshold quantity, the stationary source is included in the community emergency response plan developed under 42 U.S.C. 11003</li> <li>– for stationary sources with only regulated flammable substances held in a process above the threshold quantity, the owner or operator has coordinated response actions with the local fire department</li> <li>– appropriate mechanisms are in place to notify emergency responders when there is a need for a response</li> <li>– the owner or operator performs the annual emergency response coordination activities</li> <li>– the owner or operator performs the annual notification exercises.)</li> </ul> <p>Verify that the owner or operator of a stationary source coordinates response needs with local emergency planning and response organizations to determine how the stationary source is addressed in the community emergency response plan and to ensure that local response organizations are aware of the regulated substances at the stationary source, their quantities, the risks presented by covered processes, and the resources and capabilities at the stationary source to respond to an accidental release of a regulated substance.</p> <p>Verify that coordination occurs at least annually, and more frequently if necessary, to address changes: At the stationary source; in the stationary source's emergency response and/or emergency action plan; and/or in the community emergency response plan.</p> <p>Verify that coordination includes providing to the local emergency planning and response organizations:</p> <ul style="list-style-type: none"> <li>– the stationary source's emergency response plan if one exists;</li> <li>– emergency action plan</li> <li>– updated emergency contact information</li> <li>– any other information that local emergency</li> <li>– planning and response organizations identify as relevant to local emergency response planning.</li> </ul> <p>Verify that, for responding stationary sources, coordination also includes consulting with local emergency response officials to establish appropriate schedules and plans for field and tabletop exercises.</p> <p>Verify that the owner or operator requests an opportunity to meet with the local emergency planning committee (or equivalent) and/or local fire department as appropriate to review and discuss these materials.</p>

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	<p>Verify that the owner or operator documents coordination with local authorities, including: the names of individuals involved and their contact information (phone number, email address, and organizational affiliations); dates of coordination activities; and nature of coordination activities.</p> <p>Verify that the owner or operator develops and implements an emergency response program for the purpose of protecting public health and the environment.</p> <p>Verify that the emergency response program includes the following elements:</p> <ul style="list-style-type: none"> <li>– an emergency response plan, which is maintained at the stationary source and contain at least the following elements: <ul style="list-style-type: none"> <li>– procedures for informing the public and the appropriate Federal, state, and local emergency response agencies about accidental releases</li> <li>– documentation of proper first-aid and emergency medical treatment necessary to treat accidental human exposures</li> <li>– procedures and measures for emergency response after an accidental release of a regulated substance</li> </ul> </li> <li>– procedures for the use of emergency response equipment and for its inspection, testing, and maintenance</li> <li>– training for all employees in relevant procedures</li> <li>– procedures to review and update, as appropriate, the emergency response plan to reflect changes at the stationary source and ensure that employees are informed of changes.</li> </ul> <p>Verify that the owner or operator reviews and updates the plan as appropriate based on changes at the stationary source or new information obtained from coordination activities, emergency response exercises, incident investigations, or other available information, and that employees are informed of the changes.</p> <p>Verify that the emergency response plan is coordinated with the community emergency response plan developed under 42 U.S.C. 11003.</p> <p>(NOTE: Upon request of the local emergency planning committee (LEPC) or emergency response officials, the owner or operator shall promptly provide to the local emergency response officials information necessary for developing and implementing the community emergency response plan.)</p> <p>(NOTE: A written plan that complies with other Federal contingency plan regulations or is consistent with the approach in the National Response Team's Integrated Contingency Plan Guidance ("One Plan") and that includes the required elements may satisfy these requirements if the owner or operator also coordinates with the LEPC.)</p> <p>Verify that at least once each calendar year, the owner or operator of a stationary source with any Program 2 or Program 3 process conducts an exercise of the stationary source's emergency response notification mechanisms, as appropriate.</p>

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	<p>(NOTE: Owners or operators of responding stationary sources may perform the notification exercise as part of the required tabletop and field exercises.)</p> <p>Verify that the owner/operator maintains a written record of each notification exercise conducted over the last 5 yr.</p> <p>The owner or operator of a stationary source shall develop and implement an exercise program for its emergency response program.</p> <p>Verify that exercises involve facility emergency response personnel and, as appropriate, emergency response contractors.</p> <p>Verify that, when planning emergency response field and tabletop exercises, the owner or operator coordinates with local public emergency response officials and invites them to participate in the exercise.</p> <p>Verify that the emergency response exercise program includes emergency response field exercises involving the simulated accidental release of a regulated substance (i.e., toxic substance release or release of a regulated flammable substance involving a fire and/or explosion).</p> <p>(NOTE: The frequency of field exercises will be coordinated with local emergency response officials but at a minimum shall be done at least once every 10 yr.)</p> <p>Verify that field exercises include:</p> <ul style="list-style-type: none"> <li>– tests of procedures to notify the public and the appropriate Federal, state, and local emergency response agencies about an accidental release</li> <li>– tests of procedures and measures for emergency response actions including evacuations and medical treatment; tests of communications systems</li> <li>– mobilization of facility emergency response personnel, including contractors, as appropriate</li> <li>– coordination with local emergency responders; emergency response equipment deployment</li> <li>– any other action identified in the emergency response program, as appropriate.</li> </ul> <p>Verify that a tabletop exercise involving the simulated accidental release of a regulated substance is conducted in consultation with local emergency response officials, but at a minimum of at least once every 3 yr.</p> <p>Verify that the tabletop exercise include discussions of:</p> <ul style="list-style-type: none"> <li>– procedures to notify the public and the appropriate Federal, state, and local emergency response agencies</li> </ul>

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<p><b>AE.1.16.US.</b> Owners and operators of any stationary source producing, processing, handling, or storing regulated substances or other extremely hazardous substances have a general duty to identify hazards which may result from releases, minimize releases, and minimize the consequences of releases which do occur (Clean Air Act, para 112(r)(1)) <b>[Added January 2014]</b>.</p>	<ul style="list-style-type: none"> <li>– procedures and measures for emergency response including evacuations and medical treatment; identification of facility emergency response personnel and/or contractors and their responsibilities</li> <li>– coordination with local emergency responders</li> <li>– procedures for emergency response equipment deployment</li> <li>– any other action identified in the emergency response plan, as appropriate.</li> </ul> <p>Verify that the owner/operator prepares an evaluation report within 90 days of each exercise including the following information:</p> <ul style="list-style-type: none"> <li>– a description of the exercise scenario</li> <li>– names and organizations of each participant</li> <li>– an evaluation of the exercise results including lessons learned</li> <li>– recommendations for improvement or revisions to the emergency response exercise program and emergency response program</li> <li>– a schedule to promptly address and resolve recommendations.</li> </ul> <p>(NOTE: The owner or operator may satisfy the requirement to conduct notification, field and/or tabletop exercises through:</p> <ul style="list-style-type: none"> <li>– exercises conducted to meet other Federal, state or local exercise requirements, provided the exercise meets the requirements, as appropriate</li> <li>– response to an accidental release, provided the response includes the required actions, as appropriate.</li> </ul> <p>When used to meet field and/or tabletop exercise requirements, the owner or operator will prepare an after-action report comparable to the exercise evaluation report, within 90 days of the incident.)</p> <p>(NOTE: For the purposes of this checklist item, the phrase “regulated substance or other extremely hazardous substances” means the list of substances in 40 CFR 68 [see Appendix 1-1a] or any other extremely hazardous substances [see Appendices A and B of 40 CFR 355].)</p> <p>(NOTE: This requirement applies to stationary sources producing, processing, handling, or storing regulated substances or other extremely hazardous substances regardless of the amount of the substance onsite.)</p> <p>(NOTE: Under CAA, para 112(r)(2)(c) a stationary source means “any buildings, structures, equipment, installations or substance emitting stationary activities:</p> <ul style="list-style-type: none"> <li>– which belong to the same industrial group</li> <li>– which are located on one or more contiguous properties</li> <li>– which are under the control of the same person (or persons under common control), and</li> <li>– from which an accidental release may occur.)</li> </ul> <p>Verify that owners and operators of any stationary source producing, processing, handling, or storing regulated substances or other extremely hazardous substances</p>

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<p><b>AE.1.17.US.</b> Third party audits of a stationary source which are required to submit a single RMP and are Program 2 eligible must meet specific requirements (40 CFR 68.58(f) and 68.59) <b>[Added April 2017; Revised July 2017]</b>.</p>	<p>have identified hazards which may result from releases using appropriate hazard assessment techniques.</p> <p>Verify that owners and operators of any stationary source producing, processing, handling, or storing regulated substances or other extremely hazardous substances design and maintain a safe facility taking such steps as are necessary to prevent releases.</p> <p>Verify that owners and operators of any stationary source producing, processing, handling, or storing regulated substances or other extremely hazardous substances minimize the consequences of accidental releases which do occur.</p> <p>(NOTE: This General Duty to identify hazards, maintain a safe facility, and minimize consequences of accidental releases is to be done in the same manner and to the same extent as the general duty clause in the Occupational Safety and Health Act [OSHA].)</p> <p>(NOTE: This is a separate requirement from that of the Chemical Accident Prevention Program which is enforced through the Risk Management Plan requirements in 40 CFR 68.)</p> <p>(NOTE: EPA Guidance on how to implement the General Duty Clause can be found at <a href="http://www.epa.gov/oem/docs/chem/gdcregionalguidance.pdf">http://www.epa.gov/oem/docs/chem/gdcregionalguidance.pdf</a>.)</p> <p>(NOTE: The effective date of the Risk Management Program Amendments published in the Federal Register on 13 January 2017 (82 FR 4594) and incorporated into this checklist item as part of the June 2017 edition has been delayed until 19 February 2019.)</p> <p>(NOTE: See checklist item AE.1.9.US for information on which stationary sources are required to submit RMP.)</p> <p>(NOTE: A covered process is eligible for Program 2 requirements if it does not meet the eligibility requirements for either Program 1 [see checklist item AE.1.10.US] or Program 3 [see checklist item AE.1.13.US].)</p> <p>Verify that the owner or operator of a stationary source with processes subject to Program 2 compiles and maintain the following up-to-date safety information related to the regulated substances, processes, and equipment:</p> <ul style="list-style-type: none"> <li>– Safety Data Sheets (SDS) that meet the requirements of 29 CFR 1910.1200(g)</li> <li>– maximum intended inventory of equipment in which the regulated substances are stored or processed</li> <li>– safe upper and lower temperatures, pressures, flows, and compositions</li> <li>– equipment specifications</li> <li>– codes and standards used to design, build, and operate the process.)</li> </ul>

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	<p>Verify that, when a third-party audit is required, the owner or operator does one of the following:</p> <ul style="list-style-type: none"> <li>– engages a third-party auditor meeting all of the competency and independence criteria</li> <li>– assembles an auditing team, led by a third-party auditor meeting all of the competency and independence criteria, including               <ul style="list-style-type: none"> <li>– other employees of the third-party auditor firm meeting the independence criteria</li> <li>– other personnel not employed by the third-party auditor firm, including facility personnel.</li> </ul> </li> </ul> <p>Verify that the owner or operator documents that the third-party auditor(s) meet the competency requirements for third party auditors to be:</p> <ul style="list-style-type: none"> <li>– knowledgeable with the requirements of 40 CFR 68</li> <li>– experienced with the stationary source type and processes being audited and applicable recognized and generally accepted good engineering practices</li> <li>– trained and/or certified in proper auditing techniques.</li> </ul> <p>Verify that the owner or operator documents that the third-party auditor(s) meet the independence requirements for third party auditors by:</p> <ul style="list-style-type: none"> <li>– acting impartially when performing all activities under 40 CFR 68</li> <li>– receiving no financial benefit from the outcome of the audit, apart from payment for auditing services</li> <li>– not having conducted past research, development, design, construction services, or consulting for the owner or operator within the last 2 yr</li> <li>– not providing other business or consulting services to the owner or operator, including advice or assistance to implement the findings or recommendations in an audit report, for a period of at least 2 yr following submission of the final audit report</li> <li>– ensuring that all third-party personnel involved in the audit sign and date a conflict of interest statement documenting that they meet the independence criteria</li> <li>– ensuring that all third-party personnel involved in the audit do not accept future employment with the owner or operator of the stationary source for a period of at least 2 years following submission of the final audit report.</li> </ul> <p>(NOTE: Retired employees who otherwise satisfy the third-party auditor independence criteria in this section may qualify as independent if their sole continuing financial attachments to the owner or operator are employer-financed or managed retirement and/or health plans.)</p> <p>Verify that the auditor has written policies and procedures to ensure that all personnel comply with the competency and independence requirements.</p>

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	<p>Verify that the owner or operator ensures that the third-party auditor:</p> <ul style="list-style-type: none"> <li>– manages the audit and participates in audit initiation, design, implementation, and reporting</li> <li>– determines appropriate roles and responsibilities for the audit team members based on the qualifications of each team member</li> <li>– prepares the audit report and where there is a team, documents the full audit team's views in the final audit report</li> <li>– certifies the final audit report and its contents as meeting the requirements of 40 CFR 68</li> <li>– provides a copy of the audit report to the owner or operator.</li> </ul> <p>Verify that the audit report:</p> <ul style="list-style-type: none"> <li>– identify all persons participating on the audit team, including names, titles, employers and/or affiliations, and summaries of qualifications; including for third-party auditors information demonstrating that the competency requirements are met</li> <li>– describe or incorporate by reference the required policies and procedures</li> <li>– document the auditor's evaluation, for each covered process, of the owner or operator's compliance with the provisions of 40 CFR 68, Subpart C to determine whether the procedures and practices developed by the owner or operator are adequate and being followed</li> <li>– document the findings of the audit, including any identified compliance or performance deficiencies</li> <li>– summarize any significant revisions (if any) between draft and final versions of the report</li> <li>– include the following certification, signed and dated by the third-party auditor or third-party audit team member leading the audit: <ul style="list-style-type: none"> <li>– I certify that this RMP compliance audit report was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information upon which the audit is based. I further certify that the audit was conducted and this report was prepared pursuant to the requirements of subpart C of 40 CFR part 68 and all other applicable auditing, competency, independence, impartiality, and conflict of interest standards and protocols. Based on my personal knowledge and experience, and inquiry of personnel involved in the audit, the information submitted herein is true, accurate, and complete.</li> </ul> </li> </ul> <p>Verify that, as soon as possible, but no later than 90 days after receiving the final audit report, the owner or operator determines an appropriate response to each of the findings in the audit report, and develop a findings response report that includes:</p> <ul style="list-style-type: none"> <li>– a copy of the final audit report</li> <li>– an appropriate response to each of the audit report findings</li> </ul>

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<p><b>AE.1.18.US.</b> Third party audits of a stationary source which are required to submit a single RMP and are Program 3 eligible must meet specific requirements (40 CFR 68.79(f) and 68.80) [Added April 2017; Revised July 2017].</p>	<ul style="list-style-type: none"> <li>– a schedule for promptly addressing deficiencies</li> <li>– a certification, signed and dated by a senior corporate officer, or an official in an equivalent position, of the owner or operator of the stationary source, stating:             <ul style="list-style-type: none"> <li>– I certify under penalty of law that I have engaged a third-party to perform or lead an audit team to conduct a third-party audit in accordance with the requirements of 40 CFR 68.59 and that the attached RMP compliance audit report was received, reviewed, and responded to under my direction or supervision by qualified personnel. I further certify that appropriate responses to the findings have been identified and deficiencies were corrected, or are being corrected, consistent with the requirements of subpart C of 40 CFR part 68, as documented herein. Based on my personal knowledge and experience, or inquiry of personnel involved in evaluating the report findings and determining appropriate responses to the findings, the information submitted herein is true, accurate, and complete. I am aware that there are significant penalties for making false material statements, representations, or certifications, including the possibility of fines and imprisonment for knowing violations.</li> </ul> </li> </ul> <p>Verify that the owner or operator implements the schedule to address deficiencies identified in the audit findings response report and documents the action taken to address each deficiency, along with the date completed.</p> <p>Verify that the owner or operator immediately provides a copy of each required document, when completed, to the owner or operator's audit committee of the Board of Directors, or other comparable committee or individual, if applicable.</p> <p>Verify that the owner or operator retains at the stationary source, the two most recent final third-party audit reports, related findings response reports, documentation of actions taken to address deficiencies, and related records.</p> <p>(NOTE: This retention requirement does not apply to any document that is more than 5 yr old.)</p> <p>(NOTE: The effective date of the Risk Management Program Amendments published in the Federal Register on 13 January 2017 (82 FR 4594) and incorporated into this checklist item as part of the June 2017 edition has been delayed until 19 February 2019.)</p> <p>(NOTE: See checklist item AE.1.9.US for information on which stationary sources are required to submit RMP.)</p> <p>(NOTE: A covered process is eligible for Program 3 requirements if the process does not meet the requirements for Program 1 [see checklist item AE.1.10.US] and if either of the following conditions is met:</p>

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	<ul style="list-style-type: none"> <li>– the process is in NAICS code 32211, 32411, 32511, 325181, 325188, 325192, 325199, 325211, 325311, or 32532</li> <li>– the process is subject to the OSHA process safety management standard, 29 CFR 1910.119.)</li> </ul> <p>Verify that, when a third-party audit is required, the owner or operator does one of the following:</p> <ul style="list-style-type: none"> <li>– engages a third-party auditor meeting all of the competency and independence criteria</li> <li>– assembles an auditing team, led by a third-party auditor meeting all of the competency and independence criteria, including <ul style="list-style-type: none"> <li>– other employees of the third-party auditor firm meeting the independence criteria</li> <li>– other personnel not employed by the third-party auditor firm, including facility personnel.</li> </ul> </li> </ul> <p>Verify that the owner or operator documents that the third-party auditor(s) meet the competency requirements for third party auditors to be:</p> <ul style="list-style-type: none"> <li>– knowledgeable with the requirements of 40 CFR 68</li> <li>– experienced with the stationary source type and processes being audited and applicable recognized and generally accepted good engineering practices</li> <li>– trained and/or certified in proper auditing techniques.</li> </ul> <p>Verify that the owner or operator documents that the third-party auditor(s) meet the independence requirements for third party auditors by:</p> <ul style="list-style-type: none"> <li>– acting impartially when performing all activities under 40 CFR 68</li> <li>– receiving no financial benefit from the outcome of the audit, apart from payment for auditing services</li> <li>– not having conducted past research, development, design, construction services, or consulting for the owner or operator within the last 2 yr</li> <li>– not providing other business or consulting services to the owner or operator, including advice or assistance to implement the findings or recommendations in an audit report, for a period of at least 2 yr following submission of the final audit report</li> <li>– ensuring that all third-party personnel involved in the audit sign and date a conflict of interest statement documenting that they meet the independence criteria</li> <li>– ensuring that all third-party personnel involved in the audit do not accept future employment with the owner or operator of the stationary source for a period of at least 2 years following submission of the final audit report.</li> </ul> <p>(NOTE: Retired employees who otherwise satisfy the third-party auditor independence criteria in this section may qualify as independent if their sole</p>

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	<p>continuing financial attachments to the owner or operator are employer-financed or managed retirement and/or health plans.)</p> <p>Verify that the auditor has written policies and procedures to ensure that all personnel comply with the competency and independence requirements.</p> <p>Verify that the owner or operator ensures that the third-party auditor:</p> <ul style="list-style-type: none"> <li>– manages the audit and participates in audit initiation, design, implementation, and reporting</li> <li>– determines appropriate roles and responsibilities for the audit team members based on the qualifications of each team member</li> <li>– prepares the audit report and where there is a team, documents the full audit team's views in the final audit report</li> <li>– certifies the final audit report and its contents as meeting the requirements of 40 CFR 68</li> <li>– provides a copy of the audit report to the owner or operator.</li> </ul> <p>Verify that the audit report:</p> <ul style="list-style-type: none"> <li>– identifies all persons participating on the audit team, including names, titles, employers and/or affiliations, and summaries of qualifications; including for third-party auditors information demonstrating that the competency requirements are met</li> <li>– describes or incorporates by reference the required policies and procedures</li> <li>– documents the auditor's evaluation, for each covered process, of the owner or operator's compliance with the provisions of 40 CFR 68, Subpart D to determine whether the procedures and practices developed by the owner or operator are adequate and being followed</li> <li>– documents the findings of the audit, including any identified compliance or performance deficiencies</li> <li>– summarizes any significant revisions (if any) between draft and final versions of the report</li> <li>– includes the following certification, signed and dated by the third-party auditor or third-party audit team member leading the audit: <ul style="list-style-type: none"> <li>– I certify that this RMP compliance audit report was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information upon which the audit is based. I further certify that the audit was conducted and this report was prepared pursuant to the requirements of subpart D of 40 CFR part 68 and all other applicable auditing, competency, independence, impartiality, and conflict of interest standards and protocols. Based on my personal knowledge and experience, and inquiry of personnel involved in the audit, the information submitted herein is true, accurate, and complete.</li> </ul> </li> </ul>

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	<p>Verify that, as soon as possible, but no later than 90 days after receiving the final audit report, the owner or operator determines an appropriate response to each of the findings in the audit report, and develop a findings response report that includes:</p> <ul style="list-style-type: none"> <li>– a copy of the final audit report</li> <li>– an appropriate response to each of the audit report findings</li> <li>– a schedule for promptly addressing deficiencies</li> <li>– a certification, signed and dated by a senior corporate officer, or an official in an equivalent position, of the owner or operator of the stationary source, stating: <ul style="list-style-type: none"> <li>– I certify under penalty of law that I have engaged a third-party to perform or lead an audit team to conduct a third-party audit in accordance with the requirements of 40 CFR 68.80 and that the attached RMP compliance audit report was received, reviewed, and responded to under my direction or supervision by qualified personnel. I further certify that appropriate responses to the findings have been identified and deficiencies were corrected, or are being corrected, consistent with the requirements of subpart D of 40 CFR part 68, as documented herein. Based on my personal knowledge and experience, or inquiry of personnel involved in evaluating the report findings and determining appropriate responses to the findings, the information submitted herein is true, accurate, and complete. I am aware that there are significant penalties for making false material statements, representations, or certifications, including the possibility of fines and imprisonment for knowing violations.</li> </ul> </li> </ul> <p>Verify that the owner or operator implements the schedule to address deficiencies identified in the audit findings response report and documents the action taken to address each deficiency, along with the date completed.</p> <p>Verify that the owner or operator immediately provides a copy of each required document, when completed, to the owner or operator's audit committee of the Board of Directors, or other comparable committee or individual, if applicable.</p> <p>Verify that the owner or operator retains at the stationary source, the two most recent final third-party audit reports, related findings response reports, documentation of actions taken to address deficiencies, and related records.</p>



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<b>AE.2</b>  <b>MISSING. RISK MANAGEMENT, AND POSITIVE CHECKLIST ITEMS</b>  <b>AE.2.1.US.</b> Facilities are required to comply with all applicable Federal regulatory requirements not contained in this checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of finding).  <b>AE.2.2.US.</b> Risk management techniques should be promoted in environmental efforts (MP) [Added April 2002].  <b>AE.2.3.US.</b> Facilities should go above and beyond statutory and regulatory compliance (MP) [Added April 2002].	<p>Determine if any new regulations concerning air quality have been issued since the finalization of the manual.</p> <p>Determine if the facility has activities or facilities that are regulated but not addressed in the checklists.</p> <p>Verify that the facility is in compliance with all applicable and newly issued regulations.</p> <p>Determine if risk management techniques are promoted in environmental efforts.</p> <p>Determine if the facility has gone above and beyond simply complying with environmental requirements.</p>



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<p><b>AE.10</b></p> <p><b>STEAM GENERATORS</b></p> <p><b>AE.10.1.US.</b> Each fossil fuel-fired steam-generating unit of more than 73 MW (250 MMBtu/h) heat input rate and each fossil fuel and wood-residue fired steam-generating unit capable of firing fossil fuel at a heat input rate of more than 73 MW (250 MMBtu/h), that started construction or modification after 17 August 1971, is required to meet specific emission standards (40 CFR 60.40(a) through 60.40(c), 60.40(e), 60.42(a), 60.42(c) through 60.42(e), 60.43(a) through 60.43(d) through 60.44) <b>[Revised February 1995; Revised July 2007; Revised April 2009; Revised April 2011; Revised January 2012; Revised April 2012].</b></p>	<p>(NOTE: Any change to an existing fossil-fuel-fired steam generating unit to accommodate the use of combustible materials, other than fossil fuels, shall not bring that unit under the applicability of this checklist item.)</p> <p>Verify that, on and after the date on which the required performance test is completed, no owner or operator causes to be discharged into the atmosphere from any affected facility any gases that:</p> <ul style="list-style-type: none"> <li>– contains PM in excess of 43 nanograms per joule (ng/J) heat input (0.10 lb/MMBtu) derived from fossil fuel or fossil fuel and wood residue</li> <li>– exhibits greater than 20 percent opacity except for one six-min period per hour of not more than 27 percent opacity.</li> </ul> <p>(NOTE: An affected facility that combusts only gaseous or liquid fossil fuel [excluding residual oil] with potential SO<sub>2</sub> emissions rates of 26 ng/J [0.060 lb/MMBtu] or less and that does not use post-combustion technology to reduce emissions of SO<sub>2</sub> or PM is exempt from the PM standards.)</p> <p>(NOTE: As an alternative to meeting the requirements for particulate matter, an owner or operator that elects to install, calibrate, maintain, and operate a continuous emissions monitoring systems (CEMS) for measuring PM emissions can petition the Administrator (in writing) to comply with 40 CFR 60.42Da(a) which requires no discharges into the atmosphere from any affected facility gases that:</p> <ul style="list-style-type: none"> <li>– contain PM in excess of 43 ng/J heat input [0.10 lb/MMBtu] derived from fossil fuel or fossil fuel and wood residue</li> <li>– exhibit greater than 20 percent opacity except for one 6-min period per hour of not more than 27 percent opacity.</li> </ul> <p>If the Administrator grants the petition, the source will from then on [unless the unit is modified or reconstructed in the future] have to comply with the requirements in 40 CFR 60.43Da(a) which pertain to electric utility companies generating power for sale.)</p> <p>(NOTE: An affected facility that combusts only natural gas is exempt from the SO<sub>2</sub> and the particulate emissions standards.)</p> <p>Verify that, on and after the date on which the required performance test is completed, no owner or operator causes to be discharged into the atmosphere from any affected facility any gases that contain SO<sub>2</sub> in excess of:</p>

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	<ul style="list-style-type: none"> <li>– 340 ng/J heat input (0.80 lb/MMBtu) derived from liquid fossil fuel or liquid fossil fuel and wood residue</li> <li>– 520 ng/J heat input (1.2 lb/MMBtu) derived from solid fossil fuel or solid fossil fuel and wood residue, except as provided in paragraph (e) of this section.</li> </ul> <p>(NOTE: When different fossil fuels are burned simultaneously in any combination, the applicable SO<sub>2</sub> standard (in ng/J) shall be determined by proration using the formula in 40 CFR 60.44(b) (see text).)</p> <p>Verify that compliance with the SO<sub>2</sub> standard is based on the total heat input from all fossil fuels burned, including gaseous fuels.</p> <p>(NOTE: The owner or operator can petition the Administrator in writing to comply with alternate SO<sub>2</sub> or NO<sub>x</sub> limitations. Specifically, an owner or operator can petition to comply with the SO<sub>2</sub> standards in 40 CFR 60.42b(k)(4) [see checklist item AE.10.4.US] or one of the following in 40 CFR 60.43Da(i)(3):</p> <ul style="list-style-type: none"> <li>– 180 ng/J (1.4 lb/MWh) gross energy output on a 30-day rolling average basis</li> <li>– 65 ng/J (0.15 lb/MMBtu) heat input on a 30-day rolling average basis</li> <li>– 10 percent of the potential combustion concentration (90 percent reduction) on a 30-day rolling average basis.)</li> </ul> <p>If the Administrator grants the petition, the source will from then on (unless the unit is modified or reconstructed in the future).)</p> <p>Verify that, on and after the date on which the required performance test is completed, no owner or operator causes to be discharged into the atmosphere from any affected facility any gases that contain NO<sub>x</sub>, expressed as NO<sub>2</sub> in excess of:</p> <ul style="list-style-type: none"> <li>– 86 ng/J heat input (0.20 lb/MMBtu) derived from gaseous fossil fuel</li> <li>– 129 ng/J heat input (0.30 lb/MMBtu) derived from liquid fossil fuel, liquid fossil fuel and wood residue, or gaseous fossil fuel and wood residue</li> <li>– 300 ng/J heat input (0.70 lb/MMBtu) derived from solid fossil fuel or solid fossil fuel and wood residue (except lignite or a solid fossil fuel containing 25 percent, by weight, or more of coal refuse)</li> <li>– 260 ng/J heat input (0.60 lb MMBtu) derived from lignite or lignite and wood residue</li> <li>– 340 ng/J heat input (0.80 lb MMBtu) derived from lignite which is mined in North Dakota, South Dakota, or Montana and which is burned in a cyclone-fired unit, regardless of the types of fuel combusted in combination with that lignite.</li> </ul> <p>(NOTE: When different fossil fuels are burned simultaneously in any combination, the applicable NO<sub>2</sub> standard (in ng/J) shall be determined by proration using the formula in 40 CFR 60.45(b) (see text).)</p>

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<p><b>AE.10.2.US.</b> Each fossil fuel-fired steam-generating unit of more than 73 MW/ h (250 MMBtu/h) heat input rate and each fossil fuel and wood-residue fired steam-generating unit capable of firing fossil fuel at a heat input rate of more than 73 MW (250 MMBtu/h), that started construction or modification after 17 August 1971, is required to have specific types of monitoring instruments installed (40 CFR 60.40(a) through 60.40(c), 60.40(e), and 60.45(a) through 60.45(g)) <b>[Revised February 1995; Revised July 2007; Revised April 2009; Revised April 2011; Revised January 2012; Revised April 2012].</b></p>	<p>(NOTE: When a fossil fuel containing at least 25 percent, by weight, of coal refuse is burned in combination with gaseous, liquid, or other solid fossil fuel or wood residue, the standard for NO<sub>x</sub> does not apply.)</p> <p>(NOTE: Any facility covered under 40 CFR 60, subpart Da which applies to units generating electricity for sale or 40 CFR 60, Subpart KKKK which applies to air emissions from stationary combustion turbines [40 CFR 60.4300 through 60.4420, see checklist items AE.20.11.US through AE.20.13.US] is not covered under this checklist item.)</p> <p>(NOTE: Any change to an existing fossil-fuel-fired steam generating unit to accommodate the use of combustible materials, other than fossil fuels, shall not bring that unit under the applicability of this checklist item.)</p> <p>Verify that each owner or operator of an affected facility installs, calibrates, maintains, and operates a continuous opacity monitoring system (COMS) for measuring opacity and continuous emissions monitoring systems (CEMS) for measuring SO<sub>2</sub> emissions, NO<sub>x</sub> emissions, and either O<sub>2</sub> or CO<sub>2</sub>.</p> <p>(NOTE: The following exemptions for CEMS and COMS apply:</p> <ul style="list-style-type: none"> <li>– for a fossil-fuel-fired steam generator that combusts only gaseous or liquid fossil fuel (excluding residual oil) with potential SO<sub>2</sub> emissions rates of 26 ng/J (0.060 lb/MMBtu) or less and that does not use post-combustion technology to reduce emissions of SO<sub>2</sub> or PM, COMS for measuring the opacity of emissions and CEMS for measuring SO<sub>2</sub> emissions are not required if the owner or operator monitors SO<sub>2</sub> emissions by fuel sampling and analysis or fuel receipts</li> <li>– for a fossil-fuel-fired steam generator that does not use a flue gas desulfurization device, a CEMS for measuring SO<sub>2</sub> emissions is not required if the owner or operator monitors SO<sub>2</sub> emissions by fuel sampling and analysis</li> <li>– for affected facilities using a PM CEMS, a bag leak detection system to monitor the performance of a fabric filter (baghouse) according to the most current requirements in 40 CFR 60.48Da [see text], or an ESP predictive model to monitor the performance of the ESP developed in accordance and operated according to the most current requirements in 40 CFR 60.48Da a COMS is not required</li> <li>– for an affected facility that does not use post-combustion technology (except a wet scrubber) for reducing PM, SO<sub>2</sub>, or CO emissions, burns only gaseous fuels or fuel oils that contain less than or equal to 0.30 weight percent sulfur, and is operated such that emissions of CO to the atmosphere from the affected source are maintained at levels less than or equal to 0.15 lb/MMBtu on a boiler operating day average basis, a COMS for measuring the opacity of emissions is not required</li> <li>– for an affected facility at which the owner or operator installs, calibrates, operates, and maintains a particulate matter continuous parametric monitoring system (PM CPMS) according to 40 CFR 63, Subpart UUUUU (see text).)</li> </ul>

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	<p>(NOTE: Installation of a CEMS for NO<sub>x</sub> may be delayed until after the initial performance tests. If the owner or operator demonstrates during the performance test that emissions of NO<sub>x</sub> are less than 70 percent of the applicable standards in 40 CFR 60.44 (see checklist item AE.10.1.US), a CEMS for measuring NO<sub>x</sub> emissions is not required.)</p> <p>Verify that, if the initial performance test results show that NO<sub>x</sub> emissions are greater than 70 percent of the applicable standard, the owner or operator installs a CEMS for NO<sub>x</sub> within one year after the date of the initial performance tests and complies with all other applicable monitoring requirements.</p> <p>(NOTE: If an owner or operator is not required to and elects not to install any CEMS for SO<sub>2</sub> or NO<sub>x</sub>, a CEMS for measuring either O<sub>2</sub> or CO<sub>2</sub> is not required.)</p> <p>(NOTE: See the text of 40 CFR 60.45(c) for details on performance evaluations and calibration checks.)</p> <p>(NOTE: See the text of 40 CFR 60.45(b)(6), 60.45(b)(7), and 60.45(e) for the conversion procedures to use to convert the continuous monitoring data into units of the applicable standards [ng/J, lb/MMBtu].)</p> <p>Verify that excess emission and monitoring system performance reports are submitted to the Administrator semiannually for each 6-mo period in the calendar year.</p> <p>Verify that all semiannual reports are postmarked by the 30th day following the end of each 6-mo period.</p> <p>Verify that each excess emission and MSP report include the information required in 40 CFR 60.7(c) (see checklist item AE.1.8.US).</p> <p>Verify that periods of excess emissions and monitoring systems (MS) downtime that are reported are defined as follows:</p> <ul style="list-style-type: none"> <li>– opacity: excess emissions are defined as any six-minute period during which the average opacity of emissions exceeds 20 percent opacity, except that one six-minute average per hour of up to 27 percent opacity need not be reported</li> <li>– SO<sub>2</sub>: excess emissions for affected facilities are defined as one of the following: <ul style="list-style-type: none"> <li>– for affected facilities electing not to comply with 40 CFR 60.43(d) (see checklist item AE.10.1.US), any 3-h period during which the average emissions(arithmetic average of three contiguous one-hour periods) of SO<sub>2</sub> as measured by a CEMS exceed the applicable standard in 40 CFR 60.43</li> <li>– for affected facilities electing to comply with 40 CFR 60.43(d) (see checklist item AE.10.1.US), any 30 operating day period during which the average emissions (arithmetic average of all one-hour periods during</li> </ul> </li> </ul>

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	<p>the 30 operating days) of SO<sub>2</sub> as measured by a CEMS exceed the applicable standard in 40 CFR 60.43</p> <ul style="list-style-type: none"> <li>– NO<sub>x</sub>: excess emissions for affected facilities using a CEMS for measuring NO<sub>x</sub> are defined as one of the following: <ul style="list-style-type: none"> <li>– for affected facilities electing not to comply with 40 CFR 60.44(e) (see checklist item AE.10.1.US), any 3-h period during which the average emissions (arithmetic average of three contiguous one-hour periods) exceed the applicable standards in 40 CFR 60.44</li> <li>– for affected facilities electing to comply with 40 CFR 60.44(e) (see checklist item AE.10.1.US), any 30 operating day period during which the average emissions (arithmetic average of all 1-h periods during the 30 operating days) of NO<sub>x</sub> as measured by a CEMS exceed the applicable standard in 40 CFR 60.44</li> </ul> </li> <li>– particulate matter: excess emissions for affected facilities using a CEMS for measuring PM are defined as any boiler operating day period during which the average emissions (arithmetic average of all operating one-hour periods) exceed the applicable standards in 40 CFR 60.42 (see checklist item AE.10.1.US).</li> </ul> <p>(NOTE: Facilities complying with the 30-day SO<sub>2</sub> standard must use the most current associated SO<sub>2</sub> compliance and monitoring requirements in 40 CFR 60.48Da and 60.49Da or 40 CFR 60.45b and 60.47b, as applicable)</p> <p>(NOTE: Facilities complying with the 30-day NO<sub>x</sub> standard shall use the most current associated NO<sub>x</sub> compliance and monitoring requirements in 40 CFR 60.48Da and 60.49Da.)</p> <p>(NOTE: Affected facilities using PM CEMS must follow the most current applicable compliance and monitoring provisions in 40 CFR 60.48Da and 60.49Da.)</p> <p>(NOTE: Facilities complying with the 30-day SO<sub>2</sub> standard shall use the most current associated SO<sub>2</sub> compliance and monitoring requirements in 40 CFR 60.48Da and 60.49Da.)</p> <p>(NOTE: Facilities complying with the 30-day NO<sub>x</sub> standard shall use the most current associated NO<sub>x</sub> compliance and monitoring requirements in 40 CFR 60.48Da and 60.49Da.)</p> <p>Verify that the owner or operator of an affected facility subject to the opacity limits in 40 CFR 60.42 (see checklist item AE.10.1.US) that elects to monitor emissions according to the requirements outlined in this checklist item maintains records according to the following requirements, as applicable to the visible emissions monitoring method used:</p> <ul style="list-style-type: none"> <li>– for each performance test conducted using Method 9 of appendix A-4 of 40 CFR 60, keep the records including the following information: <ul style="list-style-type: none"> <li>– dates and time intervals of all opacity observation periods</li> </ul> </li> </ul>

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<p><b>AE.10.3.US.</b> Lignite fired steam-generating units that started construction or modification after 22 December 1976 are required to meet specific emissions limitation for NO<sub>x</sub> (40 CFR 60.40(d), 60.44(a)(4), 60.44(a)(5), 60.44(b), and 60.44(d)) <b>[Revised July 2007; Revised April 2011].</b></p>	<ul style="list-style-type: none"> <li>– name, affiliation, and copy of current visible emission reading certification for each visible emission observer participating in the performance test</li> <li>– copies of all visible emission observer opacity field data sheets</li> <li>– for each performance test conducted using Method 22 of appendix A-4 of 40 CFR 60, keep the records including the following information <ul style="list-style-type: none"> <li>– dates and time intervals of all visible emissions observation periods</li> <li>– name and affiliation for each visible emission observer participating in the performance test</li> <li>– copies of all visible emission observer opacity field data sheets</li> <li>– documentation of any adjustments made and the time the adjustments were completed to the affected facility operation by the owner or operator to demonstrate compliance with the applicable monitoring requirements</li> </ul> </li> <li>– for each digital opacity compliance system, maintain records and submit reports according to the requirements specified in the site-specific monitoring plan approved by the Administrator.</li> </ul> <p>(NOTE: Any facility covered under 40 CFR 60, subpart Da which applies to units generating electricity for sale or 40 CFR 60, Subpart KKKK which applies to air emissions from stationary combustion turbines [40 CFR 60.4300 through 60.4420, see checklist items AE.20.11.US through AE.20.13.US] is not covered under this checklist item.)</p> <p>Verify that no owner or operator discharges into the atmosphere from any lignite fired steam-generating units that started construction or modification after 22 December 1976 any gases that contain NO<sub>x</sub>, expressed as NO<sub>2</sub> in excess of 260 ng/J heat input (0.60 lb MMBtu) derived from lignite or lignite and wood residue.</p> <p>Verify that no owner or operator discharges into the atmosphere from any lignite fired steam-generating units that started construction or modification after 22 December 1976 any gases that contain NO<sub>x</sub>, expressed as NO<sub>2</sub> in excess of 340 ng/J heat input (0.80 lb MMBtu) derived from lignite which is mined in North Dakota, South Dakota, or Montana and which is burned in a cyclone-fired unit.</p> <p>(NOTE: Cyclone-fired units which burn fuels containing at least 25 percent of lignite that is mined in North Dakota, South Dakota, or Montana are still subject to the requirement to not discharge any gases that contain NO<sub>x</sub>, expressed as NO<sub>2</sub> in excess of 340 ng/J heat input (0.80 lb MMBtu) regardless of the types of fuel combusted in combination with that lignite.)</p> <p>(NOTE: When different fossil fuels are burned simultaneously in any combination, the applicable standard (in ng/J) is determined by proration using the formula in 40 CFR 60.44(b) [see text].)</p>

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<p><b>AE.10.4.US.</b> Steam generating units that commence construction, modification, or reconstruction after 19 June 1984, and that have a heat input capacity from fuels combusted in the steam generating unit of greater than 29 MW (100 MMBtu/h) must meet SO<sub>2</sub> emissions limitations (40 CFR 60.40b(a) through 60.40b(f), 60.40b(h) through 60.40b(m), 60.40b(m), and 60.42b) [Revised July 2006; Revised July 2007; Revised April 2009; Revised April 2011; Revised January 2012; Revised April 2012].</p>	<p>(NOTE: This checklist item applies to each steam generating unit that commences construction, modification, or reconstruction after 19 June 1984, and that has a heat input capacity from fuels combusted in the steam generating unit of greater than 29 megawatts (MW) (100 million British thermal units per hour (MMBtu/hr)).)</p> <p>Verify that steam generating unit that commencing construction, modification, or reconstruction after 19 June 1984, but on or before 19 June 1986, and that has a heat input capacity from fuels combusted in the steam generating unit of greater than 29 megawatts (MW) (100 million British thermal units per hour (MMBtu/hr)) meet the following limitations:</p> <ul style="list-style-type: none"> <li>– coal-fired affected facilities having a heat input capacity between 29 and 73 MW (100 and 250 MMBtu/hr), inclusive, must meet the PM and NO<sub>x</sub> standards in 40 CFR 60.43b (see the PM standard below in this checklist item) and 60.44b (see checklist item AE.10.5.US)</li> <li>– coal-fired affected facilities having a heat input capacity greater than 73 MW (250 MMBtu/hr) and meeting the applicability requirements under 40 CFR 60.40 (see checklist item AE.10.1.US) must meet the PM and NO<sub>x</sub> standards under in 40 CFR 60.43b (see the PM standard below in this checklist item) and 60.44b (see checklist item AE.10.5.US) and the SO<sub>2</sub> standards 40 CFR 60.43 (see checklist item AE.10.1.US)</li> <li>– oil-fired affected facilities having a heat input capacity between 29 and 73 MW (100 and 250 MMBtu/hr), inclusive, are subject to the NO<sub>x</sub> standards under 40 CFR 60, Subpart Db (see the text of this checklist item and checklist items AE.10.5.US and AE.10.6.US)</li> <li>– oil-fired affected facilities having a heat input capacity greater than 73 MW (250 MMBtu/hr) and meeting the applicability requirements under 40 CFR 60.40 (see checklist item AE.10.1.US) are also subject to the NO<sub>x</sub> standards in 40 CFR 60.44b (see checklist item AE.10.5.US) and the PM and SO<sub>2</sub> standards under 40 CFR 60.42 and 60.43 (see checklist item AE.10.1.US).</li> </ul> <p>(NOTE: Affected facilities subject to this checklist item that also meet the applicability requirements under 40 CFR 60.104 or 60.100a for petroleum refineries must also meet the PM [see the PM standard below in this checklist item] and NO<sub>x</sub> standards [see checklist item AE.10.5.US] under 40 CFR 60, Subpart Db and the SO<sub>2</sub> standards under 40 CFR 60.104 and 60.102a [see text].)</p> <p>(NOTE: Affected facilities subject to this checklist item which also meet the applicability requirements for incinerators under 40 CFR 60.50 (see checklist item AE.25.1.US) are subject to the NO<sub>x</sub> [see checklist item AE.10.5.US] and PM standards [see the PM standard below in this checklist item] under 40 CFR, Subpart Db.)</p> <p>(NOTE: Steam generating units meeting the applicability requirements under subpart Da [40 CFR 60.40Da] are not subject to this checklist item. These are units selling energy.)</p>

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	<p>(NOTE: Any change to an existing steam generating unit for the sole purpose of combusting gases containing total reduced sulfur (TRS) is not considered a modification under 40 CFR 60.14 and the steam generating unit is not subject this checklist item.)</p> <p>(NOTE: The following affected facilities which meet the applicability requirements of this checklist item are nonetheless not covered under 40 CFR, Subpart Db:</p> <ul style="list-style-type: none"> <li>– any affected facility subject to 40 CFR 60, Subpart Ea [40 CFR 60.50a through 60.59a, see checklist items AE.35.1.US through AE.35.3.US], Subpart Eb [40 CFR 60.50b through 60.59b, see checklist items AE.36.1.US through AE.36.16.US], Subpart AAAA [40 CFR 60.1000 through 60.1465, see checklist items AE.36.17.US through AE.36.28.US], or Subpart CCCC [40 CFR 60.2000 through 60.2265, see text]</li> <li>– heat recovery steam generators that are associated with stationary combustion turbines and that meet the applicability requirements of 40 CFR 60, Subpart KKKK 40 CFR 60.4300 through 60.4420, see checklist items AE.20.11.US through AE.20.13.US]</li> <li>– any affected facility is subject to an EPA approved State or Federal section 111(d)/129 plan implementing 40 CFR 60, Subpart Cb [40 CFR 60.30b through 60.39b, see text of regulation] or subpart BBBB [40 CFR 60.1500 through 60.1940, see text of regulation]</li> <li>– temporary boilers.)</li> </ul> <p>(NOTE: This checklist item applies to all other heat recovery steam generators with duct burners that are capable of combusting more than 29 MW (100 MMBtu/hr) heat input of fossil fuel. If the heat recovery steam generator is subject to 40 CFR Subpart Db, only emissions resulting from combustion of fuels in the steam generating unit are subject to 40 CFR 60, Subpart Db. The stationary combustion turbine emissions are subject to 40 CFR 60, Subpart GG [40 CFR 60.330 through 60.335, see checklist items AE.20.1.US through AE.20.2.US] or Subpart KKKK [40 CFR 60.4300 through 60.4420, see checklist items AE.20.11.US through AE.20.13.US], as applicable.)</p> <p>(NOTE: Any affected facility meeting the applicability requirements of this checklist item and commencing construction, modification, or reconstruction after 19 June 1986 is not subject to 40 CFR 60, Subpart D [see checklist items AE.10.1.US through AE.10.3.US].)</p> <p>(NOTE: 40 CFR 60, Subpart Db does not apply to temporary boilers.)</p> <p>Verify that, on and after the date on which the performance test is completed or required to be completed, whichever comes first, no owner or operator of an affected facility that commenced construction, reconstruction, or modification on or before 28 February 2005, that combusts coal or oil discharges into the atmosphere any gases that contain SO<sub>2</sub> in excess of 87 ng/J (0.20 lb/MMBtu) or 10 percent (0.10) of the potential SO<sub>2</sub> emission rate (90 percent reduction).</p>

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	<p>(NOTE: Refer to the text for the formula to use in determining the emission limit. For facilities complying with the percent reduction standard, only the heat input supplied to the affected facility from the combustion of coal and oil is counted in this case. No credit is provided for the heat input to the affected facility from the combustion of natural gas, wood, municipal-type solid waste, or other fuels or heat derived from exhaust gases from other sources, such as gas turbines, internal combustion engines, kilns, etc.)</p> <p>Verify that, on and after the date on which the performance test is completed or required to be completed, whichever date comes first, no owner or operator of an affected facility that commenced construction, reconstruction, or modification on or before 28 February 2005, that combusts coal refuse alone in a fluidized bed combustion steam generating unit discharges into the atmosphere any gases that contain SO<sub>2</sub> in excess of 87 ng/J (0.20 lb/MMBtu) or 20 percent (0.20) of the potential SO<sub>2</sub> emission rate (80 percent reduction) and 520 ng/J (1.2 lb/MMBtu) heat input.</p> <p>Verify that, if coal or oil is fired with coal refuse, the affected facility is required to meet the SO<sub>2</sub> percent reduction requirements or the affected facility will not discharge SO<sub>2</sub> in excess of 215 ng/J (0.50 lb/MMBtu) heat input.</p> <p>(NOTE: For facilities complying with the percent reduction standard, only the heat input supplied to the affected facility from the combustion of coal and oil is counted. No credit is provided for the heat input to the affected facility from the combustion of natural gas, wood, municipal-type solid waste, or other fuels or heat derived from exhaust gases from other sources, such as gas turbines, internal combustion engines, kilns, etc.)</p> <p>Verify that, on and after the date on which the performance test is completed or is required to be completed, whichever comes first, no owner or operator of an affected facility that combusts coal or oil, either alone or in combination with any other fuel, and that uses an emerging technology for the control of SO<sub>2</sub> emissions, discharges into the atmosphere any gases that contain SO<sub>2</sub> in excess of 50 percent of the potential SO<sub>2</sub> emission rate (50 percent reduction) and that contain SO<sub>2</sub> in excess of the emission limit determined according to the formula outlined in 40 CFR 60.42b(c).</p> <p>(NOTE: For facilities complying with the percent reduction standard, only the heat input supplied to the affected facility from the combustion of coal and oil is counted. No credit is provided for the heat input to the affected facility from the combustion of natural gas, wood, municipal-type solid waste, or other fuels, or from the heat input derived from exhaust gases from other sources, such as gas turbines, internal combustion engines, kilns, etc.)</p> <p>Verify that, on and after the date on which the performance test is completed or required to be completed, whichever comes first, no owner or operator of an affected facility that commenced construction, reconstruction, or modification on or before</p>

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	<p>28 February 2005 and listed below discharges into the atmosphere any gases that contain SO<sub>2</sub> in excess of 520 ng/J (1.2 lb/MMBtu) heat input if the affected facility combusts coal, or 215 ng/J (0.5 lb/MMBtu) heat input if the affected facility combusts oil other than very low sulfur oil:</p> <ul style="list-style-type: none"> <li>– affected facilities that have an annual capacity factor for coal and oil of 30 percent (0.30) or less and are subject to a federally enforceable permit limiting the operation of the affected facility to an annual capacity factor for coal and oil of 30 percent (0.30) or less</li> <li>– affected facilities located in a noncontinental area</li> <li>– affected facilities combusting coal or oil, alone or in combination with any fuel, in a duct burner as part of a combined cycle system where 30 percent (0.30) or less of the heat entering the steam generating unit is from combustion of coal and oil in the duct burner and 70 percent (0.70) or more of the heat entering the steam generating unit is from the exhaust gases entering the duct burner</li> <li>– the affected facility burns coke oven gas alone or in combination with natural gas or very low sulfur distillate oil.</li> </ul> <p>(NOTE: Percent reduction requirements are not applicable to the 4 affected facilities listed in the immediately above “Verify” statement. For facilities complying with the first 3 listed facilities, only the heat input supplied to the affected facility from the combustion of coal and oil is counted. No credit is provided for the heat input to the affected facility from the combustion of natural gas, wood, municipal-type solid waste, or other fuels or heat derived from exhaust gases from other sources, such as gas turbines, internal combustion engines, kilns, etc.)</p> <p>Verify that compliance with the emission limits, fuel oil sulfur limits, and/or percent reduction requirements are determined on a 30-day rolling average basis.</p> <p>(NOTE: The emission limits or fuel oil sulfur limits is determined on a 24-h average basis for affected facilities that:</p> <ul style="list-style-type: none"> <li>– have a federally enforceable permit limiting the annual capacity factor for oil to 10 percent or less</li> <li>– combust only very low sulfur oil</li> <li>– do not combust any other fuel.)</li> </ul> <p>(NOTE: The SO<sub>2</sub> emission limits and percent reduction requirements under this checklist item apply at all times, including periods of startup, shutdown, and malfunction.)</p> <p>(NOTE: Reductions in the potential SO<sub>2</sub> emission rate through fuel pretreatment are not credited toward the percent reduction requirement unless:</p> <ul style="list-style-type: none"> <li>– fuel pretreatment results in a 50 percent or greater reduction in potential SO<sub>2</sub> emissions</li> </ul>

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	<p>– emissions from the pretreated fuel (without combustion or post-combustion SO<sub>2</sub> control) are equal to or less than the emission limits requiring 50 percent reduction.)</p> <p>(NOTE: An affected facility may combust very low sulfur oil or natural gas when the SO<sub>2</sub> control system is not being operated because of malfunction or maintenance of the SO<sub>2</sub> control system.)</p> <p>(NOTE: Percent reduction requirements are not applicable to affected facilities combusting only very low sulfur oil.)</p> <p>Verify that the owner or operator of an affected facility combusting very low sulfur oil demonstrates that the oil meets the definition of very low sulfur oil by doing one of the following:</p> <ul style="list-style-type: none"> <li>– following the performance testing procedures as described in 40 CFR 60.45b(c) or 40 CFR 60.45b(d), and following the monitoring procedures as described in 40 CFR 60.47b(a) or 40 CFR 60.47b(b) to determine SO<sub>2</sub> emission rate or fuel oil sulfur content</li> <li>– maintaining fuel records as described in 40 CFR 60.49b(r).</li> </ul> <p>Verify that, on and after the date on which the initial performance test is completed or is required to be completed, whichever date comes first, no owner or operator of an affected facility that commences construction, reconstruction, or modification after 28 February 2005, and that combusts coal, oil, natural gas, a mixture of these fuels, or a mixture of these fuels with any other fuels discharges into the atmosphere any gases that contain SO<sub>2</sub> in excess of 87 ng/J (0.20 lb/MMBtu) heat input or 8 percent (0.08) of the potential SO<sub>2</sub> emission rate (92 percent reduction) and 520 ng/J (1.2 lb/MMBtu) heat input.</p> <p>(NOTE: For facilities complying with the percent reduction standard and the standards below for units in a non-continental area, only the heat input supplied to the affected facility from the combustion of coal and oil is counted. No credit is provided for the heat input to the affected facility from the combustion of natural gas, wood, municipal-type solid waste, or other fuels or heat derived from exhaust gases from other sources, such as gas turbines, internal combustion engines, kilns, etc.)</p> <p>(NOTE: Units firing only very low sulfur oil, gaseous fuel, a mixture of these fuels, or a mixture of these fuels with any other fuels with a potential SO<sub>2</sub> emission rate of 140 ng/J (0.32 lb/MMBtu) heat input or less are exempt from the requirement to not discharge into the atmosphere any gases that contain SO<sub>2</sub> in excess of 87 ng/J (0.20 lb/MMBtu) heat input or 8 percent (0.08) of the potential SO<sub>2</sub> emission rate (92 percent reduction) and 520 ng/J (1.2 lb/MMBtu) heat input.)</p> <p>Verify that units that are located in a noncontinental area and that combust coal, oil, or natural gas do not discharge any gases that contain SO<sub>2</sub> in excess of 520 ng/J (1.2</p>

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<p><b>AE.10.5.US.</b> Steam-generating units that started construction, modification, or reconstruction after 19 June 1984 with a heat input capacity of greater than 29 MW (100 MMBtu/h) shall meet specific emissions limitations for particulate matter and NO<sub>x</sub> (40 CFR 60.40b, 60.43b, and 60.44b) [Revised October 2001; Revised July 2006; Revised July 2007; Revised April 2009; Revised April 2011; Revised January 2012; Revised April 2012].</p>	<p>lb/MMBtu) heat input if the affected facility combusts coal, or 215 ng/J (0.50 lb/MMBtu) heat input if the affected facility combusts oil or natural gas.</p> <p>Verify that, as an alternative to meeting the 92 percent reduction requirements, modified facilities that combust coal or a mixture of coal with other fuels do not discharge into the atmosphere any gases that contain SO<sub>2</sub> in excess of 87 ng/J (0.20 lb/MMBtu) heat input or 10 percent (0.10) of the potential SO<sub>2</sub> emission rate (90 percent reduction) and 520 ng/J (1.2 lb/MMBtu) heat input.</p> <p>(NOTE: See AE.10.4.US for applicability statements.)</p> <p>(NOTE: All requirements apply on and after the date on which the initial performance test is completed or is required to be completed, whichever comes first.)</p> <p>Verify that no owner or operator of an affected facility that commenced construction, reconstruction, or modification on or before 28 February 2005 that combusts coal or combusts mixtures of coal with other fuels, discharges into the atmosphere from that affected facility any gases that contain PM in excess of the following emission limits:</p> <ul style="list-style-type: none"> <li>– 22 ng/J (0.051 lb/MMBtu) heat input if one of the following are true: <ul style="list-style-type: none"> <li>– the affected facility combusts only coal</li> <li>– the affected facility combusts coal and other fuels and has an annual capacity factor for the other fuels of 10 percent (0.10) or less</li> </ul> </li> <li>– 43 ng/J (0.10 lb/MMBtu) heat input if the affected facility combusts coal and other fuels and has an annual capacity factor for the other fuels greater than 10 percent (0.10) and is subject to a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor greater than 10 percent (0.10) for fuels other than coal</li> <li>– 86 ng/J (0.20 lb/MMBtu) heat input if the affected facility combusts coal or coal and other fuels and: <ul style="list-style-type: none"> <li>– has an annual capacity factor for coal or coal and other fuels of 30 percent (0.30) or less</li> <li>– has a maximum heat input capacity of 73 MW (250 MMBtu/hr) or less</li> <li>– has a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor of 30 percent (0.30) or less for coal or coal and other solid fuels</li> <li>– construction of the affected facility commenced after 19 June 1984, and before 25 November 1986.</li> </ul> </li> </ul> <p>(NOTE: An affected facility burning coke oven gas alone or in combination with other fuels not subject to a PM standard under this checklist item and not using a post-combustion technology (except a wet scrubber) for reducing PM or SO<sub>2</sub> emissions is not subject to the above PM limits.)</p>

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	<p>Verify that no owner or operator of an affected facility that commenced construction, reconstruction, or modification on or before 28 February 2005, and that combusts oil (or mixtures of oil with other fuels) and uses a conventional or emerging technology to reduce SO<sub>2</sub> emissions discharges into the atmosphere from that affected facility any gases that contain PM in excess of 43 ng/J (0.10 lb/MMBtu) heat input.</p> <p>Verify that no owner or operator of an affected facility that commenced construction, reconstruction, or modification on or before 28 February 2005, and that combusts wood, or wood with other fuels, except coal, discharges from that affected facility any gases that contain PM in excess of the following emission limits:</p> <ul style="list-style-type: none"> <li>– 43 ng/J (0.10 lb/MMBtu) heat input if the affected facility has an annual capacity factor greater than 30 percent (0.30) for wood</li> <li>– 86 ng/J (0.20 lb/MMBtu) heat input if the affected facility: <ul style="list-style-type: none"> <li>– has an annual capacity factor of 30 percent (0.30) or less for wood</li> <li>– is subject to a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor of 30 percent (0.30) or less for wood</li> <li>– has a maximum heat input capacity of 73 MW (250 MMBtu/hr) or less.</li> </ul> </li> </ul> <p>Verify that no owner or operator of an affected facility that combusts municipal-type solid waste or mixtures of municipal-type solid waste with other fuels, discharges into the atmosphere from that affected facility any gases that contain PM in excess of the following emission limits:</p> <ul style="list-style-type: none"> <li>– 43 ng/J (0.10 lb/MMBtu) heat input when one of the following is true: <ul style="list-style-type: none"> <li>– if the affected facility combusts only municipal-type solid waste</li> <li>– if the affected facility combusts municipal-type solid waste and other fuels and has an annual capacity factor for the other fuels of 10 percent (0.10) or less</li> </ul> </li> <li>– 86 ng/J (0.20 lb/MMBtu) heat input if the affected facility combusts municipal-type solid waste or municipal-type solid waste and other fuels; and: <ul style="list-style-type: none"> <li>– has an annual capacity factor for municipal-type solid waste and other fuels of 30 percent (0.30) or less</li> <li>– has a maximum heat input capacity of 73 MW (250 MMBtu/hr) or less</li> <li>– has a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor of 30 percent (0.30) or less for municipal-type solid waste, or municipal-type solid waste and other fuels</li> <li>– construction of the affected facility commenced after 19 June 1984, but on or before 25 November 1986.</li> </ul> </li> </ul> <p>(NOTE: For the purpose of the PM standard, the annual capacity factor is determined by dividing the actual heat input to the steam generating unit during the calendar year from the combustion of coal, wood, or municipal-type solid waste, and other fuels, as applicable, by the potential heat input to the steam generating unit if</p>

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	<p>the steam generating unit had been operated for 8,760 h at the maximum heat input capacity.)</p> <p>Verify that no owner or operator of an affected facility that combusts coal, oil, wood, or mixtures of these fuels with any other fuels discharges into the atmosphere any gases that exhibit greater than 20 percent opacity (6-min average), except for one 6-min period per hour of not more than 27 percent opacity.</p> <p>(NOTE: Owners and operators of an affected facility that elect to install, calibrate, maintain, and operate a continuous emissions monitoring system (CEMS) for measuring PM emissions and are subject to a federally enforceable PM limit of 0.030 lb/MMBtu or less are exempt from the opacity standard above.)</p> <p>(NOTE: The PM and opacity standards apply at all times, except during periods of startup, shutdown or malfunction.)</p> <p>Verify that no owner or operator of an affected facility that commenced construction, reconstruction, or modification after 28 February 2005, and that combusts coal, oil, wood, a mixture of these fuels, or a mixture of these fuels with any other fuels discharges into the atmosphere from that affected facility any gases that contain PM in excess of 13 ng/J (0.030 lb/MMBtu) heat input.</p> <p>(NOTE: As an alternative to meeting the requirement for an affected facility that commenced construction, reconstruction, or modification after 28 February 2005, and that combusts coal, oil, wood, a mixture of these fuels, or a mixture of these fuels with any other fuels, the owner or operator may elect to meet the requirement that there is not discharged into the atmosphere from that affected facility any gases that contain PM in excess of both:</p> <ul style="list-style-type: none"> <li>– 22 ng/J (0.051 lb/MMBtu) heat input derived from the combustion of coal, oil, wood, a mixture of these fuels, or a mixture of these fuels with any other fuels</li> <li>– 0.2 percent of the combustion concentration (99.8 percent reduction) when combusting coal, oil, wood, a mixture of these fuels, or a mixture of these fuels with any other fuels.)</li> </ul> <p>Verify that no owner or operator of an affected facility that commences modification after 28 February 2005, and that combusts over 30 percent wood (by heat input) on an annual basis and has a maximum heat input capacity of 73 MW (250 MMBtu/h) or less discharges into the atmosphere from that affected facility any gases that contain PM in excess of 43 ng/J (0.10 lb/MMBtu) heat input.</p> <p>Verify that no owner or operator of an affected facility that commences modification after 28 February 2005, and that combusts over 30 percent wood (by heat input) on an annual basis and has a maximum heat input capacity greater than 73 MW (250 MMBtu/h) discharges into the atmosphere from that affected facility any gases that contain PM in excess of 37 ng/J (0.085 lb/MMBtu) heat input.</p>

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	<p>(NOTE: An owner or operator of an affected facility not located in a noncontinental area that commences construction, reconstruction, or modification after 28 February 2005, and that combusts only oil that contains no more than 0.30 weight percent sulfur, coke oven gas, a mixture of these fuels, or either fuel (or a mixture of these fuels) in combination with other fuels not subject to a PM standard in this checklist item and not using a post-combustion technology (except a wet scrubber) to reduce SO<sub>2</sub> or PM emissions is not subject to the PM limits for an affected facility that combusts coal, oil, wood, a mixture of these fuels, or a mixture of these fuels with any other fuels.)</p> <p>(NOTE: An owner or operator of an affected facility located in a noncontinental area that commences construction, reconstruction, or modification after 28 February 2005, and that combusts only oil that contains no more than 0.5 weight percent sulfur, coke oven gas, a mixture of these fuels, or either fuel (or a mixture of these fuels) in combination with other fuels not subject to a PM standard in this checklist item and not using a post-combustion technology (except a wet scrubber) to reduce SO<sub>2</sub> or PM emissions is not subject to the PM limits for an affected facility that combusts coal, oil, wood, a mixture of these fuels, or a mixture of these fuels with any other fuels.)</p> <p>Verify that no owner or operator of an affected facility that combusts only coal, oil, or natural gas discharges into the atmosphere any gases that contain NO<sub>x</sub> (expressed as NO<sub>2</sub>) in excess of the emission limits in Appendix 1-5.</p> <p>Verify that no owner or operator of an affected facility that simultaneously combusts mixtures of only coal, oil, or natural gas discharges into the atmosphere from that affected facility any gases that contain NO<sub>x</sub> in excess of a limit determined by the use of the formula in the text of 40 CFR 60.44b(b).</p> <p>Verify that no owner or operator of an affected facility that simultaneously combusts coal or oil, natural gas (or any combination of the three), and wood, or any other fuel discharges into the atmosphere any gases that contain NO<sub>x</sub> in excess of the emission limit for the coal or oil, natural gas (or any combination of the three), combusted in the affected facility (as determined in Appendix 1-5 or the formula the text of 40 CFR 60.44b(b)) unless the affected facility is in compliance with a federally enforceable requirement that limits operation of the affected facility to an annual capacity factor of 10 percent (0.10) or less for coal, oil, natural gas (or any combination of the three).</p> <p>Verify that no owner or operator of an affected facility that simultaneously combusts natural gas and/or distillate oil with a potential SO<sub>2</sub> emissions rate of 26 ng/J (0.060 lb/MMBtu) or less with wood, municipal-type solid waste, or other solid fuel, except coal, discharges into the atmosphere any gases that contain NO<sub>x</sub> in excess of 130 ng/J (0.30 lb/MMBtu) heat input unless the affected facility has an annual capacity factor for natural gas, distillate oil, or a mixture of these fuels of 10 percent (0.10) or less and is subject to a federally enforceable requirement that limits operation of the</p>

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	<p>affected facility to an annual capacity factor of 10 percent (0.10) or less for natural gas, distillate oil, or a mixture of these fuels.</p> <p>Verify that no owner or operator of an affected facility that simultaneously combusts coal, oil, or natural gas with byproduct/waste discharges into the atmosphere any gases that contain NO<sub>x</sub> in excess of the emission limit determined by formula in the text of 40 CFR 60.44b(e) unless the affected facility has an annual capacity factor for coal, oil, and natural gas of 10 percent (0.10) or less and is subject to a federally enforceable requirement that limits operation of the affected facility to an annual capacity factor of 10 percent (0.10) or less.</p> <p>Verify that no owner or operator of an affected facility that simultaneously combusts only coal, oil, or natural gas with byproduct/waste discharges into the atmosphere any gases that contain NO<sub>x</sub> in excess of the emission limit determined by the formula in 40 CFR 60.44b(e) unless the affected facility has an annual capacity factor for coal, oil, and natural gas of 10 percent (0.10) or less and is subject to a federally enforceable requirement that limits operation of the affected facility to an annual capacity factor of 10 percent (0.10) or less.</p> <p>(NOTE: Any owner or operator of an affected facility that combusts byproduct/waste with either natural gas or oil may petition the Administrator within 180 days of the initial startup of the affected facility to establish a NO<sub>x</sub> emission limit applicable specifically to that affected facility when the byproduct/waste is combusted.)</p> <p>(NOTE: Any owner or operator of an affected facility that combusts hazardous waste (as defined by 40 CFR 261 or 40 CFR 761) with natural gas or oil may petition the Administrator within 180 days of the initial startup of the affected facility for a waiver from compliance with the NO<sub>x</sub> emission limit applicable specifically to that affected facility.)</p> <p>Verify that compliance with the NO<sub>x</sub> emission limit is determined on a 24-h average basis for the initial performance test and on a 3-h average basis for subsequent performance tests for any affected facilities that:</p> <ul style="list-style-type: none"> <li>– combust, alone or in combination, only natural gas, distillate oil, or residual oil with a nitrogen content of 0.30 weight percent or less</li> <li>– have a combined annual capacity factor of 10 percent or less for natural gas, distillate oil, and residual oil with a nitrogen content of 0.30 weight percent or less</li> <li>– are subject to a federally enforceable requirement limiting operation of the affected facility to the firing of natural gas, distillate oil, and/or residual oil with a nitrogen content of 0.30 weight percent or less and limiting operation of the affected facility to a combined annual capacity factor of 10 percent or less for natural gas, distillate oil, and residual oil with a nitrogen content of 0.30 weight percent or less.</li> </ul>

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<p><b>AE.10.6.US.</b> Steam-generating units that started construction, modification, or reconstruction after 19 June</p>	<p>(NOTE: Except as otherwise provided in this checklist item, compliance with the emission limits is determined on a 30-day rolling average basis.)</p> <p>(NOTE: The following affected facilities that have a heat input capacity of 73 MW (250 MMBtu/hr) or less, are not subject to the NO<sub>x</sub> emission limits:</p> <ul style="list-style-type: none"> <li>– facilities that combust, alone or in combination, only natural gas, distillate oil, or residual oil with a nitrogen content of 0.30 weight percent or less</li> <li>– facilities that have a combined annual capacity factor of 10 percent or less for natural gas, distillate oil, and residual oil with a nitrogen content of 0.30 weight percent or less</li> <li>– facilities which are subject to a federally enforceable requirement limiting operation of the affected facility to the firing of natural gas, distillate oil, and/or residual oil with a nitrogen content of 0.30 weight percent or less and limiting operation of the affected facility to a combined annual capacity factor of 10 percent or less for natural gas, distillate oil, and residual oil with a nitrogen content of 0.30 weight percent or less.)</li> </ul> <p>Verify that no owner or operator of an affected facility that commenced construction or reconstruction after 9 July 1997 discharges into the atmosphere from that affected facility any gases that contain NO<sub>x</sub> (expressed as NO<sub>2</sub>) in excess of one the following limits:</p> <ul style="list-style-type: none"> <li>– if the affected facility combusts coal, oil, natural gas (or any combination of the three), alone or with any other fuels: a limit of 86 ng/J (0.20 lb/MMBtu) heat input unless the affected facility has an annual capacity factor for coal, oil, and natural gas (or any combination of the three) of 10 percent (0.10) or less and is subject to a federally enforceable requirement that limits operation of the facility to an annual capacity factor of 10 percent (0.10) or less for coal, oil, and natural gas</li> <li>– if the affected facility has a low heat release rate and combusts natural gas or distillate oil in excess of 30 percent of the heat input on a 30-day rolling average from the combustion of all fuels, a limit determined by use of the formula in 40 CFR 60.44b(l)(2)</li> <li>– after 27 February 2006, units where more than 10 percent of total annual output is electrical or mechanical may comply with an optional limit of 270 ng/J (2.1 lb/MWh) gross energy output, based on a 30-day rolling average.</li> </ul> <p>(NOTE: Units complying with the output-based limit must demonstrate compliance according to the procedures of 40 CFR 60.48Da(i), and must monitor emissions according to 40 CFR 60.49Da(c), (k), through (n), see text.)</p> <p>Verify that the owner or operator of each affected facility submitted notification of the date of initial startup, and the notification included:</p>

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<p>1984 with a heat input capacity of greater than 29 MW (100 MMBtu/h) shall meet specific reporting and recordkeeping requirements (40 CFR 60.49b(a) through 60.49b(r)) <b>[Revised July 2007; Revised April 2009; Revised April 2011; Revised January 2012; Revised April 2012]</b>.</p>	<ul style="list-style-type: none"> <li>– the design heat input capacity of the affected facility and identification of the fuels to be combusted in the affected facility</li> <li>– if applicable, a copy of any federally enforceable requirement that limits the annual capacity factor for any fuel or mixture of fuels</li> <li>– the annual capacity factor at which the owner or operator anticipates operating the facility based on all fuels fired and based on each individual fuel fired</li> <li>– notification that an emerging technology will be used for controlling emissions of SO<sub>2</sub>.</li> </ul> <p>Verify that the owner or operator of each affected facility subject to the SO<sub>2</sub>, PM, and/or NO<sub>x</sub> emission limits submits to the Administrator the performance test data from the initial performance test and the performance evaluation of the CEMS using the applicable performance specifications in appendix B of 40 CFR 60.</p> <p>Verify that the owner or operator of each affected facility subject to the NO<sub>x</sub> standard who seeks to demonstrate compliance with those standards through the monitoring of steam generating unit operating conditions submits to the Administrator for approval a plan that identifies the operating conditions to be monitored and the records to be maintained, and:</p> <ul style="list-style-type: none"> <li>– this plan is submitted to the Administrator for approval within 360 days of the initial startup of the affected facility</li> <li>– an affected facility burning coke oven gas alone or in combination with other gaseous fuels or distillate oil submits the plan to the Administrator for approval within 360 days of the initial startup of the affected facility or by 30 November 2009, whichever date comes later</li> <li>– if the plan is approved, the owner or operator maintains records of predicted nitrogen oxide emission rates and the monitored operating conditions, including steam generating unit load, identified in the plan</li> <li>– the plan shall: <ul style="list-style-type: none"> <li>– identify the specific operating conditions to be monitored and the relationship between these operating conditions and NO<sub>x</sub> emission rates (i.e., ng/J or lbs/MMBtu heat input)</li> <li>– include the data and information that the owner or operator used to identify the relationship between NO<sub>x</sub> emission rates and these operating conditions</li> <li>– identify how these operating conditions, including steam generating unit load, will be monitored on an hourly basis by the owner or operator during the period of operation of the affected facility; the quality assurance procedures or practices that will be employed to ensure that the data generated by monitoring these operating conditions will be representative and accurate; and the type and format of the records of these operating conditions, including steam generating unit load, that will be maintained by the owner or operator.</li> </ul> </li> </ul>

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	<p>(NOTE: Steam generating unit operating conditions include, but are not limited to, the degree of staged combustion (i.e., the ratio of primary air to secondary and/or tertiary air) and the level of excess air (i.e., flue gas O<sub>2</sub> level).)</p> <p>Verify that the owner or operator of an affected facility records and maintains records of the amounts of each fuel combusted during each day and calculates the annual capacity factor individually for coal, distillate oil, residual oil, natural gas, wood, and municipal-type solid waste for the reporting period.</p> <p>(NOTE: As an alternative to maintaining records of the amounts of fuel combusted and calculating the annual capacity factor, the owner or operator of an affected facility subject to a federally enforceable permit restricting fuel use to a single fuel such that the facility is not required to continuously monitor any emissions (excluding opacity) or parameters indicative of emissions may elect to record and maintain records of the amount of each fuel combusted during each calendar month.)</p> <p>(NOTE: The annual capacity factor is determined on a 12-mo rolling average basis with a new annual capacity factor calculated at the end of each calendar month.)</p> <p>Verify that, for an affected facility that combusts residual oil, the owner or operator maintains records of the nitrogen content of the residual oil combusted in the affected facility and calculates the average fuel nitrogen content for the reporting period.</p> <p>(NOTE: The nitrogen content shall be determined using ASTM Method D4629 (incorporated by reference, see 40 CFR 60.17), or fuel suppliers. If residual oil blends are being combusted, fuel nitrogen specifications may be prorated based on the ratio of residual oils of different nitrogen content in the fuel blend.)</p> <p>Verify that, for facilities subject to the opacity standard in 60.43b (see checklist item AE.10.5.US), the owner or operator maintains records of opacity.</p> <p>Verify that, an owner or operator that elects to monitor emissions using a CEMS maintains the following records as applicable to the visible emissions monitoring method used:</p> <ul style="list-style-type: none"> <li>– for each performance test conducted using 40 CFR 60, Method 9 of Appendix A-4, the following records: <ul style="list-style-type: none"> <li>– dates and time intervals of all opacity observation periods</li> <li>– name, affiliation, and copy of current visible emission reading certification for each visible emission observer participating in the performance test</li> <li>– copies of all visible emission observer opacity field data sheets</li> </ul> </li> <li>– for each performance test conducted using 40 CFR 60, Method 22 of appendix A-4, the following records: <ul style="list-style-type: none"> <li>– dates and time intervals of all visible emissions observation periods</li> <li>– name and affiliation for each visible emission observer participating in the performance test</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– copies of all visible emission observer opacity field data sheets</li> <li>– documentation of any adjustments made and the time the adjustments were completed to the affected facility operation by the owner or operator to demonstrate compliance with the applicable monitoring requirements</li> <li>– for each digital opacity compliance system, the owner or operator maintains records and submit reports according to the requirements specified in the site-specific monitoring plan approved by the Administrator.</li> </ul> <p>Verify that the owner or operator of an affected facility subject to the NO<sub>x</sub> standards under 40 CFR 60.44b maintains records of the following information for each steam generating unit operating day:</p> <ul style="list-style-type: none"> <li>– calendar date</li> <li>– the average hourly NO<sub>x</sub> emission rates (expressed as NO<sub>2</sub>) (ng/J or lb/MMBtu heat input) measured or predicted</li> <li>– the 30-day average NO<sub>x</sub> emission rates (ng/J or lb/MMBtu heat input) calculated at the end of each steam generating unit operating day from the measured or predicted hourly nitrogen oxide emission rates for the preceding 30 steam generating unit operating days</li> <li>– identification of the steam generating unit operating days when the calculated 30-day average NO<sub>x</sub> emission rates are in excess of the NO<sub>x</sub> emissions standards under 40 CFR 60.44b, with the reasons for such excess emissions as well as a description of corrective actions taken</li> <li>– identification of the steam generating unit operating days for which pollutant data have not been obtained, including reasons for not obtaining sufficient data and a description of corrective actions taken</li> <li>– identification of the times when emission data have been excluded from the calculation of average emission rates and the reasons for excluding data</li> <li>– identification of the “F” factor used for calculations, method of determination, and type of fuel combusted</li> <li>– identification of the times when the pollutant concentration exceeded full span of the CEMS</li> <li>– description of any modifications to the CEMS that could affect the ability of the CEMS to comply with Performance Specification 2 or 3</li> <li>– results of daily CEMS drift tests and quarterly accuracy assessments as required under 40 CFR 60, appendix F, Procedure 1.</li> </ul> <p>Verify that the owner or operator of any of the following affected facilities in any category submits excess emission reports for any excess emissions that occurred during the reporting period:</p> <ul style="list-style-type: none"> <li>– any affected facility subject to the opacity standards under 40 CFR 60.43b(f) or to the operating parameter monitoring requirements under 40 CFR 60.13(i)(1)</li> <li>– any affected facility that is subject to the NO<sub>x</sub> standard of 40 CFR 60.44b, and that meets one of the following:</li> </ul>

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	<ul style="list-style-type: none"> <li>– combusts natural gas, distillate oil, gasified coal, or residual oil with a nitrogen content of 0.3 weight percent or less</li> <li>– has a heat input capacity of 73 MW (250 MMBtu/hr) or less and is required to monitor NO<sub>x</sub> emissions on a continuous basis or steam generating unit operating conditions.</li> </ul> <p>(NOTE: For the purpose of 40 CFR 60.43b, excess emissions are defined as all 6-minute periods during which the average opacity exceeds the opacity standards. For purposes of 40 CFR 60.48b(g)(1) [see text], excess emissions are defined as any calculated 30-day rolling average NO<sub>x</sub> emission rate, as determined under 40 CFR 60.46b(e), that exceeds the applicable emission limits in 40 CFR 60.44b.)</p> <p>Verify that the owner or operator of any affected facility subject to the continuous monitoring requirements for NO<sub>x</sub> under 40 CFR 60.48b (see text) submits reports containing the information required for an affected facility subject to the NO<sub>x</sub> standards under 40 CFR 60.44b (see above).</p> <p>Verify that, for each affected facility subject to the compliance and performance testing requirements of 40 CFR 60.45b and the SO<sub>2</sub> standards under 40 CFR 60.42b submits the following information to the Administrator:</p> <ul style="list-style-type: none"> <li>– calendar dates covered in the reporting period</li> <li>– each 30-day average SO<sub>2</sub> emission rate (ng/J or lb/MMBtu heat input) measured during the reporting period, ending with the last 30-day period; reasons for noncompliance with the emission standards; and a description of corrective actions taken</li> <li>– for an exceedance due to maintenance of the SO<sub>2</sub> control system, the report shall identify the days on which the maintenance was performed and a description of the maintenance</li> <li>– each 30-day average percent reduction in SO<sub>2</sub> emissions calculated during the reporting period, ending with the last 30-day period; reasons for noncompliance with the emission standards; and a description of corrective actions taken</li> <li>– identification of the steam generating unit operating days that coal or oil was combusted and for which SO<sub>2</sub> or diluent (O<sub>2</sub> or CO<sub>2</sub>) data have not been obtained by an approved method for at least 75 percent of the operating hours in the steam generating unit operating day; justification for not obtaining sufficient data; and description of corrective action taken</li> <li>– identification of the times when emissions data have been excluded from the calculation of average emission rates; justification for excluding data; and description of corrective action taken if data have been excluded for periods other than those during which coal or oil were not combusted in the steam generating unit</li> <li>– identification of “F” factor used for calculations, method of determination, and type of fuel combusted</li> </ul>

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	<ul style="list-style-type: none"> <li>– identification of times when hourly averages have been obtained based on manual sampling methods</li> <li>– identification of the times when the pollutant concentration exceeded full span of the CEMS</li> <li>– description of any modifications to the CEMS that could affect the ability of the CEMS to comply with Performance Specification 2 or 3</li> <li>– results of daily CEMS drift tests and quarterly accuracy assessments as required under 40 CFR 60, appendix F, Procedure 1</li> <li>– the annual capacity factor of each fired.</li> </ul> <p>Verify that, for each affected facility subject to the compliance and performance testing requirements of 40 CFR 60.45b(d) and the SO<sub>2</sub> standards under 40 CFR 60.42b, the following additional information is submitted:</p> <ul style="list-style-type: none"> <li>– calendar dates when the facility was in operation during the reporting period</li> <li>– the 24-h average SO<sub>2</sub> emission rate measured for each steam generating unit operating day during the reporting period that coal or oil was combusted, ending in the last 24-h period in the quarter; reasons for noncompliance with the emission standards; and a description of corrective actions taken</li> <li>– identification of the steam generating unit operating days that coal or oil was combusted for which SO<sub>2</sub> or diluent (O<sub>2</sub> or CO<sub>2</sub>) data have not been obtained by an approved method for at least 75 percent of the operating hours; justification for not obtaining sufficient data; and description of corrective action taken</li> <li>– identification of the times when emissions data have been excluded from the calculation of average emission rates; justification for excluding data; and description of corrective action taken if data have been excluded for periods other than those during which coal or oil were not combusted in the steam generating unit</li> <li>– identification of “F” factor used for calculations, method of determination, and type of fuel combusted</li> <li>– identification of times when hourly averages have been obtained based on manual sampling methods</li> <li>– identification of the times when the pollutant concentration exceeded full span of the CEMS</li> <li>– description of any modifications to the CEMS that could affect the ability of the CEMS to comply with Performance Specification 2 or 3</li> <li>– results of daily CEMS drift tests and quarterly accuracy assessments as required under 40 CFR 60, Procedure 1 of appendix F.</li> </ul> <p>(NOTE: If the owner or operator elects to implement the alternative data assessment procedures, each data assessment report shall include a summary of the results of all of the RATAs, linearity checks, CGAs, and calibration error or drift assessments.</p> <p>Verify that, for each affected facility subject to the SO<sub>2</sub> standards under 40 CFR 60.42(b) for which the minimum amounts of data required were not obtained during</p>

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	<p>the reporting period, the following information is reported to the Administrator in addition to other required information:</p> <ul style="list-style-type: none"> <li>– the number of hourly averages available for outlet emission rates and inlet emission rates</li> <li>– the standard deviation of hourly averages for outlet emission rates and inlet emission rates, as determined in 40 CFR 60, Method 19 of appendix A, section 7</li> <li>– the lower confidence limit for the mean outlet emission rate and the upper confidence limit for the mean inlet emission rate, as calculated in 40 CFR 60, Method 19 of appendix A, section 7</li> <li>– the ratio of the lower confidence limit for the mean outlet emission rate and the allowable emission rate, as determined in 40 CFR 60, Method 19 of appendix A, section 7.</li> </ul> <p>Verify that, if a percent removal efficiency by fuel pretreatment (i.e., % Rf) is used to determine the overall percent reduction (i.e., % Ro) under 40 CFR 60.45b, the owner or operator of the affected facility shall submit a signed statement with the report:</p> <ul style="list-style-type: none"> <li>– indicating what removal efficiency by fuel pretreatment (i.e., % Rf) was credited during the reporting period</li> <li>– listing the quantity, heat content, and date each pre-treated fuel shipment was received during the reporting period, the name and location of the fuel pretreatment facility; and the total quantity and total heat content of all fuels received at the affected facility during the reporting period</li> <li>– documenting the transport of the fuel from the fuel pretreatment facility to the steam generating unit</li> <li>– including a signed statement from the owner or operator of the fuel pretreatment facility certifying that the percent removal efficiency achieved by fuel pretreatment was determined in accordance with the provisions of 40 CFR 60, Method 19 of appendix A and listing the heat content and sulfur content of each fuel before and after fuel pretreatment.</li> </ul> <p>Verify that all required records are maintained by the owner or operator of the affected facility for a period of 2 yr following the date of such record.</p> <p>Verify that the owner or operator of an affected facility listed below maintains records for each steam generating unit operating day of the: calendar date, the number of hours of operation, and a record of the hourly steam load:</p> <ul style="list-style-type: none"> <li>– a facility that combusts, alone or in combination, only natural gas, distillate oil, or residual oil with a nitrogen content of 0.30 weight percent or less</li> <li>– a facility that has a combined annual capacity factor of 10 percent or less for natural gas, distillate oil, and residual oil with a nitrogen content of 0.30 weight percent or less</li> </ul>

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	<p>– facilities subject to a federally enforceable requirement limiting operation of the affected facility to the firing of natural gas, distillate oil, and/or residual oil with a nitrogen content of 0.30 weight percent or less and limiting operation of the affected facility to a combined annual capacity factor of 10 percent or less for natural gas, distillate oil, and residual oil with a nitrogen content of 0.30 weight percent or less.</p> <p>Verify that the owner or operator of an affected facility listed below submits to the Administrator a report containing: the annual capacity factor over the previous 12 mo; the average fuel nitrogen content during the reporting period, if residual oil was fired; and the results of any NO<sub>x</sub> emission tests required during the reporting period, the hours of operation during the reporting period, and the hours of operation since the last NO<sub>x</sub> emission test:</p> <ul style="list-style-type: none"> <li>– a facility that combusts, alone or in combination, only natural gas, distillate oil, or residual oil with a nitrogen content of 0.30 weight percent or less</li> <li>– a facility that has a combined annual capacity factor of 10 percent or less for natural gas, distillate oil, and residual oil with a nitrogen content of 0.30 weight percent or less</li> <li>– facilities subject to a federally enforceable requirement limiting operation of the affected facility to the firing of natural gas, distillate oil, and/or residual oil with a nitrogen content of 0.30 weight percent or less and limiting operation of the affected facility to a combined annual capacity factor of 10 percent or less for natural gas, distillate oil, and residual oil with a nitrogen content of 0.30 weight percent or less.</li> </ul> <p>Verify that the owner or operator of an affected facility who elects to demonstrate that the affected facility combusts only very low sulfur oil, natural gas, wood, a mixture of these fuels, or any of these fuels (or a mixture of these fuels) in combination with other fuels that are known to contain an insignificant amount of sulfur in 40 CFR 60.42b(j) or 60.42b(k) obtains and maintains at the affected facility fuel receipts (such as a current, valid purchase contract, tariff sheet, or transportation contract) from the fuel supplier that certify that the oil meets the definition of distillate oil and gaseous fuel meets the definition of natural gas and the applicable sulfur limit.</p> <p>(NOTE: For the purposes of this demonstration, the distillate oil need not meet the fuel nitrogen content specification in the definition of distillate oil.)</p> <p>Verify that reports are submitted to the Administrator certifying that only very low sulfur oil meeting this definition, natural gas, wood, and/or other fuels that are known to contain insignificant amounts of sulfur were combusted in the affected facility during the reporting period</p> <p>Verify that the owner or operator of an affected facility who elects to demonstrate compliance based on fuel analysis develops and submits a site-specific fuel analysis</p>

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<p><b>AE.10.7.US.</b> Steam-generating units, that started construction, modification, or reconstruction after 9 June 1989, with a maximum design heat input capacity of greater than or equal to 2.9 MW (10 MMBtu/h) but less than 29 MW (100 MMBtu/h), are required to meet specific standards emissions of SO<sub>2</sub> (40 CFR 60.40c and 60.42c) [Revised June 1996; Revised July 2006; Revised July 2007; Revised April 2009; Revised April 2011; Revised January 2012; Revised April 2012].</p>	<p>plan to the Administrator for review and approval no later than 60 days before the date compliance will be demonstrated.</p> <p>Verify that each fuel analysis plan includes a minimum initial requirement of weekly testing and each analysis report contains, at a minimum, the following information:</p> <ul style="list-style-type: none"> <li>– the potential sulfur emissions rate of the representative fuel mixture in ng/J heat input</li> <li>– the method used to determine the potential sulfur emissions rate of each constituent of the mixture, for distillate oil and natural gas a fuel receipt or tariff sheet is acceptable</li> <li>– the ratio of different fuels in the mixture</li> <li>– the owner or operator can petition the Administrator to approve monthly or quarterly sampling in place of weekly sampling.</li> </ul> <p>(NOTE: Steam generating units subject to the requirements in 60.30c through 60.47c are exempt during periods of combustion research.)</p> <p>(NOTE: Any temporary change to an existing steam generating unit for the purpose of conducting combustion research is not considered a modification under 40 CFR 60.14.)</p> <p>(NOTE: Heat recovery steam generators and fuel heaters that are associated with stationary combustion turbines and meet the applicability requirements of 40 CFR 60, Subpart KKKK [40 CFR 60.4300 through 60.4420, see checklist items AE.20.11.US through AE.20.13.US] are not subject to these requirements. The requirements of 40 CFR 60, Subpart Dc will continue to apply to all other heat recovery steam generators, fuel heaters and other affected facilities that are capable of combusting more than or equal to 2.9 MW (10 MMBtu/hr) heat input of fossil fuel but less than or equal to 29 MW (100 MMBtu/hr) heat input of fossil fuel. If the heat recovery steam generator, fuel heater, or other affected facility is subject to 40 CFR 60, Subpart Dc, only emissions resulting from combustion of fuels in the steam generating unit are covered by these requirements. The stationary combustion emissions are subject to 40 CFR 60, subpart GG [40 CFR 60.330 through 60.335, see checklist items AE.20.1.US through AE.20.2.US] or KKKK [40 CFR 60.4300 through 60.4420, see checklist items AE.20.11.US through AE.20.13.US], as applicable.)</p> <p>(NOTE: Any facility covered by 40 CFR 60, Subpart AAAA [40 CFR 60.1000 through 60.1465, see checklist items AE.36.17.US through AE.36.28.US] or 40 CFR 60, Subpart CCCC [see text] is not covered by these requirements.)</p> <p>(NOTE: Any facility covered by an EPA approved State or Federal section 111(d)/129 plan implementing 40 CFR 60, subpart BBBB: <i>Emission Guidelines and</i></p>

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	<p><i>Compliance Times for Small Municipal Waste Combustion Units Constructed On or Before 30 August 1999</i>, is not covered by these requirements.)</p> <p>(NOTE: These requirements do not apply to temporary boilers.)</p> <p>Verify that the owner or operator of an affected facility that combusts only coal does not:</p> <ul style="list-style-type: none"> <li>– cause to be discharged into the atmosphere from the affected facility any gases that contain SO<sub>2</sub> in excess of 87 ng/J (0.20 lb/MMBtu) heat input or 10 percent (0.10) of the potential SO<sub>2</sub> emission rate (90 percent reduction)</li> <li>– cause to be discharged into the atmosphere from the affected facility any gases that contain SO<sub>2</sub> in excess of 520 ng/J (1.2 lb/MMBtu) heat input.</li> </ul> <p>Verify that, if coal is combusted with other fuels, the affected facility does not discharge into the atmosphere:</p> <ul style="list-style-type: none"> <li>– any gases that contain SO<sub>2</sub> in excess of 87 ng/J (0.20 lb/MMBtu) heat input or 10 percent (0.10) of the potential SO<sub>2</sub> emission rate (90 percent reduction)</li> <li>– any gases that contain SO<sub>2</sub> in excess of the determined emission limit.</li> </ul> <p>Verify that the owner or operator of an affected facility that combusts only coal refuse alone in a fluidized bed combustion steam generating unit does not discharge into the atmosphere:</p> <ul style="list-style-type: none"> <li>– any gases that contain SO<sub>2</sub> in excess of 87 ng/J (0.20 lb/MMBtu) heat input or 20 percent (0.20) of the potential SO<sub>2</sub> emission rate (80 percent reduction); nor</li> <li>– gases that contain SO<sub>2</sub> in excess of SO<sub>2</sub> in excess of 520 ng/J (1.2 lb/MMBtu) heat input.</li> </ul> <p>(NOTE: If oil or any other fuel (except coal) is fired with coal refuse, the affected facility is subject to the 87 ng/J (0.20 lb/MMBtu) heat input SO<sub>2</sub> emissions limit or the 90 percent SO<sub>2</sub> reduction requirement.)</p> <p>Verify that the owner or operator of an affected facility that combusts only coal and that uses an emerging technology for the control of SO<sub>2</sub> emissions does not discharge into the atmosphere:</p> <ul style="list-style-type: none"> <li>– gases that contain SO<sub>2</sub> in excess of 50 percent (0.50) of the potential SO<sub>2</sub> emission rate (50 percent reduction)</li> <li>– any gases that contain SO<sub>2</sub> in excess of 260 ng/J (0.60 lb/MMBtu) heat input.</li> </ul> <p>(NOTE: If coal is combusted with other fuels, the affected facility is subject to the 50 percent SO<sub>2</sub> reduction requirement specified in this paragraph and the calculated emission limit.)</p>

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	<p>Verify that no owner or operator of an affected facility that combusts coal, alone or in combination with any other fuel, and is listed below discharges into the atmosphere any gases that contain SO<sub>2</sub> in excess of the calculated emission limit:</p> <ul style="list-style-type: none"> <li>– affected facilities that have a heat input capacity of 22 MW (75 MMBtu/h) or less</li> <li>– affected facilities that have an annual capacity for coal of 55 percent (0.55) or less and are subject to a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor for coal of 55 percent (0.55) or less</li> <li>– affected facilities located in a noncontinental area</li> <li>– affected facilities that combust coal in a duct burner as part of a combined cycle system where 30 percent (0.30) or less of the heat entering the steam generating unit is from combustion of coal in the duct burner and 70 percent (0.70) or more of the heat entering the steam generating unit is from exhaust gases entering the duct burner.</li> </ul> <p>(NOTE: Percent reduction requirements are not applicable to affected facilities that combusts coal, alone or in combination with any other fuel as listed above.)</p> <p>Verify that no owner or operator of an affected facility that combusts oil discharges into the atmosphere from an affected facility any gases that contain SO<sub>2</sub> in excess of 215 ng/J (0.50 lb/MMBtu) heat input; or, as an alternative, no owner or operator of an affected facility that combusts oil combusts oil in the affected facility that contains greater than 0.5 weight percent sulfur.</p> <p>(NOTE: The percent reduction requirements are not applicable to affected facilities combusting oil.)</p> <p>Verify that no owner or operator of an affected facility that combusts coal, oil, or coal and oil with any other fuel discharges into the atmosphere from that affected facility any gases that contain SO<sub>2</sub> in excess of the following:</p> <ul style="list-style-type: none"> <li>– the percent of potential SO<sub>2</sub> emission rate or required numerical SO<sub>2</sub> emission rate for any affected facility that: <ul style="list-style-type: none"> <li>– combusts coal in combination with any other fuel</li> <li>– has a heat input capacity greater than 22 MW (75 MMBtu/h)</li> <li>– has an annual capacity factor for coal greater than 55 percent (0.55)</li> </ul> </li> <li>– the emission limit determined according to the formula for any affected facility that combusts coal, oil, or coal and oil with any other fuel in 40 CFR 60.42c(e)(2).</li> </ul> <p>(NOTE: Reduction in the potential SO<sub>2</sub> emission rate through fuel pretreatment is not credited toward the percent reduction requirement unless:</p> <ul style="list-style-type: none"> <li>– fuel pretreatment results in a 50 percent (0.50) or greater reduction in the potential SO<sub>2</sub> emission rate</li> </ul>

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<p><b>AE.10.8.US.</b> Steam-generating units, that started construction, modification, or reconstruction after 9 June 1989, with a maximum design heat input capacity of greater than or equal to 2.9 MW (10 MMBtu/h), but less than 29 MW (100 MMBtu/h), are required to meet specific standards for emissions of particulates (40 CFR 60.40c and 60.43c) [Revised June 1996; Revised July 2006; Revised July 2007; Revised April 2009; Revised April</p>	<p>– emissions from the pretreated fuel (without either combustion or post-combustion SO<sub>2</sub> control) are equal to or less than the required emission limits.)</p> <p>(NOTE: Compliance with the percent reduction requirements, fuel oil sulfur limits, and emission limits of this section shall be determined on a 30-day rolling average basis.)</p> <p>(NOTE: For the following affected facilities, compliance with the emission limits or fuel oil sulfur limits may be determined based on a certification from the fuel supplier:</p> <ul style="list-style-type: none"> <li>– distillate oil-fired affected facilities with heat input capacities between 2.9 and 29 MW (10 and 100 MMBtu/hr)</li> <li>– residual oil-fired affected facilities with heat input capacities between 2.9 and 8.7 MW (10 and 30 MMBtu/hr)</li> <li>– coal-fired affected facilities with heat input capacities between 2.9 and 8.7 MW (10 and 30 MMBtu/hr)</li> <li>– other fuel-fired affected facilities with heat input capacities between 2.9 and 8.7 MW (10 and 30 MMBtu/h).)</li> </ul> <p>(NOTE: The SO<sub>2</sub> emission limits, fuel oil sulfur limits, and percent reduction requirements apply at all times, including periods of startup, shutdown, and malfunction.)</p> <p>(NOTE: For affected facilities located in noncontinental areas and affected facilities complying with the percent reduction standard, only the heat input supplied to the affected facility from the combustion of coal and oil is counted. No credit is provided for the heat input to the affected facility from wood or other fuels or for heat derived from exhaust gases from other sources, such as stationary gas turbines, internal combustion engines, and kilns.)</p> <p>(NOTE: See checklist item AE.10.7.US for applicability information.)</p> <p>(NOTE: Affected facilities subject to this checklist item that also meet the applicability requirements under 40 CFR 60.104 or 60.100a for petroleum refineries must also meet the PM [see the PM standard below in this checklist item] and the SO<sub>2</sub> standards under 40 CFR 60.104 and 60.102a [see text].)</p> <p>Verify that no owner or operator of an affected facility that commenced construction, reconstruction, or modification on or before 28 February 2005, that combusts coal or combusts mixtures of coal with other fuels and has a heat input capacity of 8.7 MW (30 MMBtu/h) or greater, discharges into the atmosphere any gases that contain PM in excess of the following emission limits:</p> <ul style="list-style-type: none"> <li>– 22 ng/J (0.051 lb/MMBtu) heat input if the affected facility combusts only coal, or combusts coal with other fuels and has an annual capacity factor for the other fuels of 10 percent (0.10) or less</li> </ul>

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<b>2011; Revised January 2012; Revised April 2012].</b>	<p>– 43 ng/J (0.10 lb/MMBtu) heat input if the affected facility combusts coal with other fuels, has an annual capacity factor for the other fuels greater than 10 percent (0.10), and is subject to a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor greater than 10 percent (0.10) for fuels other than coal.</p> <p>Verify that no owner or operator of an affected facility that commenced construction, reconstruction, or modification on or before 28 February 2005, that combusts wood or combusts mixtures of wood with other fuels (except coal) and has a heat input capacity of 8.7 MW (30 MMBtu/h) or greater, discharges into the atmosphere any gases that contain PM in excess of the following emissions limits:</p> <ul style="list-style-type: none"> <li>– 43 ng/J (0.10 lb/MMBtu) heat input if the affected facility has an annual capacity factor for wood greater than 30 percent (0.30)</li> <li>– 130 ng/J (0.30 lb/MMBtu) heat input if the affected facility has an annual capacity factor for wood of 30 percent (0.30) or less and is subject to a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor for wood of 30 percent (0.30) or less.</li> </ul> <p>Verify that no owner or operator of an affected facility that can combust coal, wood, or oil and has a heat input capacity of 8.7 MW (30 MMBtu/hr) or greater discharges into the atmosphere any gases that exhibit greater than 20 percent opacity (6-min average), except for one 6-min period per hour of not more than 27 percent opacity.</p> <p>(NOTE: Owners and operators of an affected facility that elect to install, calibrate, maintain, and operate a continuous emissions monitoring system (CEMS) for measuring PM emissions and are subject to a federally enforceable PM limit of 0.030 lb/MMBtu or less are exempt from the opacity standard above.)</p> <p>(NOTE: The PM and opacity standards apply at all times, except during periods of startup, shutdown, or malfunction.)</p> <p>Verify that no owner or operator of an affected facility that commences construction, reconstruction, or modification after 28 February 2005, and that combusts coal, oil, wood, a mixture of these fuels, or a mixture of these fuels with any other fuels and has a heat input capacity of 8.7 MW (30 MMBtu/hr) or greater discharges into the atmosphere any gases that contain PM in excess of 13 ng/J (0.030 lb/MMBtu) heat input, except as follows:</p> <ul style="list-style-type: none"> <li>– no owner or operator of an affected facility that commences modification after 28 February 2005 discharges into the atmosphere any gases that contain PM in excess of both: <ul style="list-style-type: none"> <li>– 22 ng/J (0.051 lb/MMBtu) heat input derived from the combustion of coal, oil, wood, a mixture of these fuels, or a mixture of these fuels with any other fuels</li> </ul> </li> </ul>

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<p><b>AE.10.9.US.</b> Steam-generating units, that started construction, modification, or reconstruction after 9 June 1989, with a maximum design heat input capacity of greater than or equal to 2.9 MW (10 MMBtu/h), but less than 29 MW (100 MBtu/h), are required to meet specific monitoring standards SO<sub>2</sub> and particulate matter (40 CFR 60.46c and 60.47c) [<b>Revised June 1996; Revised July 2006; Revised July 2007; Revised April 2009; Revised April 2011; Revised January 2012; Revised April 2012</b>].</p>	<ul style="list-style-type: none"> <li>– 0.2 percent of the combustion concentration (99.8 percent reduction) when combusting coal, oil, wood, a mixture of these fuels, or a mixture of these fuels with any other fuels</li> <li>– no owner or operator of an affected facility that commences modification after 28 February 2005, and that combusts over 30 percent wood (by heat input) on an annual basis and has a heat input capacity of 8.7 MW (30 MMBtu/hr) or greater discharges into the atmosphere any gases that contain PM in excess of 43 ng/J (0.10 lb/MMBtu) heat input</li> <li>– an owner or operator of an affected facility that commences construction, reconstruction, or modification after 28 February 2005, and that combusts only oil that contains no more than 0.50 weight percent sulfur or a mixture of 0.50 weight percent sulfur oil with other fuels not subject to a PM standard under 40 CFR 60.43c (this checklist item) and not using a post-combustion technology (except a wet scrubber) to reduce PM or SO<sub>2</sub> emissions is not subject to the PM limit in this checklist item.</li> </ul> <p>Verify that the owner or operator of an affected facility subject to the SO<sub>2</sub> emission limits under 40 CFR 60.42c (see checklist item AE.10.7.US) installs, calibrates, maintains, and operates a CEMS for measuring SO<sub>2</sub> concentrations and either O<sub>2</sub> or CO<sub>2</sub> concentrations at the outlet of the SO<sub>2</sub> control device (or the outlet of the steam generating unit if no SO<sub>2</sub> control device is used), and records the output of the system.</p> <p>Verify that the owner or operator of an affected facility subject to the percent reduction requirements under 40 CFR 60.42c (see checklist item AE.10.7.US) measures SO<sub>2</sub> concentrations and either O<sub>2</sub> or CO<sub>2</sub> concentrations at both the inlet and outlet of the SO<sub>2</sub> control device.</p> <p>Verify that the 1-hour average SO<sub>2</sub> emission rates measured by a CEMS is expressed in ng/J or lb/MMBtu heat input and is used to calculate the average emission rates under 40 CFR 60.42c (see checklist item AE.10.7.US).</p> <p>(NOTE: Each 1-h average SO<sub>2</sub> emission rate must be based on at least 30 minutes of operation, and calculated using the data points required under 40 CFR 60.13(h)(2). Hourly SO<sub>2</sub> emission rates are not calculated if the affected facility is operated less than 30 min in a 1-h period and are not counted toward determination of a steam generating unit operating day.)</p> <p>Verify that the procedures under 40 CFR 60.13 (see text) are followed for installation, evaluation, and operation of the CEMS, as well as:</p> <ul style="list-style-type: none"> <li>– all CEMS are operated in accordance with the applicable procedures under Performance Specifications 1, 2, and 3 of 40 CFR 60, appendix B</li> <li>– quarterly accuracy determinations and daily calibration drift tests are performed in accordance with Procedure 1 of 40 CFR 60, appendix F</li> </ul>

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	<ul style="list-style-type: none"> <li>– for affected facilities subject to the percent reduction requirements under 40 CFR 60.42c (see checklist item AE.10.7.US), the span value of the SO<sub>2</sub> CEMS at the inlet to the SO<sub>2</sub> control device shall be 125 percent of the maximum estimated hourly potential SO<sub>2</sub> emission rate of the fuel combusted, and the span value of the SO<sub>2</sub> CEMS at the outlet from the SO<sub>2</sub> control device shall be 50 percent of the maximum estimated hourly potential SO<sub>2</sub> emission rate of the fuel combusted</li> <li>– for affected facilities that are not subject to the percent reduction requirements of 40 CFR 60.42c (see checklist item AE.10.7.US), the span value of the SO<sub>2</sub> CEMS at the outlet from the SO<sub>2</sub> control device (or outlet of the steam generating unit if no SO<sub>2</sub> control device is used) is 125 percent of the maximum estimated hourly potential SO<sub>2</sub> emission rate of the fuel combusted.</li> </ul> <p>(NOTE: As an alternative to operating a CEMS at the inlet to the SO<sub>2</sub> control device (or outlet of the steam generating unit if no SO<sub>2</sub> control device is used), an owner or operator may elect to determine the average SO<sub>2</sub> emission rate by sampling the fuel prior to combustion. As an alternative to operating a CEMS at the outlet from the SO<sub>2</sub> control device (or outlet of the steam generating unit if no SO<sub>2</sub> control device is used), an owner or operator may elect to determine the average SO<sub>2</sub> emission rate by using Method 6B of 40 CFR 60, appendix A.)</p> <p>Verify that, for affected facilities combusting coal or oil, coal or oil samples are collected daily in an as-fired condition at the inlet to the steam generating unit and analyzed for sulfur content and heat content according the Method 19 of 40 CFR 60, appendix A.</p> <p>(NOTE: As an alternative fuel sampling procedure for affected facilities combusting oil, oil samples may be collected from the fuel tank for each steam generating unit immediately after the fuel tank is filled and before any oil is combusted. The owner or operator of the affected facility shall analyze the oil sample to determine the sulfur content of the oil. If a partially empty fuel tank is refilled, a new sample and analysis of the fuel in the tank would be required upon filling. Results of the fuel analysis taken after each new shipment of oil is received shall be used as the daily value when calculating the 30-day rolling average until the next shipment is received. If the fuel analysis shows that the sulfur content in the fuel tank is greater than 0.5 weight percent sulfur, the owner or operator shall ensure that the sulfur content of subsequent oil shipments is low enough to cause the 30-day rolling average sulfur content to be 0.5 weight percent sulfur or less.)</p> <p>(NOTE: Method 6B of 40 CFR 60, appendix A may be used in lieu of CEMS to measure SO<sub>2</sub> at the inlet or outlet of the SO<sub>2</sub> control system. An initial stratification test is required to verify the adequacy of the Method 6B of appendix A of this part sampling location. The stratification test shall consist of three paired runs of a suitable SO<sub>2</sub> and CO<sub>2</sub> measurement train operated at the candidate location and a second similar train operated according to the procedures in Sec. 3.2 and the applicable procedures in section 7 of Performance Specification 2 of 40 CFR 60, appendix B. Method 6B of 40 CFR 60, appendix A, Method 6A of 40 CFR 60,</p>

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	<p>appendix A, or a combination of Methods 6 and 3 of appendix A or Methods 6C and 3A of appendix A are suitable measurement techniques. If Method 6B of appendix A of this part is used for the second train, sampling time and timer operation may be adjusted for the stratification test as long as an adequate sample volume is collected; however, both sampling trains are to be operated similarly. For the location to be adequate for Method 6B of appendix A of this part 24-h tests, the mean of the absolute difference between the three paired runs must be less than 10 percent (0.10).)</p> <p>(NOTE: The monitoring requirements of a CEMS for SO<sub>2</sub> and the alternative of fuel sampling does not apply to the affected facilities subject to 40 CFR 60.42c(h)(1), 60.42c(h)(2), or 60.42c(h)(3) [see checklist item AE.10.7.US] where the owner or operator of the affected facility seeks to demonstrate compliance with the SO<sub>2</sub> standards based on fuel supplier certification.)</p> <p>Verify that the owner or operator of an affected facility operating a CEMS for SO<sub>2</sub>, or conducting as-fired fuel sampling pursuant, obtains emission data for at least 75 percent of the operating hours in at least 22 out of 30 successive steam generating unit operating days.</p> <p>(NOTE: If this SO<sub>2</sub> minimum data requirement is not met with a single monitoring system, the owner or operator of the affected facility shall supplement the emission data with data collected with other monitoring systems as approved by the Administrator.)</p> <p>Verify that the owner or operator of an affected facility combusting coal, oil, or wood that is subject to the opacity standards under 40 CFR 60.43c (see checklist item AE.10.8.US) installs, calibrates, maintains, and operates a continuous opacity monitoring system (COMS) for measuring the opacity of the emissions discharged to the atmosphere and record the output of the system.</p> <p>(NOTE: The owner or operator of an affected facility subject to an opacity standard in 40 CFR 60.43c(c) [see checklist item AE.10.8.US] and that is not required to install a COMS and elects not to install a COMS shall conduct a performance test using Method 9 of appendix A-4 of 40 CFR 60 and the procedures in 40 CFR 60.11 to demonstrate compliance by 29 April 2011, within 45 days of stopping use of an existing COMS, or within 180 days after initial startup of the facility, whichever is later. See the text of 40 CFR 60.47c(a)(1) through 60.47c(a)(3) for additional testing procedures.)</p> <p>(NOTE: If during the initial 60 min of observation all 6-min averages are less than 10 percent and all individual 15-sec observations are less than or equal to 20 percent, the observation period may be reduced from 3 h to 60 min.)</p>

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	<p>Verify that all COMS for measuring opacity are operated in accordance with the applicable procedures under Performance Specification 1 of 40 CFR 60, appendix B.</p> <p>Verify that the span value of the opacity COMS is between 60 and 80 percent.</p> <p>(NOTE: Affected facilities that burn only distillate oil that contains no more than 0.5 weight percent sulfur and/or liquid or gaseous fuels with potential SO<sub>2</sub> emission rates of 26 ng/J (0.06 lb/MMBtu) heat input or less and that do not use a post-combustion technology to reduce SO<sub>2</sub> or PM emissions and that are subject to an opacity standard in 40 CFR 60.43c(c) [see checklist item AE.10.8.US] are not required to operate a COMS if they follow the applicable procedures in 40 CFR 60.48c(f)[see checklist item AE.10.10.US].)</p> <p>Verify that owners or operators complying with the PM emission limit by using a PM CEMS calibrate, maintain, operate, and record the output of the system for PM emissions discharged to the atmosphere.</p> <p>Verify that the CEMS is operated and data recorded during all periods of operation of the affected facility except for CEMS breakdowns and repairs.</p> <p>Verify that data is recorded during calibration checks, and zero and span adjustments.</p> <p>(NOTE: Owners and operators of an affected facility that is subject to an opacity standard in 40 CFR 60.43c(c)(see checklist item AE.10.8.US) and that does not use post-combustion technology (except a wet scrubber) for reducing PM, SO<sub>2</sub>, or CO emissions, burns only gaseous fuels or fuel oils that contain less than or equal to 0.5 weight percent sulfur, and is operated such that emissions of CO discharged to the atmosphere from the affected facility are maintained at levels less than or equal to 0.15 lb/MMBtu on a boiler operating day average basis is not required to operate a COMS.)</p> <p>Verify that, owners and operators of affected facilities electing to comply with the alternative to operating a COMS must demonstrate compliance according to the following procedures:</p> <ul style="list-style-type: none"> <li>– monitor CO emissions using a CEMS according to the following procedures: <ul style="list-style-type: none"> <li>– the CO CEMS is installed, certified, maintained, and operated according to the provisions in 40 CFR 60.58b(i)(3)</li> <li>– each 1-h CO emissions average is calculated using the data points generated by the CO CEMS expressed in ppmv corrected to 3 percent oxygen (dry basis)</li> <li>– at a minimum, valid 1-h CO emissions averages are obtained for at least 90 percent of the operating hours on a 30-day rolling average basis with the 1-h averages being calculated using the data points required in 40 CFR 60.13(h)(2)</li> </ul> </li> </ul>

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<p><b>AE.10.10.US.</b> Steam-generating units, that started construction, modification, or reconstruction after 9 June</p>	<ul style="list-style-type: none"> <li>– quarterly accuracy determinations and daily calibration drift tests for the CO CEMS are performed in accordance with procedure 1 in 40 CFR 60, appendix F</li> <li>– calculate the 1-h average CO emissions levels for each steam generating unit operating day by multiplying the average hourly CO output concentration measured by the CO CEMS times the corresponding average hourly flue gas flow rate and divided by the corresponding average hourly heat input to the affected source (NOTE: The 24-h average CO emission level is determined by calculating the arithmetic average of the hourly CO emission levels computed for each steam generating unit operating day.)</li> <li>– evaluate the preceding 24-h average CO emission level each steam generating unit operating day excluding periods of affected source startup, shutdown, or malfunction (NOTE: If the 24-hour average CO emission level is greater than 0.15 lb/MMBtu, initiate investigation of the relevant equipment and control systems within 24 hours of the first discovery of the high emission incident and, take the appropriate corrective action as soon as practicable to adjust control settings or repair equipment to reduce the 24-hour average CO emission level to 0.15 lb/MMBtu or less)</li> <li>– record the CO measurements and calculations performed and any corrective actions taken.</li> </ul> <p>Verify that the record of corrective action taken includes the date and time during which the 24-h average CO emission level was greater than 0.15 lb/MMBtu, and the date, time, and description of the corrective action.</p> <p>(NOTE: Owners and operators of an affected facility that is subject to an opacity standard in 40 CFR 60.43c(c) [see checklist item AE.10.9.US] (see text) are not required to operate a COMS if the affected facility meets any of the following conditions:</p> <ul style="list-style-type: none"> <li>– the affected facility uses a fabric filter (baghouse) as the primary PM control device and, the owner or operator operates a bag leak detection system to monitor the performance of the fabric filter according to the requirements in 40 CFR 60.48Da</li> <li>– the affected facility uses an ESP as the primary PM control device, and the owner or operator uses an ESP predictive model to monitor the performance of the ESP developed in accordance and operated according to the requirements in 40 CFR 60.48Da</li> <li>– the affected facility burns only gaseous fuels and/or fuel oils that contain no greater than 0.5 weight percent sulfur, and the owner or operator operates the unit according to a written site-specific monitoring plan approved by the permitting authority.)</li> </ul> <p>Verify that the owner or operator of each affected facility submitted notification of the date of construction or reconstruction and actual startup, including:</p>

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<p>1989, with a maximum design heat input capacity of greater than or equal to 2.9 MW (10 MMBtu/h), but less than 29 MW (100 MMBtu/h), are required to meet specific reporting requirements (40 CFR 60.48c) <b>[Revised February 1995; Revised July 2006; Revised April 2009; Revised April 2011]</b>.</p>	<ul style="list-style-type: none"> <li>– the design heat input capacity of the affected facility and identification of fuels to be combusted in the affected facility</li> <li>– if applicable, a copy of any federally enforceable requirement that limits the annual capacity factor for any fuel or mixture of fuels under 40 CFR 60.42c, or 40 CFR 60.43c</li> <li>– the annual capacity factor at which the owner or operator anticipates operating the affected facility based on all fuels fired and based on each individual fuel fired</li> <li>– notification if an emerging technology will be used for controlling SO<sub>2</sub> emissions.</li> </ul> <p>(NOTE: The Administrator will examine the description of the control device and will determine whether the technology qualifies as an emerging technology. In making this determination, the Administrator may require the owner or operator of the affected facility to submit additional information concerning the control device.)</p> <p>Verify that the owner or operator of each affected facility subject to the SO<sub>2</sub> emission limits of 40 CFR 60.42c, or the PM or opacity limits of 40 CFR 60.43c, (see checklist items AE.10.7.US and AE.10.8.US) submits to the Administrator the performance test data from the initial and any subsequent performance tests and, if applicable, the performance evaluation of the CEMS and/or COMS using the applicable performance specifications in 40 CFR 60, appendix B.</p> <p>Verify that the owner or operator of an affected facility subject to the opacity limits in 40 CFR 60.43c(c)(see checklist item AE.10.8.US) submits excess emission reports for any excess emissions from the affected facility that occur during the reporting period and maintains records according to the following requirements, as applicable to the visible emissions monitoring method used:</p> <ul style="list-style-type: none"> <li>– for each performance test conducted using Method 9 of appendix A-4 of this part, keep the following records: <ul style="list-style-type: none"> <li>– dates and time intervals of all opacity observation periods</li> <li>– name, affiliation, and copy of current visible emission reading certification for each visible emission observer participating in the performance test</li> <li>– copies of all visible emission observer opacity field data sheets</li> </ul> </li> <li>– for each performance test conducted using Method 22 of appendix A-4 of 40 CFR 60, keep the records including the following: <ul style="list-style-type: none"> <li>– dates and time intervals of all visible emissions observation periods</li> <li>– name and affiliation for each visible emission observer participating in the performance test</li> <li>– copies of all visible emission observer opacity field data sheets</li> <li>– documentation of any adjustments made and the time the adjustments were completed to the affected facility operation by the owner or operator to demonstrate compliance with the applicable monitoring requirements</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– for each digital opacity compliance system, maintain records and submit reports according to the requirements specified in the site-specific monitoring plan approved by the Administrator.</li> </ul> <p>Verify that the owner or operator of each affected facility subject to the SO<sub>2</sub> emission limits, fuel oil sulfur limits, or percent reduction requirements under 40 CFR 60.42c (see checklist item AE.10.7.US) submits reports to the Administrator.</p> <p>Verify that the owner or operator of each affected facility subject to the SO<sub>2</sub> emission limits, fuel oil sulfur limits, or percent reduction requirements under 40 CFR 60.42c (see checklist item AE.10.7.US) keeps records and submits reports as required, including the following information, as applicable:</p> <ul style="list-style-type: none"> <li>– calendar dates covered in the reporting period</li> <li>– each 30-day average SO<sub>2</sub> emission rate (ng/J or lb/MMBtu), or 30-day average sulfur content (weight percent), calculated during the reporting period, ending with the last 30-day period; reasons for any noncompliance with the emission standards; and a description of corrective actions taken</li> <li>– each 30-day average percent of potential SO<sub>2</sub> emission rate calculated during the reporting period, ending with the last 30-day period; reasons for any noncompliance with the emission standards; and a description of the corrective actions taken</li> <li>– identification of any steam generating unit operating days for which SO<sub>2</sub> or diluent (O<sub>2</sub> or CO<sub>2</sub>) data have not been obtained by an approved method for at least 75 percent of the operating hours; justification for not obtaining sufficient data; and a description of corrective actions taken</li> <li>– identification of any times when emissions data have been excluded from the calculation of average emission rates; justification for excluding data; and a description of corrective actions taken if data have been excluded for periods other than those during which coal or oil were not combusted in the steam generating unit</li> <li>– identification of the F factor used in calculations, method of determination, and type of fuel combusted</li> <li>– identification of whether averages have been obtained based on CEMS rather than manual sampling methods</li> <li>– if a CEMS is used, identification of any times when the pollutant concentration exceeded the full span of the CEMS</li> <li>– if a CEMS is used, description of any modifications to the CEMS that could affect the ability of the CEMS to comply with Performance Specifications 2 or 3 of 40 CFR 60, appendix B</li> <li>– if a CEMS is used, results of daily CEMS drift tests and quarterly accuracy assessments as required under 40 CFR 60, appendix F, Procedure 1</li> <li>– if fuel supplier certification is used to demonstrate compliance, records of fuel supplier certification are used to demonstrate compliance, records of fuel supplier certification, as applicable</li> </ul>

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	<p>– in addition to records of fuel supplier certifications, a certified statement signed by the owner or operator of the affected facility that the records of fuel supplier certifications submitted represent all of the fuel combusted during the reporting period.</p> <p>Verify that fuel supplier certification includes the following information:</p> <ul style="list-style-type: none"> <li>– for distillate oil: <ul style="list-style-type: none"> <li>– the name of the oil supplier</li> <li>– a statement from the oil supplier that the oil complies with the specifications under the definition of distillate oil in 40 CFR 60.41c; and</li> <li>– the sulfur content or maximum sulfur content of the oil</li> </ul> </li> <li>– for residual oil: <ul style="list-style-type: none"> <li>– the name of the oil supplier</li> <li>– the location of the oil when the sample was drawn for analysis to determine the sulfur content of the oil, specifically including whether the oil was sampled as delivered to the affected facility, or whether the sample was drawn from oil in storage at the oil supplier's or oil refiner's facility, or other location</li> <li>– the sulfur content of the oil from which the shipment came (or of the shipment itself)</li> <li>– the method used to determine the sulfur content of the oil</li> </ul> </li> <li>– for coal: <ul style="list-style-type: none"> <li>– the name of the coal supplier</li> <li>– the location of the coal when the sample was collected for analysis to determine the properties of the coal, specifically including whether the coal was sampled as delivered to the affected facility or whether the sample was collected from coal in storage at the mine, at a coal preparation plant, at a coal supplier's facility, or at another location (NOTE: The certification shall include the name of the coal mine (and coal seam), coal storage facility, or coal preparation plant (where the sample was collected))</li> <li>– the results of the analysis of the coal from which the shipment came (or of the shipment itself) including the sulfur content, moisture content, ash content, and heat content</li> <li>– the methods used to determine the properties of the coal</li> </ul> </li> <li>– for other fuels: <ul style="list-style-type: none"> <li>– the name of the supplier of the fuel</li> <li>– the potential sulfur emissions rate or maximum potential sulfur emissions rate of the fuel in ng/J heat input</li> <li>– the method used to determine the potential sulfur emissions rate of the fuel.</li> </ul> </li> </ul> <p>Verify that the owner or operator of each affected facility records and maintains records of the amount of each fuel combusted during each operating day.</p>

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<p><b>AE.10.11.US.</b> Checklist item deleted [Added October 2004; Revised January 2007; Deleted January 2008].</p> <p><b>AE.10.12.US.</b> Checklist item deleted [Added October 2004; Revised July 2006; Revised October 2006; Deleted January 2008].</p>	<p>(NOTE: As an alternative to keeping the records of amount of fuel combusted each operating day, the owner or operator of an affected facility that combusts only natural gas, wood, fuels using fuel certification to demonstrate compliance with the SO<sub>2</sub> standard, fuels not subject to an emissions standard (excluding opacity), or a mixture of these fuels may elect to record and maintain records of the amount of each fuel combusted during each calendar month.)</p> <p>(NOTE: As an alternative to keeping the records of amount of fuel combusted each operating day, the owner or operator of an affected facility or multiple affected facilities located on a contiguous property unit where the only fuels combusted in any steam generating unit (including steam generating units not subject to this subpart) at that property are natural gas, wood, distillate oil meeting the most current requirements in 40 CFR 60.42C to use fuel certification to demonstrate compliance with the SO<sub>2</sub> standard, and/or fuels, excluding coal and residual oil, not subject to an emissions standard (excluding opacity) may elect to record and maintain records of the total amount of each steam generating unit fuel delivered to that property during each calendar month.)</p> <p>Verify that the owner or operator of each affected facility subject to a federally enforceable requirement limiting the annual capacity factor for any fuel or mixture of fuels under 40 CFR 60.42c or 40 CFR 60.43c calculates the annual capacity factor individually for each fuel combusted.</p> <p>(NOTE: The annual capacity factor is determined on a 12-mo rolling average basis with a new annual capacity factor calculated at the end of the calendar month.)</p> <p>Verify that all required records are maintained by the owner or for a period of 2 yr following the date of such record.</p> <p>(NOTE: The reporting period for the required reports is each 6-mo period. All reports shall be submitted to the Administrator and shall be postmarked by the 30th day following the end of the reporting period.)</p> <p>(NOTE: The NESHAP for boilers and process heaters were promulgated at 40 CFR 63, Subpart DDDDD [40 CFR 63.7480 – 63.7575], on September 2004 and vacated by the Courts on June 8, 2007. The vacature requires the Agency to revise the standards and the associated MACT floors based on new estimates of potentially affected units.)</p> <p>(NOTE: The NESHAP for boilers and process heaters were promulgated at 40 CFR 63, Subpart DDDDD [40 CFR 63.7480 – 63.7575], on September 2004 and vacated by the Courts on June 8, 2007. The vacature requires the Agency to revise the standards and the associated MACT floors based on new estimates of potentially affected units.)</p>

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<b>AE.10.13.US.</b> Checklist item deleted [Added <b>October 2004;</b> Deleted <b>January 2008</b> ].	(NOTE: The NESHAP for boilers and process heaters were promulgated at 40 CFR 63, Subpart DDDDD [40 CFR 63.7480 – 63.7575], on September 2004 and vacated by the Courts on June 8, 2007. The vacature requires the Agency to revise the standards and the associated MACT floors based on new estimates of potentially affected units.)
<b>AE.10.14.US.</b> Checklist item deleted [Added <b>October 2004;</b> Revised <b>January 2007;</b> Deleted <b>January 2008</b> ].	(NOTE: The NESHAP for boilers and process heaters were promulgated at 40 CFR 63, Subpart DDDDD [40 CFR 63.7480 – 63.7575], on September 2004 and vacated by the Courts on June 8, 2007. The vacature requires the Agency to revise the standards and the associated MACT floors based on new estimates of potentially affected units.)
<b>AE.10.15.US.</b> Checklist item deleted [Added <b>October 2004;</b> Revised <b>January 2007;</b> Deleted <b>January 2008</b> ].	(NOTE: The NESHAP for boilers and process heaters were promulgated at 40 CFR 63, Subpart DDDDD [40 CFR 63.7480 – 63.7575], on September 2004 and vacated by the Courts on June 8, 2007. The vacature requires the Agency to revise the standards and the associated MACT floors based on new estimates of potentially affected units.)
<b>AE.10.16.US.</b> Checklist item deleted [Added <b>October 2004;</b> Deleted <b>January 2008</b> ].	(NOTE: The NESHAP for boilers and process heaters were promulgated at 40 CFR 63, Subpart DDDDD [40 CFR 63.7480 – 63.7575], on September 2004 and vacated by the Courts on June 8, 2007. The vacature requires the Agency to revise the standards and the associated MACT floors based on new estimates of potentially affected units.)
<b>AE.10.17.US.</b> Checklist item deleted [Added <b>October 2004;</b> Deleted <b>January 2008</b> ].	(NOTE: The NESHAP for boilers and process heaters were promulgated at 40 CFR 63, Subpart DDDDD [40 CFR 63.7480 – 63.7575], on September 2004 and vacated by the Courts on June 8, 2007. The vacature requires the Agency to revise the standards and the associated MACT floors based on new estimates of potentially affected units.)
<b>AE.10.18.US.</b> Checklist item deleted [Added <b>October 2004;</b> Deleted <b>January 2008</b> ].	(NOTE: The NESHAP for boilers and process heaters were promulgated at 40 CFR 63, Subpart DDDDD [40 CFR 63.7480 – 63.7575], on September 2004 and vacated by the Courts on June 8, 2007. The vacature requires the Agency to revise the standards and the associated MACT floors based on new estimates of potentially affected units.)



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<b>AE.12</b>  <b>MERCURY-BUDGET TRADING PROGRAM</b>  <b>AE.12.1.US.</b> Checklist item deleted [Added October 2005; Deleted January 2012].  <b>AE.12.2.US.</b> Checklist item deleted [Added October 2005; Deleted January 2012].  <b>AE.12.3.US.</b> Checklist item deleted [Added October 2005; Deleted January 2012].  <b>AE.12.4.US.</b> Checklist item deleted [Added October 2005; Deleted January 2012].	<p>(NOTE: This checklist item was deleted with the promulgation of 40 CFR 63, Subpart UUUUU: National Emission Standards for Hazardous Air Pollutants: Coal-and-Oil-fired Electric Utility Steam Generating Units in December 2011. 40 CFR 63, Subpart UUUUU applies to “a fossil fuel-fired combustion unit of more than 25 megawatts electric (MWe) that serves a generator that produces electricity for sale. A fossil fuel-fired unit that cogenerates steam and electricity and supplies more than one-third of its potential electric output capacity and more than 25 MWe output to any utility power distribution system for sale is considered an electric utility steam generating unit.” Due to the “for sale” aspect of this 40 CFR 63, Subpart UUUUU, it is not included in the U.S. TEAM Guide.)</p> <p>(NOTE: This checklist item was deleted with the promulgation of 40 CFR 63, Subpart UUUUU: National Emission Standards for Hazardous Air Pollutants: Coal-and-Oil-fired Electric Utility Steam Generating Units in December 2011. 40 CFR 63, Subpart UUUUU applies to “a fossil fuel-fired combustion unit of more than 25 megawatts electric (MWe) that serves a generator that produces electricity for sale. A fossil fuel-fired unit that cogenerates steam and electricity and supplies more than one-third of its potential electric output capacity and more than 25 MWe output to any utility power distribution system for sale is considered an electric utility steam generating unit.” Due to the “for sale” aspect of this 40 CFR 63, Subpart UUUUU, it is not included in the U.S. TEAM Guide.)</p> <p>(NOTE: This checklist item was deleted with the promulgation of 40 CFR 63, Subpart UUUUU: National Emission Standards for Hazardous Air Pollutants: Coal-and-Oil-fired Electric Utility Steam Generating Units in December 2011. 40 CFR 63, Subpart UUUUU applies to “a fossil fuel-fired combustion unit of more than 25 megawatts electric (MWe) that serves a generator that produces electricity for sale. A fossil fuel-fired unit that cogenerates steam and electricity and supplies more than one-third of its potential electric output capacity and more than 25 MWe output to any utility power distribution system for sale is considered an electric utility steam generating unit.” Due to the “for sale” aspect of this 40 CFR 63, Subpart UUUUU, it is not included in the U.S. TEAM Guide.)</p> <p>(NOTE: This checklist item was deleted with the promulgation of 40 CFR 63, Subpart UUUUU: National Emission Standards for Hazardous Air Pollutants: Coal-and-Oil-fired Electric Utility Steam Generating Units in December 2011. 40 CFR 63, Subpart UUUUU applies to “a fossil fuel-fired combustion unit of more than 25 megawatts electric (MWe) that serves a generator that produces electricity for sale. A fossil fuel-fired unit that cogenerates steam and electricity and supplies more than one-third of its potential electric output capacity and more than 25 MWe output to any utility power distribution system for sale is considered an electric utility steam generating unit.” Due to the “for sale” aspect of this 40 CFR 63, Subpart UUUUU, it is not included in the U.S. TEAM Guide.)</p>

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<p><b>AE.12.5.US.</b> Checklist item deleted [Added October 2005; Deleted January 2012].</p>	<p>any utility power distribution system for sale is considered an electric utility steam generating unit.” Due to the “for sale” aspect of this 40 CFR 63, Subpart UUUUU, it is not included in the U.S. TEAM Guide.)</p> <p>(NOTE: This checklist item was deleted with the promulgation of 40 CFR 63, Subpart UUUUU: National Emission Standards for Hazardous Air Pollutants: Coal-and-Oil-fired Electric Utility Steam Generating Units in December 2011. 40 CFR 63, Subpart UUUUU applies to “a fossil fuel-fired combustion unit of more than 25 megawatts electric (MWe) that serves a generator that produces electricity for sale. A fossil fuel-fired unit that cogenerates steam and electricity and supplies more than one-third of its potential electric output capacity and more than 25 MWe output to any utility power distribution system for sale is considered an electric utility steam generating unit.” Due to the “for sale” aspect of this 40 CFR 63, Subpart UUUUU, it is not included in the U.S. TEAM Guide.)</p>
<p><b>AE.12.6.US.</b> Checklist item deleted [Added October 2005; Deleted January 2012].</p>	<p>(NOTE: This checklist item was deleted with the promulgation of 40 CFR 63, Subpart UUUUU: National Emission Standards for Hazardous Air Pollutants: Coal-and-Oil-fired Electric Utility Steam Generating Units in December 2011. 40 CFR 63, Subpart UUUUU applies to “a fossil fuel-fired combustion unit of more than 25 megawatts electric (MWe) that serves a generator that produces electricity for sale. A fossil fuel-fired unit that cogenerates steam and electricity and supplies more than one-third of its potential electric output capacity and more than 25 MWe output to any utility power distribution system for sale is considered an electric utility steam generating unit.” Due to the “for sale” aspect of this 40 CFR 63, Subpart UUUUU, it is not included in the U.S. TEAM Guide.)</p>
<p><b>AE.12.7.US.</b> Checklist item deleted [Added October 2005; Deleted January 2012].</p>	<p>(NOTE: This checklist item was deleted with the promulgation of 40 CFR 63, Subpart UUUUU: National Emission Standards for Hazardous Air Pollutants: Coal-and-Oil-fired Electric Utility Steam Generating Units in December 2011. 40 CFR 63, Subpart UUUUU applies to “a fossil fuel-fired combustion unit of more than 25 megawatts electric (MWe) that serves a generator that produces electricity for sale. A fossil fuel-fired unit that cogenerates steam and electricity and supplies more than one-third of its potential electric output capacity and more than 25 MWe output to any utility power distribution system for sale is considered an electric utility steam generating unit.” Due to the “for sale” aspect of this 40 CFR 63, Subpart UUUUU, it is not included in the U.S. TEAM Guide.)</p>
<p><b>AE.12.8.US.</b> Checklist item deleted [Added October 2005; Deleted January 2012].</p>	<p>(NOTE: This checklist item was deleted with the promulgation of 40 CFR 63, Subpart UUUUU: National Emission Standards for Hazardous Air Pollutants: Coal-and-Oil-fired Electric Utility Steam Generating Units in December 2011. 40 CFR 63, Subpart UUUUU applies to “a fossil fuel-fired combustion unit of more than 25 megawatts electric (MWe) that serves a generator that produces electricity for sale. A fossil fuel-fired unit that cogenerates steam and electricity and supplies more than one-third of its potential electric output capacity and more than 25 MWe output to any utility power distribution system for sale is considered an electric utility steam generating unit.” Due to the “for sale” aspect of this 40 CFR 63, Subpart UUUUU, it is not included in the U.S. TEAM Guide.)</p>

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<b>AE.12.9.US.</b> Checklist item deleted [Added <b>October 2005</b> ; Deleted <b>January 2012</b> ].	<p>(NOTE: This checklist item was deleted with the promulgation of 40 CFR 63, Subpart UUUUU: National Emission Standards for Hazardous Air Pollutants: Coal-and-Oil-fired Electric Utility Steam Generating Units in December 2011. 40 CFR 63, Subpart UUUUU applies to “a fossil fuel-fired combustion unit of more than 25 megawatts electric (MWe) that serves a generator that produces electricity for sale. A fossil fuel-fired unit that cogenerates steam and electricity and supplies more than one-third of its potential electric output capacity and more than 25 MWe output to any utility power distribution system for sale is considered an electric utility steam generating unit.” Due to the “for sale” aspect of this 40 CFR 63, Subpart UUUUU, it is not included in the U.S. TEAM Guide.)</p>
<b>AE.12.10.US.</b> Checklist item deleted [Added <b>October 2005</b> ; Deleted <b>January 2012</b> ].	<p>(NOTE: This checklist item was deleted with the promulgation of 40 CFR 63, Subpart UUUUU: National Emission Standards for Hazardous Air Pollutants: Coal-and-Oil-fired Electric Utility Steam Generating Units in December 2011. 40 CFR 63, Subpart UUUUU applies to “a fossil fuel-fired combustion unit of more than 25 megawatts electric (MWe) that serves a generator that produces electricity for sale. A fossil fuel-fired unit that cogenerates steam and electricity and supplies more than one-third of its potential electric output capacity and more than 25 MWe output to any utility power distribution system for sale is considered an electric utility steam generating unit.” Due to the “for sale” aspect of this 40 CFR 63, Subpart UUUUU, it is not included in the U.S. TEAM Guide.)</p>
<b>AE.12.11.US.</b> Checklist item deleted [Added <b>October 2005</b> ; Deleted <b>January 2012</b> ].	<p>(NOTE: This checklist item was deleted with the promulgation of 40 CFR 63, Subpart UUUUU: National Emission Standards for Hazardous Air Pollutants: Coal-and-Oil-fired Electric Utility Steam Generating Units in December 2011. 40 CFR 63, Subpart UUUUU applies to “a fossil fuel-fired combustion unit of more than 25 megawatts electric (MWe) that serves a generator that produces electricity for sale. A fossil fuel-fired unit that cogenerates steam and electricity and supplies more than one-third of its potential electric output capacity and more than 25 MWe output to any utility power distribution system for sale is considered an electric utility steam generating unit.” Due to the “for sale” aspect of this 40 CFR 63, Subpart UUUUU, it is not included in the U.S. TEAM Guide.)</p>



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<b>AE.15</b>  <b>FUEL BURNING EQUIPMENT</b>  <b>AE.15.1.US.</b> Industrial, commercial, or institutional boiler or process heaters located at, or a part of, a major source of HAP must meet specific emissions limitations (40 CFR 63.7485, 63.7490, 63.7491, 63.7500(a)(1), 63.7500(b), 63.7500(c), 63.7500(e), 63.7500(f), 63.7505(c), and 63.7505(e)) [Added April 2011; Revised July 2011; Revised April 2013; Revised January 2016].	<p>(NOTE: For this checklist item the following definition of HAP from 40 CFR 63.2 applies: “any air pollutant listed in or pursuant to section 112(b) of the Clean Air Act.”)</p> <p>(NOTE: This checklist item applies to:</p> <ul style="list-style-type: none"> <li>– the collection at a major source of all existing industrial, commercial, and institutional boilers and process heaters within a subcategory [see definitions]</li> <li>– each new or reconstructed industrial, commercial, or institutional boiler or process heater located at a major source [see definitions].)</li> </ul> <p>(NOTE: A boiler or process heater is new if construction of the boiler or process heater commenced after 4 June 2010, and the facility meets the applicability criteria at the time they commence construction. A boiler or process heater is reconstructed if the facility commences reconstruction after 4 June 2010, and the facility meets the applicability criteria at the time they commence reconstruction. A boiler or process heater is existing if it is not new or reconstructed.)</p> <p>(NOTE: An existing electric utility steam generating unit (EGU) that meets the applicability requirements of this subpart after 1 April 2013 due to a change (e.g., fuel switch) is considered to be an existing source.)</p> <p>(NOTE: See the end of this checklist item for information on exempted sources and compliance dates.)</p> <p>Verify that the facility meets each emission limit and work practice standard in Tables 1 through 3 (see Appendix 1-42), and 11 through 13 (see text for these alternative limitations) that applies to the facility boiler or process heater, for each boiler or process heater at the source, except as provided in relation to emissions averaging (see text of 40 CFR 63.7522 for details on emissions averaging).</p> <p>(NOTE: The output-based emission limits, in units of pounds per million Btu of steam output, in Tables 1 or 2 (see Appendix 1-42) are an alternative applicable only to boilers and process heaters that generate either steam, cogenerate steam with electricity, or both. The output-based emission limits, in units of pounds per megawatt-hour, in Tables 1 or 2 are an alternative applicable only to boilers that generate only electricity.)</p> <p>(NOTE: Boilers that perform multiple functions (cogeneration and electricity generation) or supply steam to common headers would calculate a total steam energy output using equation 21 of 40 CFR 63.7575 to demonstrate compliance</p>

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	<p>with the output-based emission limits, in units of pounds per million Btu of steam output, in Tables 1 or 2 (see Appendix 1-42).)</p> <p>Verify that, if the facility operates a new boiler or process heater, they comply with the emissions limits in Table 1 (see Appendix 1-42) on or after 31 January 2016.</p> <p>(NOTE: Until 31 January 2016, the owner or operator of a new boiler or process heater can choose to comply with following alternative limits:</p> <ul style="list-style-type: none"> <li>– if the boiler or process heater commenced construction or reconstruction after 4 June 2010 and before 20 May 2011, the emission limits in Table 1 (see Appendix 1-42) or Table 11 (see text for alternative limitations)</li> <li>– if the boiler or process heater commenced construction or reconstruction on or after 20 May 2011 and before 23 December 2011, comply with the emission limits in Table 1 (see Appendix 1-42) or Table 12 (see text for alternative limitations)</li> <li>– if the boiler or process heater commenced construction or reconstruction on or after 23 December 2011 and before 1 April 2013, comply with the emission limits in Table 1 (see Appendix 1-42) or Table 13 (see text for alternative limitations).</li> </ul> <p>(NOTE: EPA may approve use of an alternative to the work practice standards.)</p> <p>(NOTE: Limited-use boilers and process heaters are not subject to the emission limits in Tables 1 and 2 [see Appendix 1-42] or 11 through 13 [see text].)</p> <p>Verify that the facility demonstrates compliance with all applicable emission limits using performance stack testing, fuel analysis, or continuous monitoring systems (CMS), including a continuous emission monitoring system (CEMS), or particulate matter continuous parameter monitoring system (PM CPMS), where applicable.</p> <p>(NOTE: The facility may demonstrate compliance with the applicable emission limit for hydrogen chloride (HCl), mercury, or total selected metals (TSM) using fuel analysis if the emission rate calculated according to 40 CFR 63.7530(c) [see text] is less than the applicable emission limit. For gaseous fuels, the facility may not use fuel analyses to comply with the TSM alternative standard or the HCl standard. Otherwise, the facility must demonstrate compliance for HCl, mercury, or TSM using performance stack testing, if subject to an applicable emission limit listed in Tables 1, 2, [see Appendix 1-42] or 11 through 13 [see text].)</p> <p>(NOTE: Boilers and process heaters in the units designed to burn gas 1 fuels subcategory are not subject to the emission limits in Tables 1 and 2 [see Appendix 1-42].)</p> <p>(NOTE: These standards apply at all times the affected unit is operating, except during periods of startup and shutdown during which time the facility must comply only with items 5 and 6 of Table 3 [see Appendix 1-42].)</p>

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	<p>(NOTE: The following boilers and process heaters are exempt from this checklist item:</p> <ul style="list-style-type: none"> <li>– an electric utility steam generating unit (EGU) covered by 40 CFR 63, subpart UUUUU or a natural gas-fired EGU as defined in 40 CFR 63, subpart UUUUU firing at least 85 percent natural gas on an annual input basis</li> <li>– a recovery boiler or furnace covered by 40 CFR 63, Subpart MM</li> <li>– a boiler or process heater that is used specifically for research and development, including test steam boilers used to provide steam for testing the propulsion systems on military vessels; does not include units that provide heat or steam to a process at a research and development facility</li> <li>– a hot water heater</li> <li>– a refining kettle covered by 40 CFR 63, Subpart X</li> <li>– an ethylene cracking furnace covered by 40 CFR 63, Subpart YY</li> <li>– blast furnace stoves as described in EPA-453/R-01-005</li> <li>– any boiler or process heater that is part of the affected source subject to another subpart 40 CFR 63, such as boilers and process heaters used as control devices to comply with 40 CFR 63, subparts JJJ, OOO, PPP, and U</li> <li>– any boiler or process heater that is used as a control device to comply with another subpart of 40 CFR 63, or part 60, part 61, or part 65 provided that at least 50 percent of the average annual heat input during any 3 consecutive calendar years to the boiler or process heater is provided by regulated gas streams that are subject to another standard</li> <li>– temporary boilers and process heaters</li> <li>– blast furnace gas fuel-fired boilers and process heaters</li> <li>– any boiler or process heater specifically listed as an affected source in any standard(s) established under section 129 of the Clean Air Act</li> <li>– a unit that burns hazardous waste covered by 40 CFR 63, subpart EEE; a unit that is exempt from Subpart EEE as specified in 40 CFR 63.1200(b) is not covered by Subpart EEE.</li> <li>– residential boilers (see <i>Definitions</i>).</li> </ul> <p>(NOTE: If the facility has a new or reconstructed boiler or process heater, the facility must comply with this checklist item by 20 May 2011 or upon startup of the boiler or process heater, whichever is later. If the facility has an existing boiler or process heater, the facility must comply with this checklist item no later than 21 June 2014. If the facility has an area source that increases its emissions or its potential to emit such that it becomes a major source of HAP:</p> <ul style="list-style-type: none"> <li>– any new or reconstructed boiler or process heater at the existing source must be in compliance upon startup</li> <li>– any existing boiler or process heater at the existing source must be in compliance within 3 yr after the source becomes a major source.)</li> </ul> <p>(NOTE: If the facility owns or operates an industrial, commercial, or institutional boiler or process heater and is exempted from compliance with this checklist item because it is regulated under 40 CFR 60, Subpart CCCC or subpart DDDD, and the</p>

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<b>AE.15.2.US.</b> Industrial, commercial, or institutional boiler or process heaters located at, or a part of, a major source of HAP must meet specific operating limitations as well as safety and good air pollution control practices (40 CFR 63.7500(a)(2), 63.7500(a)(3), 63.7500(b), through 63.7500(f)) [Added April 2011; Revised April 2013].	<p>facility ceases combusting solid waste, the facility must be in compliance with this checklist item on the effective date of the switch from waste to fuel.)</p> <p>Verify that, if the facility has an applicable emission limit and it chooses to comply using definition 2 of “startup,” the facility has developed and implements a written startup and shutdown plan (SSP) according to the requirements in Table 3 (see Appendix 1-42).</p> <p>(NOTE: See checklist item AE.15.1.US for information on the applicability, exemptions, and compliance dates for this checklist item.)</p> <p>Verify that the facility meets each operating limit in Table 4 (see Appendix 1-42) that applies to facility boilers or process heaters.</p> <p>(NOTE: If the facility uses a control device or combination of control devices not covered in Table 4 [see Appendix 1-42], or the facility wishes to establish and monitor an alternative operating limit or an alternative monitoring parameter, the facility must apply to the EPA Administrator for approval of alternative monitoring.)</p> <p>(NOTE: EPA may approve use of an alternative to the work practice standards.)</p> <p>Verify that, at all times, the facility operates and maintains any applicable boiler or process heater, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions.</p> <p>(NOTE: Determination of whether good operation and maintenance procedures are being used will be based on information available to the Administrator that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.)</p> <p>Verify that limited-use boilers and process heaters complete a tune-up every 5 yr.</p> <p>(NOTE: Limited-use boilers and process heaters are not subject to the annual tune-up, or the energy assessment requirements in Table 3, or the operating limits in Table 4 [see Appendix 1-42].)</p> <p>Verify that boilers and process heaters with a heat input capacity of less than or equal to 5 million Btu per hour in the units designed to burn gas 2 (other) fuels subcategory or units designed to burn light liquid fuels subcategory complete a tune-up every 5 yr.</p> <p>Verify that boilers and process heaters in the units designed to burn gas 1 fuels subcategory with a heat input capacity of less than or equal to 5 million Btu per hour complete a tune-up every 5 yr.</p>

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<p><b>AE.15.3.US.</b> In specific situations, facilities with industrial, commercial, or institutional boiler or process heaters located at, or a part of, a major source of HAP must develop and implement a site-specific monitoring plan (40 CFR 63.7505(d)) <b>[Added April 2011; Revised April 2013; Revised January 2016].</b></p>	<p>Verify that boilers and process heaters in the units designed to burn gas 1 fuels subcategory with a heat input capacity greater than 5 million Btu per hour and less than 10 million Btu per hour complete a tune-up every 2 yr.</p> <p>(NOTE: Boilers and process heaters in the units designed to burn gas 1 fuels subcategory are not subject to the operating limits in Table 4 [see Appendix 1-42].)</p> <p>(NOTE: These standards apply at all times the affected unit is operating, except during periods of startup and shutdown during which time the facility must comply only with Table 3 [see Appendix 1-42].)</p> <p>(NOTE: See checklist item AE.15.1.US for information on the applicability, exemptions, and compliance dates for this checklist item.)</p> <p>Verify that, if the facility demonstrates compliance with any applicable emission limit through performance testing and subsequent compliance with operating limits through use of CPMS, or with a CEMS, or COMS, the facility develops a site-specific monitoring plan for the use of any CEMS, COMS, or CPMS.</p> <p>(NOTE: The requirement for a site-specific monitoring plan also applies to a facility if they petition the EPA Administrator for alternative monitoring parameters.)</p> <p>Verify that the site-specific monitoring plan is submitted, if requested, at least 60 days before the initial performance evaluation of the CMS.</p> <p>(NOTE: The requirement to develop and submit a site specific monitoring plan does not apply to affected sources with existing CEMS or COMS operated according to the performance specifications under 40 CFR 60, appendix B and that meet the requirements of 40 CFR 63.7525 [see checklist item AE.15.4.US].)</p> <p>Verify that, for each required CMS (including CEMS, COMS, or CPMS), The facility develops, and submits to the delegated authority for approval upon request, a site-specific monitoring plan that addresses the following:</p> <ul style="list-style-type: none"> <li>– installation of the CMS sampling probe or other interface at a measurement location relative to each affected process unit such that the measurement is representative of control of the exhaust emissions (e.g., on or downstream of the last control device)</li> <li>– performance and equipment specifications for the sample interface, the pollutant concentration or parametric signal analyzer, and the data collection and reduction systems</li> <li>– performance evaluation procedures and acceptance criteria (e.g., calibrations, accuracy audits, analytical drift).</li> </ul>

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<p><b>AE.15.4.US.</b> Facilities with industrial, commercial, or institutional boilers or process heaters located at, or a part of, a major source of HAP must conduct monitoring (40 CFR 63.7525) [Added April 2011; Revised April 2013; Revised January 2016].</p>	<p>Verify that the following are also addressed in the site-specific monitoring plan:</p> <ul style="list-style-type: none"> <li>– ongoing operation and maintenance procedures</li> <li>– ongoing data quality assurance procedures</li> <li>– ongoing recordkeeping and reporting procedures</li> </ul> <p>Verify that the facility conducts a performance evaluation of each CMS in accordance with the site-specific monitoring plan.</p> <p>Verify that the facility operates and maintains the CMS in continuous operation according to the site-specific monitoring plan.</p> <p>(NOTE: See checklist item AE.15.1.US for information on the applicability, exemptions, and compliance dates for this checklist item.)</p> <p>Verify that, if the facility’s boiler or process heater is subject to a CO emission limit in Table 1, 2, (see Appendix 1-42) or Tables 11 through 13 (see text for alternative limitations), the facility installs, operates, and maintains an oxygen analyzer system or installs, certifies, operates and maintains continuous monitoring systems for CO and oxygen (or carbon dioxide [CO<sub>2</sub>])</p> <p>(NOTE: See the text of 40 CFR 63.7525(a)(1) through 63.7525(a)(7) for technical information on the installation, operation, and maintenance of a continuous oxygen monitor.)</p> <p>Verify that, if the boiler or process heater is in the unit designed to burn coal/solid fossil fuel subcategory or the unit designed to burn heavy liquid subcategory and has an average annual heat input rate greater than 250 MMBtu per hour from solid fossil fuel and/or heavy liquid, and the facility demonstrates compliance with the PM limit instead of the alternative TSM limit, the facility installs, certifies, maintains, and operates a PM CPMS monitoring emissions discharged to the atmosphere and records the output of the system.</p> <p>(NOTE: As an alternative to use of a PM CPMS to demonstrate compliance with the PM limit, the facility may choose to use a PM CEMS. If the facility chooses to use a PM CEMS to demonstrate compliance with the PM limit instead of the alternative TSM limit, the facility must install, certify, maintain, and operate a PM CEMS monitoring emissions discharged to the atmosphere and recording the output. For other boilers or process heaters, the facility may elect to use a PM CPMS or PM CEMS operated in accordance with 40 CFR 63.7525 in lieu of using other CMS for monitoring PM compliance (e.g., bag leak detectors, ESP secondary power, PM scrubber pressure). Owners of boilers and process heaters who elect to comply with the alternative TSM limit are not required to install a PM CPMS.)</p>

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<p><b>AE.15.5.US.</b> Facilities with industrial, commercial, or institutional boiler or process heaters located at, or a part of, a major source of HAP must monitor and collect data to demonstrate continuous compliance (40 CFR 63.7535, 63.7540, and 63.7541) [Added April 2011; Revised April 2013; Revised January 2016].</p>	<p>(NOTE: See the text of 40 CFR 63.7525(b)(1) through 63.7525(b)(8) for technical information on the installation, certification, maintenance, and operation of a CEMS measuring PM emissions.)</p> <p>Verify that, if the facility is subject to opacity operating limit under 40 CFR 63, Subpart DDDDD, and are not otherwise required or elect to install and operate a PM CPMS, PM CEMS or a bag leak detection system, the facility installs, operates, certifies and maintains COMS.</p> <p>(NOTE: See the text of 40 CFR 63.7525(c)(1) through 63.7525(c)(7) for technical information on the installation, certification, maintenance, and operation of COMS.)</p> <p>(NOTE: 40 CFR 63.7525 also provides technical information on the installation, maintenance, and operation of the following types of monitoring which may be required depending on the applicable operating limits:</p> <ul style="list-style-type: none"> <li>– CMS</li> <li>– CEMS</li> <li>– a flow monitoring system</li> <li>– a pressure monitoring system</li> <li>– a pH monitoring system</li> <li>– a secondary electric power monitoring system for an electrostatic precipitator operated with a wet scrubber</li> <li>– a monitoring system to measure sorbent injection rate [e.g., weigh belt, weigh hopper, or hopper flow measurement device].)</li> </ul> <p>Verify that for each unit that meets the definition of limited-use boiler or process heater, the facility monitors and records the operating hours per year for that unit.</p> <p>(NOTE: See checklist item AE.15.1.US for information on the applicability, exemptions, and compliance dates for this checklist item.)</p> <p>Verify that the facility operates the monitoring system and collects data at all required intervals at all times each boiler or process heater is operating, except for periods of monitoring system malfunctions or out of control periods, and required monitoring system quality assurance or control activities, including, as applicable, calibration checks and required zero and span adjustments, and scheduled CMS maintenance as defined in the site-specific monitoring plan.</p> <p>(NOTE: A monitoring system malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring system failures that are caused in part by poor maintenance or careless operation are not malfunctions.)</p>

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	<p>Verify that the facility completes monitoring system repairs in response to monitoring system malfunctions or out-of-control periods and to return the monitoring system to operation as expeditiously as practicable.</p> <p>(NOTE: The facility may not use data recorded during periods of startup or shutdown, monitoring system malfunctions or out-of-control periods, repairs associated with monitoring system malfunctions or out-of-control periods, or required monitoring system quality assurance or control activities in data averages and calculations used to report emissions or operating levels.)</p> <p>Verify that the facility records, and makes available upon request, results of CMS performance audits and dates and duration of periods when the CMS is out of control to completion of the corrective actions necessary to return the CMS to operation consistent with the site-specific monitoring plan.</p> <p>Verify that all the data collected during all other periods is used in assessing the operation of the control device and associated control system.</p> <p>(NOTE: Except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities (including, as applicable, system accuracy audits, calibration checks, and required zero and span adjustments), failure to collect required data is a deviation of the monitoring requirements. In calculating monitoring results, do not use any data collected during periods when the monitoring system is out of control as specified in the site-specific monitoring plan, while conducting repairs associated with periods when the monitoring system is out of control, or while conducting required monitoring system quality assurance or quality control activities. Calculate monitoring results using all other monitoring data collected while the process is operating.)</p> <p>Verify that all periods when the monitoring system is out of control is reported in the semi-annual report.</p> <p>(NOTE: See the text of 40 CFR 63.7540 for the technical details on demonstrating continuous compliance with emission limitations, fuel specifications, and work practice standards.)</p> <p>Verify that, in relation to the emissions averaging provision, the owner or operator demonstrates compliance on a continuous basis by meeting the following requirements:</p> <ul style="list-style-type: none"> <li>– for each calendar month, demonstrate compliance with the average weighted emissions limit for the existing units participating in the emissions averaging option</li> <li>– maintain the applicable opacity limit as follows:</li> </ul>

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<p><b>AE.15.6.US.</b> Facilities with industrial, commercial, or institutional boiler or process heaters located at, or a part of, a major source of HAP must submit specific notifications (40 CFR 63.7545) [Added April 2011; Revised April 2013; Revised January 2016].</p>	<ul style="list-style-type: none"> <li>– for each existing unit participating in the emissions averaging option that is equipped with a dry control system and not vented to a common stack, maintain opacity at or below the applicable limit</li> <li>– for each group of units participating in the emissions averaging option where each unit in the group is equipped with a dry control system and vented to a common stack that does not receive emissions from non-affected units, maintain opacity at or below the applicable limit at the common stack</li> <li>– for each existing unit participating in the emissions averaging option that is equipped with a wet scrubber, maintain the 30-day rolling average parameter values at or above the operating limits established during the most recent performance test</li> <li>– for each existing unit participating in the emissions averaging option that has an approved alternative operating parameter, maintain the 30-day rolling average parameter values consistent with the approved monitoring plan</li> <li>– for each existing unit participating in the emissions averaging option venting to a common stack configuration containing affected units from other subcategories, maintain the appropriate operating limit for each unit as specified in Table 4 (see Appendix 1-42) that applies.</li> </ul> <p>(NOTE: See checklist item AE.15.1.US for information on the applicability, exemptions, and compliance dates for this checklist item.)</p> <p>Verify that the facility submits to the Administrator all of the notifications in 40 CFR 63.7(b) and (c), 63.8(e), (f)(4) and (6), and 63.9(b) through (h) that apply to the facility by the dates specified.</p> <p>Verify that, if the facility's affected source started up before 31 January 2013, the facility submitted an Initial Notification not later than 120 days after 31 January 2013.</p> <p>Verify that, if the facility startup their new or reconstructed affected source on or after 31 January 2013, the facility submits an Initial Notification not later than 15 days after the actual date of startup of the affected source.</p> <p>Verify that, if the facility is required to conduct a performance test, the facility submits a Notification of Intent to conduct a performance test at least 60 days before the performance test is scheduled to begin.</p> <p>Verify that, if the facility is required to conduct an initial compliance demonstration (see text of 40 CFR 63.7530) the facility submits a Notification of Compliance Status.</p> <p>Verify that, for the initial compliance demonstration for each boiler or process heater, the facility submits the Notification of Compliance Status, including all</p>

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	<p>performance test results and fuel analyses, before the close of business on the 60th day following the completion of all performance test and/or other initial compliance demonstrations for all boilers and/or process heaters.</p> <p>Verify that the Notification of Compliance Status report contains all of the following information, as applicable:</p> <ul style="list-style-type: none"> <li>– a description of the affected unit(s) including identification of which subcategories the unit is in, the design heat input capacity of the unit, a description of the add-on controls used on the unit to comply with this subpart, description of the fuel(s) burned, including whether the fuel(s) were a secondary material determined by you or the EPA through a petition process to be a non-waste under 40 CFR 241.3, whether the fuel(s) were a secondary material processed from discarded non-hazardous secondary materials within the meaning of 40 CFR 241.3, and justification for the selection of fuel(s) burned during the compliance demonstration</li> <li>– summary of the results of all performance tests and fuel analyses, and calculations conducted to demonstrate initial compliance including all established operating limits, and including: <ul style="list-style-type: none"> <li>– identification of whether the facility is complying with the PM emission limit or the alternative TSM emission limit</li> <li>– identification of whether the facility is complying with the output-based emission limits or the heat input-based (i.e., lb/MMBtu or ppm) emission limits</li> <li>– identification of whether the facility is complying the arithmetic mean of all valid hours of data from the previous 30 operating days or of the previous 729 hours with the identification specified separately for each operating parameter</li> </ul> </li> <li>– a summary of the maximum CO emission levels recorded during the performance test to show that you have met any applicable emission standard in Tables 1, 2 (see Appendix 1-42, or Tables 11 through 13 (see text for alternative limitations), if the facility is not using a CO CEMS to demonstrate compliance</li> <li>– identification of whether the facility plans to demonstrate compliance with each applicable emission limit through performance testing, a CEMS, or fuel analysis</li> <li>– identification of whether the facility plans to demonstrate compliance by emissions averaging and identification of whether you plan to demonstrate compliance by using efficiency credits through energy conservation:</li> <li>– a signed certification that the facility has met all applicable emission limits and work practice standards</li> <li>– if the facility had a deviation from any emission limit, work practice standard, or operating limit, the facility must also submit a description of the deviation, the duration of the deviation, and the corrective action taken in the Notification of Compliance Status report</li> </ul>

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	<ul style="list-style-type: none"> <li>– the following certification(s) of compliance, as applicable, and signed by a responsible official: <ul style="list-style-type: none"> <li>– “This facility completed the required initial tune-up for all of the boilers and process heaters covered by 40 CFR part 63 subpart DDDDD at this site according to the procedures in 40 CFR 63.7540(a)(10)(i) through (vi)”</li> <li>– “This facility has had an energy assessment performed according to 40 CFR 63.7530(e)”</li> <li>– except for units that burn only natural gas, refinery gas, or other gas 1 fuel, or units that qualify for a statutory exemption as provided in section 129(g)(1) of the Clean Air Act, include the following: “No secondary materials that are solid waste were combusted in any affected unit”</li> </ul> </li> </ul> <p>Verify that, if the facility operates a unit designed to burn natural gas, refinery gas, or other gas 1 fuels that is subject to this subpart, and the facility intends to use a fuel other than natural gas, refinery gas, gaseous fuel subject to another subpart of 40 CFR part 63, part 60, 61, or 65, or other gas 1 fuel to fire the affected unit during a period of natural gas curtailment or supply interruption, the facility submits a notification of alternative fuel use within 48 h of the declaration of each period of natural gas curtailment or supply interruption including the following information:</p> <ul style="list-style-type: none"> <li>– company name and address</li> <li>– identification of the affected unit</li> <li>– reason the facility is unable to use natural gas or equivalent fuel, including the date when the natural gas curtailment was declared or the natural gas supply interruption began</li> <li>– type of alternative fuel that the facility intends to use</li> <li>– dates when the alternative fuel use is expected to begin and end.</li> </ul> <p>Verify that, if the facility intends to commence or recommence combustion of solid waste, the facility provides 30 days prior notice of the date upon which the facility will commence or recommence combustion of solid waste; including the following information:</p> <ul style="list-style-type: none"> <li>– the name of the owner or operator of the affected source, the location of the source, the boiler(s) or process heater(s) that will commence burning solid waste, and the date of the notice</li> <li>– the currently applicable subcategory under 40 CFR 63, Subpart DDDDD</li> <li>– the date on which the facility became subject to the currently applicable emission limits</li> <li>– the date upon which the facility will commence combusting solid waste.</li> </ul> <p>Verify that, if the facility has switched fuels, or made a physical change to the boiler or process heater and the fuel switch or physical change resulted in the applicability of a different subcategory, the facility provides notice of the date upon which they</p>

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<p><b>AE.15.7.US.</b> Facilities with industrial, commercial, or institutional boiler or process heaters located at, or a part of, a major source of HAP must meet reporting requirements (40 CFR 63.7550) [Added April 2011; Revised April 2013; Revised January 2016].</p>	<p>switched fuels or made the physical change within 30 days of the switch/change; including the following information:</p> <ul style="list-style-type: none"> <li>– the name of the owner or operator of the affected source, the location of the source, the boiler(s) that will switch fuels, and the date of the notice</li> <li>– the currently applicable subcategory under 40 CFR 63, Subpart DDDDD</li> <li>– the date on which the facility became subject to the currently applicable standards.</li> </ul> <p>(NOTE: See checklist item AE.15.1.US for information on the applicability, exemptions, and compliance dates for this checklist item.)</p> <p>Verify that the facility submits each report in Table 9 (see Appendix 1-6i) that applies to the facility by the date stipulated in Table 9 unless the EPA Administrator has approved a different schedule.</p> <p>(NOTE: For units that are subject only to a requirement to conduct subsequent annual, biennial, or 5-year tune-up and not subject to emission limits or operating limits, the facility may submit only an annual, biennial, or 5-year compliance report, as applicable, instead of a semi-annual compliance report.)</p> <p>Verify that the facility submits a semi-annual compliance reports as follows:</p> <ul style="list-style-type: none"> <li>– the first semi-annual compliance report covers the period beginning on the compliance date that is specified for each boiler or process heater and ending on July 31 or January 31, whichever date is the first date that occurs at least 180 days (or 1, 2, or 5 yr, as applicable, if submitting an annual, biennial, or 5-year compliance report) after the compliance date that is specified for the source</li> <li>– the first semi-annual compliance report is postmarked or submitted no later than July 31 or January 31, whichever date is the first date following the end of the first calendar half after the compliance date that is specified for each boiler or process heater</li> <li>– if submitting an annual, biennial, or 5-yr compliance report, the first annual, biennial, or 5-year compliance report is postmarked or submitted no later than January 31</li> <li>– each subsequent semi-annual compliance report covers the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31</li> <li>– if submitting an annual, biennial, or 5-yr compliance report, the annual, biennial, and 5-yr compliance reports covers the applicable 1-, 2-, or 5-yr periods from January 1 to December 31</li> <li>– each subsequent semi-annual compliance report is postmarked or submitted no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period</li> </ul>

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	<ul style="list-style-type: none"> <li>– if submitting an annual, biennial, or 5-yr compliance report, the annual, biennial, and 5-yr compliance reports are postmarked or submitted no later than January 31.</li> </ul> <p>(NOTE: For each affected source that is subject to permitting regulations under 40 CFR 70 or 40 CFR 71, if the permitting authority has established different dates for submitting semi-annual reports, submit the reports according to the dates in the permit.)</p> <p>Verify that the compliance report contains the following information depending on how the facility chooses to comply with the applicable limits:</p> <ul style="list-style-type: none"> <li>– if the facility is subject to a the requirements of a tune up, submit a compliance report with the information from dashes 1 – 3, 14, and 16 below</li> <li>– if a facility is complying with the fuel analysis, submit a compliance report with the information from dashes 1 through 3, 6, 10, 11, 13, 15, and 18</li> <li>– if a facility is complying with the applicable emissions limit with performance testing, submit a compliance report with the information in dashes 1 through 3, 6, 7, 8, 9, 11, 13, 15, 17, and 18</li> <li>– if a facility is complying with an emissions limit using a CMS, submit the information from dashes 1 through 3, 5, 6, 11 through 13, and 15 through 18</li> <li>– company and facility name and address</li> <li>– process unit information, emissions limitations, and operating parameter limitations</li> <li>– date of report and beginning and ending dates of the reporting period</li> <li>– the total operating time during the reporting period</li> <li>– if using a CMS, including CEMS, COMS, or CPMS, include the monitoring equipment manufacturer(s) and model numbers and the date of the last CMS certification or audit</li> <li>– the total fuel use by each individual boiler or process heater subject to an emission limit within the reporting period, including, but not limited to, a description of the fuel, whether the fuel has received a non-waste determination by the EPA or the basis for concluding that the fuel is not a waste, and the total fuel usage amount with units of measure</li> <li>– if conducting performance tests once every 3 yr, the date of the last 2 performance tests and a statement as to whether there have been any operational changes since the last performance test that could increase emissions</li> <li>– a statement indicating no new types of fuel have been burned in an individual boiler or process heater subject to an emission limit, or <ul style="list-style-type: none"> <li>– if the facility did burn a new type of fuel and are subject to a HCl emission limit, they submit the calculation of chlorine input, using Equation 7 of 40 CFR 63.7530,</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– that demonstrates the source is still within its maximum chlorine input level established during the previous performance testing (for sources that</li> <li>– demonstrate compliance through performance testing) or submit the calculation of HCl emission rate using Equation 16 of 40 CFR 63.7530 that demonstrates that the source is still meeting the emission limit for HCl emissions (for boilers or process heaters that demonstrate compliance through fuel analysis).</li> <li>– if the facility burned a new type of fuel and is subject to a mercury emission limit, t submit the calculation of mercury input, using Equation 8 of § 63.7530, that demonstrates that the source is still within its maximum mercury input level established during the previous performance testing (for sources that demonstrate compliance through performance testing)</li> <li>– submit the calculation of mercury emission rate using Equation 17 of 40 CFR 63.7530 that demonstrates the source is still meeting the emission limit for mercury emissions (for boilers or process heaters that demonstrate compliance through fuel analysis)</li> <li>– if burning a new type of fuel and subject to a TSM emission limit, submit the calculation of TSM input, using Equation 9 of 40 CFR 63.7530, demonstrating that the source is still within its maximum TSM input level established during the previous performance testing (for sources that demonstrate compliance through performance testing)</li> <li>– submit the calculation of TSM emission rate, using Equation 18 of 40 CFR 63.7530,</li> <li>– demonstrating that the source is still meeting the emission limit for TSM emissions (for boilers or process heaters that demonstrate compliance through fuel analysis)</li> <li>– if the facility wishes to burn a new type of fuel in an individual boiler or process heater subject to an emission limit and the facility cannot demonstrate compliance with the maximum chlorine input operating limit using Equation 7 of 40 CFR 63.7530 or the maximum mercury input operating limit using Equation 8 of 40 CFR 63.7530, or the maximum TSM input operating limit using Equation 9 of 40 CFR 63.7530, include in the compliance report a statement indicating the intent to conduct a new performance test within 60 days of starting to burn the new fuel</li> <li>– a summary of any monthly fuel analyses conducted to demonstrate compliance according to 40 CFR 63.7521 and 63.7530 for individual boilers or process heaters subject to emission limits, and any fuel specification analyses conducted according to 40 CFR 63.7521(f) and 63.7530(g)</li> <li>– if there are no deviations from any emission limits or operating limits in this subpart that apply to the facility, a statement that there were no</li> </ul>

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	<p>deviations from the emission limits or operating limits during the reporting period</p> <ul style="list-style-type: none"> <li>– if there were no deviations from the monitoring requirements including no periods during which the CMSs, including CEMS, COMS, and CPMS, were out of control, a statement that there were no deviations and no periods during which the CMS were out of control during the reporting period</li> <li>– if a malfunction occurred during the reporting period, include the number, duration, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded as well as a description of actions taken by the facility during a malfunction of a boiler, process heater, or associated air pollution control device or CMS to minimize emissions, including actions taken to correct the malfunction</li> <li>– the date of the most recent tune-up for each unit subject to only the requirement to conduct an annual, biennial, or 5-yr tune-up, including the date of the most recent burner inspection if it was not done annually, biennially, or on a 5-yr period and was delayed until the next scheduled or unscheduled unit shutdown</li> <li>– if the facility plans to demonstrate compliance by emission averaging, certify the emission level achieved or the control technology employed is no less stringent than the level or control technology contained in the notification of compliance status in 40 CFR 63.7545(e)(5)(i)</li> <li>– for each reporting period, the compliance reports include all of the calculated 30 day rolling average values for CEMS (CO, HCl, SO<sub>2</sub>, and mercury), 10 day rolling average values for CO CEMS when the limit is expressed as a 10 day instead of a 30 day rolling average and the PM CPMS data</li> <li>– statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report</li> <li>– for each instance of startup or shutdown, the information required to be monitored, collected, or recorded.</li> </ul> <p>Verify that, for each deviation from an emission limit or operating limit in that occurs at an individual boiler or process heater where a CMS is not being used to comply with that emission limit or operating limit, or from the work practice standards for periods of startup and shutdown, the compliance report additionally contains the following information:</p> <ul style="list-style-type: none"> <li>– a description of the deviation and which emission limit, operating limit, or work practice standard from which the facility deviated</li> <li>– information on the number, duration, and cause of deviations (including unknown cause), as applicable, and the corrective action taken</li> </ul>

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	<p>– if the deviation occurred during an annual performance test, the date the annual performance test was completed.</p> <p>Verify that, for each deviation from an emission limit, operating limit, and monitoring requirement occurring at an individual boiler or process heater where a CMS is being used to comply with that emission limit or operating limit, the compliance report additionally contain the following information (including deviations from the site-specific monitoring plan):</p> <ul style="list-style-type: none"> <li>– the date and time that each deviation started and stopped and description of the nature of the deviation (i.e., what the facility deviated from)</li> <li>– the date and time that each CMS was inoperative, except for zero (low-level) and high-level checks</li> <li>– the date, time, and duration that each CMS was out of control</li> <li>– the date and time that each deviation started and stopped</li> <li>– a summary of the total duration of the deviation during the reporting period and the total duration as a percent of the total source operating time during that reporting period</li> <li>– a characterization of the total duration of the deviations during the reporting period into those that are due to control equipment problems, process problems, other known causes, and other unknown causes</li> <li>– a summary of the total duration of CMS's downtime during the reporting period and the total duration of CMS downtime as a percent of the total source operating time during that reporting period</li> <li>– a brief description of the source for which there was a deviation</li> <li>– a description of any changes in CMSs, processes, or controls since the last reporting period for the source for which there was a deviation.</li> </ul> <p>Verify that within 60 days after the date of completing each required performance test the facility submit the results of the performance tests, including any associated fuel analyses.</p> <p>(NOTE: For data collected using test methods supported by the EPA's Electronic Reporting Tool (ERT) as listed on the EPA's ERT Web site (<a href="http://www.epa.gov/ttn/chief/ert/index.html">http://www.epa.gov/ttn/chief/ert/index.html</a>), submit the results of the performance test to the EPA via the Compliance and Emissions Data Reporting Interface (CEDRI). (CEDRI can be accessed through the EPA's Central Data Exchange (CDX) (<a href="https://cdx.epa.gov/">https://cdx.epa.gov/</a>.) Performance test data must be submitted in a file format generated through use of the EPA's ERT or an electronic file format consistent with the extensible markup language (XML) schema listed on the EPA's ERT Web site. If you claim that some of the performance test information being submitted is confidential business information (CBI), you must submit a complete file generated through the use of the EPA's ERT or an alternate electronic file consistent with the XML schema listed on the EPA's ERT Web site, including information claimed to be CBI, on a compact disc, flash drive, or other commonly used electronic storage media to the EPA. For data collected using test methods that</p>

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<b>AE.15.8.US.</b> Facilities with industrial, commercial, or institutional boiler or process heaters located at, or a part of, a major source of HAP must meet recordkeeping requirements (40 CFR 63.7555 and 63.7560) [Added April 2011; Revised April 2013; Revised January 2016].	<p>are not supported by the EPA's ERT as listed on the EPA's ERT Web site at the time of the test, submit the results of the performance test to the Administrator at the appropriate address.)</p> <p>Verify that, within 60 days after the date of completing each CEMS performance evaluation test the facility submits the results of the performance evaluation as outlined in the above NOTE.</p> <p>(NOTE: For performance evaluations of continuous monitoring systems measuring relative accuracy test audit (RATA) pollutants that are supported by the EPA's ERT as listed on the EPA's ERT Web site at the time of the evaluation, submit the results of the performance evaluation to the EPA via the CEDRI.)</p> <p>Verify that all of the reports required by Table 9 (see Appendix 1-6i) are submitted electronically using CEDRI that is accessed through the EPA's Central Data Exchange (CDX) (<a href="http://www.epa.gov/cdx">www.epa.gov/cdx</a>).</p> <p>(NOTE: If the applicable reporting form is not available in CEDRI at the time that the report is due, the facility must submit the report to the Administrator. At the discretion of the Administrator, the facility must also submit these reports, to the Administrator in the format specified by the Administrator. The facility must begin submitting reports via CEDRI no later than 90 days after a form becomes available.)</p> <p>(NOTE: See checklist item AE.15.1.US for information on the applicability, exemptions, and compliance dates for this checklist item.)</p> <p>Verify that the facility keeps a copy of each notification and report submitted to be in compliance, including all documentation supporting any Initial Notification or Notification of Compliance Status or semiannual compliance report that were submitted.</p> <p>Verify that the facility keeps copies of the records of performance tests, fuel analyses, or other compliance demonstrations and performance evaluations.</p> <p>Verify that, for units in the limited use subcategory, facilities keep a copy of the federally enforceable permit that limits the annual capacity to less than or equal to 10 percent and fuel use records for the days the boiler or process heaters was operating.</p> <p>Verify that, for each CEMS, COMS, and continuous monitoring system the facility keeps the following records:</p> <ul style="list-style-type: none"> <li>– records described in 43 CFR 63.10(b)(2)(vii) through 63.10(b)(2)(xi)</li> <li>– monitoring data for continuous opacity monitoring system during a performance evaluation</li> </ul>

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	<ul style="list-style-type: none"> <li>– previous (i.e., superseded) versions of the performance evaluation plan</li> <li>– requests for alternatives to relative accuracy test for CEMS</li> <li>– records of the date and time that each deviation started and stopped.</li> </ul> <p>Verify that records are maintained of all monitoring data and calculated averages for applicable operating limits, such as opacity, pressure drop, pH, and operating load, to show continuous compliance with each emission limit and operating limit that applies to the facility.</p> <p>Verify that, for each boiler or process heater subject to an emission limit in Table 1, 2 (see Appendix 1-42), or Tables 11 through 13 (see text for alternative limitations), the facility also keeps the following applicable records:</p> <ul style="list-style-type: none"> <li>– records of monthly fuel use by each boiler or process heater, including the type(s) of fuel and amount(s) used</li> <li>– if the facility combusts non-hazardous secondary materials that have been determined not to be solid waste, keep a record that documents how the secondary material meets each of the legitimacy criteria</li> <li>– if the facility combusts a fuel that has been processed from a discarded non-hazardous secondary material, keep records as to how the operations that produced the fuel satisfy the definition of processing</li> <li>– if the fuel received a non-waste determination pursuant to the petition process, keep a record that documents how the fuel satisfies the requirements of the petition process</li> <li>– for operating units that combust non-hazardous secondary materials as fuel, keep records documenting that the material is listed as a non-waste</li> <li>– a copy of all calculations and supporting documentation of maximum chlorine fuel input, using Equation 7 of 40 CFR 63.7530, that were done to demonstrate continuous compliance with the HCl emission limit, for sources that demonstrate compliance through performance testing</li> <li>– for sources that demonstrate compliance through fuel analysis, a copy of all calculations and supporting documentation of HCl emission rates, using Equation 16 of 40 CFR 63.7530, that were done to demonstrate compliance with the HCl emission limit</li> <li>– a copy of all calculations and supporting documentation of maximum mercury fuel input, using Equation 8 of 40 CFR 63.7530, that were done to demonstrate continuous compliance with the mercury emission limit for sources that demonstrate compliance through performance testing</li> <li>– for sources that demonstrate compliance through fuel analysis, a copy of all calculations and supporting documentation of mercury emission rates, using Equation 17 of 40 CFR 63.7530, that were done to demonstrate compliance with the mercury emission limit</li> <li>– if the facility chooses to stack test less frequently than annually, keep a record that documents that the emissions in the previous stack test(s) were less than 75 percent of the applicable emission limit (or, in specific instances noted in Tables 1 and 2 [see Appendix 1-42] or Tables 11 through 13 [see text for</li> </ul>

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	<p>alternative limitations), less than the applicable emission limit), and document that there was no change in source operations including fuel composition and operation of air pollution control equipment that would cause emissions of the relevant pollutant to increase within the past year</p> <ul style="list-style-type: none"> <li>– records of the occurrence and duration of each malfunction of the boiler or process heater, or of the associated air pollution control and monitoring equipment</li> <li>– records of actions taken during periods of malfunction to minimize emissions in accordance with the general duty to minimize emissions, including corrective actions to restore the malfunctioning boiler or process heater, air pollution control, or monitoring equipment to its normal or usual manner of operation</li> <li>– a copy of all calculations and supporting documentation of maximum TSM fuel input, using Equation 9 of 40 CFR 63.7530, done to demonstrate continuous compliance with the TSM emission limit for sources that demonstrate compliance through performance testing</li> <li>– for sources that demonstrate compliance through fuel analysis, a copy of all calculations and supporting documentation of TSM emission rates, using Equation 18 of 40 CFR 63.7530, that were done to demonstrate compliance with the TSM emission limit</li> <li>– records of the calendar date, time, occurrence and duration of each startup and shutdown</li> <li>– records of the type(s) and amount(s) of fuels used during each startup and shutdown</li> <li>– for each startup period, for units selecting paragraph (2) of the definition of “startup” in 40 CFR 63.7575 the facility must maintain records of the time that clean fuel combustion begins; the time when the facility starts feeding fuels that are not clean fuels; the time when useful thermal energy is first supplied; and the time when the PM controls are engaged</li> <li>– if the facility chooses to rely on paragraph (2) of the definition of “startup” in 40 CFR 63.7575, for each startup period, the facility maintains records of the hourly steam temperature, hourly steam pressure, hourly steam flow, hourly flue gas temperature, and all hourly average CMS data (<i>e.g.</i>, CEMS, PM CPMS, COMS, ESP total secondary electric power input, scrubber pressure drop, scrubber liquid flow rate) collected during each startup period to confirm that the control devices are engaged</li> <li>– if the facility chooses to rely on paragraph (2) of the definition of “startup” in 40 CFR 63.7575, for each startup period and compliance with the PM emission limit is demonstrated using a PM control device, the facility maintain records as follows: <ul style="list-style-type: none"> <li>– for a boiler or process heater with an electrostatic precipitator, record the number of fields in service, as well as each field’s secondary voltage and secondary current during each hour of startup</li> <li>– for a boiler or process heater with a fabric filter, record the number of compartments in service, as well as the differential pressure across the baghouse during each hour of startup</li> </ul> </li> </ul>

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	<p>– for a boiler or process heater with a wet scrubber needed for filterable PM control, record the scrubber’s liquid flow rate and the pressure drop during each hour of startup.</p> <p>(NOTE: If the facility chooses to use paragraph (2) of the definition of “startup” in 40 CFR 63.7575 and they find that they are unable to safely engage and operate their PM control(s) within 1 hour of first firing of non-clean fuels, they may choose to rely on paragraph (1) of definition of “startup” in § 63.7575 or they may submit to the delegated permitting authority a request for a variance with the PM controls requirement.)</p> <p>(NOTE: Supporting documentation should include results of any fuel analyses and basis for the estimates of maximum chlorine/mercury/TSM fuel input or HCl/mercury/TSM emission rates. The facility can use the results from one fuel analysis for multiple boilers and process heaters provided they are all burning the same fuel type. However, the facility must calculate chlorine/mercury/TSM fuel input, or HCl/mercury/TSM emission rate, for each boiler and process heater.)</p> <p>Verify that, if the facility elects to average emissions, they keep a copy of the emission averaging implementation plan, all required calculations, including monthly records of heat input or steam generation, as applicable, and monitoring records.</p> <p>Verify that, if the facility elects to use emission credits from energy conservation measures to demonstrate compliance, they keep a copy of the required Implementation Plan and copies of all data and calculations used to establish credits.</p> <p>Verify that, if the facility elected to demonstrate that the unit meets the specification for mercury for the unit designed to burn gas 1 subcategory, the facility maintains monthly records (or at the frequency required by 40 CFR 63.7540(c)) of the calculations and results of the fuel specification for mercury in Table 6 (see text).</p> <p>Verify that, if the facility operates a unit in the unit designed to burn gas 1 subcategory that is subject to 40 CFR 63, subpart DDDDD, and the facility uses an alternative fuel other than natural gas, refinery gas, gaseous fuel subject to another subpart under 40 CFR 63, other gas 1 fuel, or gaseous fuel subject to another subpart of 40 CFR 63 or part 60, 61, or 65, the facility keeps records of the total hours per calendar year that alternative fuel is burned and the total hours per calendar year that the unit operated during periods of gas curtailment or gas supply emergencies.</p> <p>Verify that the facility maintains records of the calendar date, time, occurrence and duration of each startup and shutdown.</p> <p>Verify that the facility maintains records of the type(s) and amount(s) of fuels used during each startup and shutdown.</p>

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<p><b>AE.15.9.US.</b> Industrial, commercial, or institutional boiler or process heaters located at, or a part of, an area source of HAP must meet specific emission limitations (40 CFR 63.11193, 63.11194, 63.11195, 63.11196, 63.11200, and 63.11201) [Added April 2011; Revised July 2011; Revised April 2013; Revised October 2016].</p>	<p>Verify that records are in a form suitable and readily available for expeditious review.</p> <p>Verify that each record is kept for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.</p> <p>Verify that the facility keeps each record onsite, or in a location where they are accessible from onsite (for example, through a computer network), for at least 2 yr after the date of each occurrence, measurement, maintenance, corrective action, report, or record.</p> <p>(NOTE: The facility can keep the records off site for the remaining 3 yr.)</p> <p>Verify that the facility complies with the emission limitations in Table 1 of Appendix 1-43.</p> <p>Verify that the facility complies with each work practice standard, emission reduction measure, and management practice specified in Table 2 (see Appendix 1-43) that applies to the facility boiler.</p> <p>(NOTE: An energy assessment completed on or after 1 January 2008 that meets or is amended to meet the energy assessment requirements in Table 2 [see Appendix 1-43] satisfies the energy assessment requirement. A facility that operates under an energy management program established through energy management systems compatible with ISO 50001, that includes the affected units, also satisfies the energy assessment requirement.)</p> <p>Verify that the facility complies with each operating limit specified in Table 3 of Appendix 1-43 that applies to the boiler.</p> <p>(NOTE: These standards apply at all times the affected boiler is operating, except during periods of startup and shutdown, during which time the facility must comply only with Table 2 [see Appendix 1-43].).</p> <p>(NOTE: This checklist item applies to each new, reconstructed, or existing affected source as follows:</p> <ul style="list-style-type: none"> <li>– the affected source is the collection of all existing industrial, commercial, and institutional boilers within one of the following subcategories located at an area source: <ul style="list-style-type: none"> <li>– coal</li> <li>– biomass</li> <li>– oil</li> <li>– seasonal boilers</li> <li>– oil-fired boilers with heat input capacity of equal to or less than 5 million British thermal units (Btu) per hour</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– boilers with an oxygen trim system that maintains an optimum air-to-fuel ratio that would otherwise be subject to a biennial tune-up</li> <li>– limited-use boilers</li> <li>– the affected source is each new or reconstructed industrial, commercial, or institutional boiler within one of the following subcategories, located at an area source: <ul style="list-style-type: none"> <li>– coal</li> <li>– biomass</li> <li>– oil</li> <li>– seasonal boilers</li> <li>– oil-fired boilers with heat input capacity of equal to or less than 5 million British thermal units (Btu) per hour</li> <li>– boilers with an oxygen trim system that maintains an optimum air-to-fuel ratio that would otherwise be subject to a biennial tune-up</li> <li>– limited-use boilers.</li> </ul> </li> </ul> <p>(NOTE: An affected source is a new source if the facility commenced construction of the affected source after 4 June 2010, and the boiler meets the applicability criteria at the time construction started.)</p> <p>(NOTE: An affected source is a reconstructed source if the boiler meets the reconstruction criteria as defined in 40 CFR 63.2, the facility commenced reconstruction after 4 June 2010, and the boiler meets the applicability criteria at the time reconstruction started.)</p> <p>(NOTE: An existing dual-fuel fired boiler meeting the definition of gas-fired boiler (see Definitions), that meets the applicability requirements after 4 June 2010 due to a fuel switch from gaseous fuel to solid fossil fuel, biomass, or liquid fuel is considered to be an existing source as long as the boiler was designed to accommodate the alternate fuel.)</p> <p>(NOTE: Owners or operators of an area source subject to this checklist item are exempt from the obligation to obtain a permit under 40 CFR 70 or 71. The facility may, however, be required to obtain a title V permit due to another reason or reasons. See 40 CFR 70.3(a) and 70.3(b) or 71.3(a) and 71.3(b).)</p> <p>(NOTE: The following boilers are exempt from this checklist item:</p> <ul style="list-style-type: none"> <li>– any boiler specifically listed as, or included in the definition of, an affected source in another standard(s) under 40 CFR 63</li> <li>– any boiler specifically listed as an affected source in another standard(s) established under section 129 of the Clean Air Act</li> <li>– a boiler required to have a permit under section 3005 of the <i>Solid Waste Disposal Act</i> or covered 40 CFR 63, subpart EEE (e.g., hazardous waste boilers)</li> <li>– a boiler that is used specifically for research and development except for boilers that solely or primarily provide steam (or heat) to a process or for</li> </ul>

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	<p>heating at a research and development facility (NOTE: This exemption does not prohibit the use of the steam (or heat) generated from the boiler during research and development, however, the boiler must be concurrently and primarily engaged in research and development for the exemption to apply.)</p> <ul style="list-style-type: none"> <li>– a gas-fired boiler</li> <li>– a hot water heater</li> <li>– any boiler that is used as a control device to comply with another subpart of 40 CFR 63, or part 60, part 61, or part 65 provided that at least 50 percent of the average annual heat input during any 3 consecutive calendar years to the boiler is provided by regulated gas streams that are subject to another standard</li> <li>– temporary boilers</li> <li>– residential boilers</li> <li>– electric boilers</li> <li>– an electric utility steam generating unit (EGU) as defined by 40 CFR 63.11237 [see Definitions].)</li> </ul> <p>Verify that, if the facility owns or operates an existing affected boiler, the facility achieves compliance with the following applicable provisions:</p> <ul style="list-style-type: none"> <li>– if the existing affected boiler is subject to a work practice or management practice standard of a tune-up, achieve compliance with the work practice or management standard no later than 21 June 2014</li> <li>– if the existing affected boiler is subject to emission limits, achieve compliance with the emission limits no later than 21 June 2014</li> <li>– if the existing affected boiler is subject to the energy assessment requirement, achieve compliance with the energy assessment requirement no later than 21 June 2014.</li> </ul> <p>Verify that, if the facility starts up a new affected source on or before 20 May 2011, achieve compliance with the provisions of this subpart (40 CFR 63, subpart JJJJ) no later than 20 May 2011.</p> <p>Verify that, if the facility starts up a new affected source after 20 May 2011, the facility achieves compliance with the provisions of 40 CFR 63, subpart JJJJ upon startup of the affected source.</p> <p>(NOTE: If the facility owns or operates an industrial, commercial, or institutional boiler and would be subject to 40 CFR 63, subpart JJJJ except for the exemption for commercial and industrial solid waste incineration units covered by 40 CFR part 60, subpart CCCC or subpart DDDD, and the facility ceases combusting solid waste, the facility must be in compliance with 40 CFR 63, subpart JJJJ on the effective date of the waste to fuel switch as specified in 40 CFR 60, subpart CCCC or subpart DDDD.)</p>

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<p><b>AE.15.10.US.</b> Industrial, commercial, or institutional boiler or process heaters located at, or a part of, an area source of HAP must meet general compliance requirements (40 CFR 63.11205) [Added April 2011; Revised April 2013].</p>	<p>(NOTE: See checklist item AE.15.9.US for details on applicability of this checklist item and exemptions from this checklist item.)</p> <p>Verify that, at all times, the facility operates and maintains any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions.</p> <p>(NOTE: The general duty to minimize emissions does not require the facility to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.)</p> <p>Verify that the facility demonstrates compliance with all applicable emission limits using performance stack testing, fuel analysis, or a continuous monitoring system (CMS), including a continuous emission monitoring system (CEMS), a continuous opacity monitoring system (COMS), or a continuous parameter monitoring system (CPMS), where applicable.</p> <p>Verify that, if the facility demonstrates compliance with applicable mercury emission limits using fuel analysis, the emission rate calculated according to 40 CFR 63.11211(c) (see text) is less than the applicable emission limit or the facility demonstrates compliance using stack testing.</p> <p>Verify that, if the facility demonstrates compliance with any applicable emission limit through performance stack testing and subsequent compliance with operating limits (including the use of CPMS), with a CEMS, or with a COMS, the facility develops a site-specific monitoring plan for the use of any CEMS, COMS, or CPMS.</p> <p>(NOTE: The requirement for a site-specific monitoring plan also applies if the facility petitions the EPA Administrator for alternative monitoring parameters under 40 CFR 63.8(f).)</p> <p>Verify that, for each required continuous monitoring system (including CEMS, COMS, or continuous parameter monitoring system), the facility develops, and submits to the delegated authority for approval upon request, a site-specific monitoring plan that addresses the following:</p> <ul style="list-style-type: none"> <li>– installation of the CMS sampling probe or other interface at a measurement location relative to each affected process unit such that the measurement is representative of control of the exhaust emissions (e.g., on or downstream of the last control device)</li> </ul>

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<b>AE.15.11.US.</b> Industrial, commercial, or institutional boiler or process heaters located at, or a part of, an area source of HAP must conduct performance tests (40 CFR 63.11220) [Added April 2011; Revised April 2013; Revised October 2016].	<ul style="list-style-type: none"> <li>– performance and equipment specifications for the sample interface, the pollutant concentration or parametric signal analyzer, and the data collection and reduction systems</li> <li>– performance evaluation procedures and acceptance criteria (e.g., calibrations)</li> <li>– ongoing operation and maintenance procedures in accordance with the general requirements of 40 CFR 63.8(c)(1)(ii), (c)(3), and (c)(4)(ii);</li> <li>– ongoing data quality assurance procedures in accordance with the general requirements of 40 CFR 63.8(d)</li> <li>– ongoing recordkeeping and reporting procedures in accordance with the general requirements of 40 CFR 63.10(c), 63.10(e)(1), and 63.10(e)(2)(i).</li> </ul> <p>Verify that the site-specific monitoring plan, if requested, is submitted at least 60 days before the initial performance evaluation of the CMS.</p> <p>(NOTE: This requirement to develop and submit a site specific monitoring plan does not apply to affected sources with existing CEMS or COMS operated according to the performance specifications under 40 CFR 60, Appendix B and which meet the requirements of 40 CFR 63.11224 (see checklist item AE.15.14.US).</p> <p>Verify that the facility conducts a performance evaluation of each CMS in accordance with the facility’s site-specific monitoring plan.</p> <p>Verify that the facility operates and maintains the CMS in continuous operation according to the site-specific monitoring plan.</p> <p>(NOTE: See checklist item AE.15.9.US for details on applicability of this checklist item and exemptions from this checklist item.)</p> <p>Verify that, if your boiler has a heat input capacity of 10 million Btu per hour or greater, all applicable performance (stack) tests are conducted according to 40 CFR 63.11212 on a triennial basis, except as follows:</p> <ul style="list-style-type: none"> <li>– for new or reconstructed boilers that commenced construction or reconstruction on or before 14 September 2016, when demonstrating initial compliance with the PM emission limit, if the boiler's performance test results show that PM emissions are <math>\leq</math> half of the PM emission limit, further performance tests for PM need not be done until 14 September 2021, but compliance with all applicable operating limits and monitoring requirements must continue as well with the following provisions:             <ul style="list-style-type: none"> <li>– the performance test for PM is conducted by 14 September 2021</li> <li>– if the performance test results show that the PM emissions are <math>\leq</math> than half of the PM emission limit, the facility may choose to conduct performance tests for PM every fifth year as long as each performance</li> </ul> </li> </ul>

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	<p>test is conducted no more than 61 mo. after the previous performance test</p> <ul style="list-style-type: none"> <li>– if there is intent to burn a new type of fuel other than ultra-low-sulfur liquid fuel or gaseous fuels as defined in 40 CFR 63.11237, a performance test is conducted within 60 days of burning the new fuel type</li> <li>– if the performance test results show that PM emissions are greater than half of the PM emission limit, subsequent performance tests are done on a triennial basis</li> </ul> <p>– for new or reconstructed boilers that commenced construction or reconstruction after 14 September 2016, when demonstrating initial compliance with the PM emission limit, if the boiler's performance test results show that PM emissions are <math>\leq</math> half of the PM emission limit, the facility may choose to conduct performance tests for PM every fifth year as long as they continue to comply with all applicable operating limits and monitoring requirements and the following provisions:</p> <ul style="list-style-type: none"> <li>– each performance test is conducted no more than 61 mo. after the previous performance test</li> <li>– if there is intent to burn a new type of fuel other than ultra-low-sulfur liquid fuel or gaseous fuels as defined in 40 CFR 63.11237, a performance test is conducted within 60 days of burning the new fuel type</li> <li>– if performance test results show that PM emissions are greater than half of the PM emission limit, subsequent performance tests are conducted on a triennial basis</li> </ul> <p>– if compliance with the mercury emission limit is demonstrated based on fuel analysis, a fuel analysis is done according to 40 CFR 63.11213 for each type of fuel burned as specified in the following:</p> <ul style="list-style-type: none"> <li>– for existing boilers and new or reconstructed boilers that commenced construction or reconstruction on or before 14 September 2016, when demonstrating initial compliance with the mercury emission limit, if the mercury constituents in the fuel or fuel mixture are measured to be <math>\leq</math> half of the mercury emission limit, further fuel analysis sampling is not required until 14 September 2017, but compliance with all applicable operating limits and monitoring requirements continues and the boiler complies with the following provisions: <ul style="list-style-type: none"> <li>– fuel analysis sampling for mercury is conducted by 14 June 2018</li> <li>– if the fuel analysis results show that the mercury constituents in the fuel or fuel mixture are equal to or less than half of the mercury emission limit, the facility may choose to conduct fuel analysis sampling for mercury every 12 mo.</li> </ul> </li> <li>– for new or reconstructed boilers that commenced construction or reconstruction after 14 September 2016, when demonstrating initial compliance with the mercury emission limit, if the mercury constituents in the fuel or fuel mixture are measured to be <math>\leq</math> half of the mercury emission limit, the facility may choose to conduct fuel analysis sampling</li> </ul>

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<b>AE.15.12.US.</b> Industrial, commercial, or institutional boiler or process heaters located at, or a part of, an area source of HAP must conduct monitoring and data collection (40 CFR 63.11221) [Added April 2011; Revised April 2013; Revised October 2016].	<p>for mercury every 12 mo., but must continue to comply with all applicable operating limits and monitoring requirements</p> <ul style="list-style-type: none"> <li>– when demonstrating compliance with the mercury emission limit, if the mercury constituents in the fuel or fuel mixture are greater than half of the mercury emission limit, quarterly sampling is done</li> <li>– for existing affected boilers that have not operated on solid fossil fuel, biomass, or liquid fuel since the previous compliance demonstration and more than 3 yr have passed since the previous compliance demonstration, the facility completes the subsequent compliance demonstration no later than 180 days after the re-start of the affected boiler on solid fossil fuel, biomass, or liquid fuel.</li> </ul> <p>Verify that, if compliance with the mercury emission limit is demonstrated based on fuel analysis and there are plans to burn a new type of fuel or fuel mixture, a fuel analysis is done before burning the new type of fuel or mixture in the boiler and the mercury emission rate is recalculated using Equation 1 of 40 CFR 63.11211.</p> <p>(NOTE: The recalculated mercury emission rate must be less than the applicable emission limit.</p> <p>Verify that triennial performance tests are completed no more than 37 mo after the previous performance test.</p> <p>(NOTE: See checklist item AE.15.9.US for details on applicability of this checklist item and exemptions from this checklist item.)</p> <p>Verify that the facility monitors and collects data according to 40 CFR, subpart JJJJ and the site-specific monitoring plan, when required.</p> <p>Verify that the facility operates the monitoring system and collects data at all required intervals at all times the affected source is operating and compliance is required, except for periods of monitoring system malfunctions or out-of-control periods, repairs associated with monitoring system malfunctions or out-of-control periods, and required monitoring system quality assurance or quality control activities including, as applicable, calibration checks, required zero and span adjustments, and scheduled CMS maintenance as defined in the site-specific monitoring plan.</p> <p>(NOTE: A monitoring system malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring system failures that are caused in part by poor maintenance or careless operation are not malfunctions.)</p> <p>Verify that the facility completes monitoring system repairs in response to monitoring system malfunctions or out-of-control periods and to return the monitoring system to operation as expeditiously as practicable.</p>

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<b>AE.15.13.US.</b> Industrial, commercial, or institutional boiler or process heaters located at, or a part of, an area source of HAP must demonstrate continuous compliance (40 CFR 63.11222(a), 63.11223(a), and 63.11223(c)) [Added April 2011; Revised April 2013; Revised October 2016].	<p>Verify that the facility does not use data collected during periods of startup and shutdown, monitoring system malfunctions or out-of-control periods, repairs associated with monitoring system malfunctions or out-of-control periods, or required monitoring system quality assurance or quality control activities in calculations used to report emissions or operating levels.</p> <p>Verify that the facility uses all the data collected during all other periods in assessing the operation of the control device and associated control system.</p> <p>(NOTE: Except for periods of monitoring system malfunctions or monitoring system out-of-control periods, repairs associated with monitoring system malfunctions or monitoring system out-of-control periods, and required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks, required zero and span adjustments, and scheduled CMS maintenance as defined in the site-specific monitoring plan), failure to collect required data is a deviation of the monitoring requirements.)</p> <p>(NOTE: See checklist item AE.15.9.US for details on applicability of this checklist item and exemptions from this checklist item.)</p> <p>Verify that the facility demonstrates continuous compliance with each emission limit and operating limit in Table 1 and Table 3 (see Appendix 1-43) that applies to the facility according to the methods specified in Table 7 of 40 CFR 63, Part JJJJJ (see text).</p> <p>Verify that, for affected sources subject to the work practice standard or the management practices of a tune-up, the facility conducts a performance tune-up and keeps the required records.</p> <p>(NOTE: See the text of 40 CFR 63.11223(b) for details and methodology for demonstrating compliance with standards for the tune-up.)</p> <p>Verify that boilers with an oxygen trim system that maintains an optimum air-to-fuel ratio that would otherwise have to perform a biennial tune-up does a tune-up of the boiler every 5 yr and each 5-year tune-up is done no more than 61 mo after the previous tune-up.</p> <p>Verify that, for a new or reconstructed boiler with an oxygen trim system, the first 5-yr tune-up is no later than 61 mo after the initial startup.</p> <p>(NOTE: The burner inspection and inspection of the system controlling the air-to-fuel ratio may be delayed until the next scheduled unit shutdown. But each burner and system controlling the air-to-fuel ratio must be inspected at least once every 72 mo.)</p>

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	<p>Verify that, if an oxygen trim system is utilized on a unit without emission standards to reduce the tune-up frequency to once every 5 years, the oxygen level is set no lower than the oxygen concentration measured during the most recent tune-up.</p> <p>Verify that seasonal boilers conduct a tune-up every 5 yr and each 5 yr tune-up is done no more than 61 mo after the previous tune-up.</p> <p>(NOTE: For a new or reconstructed seasonal boiler, the first 5-yr tune-up must be no later than 61 months after the initial startup. The facility may delay the burner inspection and inspection of the system controlling the air-to-fuel ratio until the next scheduled unit shutdown, but the facility must inspect each burner and system controlling the air-to-fuel ratio at least once every 72 mo. Seasonal boilers are not subject to the emission limits in Table 1 (see Appendix 1-43) to this or the operating limits in Table 3 (see Appendix 1-43).)</p> <p>Verify that oil-fired boilers with a heat input capacity of equal to or less than 5 million Btu per hour conduct a tune-up every 5 yr and each 5-yr tune-up is conducted no more than 61 mo after the previous tune-up.</p> <p>(NOTE: For a new or reconstructed oil-fired boiler with a heat input capacity of equal to or less than 5 million Btu per hour, the first 5-year tune-up must be no later than 61 mo after the initial startup. The facility may delay the burner inspection and inspection of the system controlling the air-to-fuel ratio until the next scheduled unit shutdown, but the facility must inspect each burner and system controlling the air-to-fuel ratio at least once every 72 mo.)</p> <p>Verify that limited-use boilers conduct a tune-up every 5 yr and each 5-yr tune-up is conducted no more than 61 mo after the previous tune-up.</p> <p>(NOTE: For a new or reconstructed limited-use boiler, the first 5-yr tune-up must be no later than 61 mo after the initial startup. The facility may delay the burner inspection and inspection of the system controlling the air-to-fuel ratio until the next scheduled unit shutdown, but the facility must inspect each burner and system controlling the air-to-fuel ratio at least once every 72 mo. Limited-use boilers are not subject to the emission limits in Table 1 (see Appendix 1-43), the energy assessment requirements in Table 2 (see Appendix 1-43), or the operating limits in Table 3 (see Appendix 1-43).)</p> <p>Verify that, if the facility owns or operates a boiler subject to emission limits in Table 1 (see Appendix 1-43) of 40 CFR 63, subpart JJJJ, the facility minimizes the boiler's startup and shutdown periods following the manufacturer's recommended procedures, if available.</p> <p>(NOTE: If manufacturer's recommended procedures are not available, follow recommended procedures for a unit of similar design for which manufacturer's recommended procedures are available.)</p>

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<b>AE.15.14.US.</b> Industrial, commercial, or institutional boiler or process heaters located at, or a part of, an area source of HAP must meet monitoring, installation, operation, and maintenance requirements (40 CFR 63.11224) [Added April 2011; Revised April 2013].	<p>Verify that the facility submits a signed statement in the Notification of Compliance Status report that indicates that they conducted startups and shutdowns according to the manufacturer's recommended procedures or procedures specified for a boiler of similar design if manufacturer's recommended procedures are not available.</p> <p>(NOTE: See checklist item AE.15.9.US for details on applicability of this checklist item and exemptions from this checklist item.)</p> <p>Verify that, if the facility's boiler is subject to a CO emission limit in Table 1 (see Appendix 1-43), the facility either installs, operates, and maintains a CEMS for CO and oxygen or installs, calibrates, operates, and maintains an oxygen analyzer system .manufacturer's recommendations</p> <p>(NOTE: See the text of 40 CFR 63.11224(a) for details on methodology and processes to use when installing, operating, and maintaining a CEMS.)</p> <p>Verify that, where a certified CO CEMS is used, the CO level is monitored at the outlet of the boiler, after any add-on controls or flue gas recirculation system and before release to the atmosphere.</p> <p>(NOTE: Boilers that use a CO CEMS are exempt from the initial CO performance testing and oxygen concentration operating limit requirements. Oxygen monitors and oxygen trim systems must be installed to monitor oxygen in the boiler flue gas, boiler firebox, or other appropriate intermediate location.)</p> <p>Verify that, if the facility is using a control device to comply with the emission limits specified in Table 1 (see Appendix 1-43), the facility maintains each applicable operating limit in Table 3 (see Appendix 1-43).</p> <p>(NOTE: If the facility uses a control device not covered in Table 3 (see Appendix 1-43), or the facility wishes to establish and monitor an alternative operating limit and alternative monitoring parameters, the facility must apply to the United States EPA Administrator for approval of alternative monitoring.)</p> <p>Verify that, if the facility demonstrates compliance with any applicable emission limit through stack testing and subsequent compliance with operating limits, the facility develop a site-specific monitoring plan.</p> <p>Verify that, if the facility has an applicable operating limit that requires the use of a CMS, the facility installs, operates, and maintains each CPMS according to the procedures in 40 CFR 63.11224(d) (see text).</p> <p>Verify that, if the facility has an applicable opacity operating limit, they install, operate, certify and maintain each COMS according to the procedures in 40 CFR 63.1124(e) (see text).</p>

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	<p>– for units that do not qualify for a statutory exemption as provided in section 129(g)(1) of the Clean Air Act: “No secondary materials that are solid waste were combusted in any affected unit.”</p> <p>Verify that the notification is submitted electronically using the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA’s Central Data Exchange (CDX) (<a href="http://www.epa.gov/cdx">www.epa.gov/cdx</a>).</p> <p>(NOTE: If the specific reporting form is not available in CEDRI at the time that the report is due, the written Notification of Compliance Status must be submitted to the Administrator.)</p> <p>Verify that, if the facility conducts any opacity or visible emission observations, or other monitoring procedures or methods, they submit that data to the Administrator.</p> <p>(NOTE: If the facility is using data from a previously conducted emission test to serve as documentation of conformance with the emission standards and operating limits of 40 CFR 63, subpart JJJJJ, the facility must include in the Notification of Compliance Status the date of the test and a summary of the results, not a complete test report.)</p> <p>Verify that, if the facility intends to commence or recommence combustion of solid waste, they provide 30 days prior notice of the date upon which they will commence or recommence combustion of solid waste.</p> <p>Verify that the notification identifies the following:</p> <ul style="list-style-type: none"> <li>– the name of the owner or operator of the affected source, the location of the source, the boiler(s) that will commence burning solid waste, and the date of the notice</li> <li>– the currently applicable subcategory under 40 CFR 63, Subpart JJJJJ</li> <li>– the date on which the facility became subject to the currently applicable emission limits</li> <li>– the date upon which the facility will commence combusting solid waste</li> </ul> <p>Verify that, if the facility has switched fuels or made a physical change to the boiler and the fuel switch or change resulted in the applicability of a different subcategory within 40 CFR 63, subpart JJJJJ, in the boiler becoming subject to 40 CFR 63, subpart JJJJJ, or in the boiler switching out of 40 CFR 63, subpart JJJJJ due to a fuel change that results in the boiler meeting the definition of gas-fired boiler, as defined in 40 CFR 63.11237, or the facility has taken a permit limit that resulted in the facility becoming subject to 40 CFR 63, subpart JJJJJ or no longer being subject to 40 CFR 63, subpart JJJJJ, the facility provides notice of the date upon which fuels were switched, a physical change was made, or a permit limit was taken within 30 days of the change.</p>

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<p><b>AE.15.16.US.</b> Industrial, commercial, or institutional boiler or process heaters located at, or a part of, an area source of HAP must meet reporting requirements (40 CFR 63.11225(b) and 63.11225(e)) [Added April 2011; Revised April 2013; Revised October 2016].</p>	<p>Verify that the notification of fuel switching or physical change identifies the following:</p> <ul style="list-style-type: none"> <li>– the name of the owner or operator of the affected source, the location of the source, the boiler(s) that have switched fuels, were physically changed, or took a permit limit, and the date of the notice</li> <li>– the date upon which the fuel switch, physical change, or permit limit occurred.</li> </ul> <p>(NOTE: See checklist item AE.15.9.US for details on applicability of this checklist item and exemptions from this checklist item.)</p> <p>Verify that the facility prepares, by March 1 of each year, and submits to the delegated authority upon request, an annual compliance certification report for the previous calendar year containing the following information:</p> <ul style="list-style-type: none"> <li>– company name and address</li> <li>– statement by a responsible official, with the official's name, title, phone number, email address, and signature, certifying the truth, accuracy and completeness of the notification and a statement of whether the source has complied with all the relevant standards and other requirements of 40 CFR 63, subpart JJJJJ; including the following certification(s) of compliance, as applicable, and signed by a responsible official: <ul style="list-style-type: none"> <li>– “This facility complies with the requirements in 40 CFR 63.11223 to conduct a biennial or 5-year tune-up, as applicable, of each boiler.”</li> <li>– for units that do not qualify for a statutory exemption as provided in section 129(g)(1) of the Clean Air Act: “No secondary materials that are solid waste were combusted in any affected unit”</li> <li>– “This facility complies with the requirement in 40 CFR 63.11214(d) and 63.11223(g) to minimize the boiler's time spent during startup and shutdown and to conduct startups and shutdowns according to the manufacturer's recommended procedures or procedures specified for a boiler of similar design if manufacturer's recommended procedures are not available”</li> </ul> </li> <li>– if the source experiences any deviations from the applicable requirements during the reporting period, include a description of deviations, the time periods during which the deviations occurred, and the corrective actions taken</li> <li>– the total fuel use by each affected boiler subject to an emission limit, for each calendar month within the reporting period, including, but not limited to, a description of the fuel, whether the fuel has received a non-waste determination by the facility or EPA through a petition process to be a non-waste under 40 CFR 241.3(c), whether the fuel(s) were processed from discarded non-hazardous secondary materials within the meaning of 40 CFR 241.3, and the total fuel usage amount with units of measure.</li> </ul>

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	<p>Verify that the facility submits the report by March 15 if the facility had any deviations from the applicable requirements.</p> <p>(NOTE: For boilers that are subject only to the energy assessment requirement and/or a requirement to conduct a biennial or 5-year tune-up and not subject to emission limits or operating limits, the facility may prepare only a biennial or 5-year compliance report.)</p> <p>Verify that, within 60 days after the date of completing each required performance test, the results of the performance tests, including any associated fuel analyses, are submitted.</p> <p>Verify that, within 60 days after the date of completing each CEMS performance evaluation, the results of the performance evaluation is submitted.</p> <p>Verify that for data collected using test methods supported by the EPA's Electronic Reporting Tool (ERT) or performance evaluations of continuous monitoring systems measuring relative accuracy test audit (RATA) pollutants that are supported by EPA's ERT as listed on the EPA's ERT Web site (<a href="https://www3.epa.gov/ttn/chief/ert/ert_info.html">https://www3.epa.gov/ttn/chief/ert/ert_info.html</a>) at the time of the test/evaluation, the results of the performance test/evaluation are submitted to the EPA via the Compliance and Emissions Data Reporting Interface (CEDRI). (CEDRI can be accessed through the EPA's Central Data Exchange (CDX). (<a href="https://cdx.epa.gov/">https://cdx.epa.gov/</a>)).</p> <p>(NOTE: Performance test data and/or performance evaluation data must be submitted in a file format generated through the use of the EPA's ERT or an alternate electronic file format consistent with the extensible markup language (XML) schema listed on the EPA's ERT Web site. If the facility claims that some of the performance test information being submitted is confidential business information (CBI), the facility must submit a complete file generated through the use of the EPA's ERT or an alternate electronic file consistent with the XML schema listed on the EPA's ERT Web site, including information claimed to be CBI, on a compact disc, flash drive, or other commonly used electronic storage media to the EPA. The electronic media must be clearly marked as CBI and mailed to U.S. EPA/OAQPS/CORE CBI Office, Attention: Group Leader, Measurement Policy Group, MD C404-02, 4930 Old Page Rd., Durham, NC 27703. The same ERT or alternate file with the CBI omitted must be submitted to the EPA via the EPA's CDX.)</p> <p>Verify that, for data collected using test methods that are not supported by the EPA's ERT and/or performance evaluations of continuous monitoring systems measuring RATA pollutants that are not supported by EPA's ERT as listed on the EPA's ERT Web site at the time of the test/evaluation, the results of the performance test/evaluation are submitted to the Administrator at the appropriate address.</p>

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<p><b>AE.15.17.US.</b> Industrial, commercial, or institutional boiler or process heaters located at, or a part of, an area source of HAP must meet recordkeeping requirements (40 CFR 63.11225(c) and 63.11225(d)) [Added April 2011; Revised April 2013; Revised October 2016].</p>	<p>Verify that the facility keeps a copy of each notification and report that they submitted to be in compliance and all documentation supporting any Initial Notification or Notification of Compliance Status that were submitted.</p> <p>Verify that the facility keeps records to document conformance with the work practices, emission reduction measures, and management practices required by 40 CFR 63.11214 and 63.11223 as follows:</p> <ul style="list-style-type: none"> <li>– records identify each boiler, the date of tune-up, the procedures followed for tune-up, and the manufacturer's specifications to which the boiler was tuned</li> <li>– for operating units that combust non-hazardous secondary materials that have been determined not to be solid waste, keep a record which documents how the secondary material meets each of the legitimacy</li> <li>– if combusting a fuel that has been processed from a discarded non-hazardous secondary material, keep records as to how the operations that produced the fuel satisfies the definition of processing in 40 CFR 241.2 and each of the legitimacy criteria</li> <li>– if the fuel received a non-waste determination pursuant to the petition process, a record that documents how the fuel satisfies the requirements of the petition process</li> <li>– for operating units that combust non-hazardous secondary materials as fuel, keep records documenting that the material is a listed non-waste</li> <li>– for each boiler required to conduct an energy assessment, keep a copy of the energy assessment report</li> <li>– for each boiler subject to an emission limit in Table 1 (see Appendix 1-43), keep records of monthly fuel use by each boiler, including the type(s) of fuel and amount(s) used</li> <li>– for each new oil-fired boiler that meets the requirements of 40 CFR 63.11210(e) or (f), keep records, on a monthly basis, of the type of fuel combusted</li> <li>– for each boiler that meets the definition of seasonal boiler, keep records of days of operation per year</li> <li>– for each boiler that meets the definition of limited-use boiler, keep a copy of the federally enforceable permit that limits the annual capacity factor to less than or equal to 10 percent and records of fuel use for the days the boiler is operating</li> <li>– for sources that demonstrate compliance through fuel analysis, a copy of all calculations and supporting documentation that were done to demonstrate compliance with the mercury emission limits, including results of any fuel analyses</li> <li>– records of the occurrence and duration of each malfunction of the boiler, or of the associated air pollution control and monitoring equipment</li> <li>– records of actions taken during periods of malfunction to minimize emissions in accordance with the general duty to minimize emissions in 40 CFR 63.11205(a), including corrective actions to restore the malfunctioning boiler,</li> </ul>

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	<p>air pollution control, or monitoring equipment to its normal or usual manner of operation.</p> <p>Verify that the facility keeps the records of all required inspection and monitoring data and the following information for each required inspection or monitoring:</p> <ul style="list-style-type: none"> <li>– the date, place, and time of the monitoring event</li> <li>– person conducting the monitoring</li> <li>– technique or method used</li> <li>– operating conditions during the activity</li> <li>– results, including the date, time, and duration of the period from the time the monitoring indicated a problem to the time that monitoring indicated proper operation</li> <li>– maintenance or corrective action taken (if applicable).</li> </ul> <p>Verify that, if the facility uses a bag leak detection system, the facility keeps the following records:</p> <ul style="list-style-type: none"> <li>– records of the bag leak detection system output</li> <li>– records of bag leak detection system adjustments, including the date and time of the adjustment, the initial bag leak detection system settings, and the final bag leak detection system settings</li> <li>– the date and time of all bag leak detection system alarms, and for each valid alarm, the time the facility initiated corrective action, the corrective action taken, and the date on which corrective action was completed.</li> </ul> <p>Verify that records are in a form suitable and readily available for expeditious review.</p> <p>Verify that each record is kept for 5 yr following the date of each recorded action.</p> <p>Verify that each record is kept on-site or is accessible from a central location by computer or other means that instantly provide access at the site for at least 2 yr after the date of each recorded action.</p> <p>(NOTE: The facility may keep the records off site for the remaining 3 yr.)</p>

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<p><b>AE.20</b></p> <p><b>GAS TURBINES</b></p> <p><b>AE.20.1.US.</b> Stationary gas turbines with a heat input at peak load equal to or greater than 10.7 gJ/h (10 MBtu/h), based on the lower heat value of the fuel fired, which started construction, modification, or reconstruction after 3 October 1977, are required to meet specific operations standards (40 CFR 60.332(a), 60.332(c) through 60.332(l), 60.333, and 60.334(a) through 60.334(h)) [Revised October 2004; Revised April 2006].</p>	<p>Verify that gases which contain NO<sub>x</sub> are not emitted in excess of the amount calculated using Formula B in Appendix 1-7 from:</p> <ul style="list-style-type: none"> <li>– stationary gas turbines with a heat input at peak load equal to or greater than 10.7 gJ/h (10 MBtu/h) heat input but less than or equal to 107.2 gJ/h (100 MBtu/h) based on the lower heating value of the fuel fired, except those with greater than 10.7 gJ/h (10 MBtu/h) heat input that are fired with natural gas and are being fired in an emergency</li> <li>– stationary gas turbines with a manufacturer's rated base load at ISO conditions of 30 MW [approx. 102 MBtu/h] or less.</li> </ul> <p>Verify that gases are not discharged containing SO<sub>2</sub> in excess of 0.15 percent by volume at 15 percent oxygen and on a dry basis.</p> <p>(NOTE: The following sources are exempt from meeting the NO<sub>x</sub> emissions limitations:</p> <ul style="list-style-type: none"> <li>– stationary gas turbines with a heat input at peak load greater than 2.9 MW (10 MMBtu/h) heat input but less than or equal to 29 MW (100 MMBtu/h) based on the lower heating value of the fuel fired, and that started construction before 3 October 1982</li> <li>– stationary gas turbines using water or steam injection for control of NO<sub>x</sub> when ice fog is deemed a traffic hazard</li> <li>– emergency gas turbines, military gas turbines for use in other than a garrison facility, military gas turbines installed for use as training facilities, and firefighting gas turbines</li> <li>– regenerative cycle gas turbines with a heat input less than or equal to 29 MW (100 MMBtu/h)</li> <li>– stationary gas turbines, except electric utility stationary gas turbines, with a heat input at peak load of greater than 107.2 gJ/h (100 MMBtu/h) that started construction, modification, or reconstruction between 3 October 1977 and 27 January 1982.)</li> </ul> <p>Verify that fuel stationary gas turbines using water injection to control NO<sub>x</sub> emissions have installed and are operating a continuous monitoring system to monitor and record fuel consumption and the ratio of water to fuel being fired in the turbine.</p> <p>Verify that on and after the date on which the performance test is required to be conducted is completed, every owner or operator complies with one or the other of the following conditions:</p>

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	<ul style="list-style-type: none"> <li>– no discharge into the atmosphere from any stationary gas turbine any gases which contain SO<sub>2</sub> in excess of 0.015 percent by volume at 15 percent oxygen and on a dry basis</li> <li>– no fuel is burned in any stationary gas turbine which contains total sulfur in excess of 0.8 percent by weight (8000 ppmw).</li> </ul> <p>Verify that, if the facility is using water or steam injection to control NO<sub>x</sub> emissions, the facility installs, calibrates, maintains and operates a continuous monitoring system to monitor and record the fuel consumption and the ratio of water or steam to fuel being fired in the turbine.</p> <p>(NOTE: The owner or operator of any stationary gas turbine that commenced construction, reconstruction or modification after 3 October 1977, but before 8 July 2004, and which uses water or steam injection to control NO<sub>x</sub> emissions may, as an alternative to operating the continuous monitoring system install, certify, maintain, operate, and quality-assure a continuous emission monitoring system (CEMS) consisting of NO<sub>x</sub> and O<sub>2</sub> monitors. As an alternative, a CO<sub>2</sub> monitor may be used to adjust the measured NO<sub>x</sub> concentrations to 15 percent O<sub>2</sub> by either converting the CO<sub>2</sub> hourly averages to equivalent O<sub>2</sub> concentrations using Equation F-14a or F-14b in appendix F to 40 CFR 75 and making the adjustments to 15 percent O<sub>2</sub>, or by using the CO<sub>2</sub> readings directly to make the adjustments, as described in Method 20.)</p> <p>Verify that, if the option to use a CEMS is chosen, the CEMS is installed, certified, maintained and operated as follows:</p> <ul style="list-style-type: none"> <li>– each CEMS is installed and certified according to PS 2 and 3 (for diluent) of 40 CFR 60, appendix B, except the 7-day calibration drift is based on unit operating days, not calendar days</li> <li>– Appendix F, Procedure 1 is not required</li> <li>– the relative accuracy test audit (RATA) of the NO<sub>x</sub> and diluent monitors may be performed individually or on a combined basis, i.e., the relative accuracy tests of the CEMS may be performed either: <ul style="list-style-type: none"> <li>– on a ppm basis (for NO<sub>x</sub>) and a percent O<sub>2</sub> basis for oxygen</li> <li>– on a ppm at 15 percent O<sub>2</sub> basis</li> <li>– on a ppm basis (for NO<sub>x</sub>) and a percent CO<sub>2</sub> basis (for a CO<sub>2</sub> monitor that uses the procedures in Method 20 to correct the NO<sub>x</sub> data to 15 percent O<sub>2</sub>)</li> </ul> </li> <li>– during each full unit operating hour, each monitor completes a minimum of one cycle of operation (sampling, analyzing, and data recording) for each 15-min quadrant of the hour, to validate the hour</li> <li>– for partial unit operating hours, at least one valid data point must be obtained for each quadrant of the hour in which the unit operates</li> <li>– for unit operating hours in which required quality assurance and maintenance activities are performed on the CEMS, a minimum of two valid data points (one in each of two quadrants) are required to validate the hour</li> </ul>

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	<ul style="list-style-type: none"> <li>– for purposes of identifying excess emissions, CEMS data is reduced to hourly averages: <ul style="list-style-type: none"> <li>– for each unit operating hour in which a valid hourly average is obtained for both NO<sub>x</sub> and diluent, the data acquisition and handling system calculates and records the hourly NO<sub>x</sub> emissions as percent NOX by volume, dry basis, corrected to 15 percent O<sub>2</sub> and International Organization for Standardization (ISO) standard conditions</li> <li>– for any hour in which the hourly average O<sub>2</sub> concentration exceeds 19.0 percent O<sub>2</sub>, a diluent cap value of 19.0 percent O<sub>2</sub> may be used in the emission calculations</li> <li>– a worst case ISO correction factor may be calculated and applied using historical ambient data (NOTE: For the purpose of this calculation, substitute the maximum humidity of ambient air (Ho), minimum ambient temperature (Ta), and minimum combustor inlet absolute pressure (Po) into the ISO correction equation).</li> </ul> </li> </ul> <p>(NOTE: If the owner or operator has installed a NO<sub>x</sub> CEMS to meet the requirements of 40 CFR 75, and is continuing to meet the ongoing requirements of 40 CFR 75 of this chapter, the CEMS may be used to meet the requirements of this section, except that the missing data substitution methodology provided for at 40 CFR 75, Subpart D, is not required for purposes of identifying excess emissions. Instead, periods of missing CEMS data are to be reported as monitor downtime in the excess emissions and monitoring performance report.)</p> <p>(NOTE: For any turbine that commenced construction, reconstruction or modification after 3 October 1977, but before 8 July 2004, and which does not use steam or water injection to control NO<sub>x</sub> emissions, the owner or operator may, but is not required to, use a CEMS that meets the requirements outlined above. Also, if the owner or operator has previously submitted and received EPA, state, or local permitting authority approval of a procedure for monitoring compliance with the applicable NO<sub>x</sub> emission limit, that approved procedure may continue to be used.)</p> <p>(NOTE: The owner or operator of any new turbine that commences construction after 8 July 2004, and which does not use water or steam injection to control NO<sub>x</sub> emissions, may, but is not required to, elect to use a NO<sub>x</sub> CEMS installed, certified, operated, maintained, and quality-assured as described above. Other acceptable monitoring approaches include periodic testing approved by EPA or the State or local permitting authority or continuous parameter monitoring.</p> <p>(NOTE: The owner or operator of a new turbine that commences construction after 8 July 2004, which does not use water or steam injection to control NO<sub>x</sub> emissions may, but is not required to, perform continuous parameter monitoring as follows:</p> <ul style="list-style-type: none"> <li>– for a diffusion flame turbine without add-on selective catalytic reduction controls (SCR), the owner or operator defines at least four parameters indicative of the unit's NO<sub>x</sub> formation characteristics and shall monitor these parameters continuously</li> </ul>

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	<ul style="list-style-type: none"> <li>– for any lean premix stationary combustion turbine, the owner or operator shall continuously monitor the appropriate parameters to determine whether the unit is operating in low- NO<sub>x</sub> mode</li> <li>– for any turbine that uses SCR to reduce NO<sub>x</sub> emissions, the owner or operator continuously monitors appropriate parameters to verify the proper operation of the emission controls</li> <li>– for affected units also regulated under 40 CFR 75, if the owner or operator elects to monitor NO<sub>x</sub> emission rate using the methodology in appendix E to 40 CFR 75, or the low mass emissions methodology in 40 CFR 75.19, the requirements may be met by performing the parametric monitoring described in section 2.3 of appendix E or in 40 CFR 75.19(c)(1)(iv)(H).)</li> </ul> <p>Verify that the steam or water to fuel ratio, or other parameters that are continuously monitored, are monitored during the required performance test to establish acceptable values and ranges.</p> <p>Verify that the owner or operator may supplement the performance test data with engineering analyses, design specifications, manufacturer's recommendations and other relevant information to define the acceptable parametric ranges more precisely.</p> <p>Verify that the owner or operator develops and keeps onsite a parameter monitoring plan which explains the procedures used to document proper operation of the NO<sub>x</sub> emission controls and including the following information:</p> <ul style="list-style-type: none"> <li>– the parameter(s) monitored and the acceptable range(s) of the parameter(s) as well as the basis for designating the parameter(s) and acceptable range(s)</li> <li>– any supplemental data such as engineering analyses, design specifications, manufacturer's recommendations and other relevant information.</li> </ul> <p>(NOTE: For affected units that are also subject to 40 CFR 75 and that use the low mass emissions methodology or the NO<sub>x</sub> emission measurement methodology, the owner or operator may meet the requirements by developing and keeping on-site (or at a central location for unmanned facilities) a quality-assurance plan.)</p> <p>Verify that the owner or operator of any stationary gas turbine:</p> <ul style="list-style-type: none"> <li>– monitors the total sulfur content of the fuel being fired in the turbine</li> <li>– monitors the nitrogen content of the fuel combusted in the turbine, if the owner or operator claims an allowance for fuel bound nitrogen (i.e., if an F-value greater than zero is being or will be used by the owner or operator to calculate STD in 40 CFR 60.332).</li> </ul> <p>(NOTE: The owner or operator may elect not to monitor the total sulfur content of the gaseous fuel combusted in the turbine, if the gaseous fuel is demonstrated to meet the definition of natural gas, regardless of whether an existing custom</p>

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<p><b>AE.20.2.US.</b> Electric utility stationary gas turbines with a heat input at peak load greater than 107.2 gJ/h (100 MBtu/h), based on the lower heating value of the fuel fired, which started construction, modification, or reconstruction after 3 October 1977, are required to meet specific operations NO<sub>x</sub> emissions standards (40 CFR 60.332(a)(1) and 60.332(b)) [Added June 1995; Citation Revised October 2004].</p> <p><b>AE.20.3.US.</b> Stationary combustion turbines located at major sources of HAP emissions must meet certain emissions and operating limitations (40 CFR 63.6090(a), 63.6092, 63.6095, and 63.6100) [Added April 2004].</p>	<p>schedule approved by the administrator for this subpart (i.e., Subpart GG) requires such monitoring.)</p> <p>Verify that gases, which contain NO<sub>x</sub>, are not emitted in excess of the amount calculated using Formula A in Appendix 1-7 from electric utility stationary gas turbines with a heat input at peak load greater than 107.2 gJ/h (100 MBtu/h), based on the lower heating value of the fuel fired.</p> <p>(NOTE: An affected source is any existing, new, or reconstructed stationary combustion turbine located at a major source of HAP emissions. A stationary combustion turbine is existing if construction or reconstruction of the stationary combustion turbine started on or before 14 January 2003. A change in ownership of an existing stationary combustion turbine does not make that stationary combustion turbine a new or reconstructed stationary combustion turbine. A stationary combustion turbine is new if construction of the stationary combustion turbine started after 14 January 2003. A stationary combustion turbine is reconstructed if the definition of reconstruction in 40 CFR 63.2 is met and reconstruction is started after 14 January 2003.)</p> <p>(NOTE: Duct burners and waste heat recovery units are considered steam generating units and are not covered in this checklist item. In some cases, it may be difficult to separately monitor emissions from the turbine and duct burner, so sources are allowed to meet the required emission limitations with their duct burners in operation.)</p> <p>Verify that, each new or reconstructed stationary combustion turbine which is a lean premix gas-fired stationary combustion turbine, a lean premix oil-fired stationary combustion turbine, a diffusion flame gas-fired stationary combustion turbine, or a diffusion flame oil-fired stationary combustion turbine (see definitions) complies with the emission limitations and operating limitations in Tables 1 and 2 of Appendix 1-7j.</p> <p>(NOTE: If a new or reconstructed stationary combustion turbine which is a lean premix oil-fired stationary combustion turbine or a diffusion flame oil-fired stationary combustion turbine starts up on or before 5 March 2004, the facility must</p>

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<p><b>AE.20.4.US.</b> Stationary combustion turbines located at major sources of HAP emissions must meet general compliance requirements (40 CFR 63.6090(a), 63.6092, and 63.6105) [Added April 2004].</p> <p><b>AE.20.5.US.</b> Stationary combustion turbines located at major sources of HAP emissions must meet specific testing requirements (40 CFR 63.6090(a), 63.6092, 63.6110, 63.6115, and 63.6120) [Added April 2004].</p>	<p>comply with the emissions limitations and operating limitations in this subpart (i.e. 40 CFR 63, Subpart YYYYY) no later than 5 March 2004.)</p> <p>(NOTE: If a new or reconstructed stationary combustion turbine which is a lean premix oil-fired stationary combustion turbine or a diffusion flame oil-fired stationary combustion turbine starts up after 5 March 5 2004, the facility complies with the emissions limitations and operating limitations upon startup of the affected source.)</p> <p>(NOTE: If the new or reconstructed stationary combustion turbine is an area source that increases its emissions or its potential to emit such that it becomes a major source of HAP, the turbine must be in compliance with any applicable requirements when it becomes a major source.)</p> <p>(NOTE: If a new or reconstructed stationary combustion turbine that is a lean premix gas-fired stationary combustion turbine or diffusion flame gas-fired stationary combustion turbine starts up, the facility must comply with the Initial Notification requirements set forth in 40 CFR 63.6145 [see checklist item AE.20.8.US] but need not comply with any other requirement of this subpart [i.e. 40 CFR 63, Subpart YYYYY] until EPA takes final action to require compliance and publishes a document in the <i>Federal Register</i>.)</p> <p>(NOTE: See AE.20.3.US for information on applicability of this requirement.)</p> <p>Verify that the facility is in compliance with the applicable emission limitations and operating limitations at all times except during startup, shutdown, and malfunctions.</p> <p>Verify that, if the facility must comply with emission and operating limitations, the stationary combustion turbine, oxidation catalyst emission control device or other air pollution control equipment, and monitoring equipment must be operated and maintained in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction.</p> <p>(NOTE: See AE.20.3.US for information on applicability of this requirement.)</p> <p>Verify that the initial performance tests or other initial compliance demonstrations in Table 4 of Appendix 1-7j that apply are conducted within 180 calendar days after the applicable compliance date.</p> <p>(NOTE: An owner or operator is not required to conduct an initial performance test to determine outlet formaldehyde concentration on units for which a performance test has been previously conducted, but the test must meet all of the following conditions:</p>

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	<ul style="list-style-type: none"> <li>– the test was conducted using the same methods specified in this subpart [i.e., 40 CFR 63, Subpart YYYY], and these methods must have been followed correctly</li> <li>– the test is not older than 2 yr</li> <li>– the test was reviewed and accepted by the Administrator</li> <li>– either no process or equipment changes have been made since the test was performed, or the owner or operator can demonstrate that the results of the performance test, with or without adjustments, reliably demonstrate compliance despite process or equipment changes</li> <li>– the test was conducted at any load condition within plus or minus 10 percent of 100 percent load.)</li> </ul> <p>Verify that subsequent performance tests are performed on an annual basis as specified in Table 3 of Appendix 1-7j.</p> <p>Verify that each applicable performance test in Table 3 is conducted.</p> <p>Verify that each performance test is conducted according to the requirements of the General Provisions at 40 CFR 63.7(e)(1) and under the specific conditions in Table 2 of Appendix 1-7j.</p> <p>Verify that performance tests or compliance evaluations are not conducted during periods of startup, shutdown, or malfunction.</p> <p>Verify that performance tests are conducted at high load, defined as 100 percent plus or minus 10 percent.</p> <p>Verify that three separate test runs are conducted for each performance test, and each test run lasts at least 1 h.</p> <p>Verify that, if the stationary combustion turbine is not equipped with an oxidation catalyst, the Administrator is petitioned for operating limitations that will be monitored to demonstrate compliance with the formaldehyde emission limitation in Table 1 of Appendix 1-7j, and these operating parameters are monitored during the initial performance test and continuously thereafter.</p> <p>(NOTE: The facility may petition the Administrator for approval of no additional operating limitations. If a petition is submitted, the initial performance test must not be conducted until after the petition has been approved or disapproved by the Administrator.)</p> <p>Verify that, if the stationary combustion turbine is not equipped with an oxidation catalyst and the Administrator has been petitioned for approval of additional operating limitations to demonstrate compliance with the formaldehyde emission limitation in Table 1 of Appendix 1-7j, the petition includes:</p>

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<p><b>AE.20.6.US.</b> Stationary combustion turbines located at major sources of HAP emissions must meet specific monitoring requirements (40</p>	<ul style="list-style-type: none"> <li>– identification of the specific parameters proposed to use as additional operating limitations</li> <li>– a discussion of the relationship between these parameters and HAP emissions, identifying how HAP emissions change with changes in these parameters and how limitations on these parameters will serve to limit HAP emissions;</li> <li>– a discussion of how the upper and/or lower values are established for these parameters which will establish the limits on these parameters in the operating limitations</li> <li>– a discussion identifying the methods used to measure and the instruments used to monitor these parameters, as well as the relative accuracy and precision of these methods and instruments</li> <li>– a discussion identifying the frequency and methods for recalibrating the instruments used for monitoring these parameters.</li> </ul> <p>Verify that, if the Administrator is petitioned for approval of no additional operating limitations, the petition includes:</p> <ul style="list-style-type: none"> <li>– identification of the parameters associated with operation of the stationary combustion turbine and any emission control device which could change intentionally (e.g., operator adjustment, automatic controller adjustment, etc.) or unintentionally (e.g., wear and tear, error, etc.) on a routine basis or over time</li> <li>– a discussion of the relationship, if any, between changes in the parameters and changes in HAP emissions</li> <li>– for the parameters that could change in such a way as to increase HAP emissions, a discussion of why establishing limitations on the parameters is not possible</li> <li>– for the parameters that could change in such a way as to increase HAP emissions, a discussion of why upper and/or lower values could not be established for the parameters which would establish limits on the parameters as operating limitations</li> <li>– for the parameters that could change in such a way as to increase HAP emissions, a discussion identifying the methods to use to measure them and the instruments to use to monitor them, as well as the relative accuracy and precision of the methods and instruments</li> <li>– for the parameters, a discussion identifying the frequency and methods for recalibrating the instruments used to monitor them</li> <li>– a discussion of why it is infeasible, unreasonable, or unnecessary to adopt the parameters as operating limitations.</li> </ul> <p>(NOTE: See AE.20.3.US for information on applicability of this requirement.)</p> <p>Verify that, if the facility is operating a stationary combustion turbine that is required to comply with the formaldehyde emission limitation and an oxidation catalyst emission control device is used, the catalyst inlet temperature is</p>

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<p>CFR 63.6090(a), 63.6092, and 63.6125) [Added April 2004].</p> <p><b>AE.20.7.US.</b> Stationary combustion turbines located at major sources of HAP emissions must demonstrate continuous compliance (40 CFR 63.6090(a), 63.6092, 63.6130, 63.6135, and 63.6140) [Added April 2004; Revised July 2006].</p>	<p>continuously monitored in order to comply with the operating limitations in Table 2 of Appendix 1-7j and as specified in Table 5 of Appendix 1-7j.</p> <p>Verify that, if the facility is operating a stationary combustion turbine that is required to comply with the formaldehyde emission limitation and an oxidation catalyst is not used, any parameters specified in the approved petition to the Administrator are continuously monitored in order to comply with the operating limitations in Table 2 of Appendix 1-7j and as specified in Table 5 of Appendix 1-7j.</p> <p>Verify that, if the facility is operating a stationary combustion turbine that fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, or a stationary combustion turbine where gasified MSW is used to generate 10 percent or more of the gross heat input on an annual basis, the fuel usage is monitored and recorded daily with separate fuel meters to measure the volumetric flow rate of each fuel and the turbine is operated in a manner which minimizes HAP emissions.</p> <p>Verify that, if the facility is operating a lean premix gas-fired stationary combustion turbine or a diffusion flame gas-fired stationary combustion turbine, and any quantity of distillate oil is used to fire any new or existing stationary combustion turbine that is located at the same major source, the distillate oil usage is monitored and recorded daily for all new and existing stationary combustion turbines located at the major source with a nonresettable hour meter to measure the number of hours that distillate oil is fired.</p> <p>(NOTE: See AE.20.3.US for information on applicability of this requirement.)</p> <p>Verify that initial compliance with each applicable emission and operating limitation is demonstrated according to Table 4 of Appendix 1-7j.</p> <p>Verify that the Notification of Compliance Status containing results of the initial compliance demonstration has been submitted.</p> <p>Verify that, except for monitor malfunctions, associated repairs, and required quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments of the monitoring system), all parametric monitoring is done at all times the stationary combustion turbine is operating.</p> <p>Verify that data recorded during monitor malfunctions, associated repairs, and required quality assurance or quality control activities is not used for meeting the reporting requirements including data averages and calculations.</p>

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<b>AE.20.8.US.</b> Stationary combustion turbines located at major sources of HAP emissions must meet notification requirements (40 CFR 63.6090(a), 63.6092, 63.6145) [Added April 2004].	<p>Verify that all the data collected during all other periods is used in assessing the performance of the control device or in assessing emissions from the new or reconstructed stationary combustion turbine.</p> <p>Verify that continuous compliance with each emission limitation and operating limitation in Tables 1 and 2 of Appendix 1-7j is demonstrated according to methods specified in Table 5 of Appendix 1-7j.</p> <p>Verify that each instance in which the turbine did not meet each emission limitation or operating limitation is reported.</p> <p>Verify that each instance in which the requirements in Table 7 of Appendix 1-7j are reported.</p> <p>(NOTE: These instances are deviations from the emission and operating limitations and must be reported according to the requirements in 40 CFR 63.6150.)</p> <p>(NOTE: Deviations that occur during a period of startup, shutdown, and malfunction are not violations if the stationary combustion turbine is operated according to 40 CFR 63.6(e)(1)(i).)</p> <p>(NOTE: See AE.20.3.US for information on applicability of this requirement.)</p> <p>Verify that all of the notifications in 40 CFR 63.7(b) and (c), 63.8(e), 63.8(f)(4), and 63.9(b) and (h) are submitted by the dates specified.</p> <p>Verify that, if a new or reconstructed stationary combustion turbine is started up before 5 March 2004, an Initial Notification is submitted not later than 120 calendar days after 5 March 2004.</p> <p>Verify that, if a new or reconstructed stationary combustion turbine is started up on or after 5 March 2004, an Initial Notification is submitted not later than 120 calendar days after becoming subject to these regulations.</p> <p>Verify that, if the facility is required to submit an Initial Notification but is otherwise not affected by the emission limitation requirements, the notification includes the information in 40 CFR 63.9(b)(2)(i) through (v) and a statement that the new or reconstructed stationary combustion turbine has no additional emission limitation requirements and an explanation of the basis of the exclusion (for example, that it operates exclusively as an emergency stationary combustion turbine).</p> <p>Verify that, if the facility is required to conduct an initial performance test, a notification of intent to conduct an initial performance test is submitted at least 60 calendar days before the initial performance test is scheduled to begin.</p>

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<p><b>AE.20.9.US.</b> Stationary combustion turbines located at major sources of HAP emissions must meet reporting requirements (40 CFR 63.6090(a), 63.6092, and 63.6150) [Added April 2004].</p>	<p>Verify that, if the facility is required to comply with the emission limitation for formaldehyde, Notification of Compliance Status is submitted.</p> <p>Verify that, for each performance test required to demonstrate compliance with the emission limitation for formaldehyde, the facility submits the Notification of Compliance Status, including the performance test results, before the close of business on the 60th calendar day following the completion of the performance test.</p> <p>(NOTE: See AE.20.3.US for information on applicability of this requirement.)</p> <p>Verify that anyone who owns or operates a stationary combustion turbine which must meet the emission limitation for formaldehyde submits a semiannual compliance report according to Table 6 of Appendix 1-7j.</p> <p>Verify that the semiannual compliance report contains the following information:</p> <ul style="list-style-type: none"> <li>– company name and address</li> <li>– statement by a responsible official, with that official's name, title, and signature, certifying the accuracy of the content of the report</li> <li>– date of report and beginning and ending dates of the reporting period</li> <li>– for each deviation from an emission limitation, the compliance report must contain the following information: <ul style="list-style-type: none"> <li>– the total operating time of each stationary combustion turbine during the reporting period</li> <li>– information on the number, duration, and cause of deviations (including unknown cause, if applicable), as applicable, and the corrective action taken</li> <li>– information on the number, duration, and cause for monitor downtime incidents (including unknown cause, if applicable, other than downtime associated with zero and span and other daily calibration checks).</li> </ul> </li> </ul> <p>Verify that the first semiannual compliance report covers the period beginning on the compliance date specified in 40 CFR 63.6095 and ending on 30 June or 31 December, whichever date is the first date following the end of the first calendar half after the specified compliance date.</p> <p>Verify that the first semiannual compliance report is postmarked or delivered no later than 31 July or 31 January, whichever date follows the end of the first calendar half after the specified compliance date</p> <p>Verify that each subsequent semiannual compliance report covers the semiannual reporting period from 1 January through 30 June or the semiannual reporting period from 1 July through 31 December.</p>

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	<p>Verify that each subsequent semiannual compliance report is postmarked or delivered no later than 31 July or 31 January, whichever date is the first date following the end of the semiannual reporting period.</p> <p>(NOTE: For each stationary combustion turbine subject to permitting regulations pursuant to 40 CFR 70 or 71, and if the permitting authority has established the date for submitting annual reports pursuant to 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), the first and subsequent compliance reports may be submitted according to the dates the permitting authority has established.)</p> <p>Verify that, if the facility is operating as a stationary combustion turbine that fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, or a stationary combustion turbine where gasified MSW is used to generate 10 percent or more of the gross heat input on an annual basis, an annual report is submitted according to Table 6 of Appendix 1-7j by the date specified unless the Administrator has approved a different schedule.</p> <p>Verify that the report contains the following information:</p> <ul style="list-style-type: none"> <li>– fuel flow rate of each fuel and the heating values that were used in your calculations</li> <li>– demonstration that the percentage of heat input provided by landfill gas, digester gas, or gasified MSW is equivalent to 10 percent or more of the total fuel consumption on an annual basis</li> <li>– the operating limits provided in the federally enforceable permit, and any deviations from these limits</li> <li>– any problems or errors suspected with the meters.</li> </ul> <p>Verify that the first annual report covers the period beginning on the compliance date specified in 40 CFR 63.6095 and ending on December 31.</p> <p>Verify that the first annual report is postmarked or delivered no later than 31 January.</p> <p>Verify that each subsequent annual report covers the annual reporting period from 1 January through 31 December.</p> <p>Verify that each subsequent annual report is postmarked or delivered no later than 31 January.</p> <p>Verify that, for each stationary combustion turbine that is subject to permitting regulations pursuant to 40 CFR 70 or 71, and if the permitting authority has established the date for submitting annual reports, the first and subsequent compliance reports are submitted according to the dates the permitting authority has established.</p>

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<p><b>AE.20.10.US.</b> Stationary combustion turbines located at major sources of HAP emissions must meet recordkeeping requirements (40 CFR 63.6090(a), 63.6092, 63.6155, and 63.6160) [Added April 2004].</p>	<p>Verify that, if the facility is operating a lean premix gas-fired stationary combustion turbine or a diffusion flame gas-fired stationary combustion turbine, and any quantity of distillate oil is used to fire any new or existing stationary combustion turbine located at the same major source, an annual report is submitted according to Table 6 of Appendix 1-7j.</p> <p>Verify that the report contains:</p> <ul style="list-style-type: none"> <li>– the number of hours distillate oil was fired by each new or existing stationary combustion turbine during the reporting period.</li> <li>– the operating limits provided in the federally enforceable permit, and any deviations from these limits.</li> <li>– any problems or errors suspected with the meters.</li> </ul> <p>(NOTE: See AE.20.3.US for information on applicability of this requirement.)</p> <p>Verify that the following records are kept:</p> <ul style="list-style-type: none"> <li>– a copy of each notification and report that submitted to comply, including all documentation supporting any Initial Notification or Notification of Compliance Status submitted</li> <li>– records of performance tests and performance evaluations</li> <li>– records of the occurrence and duration of each startup, shutdown, or malfunction</li> <li>– records of the occurrence and duration of each malfunction of the air pollution control equipment, if applicable</li> <li>– records of all maintenance on the air pollution control equipment.</li> </ul> <p>Verify that, if the facility is operating a stationary combustion turbine that fires landfill gas, digester gas, or gasified MSW equivalent to 10 percent or more of the gross heat input on an annual basis, or if the facility is operating a lean premix gas-fired stationary combustion turbine or a diffusion flame gas-fired stationary combustion turbine, and any quantity of distillate oil is used to fire any new or existing stationary combustion turbine located at the same major source, the records of daily fuel usage monitors are kept.</p> <p>Verify that the records required in Table 5 of Appendix 1-7j to show continuous compliance with each operating limitation are kept.</p> <p>Verify that all applicable records are maintained in such a manner that they can be readily accessed and are suitable for inspection.</p> <p>Verify that each record is kept for 5 yr following the date of each occurrence, measurement, maintenance, corrective action, report, or record.</p>

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<p><b>AE.20.11.US.</b> Stationary combustion turbine with a heat input at peak load equal to or greater than 10.7 gigajoules (10 MMBtu) per hour, which started construction, modification, or reconstruction after 18 February 2005 must meet certain emissions limitations and operational requirements (40 CFR 60.4300, 60.4305, 60.4310, 60.4320, 60.4325, 60.4330, and 60.4333 [Added April 2009].</p>	<p>Verify that records of the most recent 2 yr are maintained onsite or are accessible onsite.</p> <p>(NOTE: Records of the remaining 3 yr may be retained offsite.)</p> <p>(NOTE: The heat input at peak load is based on the higher heating value of the fuel. Only heat input to the combustion turbine should be included when determining whether or not this checklist item is applicable to the turbine. Any additional heat input to associated heat recovery steam generators (HRSG) or duct burners should not be included when determining the peak heat input. However, this checklist item does apply to emissions from any associated HRSG and duct burners.)</p> <p>(NOTE: Stationary combustion turbines regulated under this checklist item are exempt from the requirements of 40 CFR 60, Subpart GG [40 CFR 63.741 through 63.759, see checklist items AE.170.1.US through AE.170.13.US]. Heat recovery steam generators and duct burners regulated under this checklist item are exempted from the requirements of 40 CFR subparts Da, Db [see checklist items AE.10.4.US through AE.10.6.US], and Dc [see checklist items AE.10.7.US through AE.10.10.US].)</p> <p>(NOTE: The following are exempt from the requirements of this checklist item:</p> <ul style="list-style-type: none"> <li>– stationary combustion turbines at integrated gasification combined cycle electric utility steam generating units that are subject to 40 CFR 60, subpart Da</li> <li>– combustion turbine test cells/stands.)</li> </ul> <p>Verify that the turbine meets the emission limits for NO<sub>x</sub> specified in Appendix 1-7k</p> <p>Verify that, if there are two or more turbines that are connected to a single generator, each turbine meets the emission limits for NO<sub>x</sub>.</p> <p>(NOTE: Emergency combustion turbines (see definitions) are exempt from the NO<sub>x</sub> standards. Stationary combustion turbines engaged by manufacturers in research and development of equipment for both combustion turbine emission control techniques and combustion turbine efficiency improvements are exempt from the NO<sub>x</sub> emission limits on a case-by-case basis as determined by the EPA Administrator.)</p> <p>Verify that, if the turbine burns both natural gas and distillate oil (or some other combination of fuels), the emission limits specified in Appendix 1-7k are met.</p> <p>(NOTE: If the total heat input is greater than or equal to 50 percent natural gas, the turbine must meet the corresponding limit for a natural gas-fired turbine when burning that fuel. Similarly, when the total heat input is greater than 50 percent</p>

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	<p>distillate oil and fuels other than natural gas, the turbine meets the corresponding limit for distillate oil and fuels other than natural gas for the duration of the time that that particular fuel is burned.)</p> <p>Verify that, if the turbine is located in a continental area, the facility complies with any of the following paragraphs:</p> <ul style="list-style-type: none"> <li>– does not cause to be discharged into the atmosphere from the stationary combustion turbine any gases which contain SO<sub>2</sub> in excess of 110 ng/J (0.90 lb/MWh) gross output;</li> <li>– does not burn in the stationary combustion turbine any fuel which contains total potential sulfur emissions in excess of 26 ng SO<sub>2</sub>/J (0.060 lb SO<sub>2</sub>/MMBtu) heat input (NOTE: If the turbine simultaneously fires multiple fuels, each fuel must meet this requirement)</li> <li>– for each stationary combustion turbine burning at least 50 percent biogas on a calendar month basis, as determined based on total heat input, do not cause to be discharged into the atmosphere any gases that contain SO<sub>2</sub> in excess of 65 ng SO<sub>2</sub>/J (0.15 lb SO<sub>2</sub>/MMBtu) heat input.</li> </ul> <p>(NOTE: If the turbine is located in Alaska, the facility did not have to comply with the above SO<sub>2</sub> limitations until 1 January 2008)</p> <p>Verify that, if the turbine is located in a noncontinental area or a continental area that the Administrator determines does not have access to natural gas and that the removal of sulfur compounds would cause more environmental harm than benefit, the facility complies with one or the other of the following conditions:</p> <ul style="list-style-type: none"> <li>– do not cause to be discharged into the atmosphere from the stationary combustion turbine any gases which contain SO<sub>2</sub> in excess of 780 ng/J (6.2 lb/MWh) gross output</li> <li>– do not burn in the subject stationary combustion turbine any fuel which contains total sulfur with potential sulfur emissions in excess of 180 ng SO<sub>2</sub>/J (0.42 lb SO<sub>2</sub>/MMBtu) heat input (NOTE: If the turbine simultaneously fires multiple fuels, each fuel must meet this requirement.)</li> </ul> <p>Verify that stationary combustion turbine, air pollution control equipment, and monitoring equipment are operated and maintained in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction.</p> <p>Verify that, when an affected unit with heat recovery utilizes a common steam header with one or more combustion turbines, the owner or operator either:</p> <ul style="list-style-type: none"> <li>– determine compliance with the applicable NOX emissions limits by measuring the emissions combined with the emissions from the other unit(s) utilizing the common heat recovery unit</li> </ul>

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<p><b>AE.20.12.US.</b> Stationary combustion turbine with a heat input at peak load equal to or greater than 10.7 gigajoules (10 MMBtu) per hour, which started construction, modification, or reconstruction after 18 February 2005 must meet monitoring requirements (40 CFR 60.4330, 60.4335, 60.4340, 60.4345) [Added April 2009].</p>	<p>– develop, demonstrate, and provide information satisfactory to the Administrator on methods for apportioning the combined gross energy output from the heat recovery unit for each of the affected combustion turbines.</p> <p>(NOTE: The Administrator may approve such demonstrated substitute methods for apportioning the combined gross energy output measured at the steam turbine whenever the demonstration ensures accurate estimation of related emissions.)</p> <p>(NOTE: Information on conducting initial and subsequent performance tests can be found in 40 CFR 60.4400 through 60.4415.)</p> <p>(NOTE: See AE.20.11.US for applicability and exemption information.)</p> <p>Verify that, if the facility is using water or steam injection to control NO<sub>x</sub> emissions, the facility installs, calibrates, maintains and operates a continuous monitoring system to monitor and record the fuel consumption and the ratio of water or steam to fuel being fired in the turbine when burning a fuel that requires water or steam injection for compliance.</p> <p>(NOTE: As an alternative, continuous emission monitoring can be used as follows:</p> <ul style="list-style-type: none"> <li>– install, certify, maintain, and operate a continuous emission monitoring system (CEMS) consisting of a NO<sub>x</sub> monitor and a diluent gas (oxygen (O<sub>2</sub>) or carbon dioxide (CO<sub>2</sub>) monitor, to determine the hourly NO<sub>x</sub> emission rate in ppm or lb/MMBtu</li> <li>– for units complying with the output-based standard, install, calibrate, maintain, and operate a fuel flow meter (or flow meters) to continuously measure the heat input to the affected unit</li> <li>– for units complying with the output-based standard, install, calibrate, maintain, and operate a watt meter (or meters) to continuously measure the gross electrical output of the unit in megawatt-hours</li> <li>– for combined heat and power units complying with the output-based standard, install, calibrate, maintain, and operate meters for useful recovered energy flow rate, temperature, and pressure, to continuously measure the total thermal energy output in Btu/h.)</li> </ul> <p>Verify that, if the facility is not using water or steam injection to control NO<sub>x</sub> emissions, the facility performs annual performance tests in accordance with 40 CFR 60.4400 (see text) to demonstrate continuous compliance.</p> <p>(NOTE: If the NO<sub>x</sub> emission result from the performance test is less than or equal to 75 percent of the NO<sub>x</sub> emission limit for the turbine, the facility may reduce the frequency of subsequent performance tests to once every 2 yr (no more than 26 calendar months following the previous performance test). If the results of any subsequent performance test exceed 75 percent of the NO<sub>x</sub> emission limit for the turbine, the facility must resume annual performance tests.)</p>

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<p><b>AE.20.13.US.</b> Stationary combustion turbine with a heat input at peak load equal to or greater than 10.7 gigajoules (10 MMBtu) per hour, which started construction, modification, or reconstruction after 18 February 2005 must meet documentation requirements (40 CFR 60.4355, 60.4375, 60.4390, and 60.4395) [Added April 2009].</p>	<p>(NOTE: As an alternative to annual performance tests, the facility may install, calibrate, maintain and operate one of the following continuous monitoring systems:</p> <ul style="list-style-type: none"> <li>– continuous emission monitoring</li> <li>– continuous parameter monitoring as follows: <ul style="list-style-type: none"> <li>– for a diffusion flame turbine without add-on selective catalytic reduction (SCR) controls, you must define parameters indicative of the unit's NO<sub>x</sub> formation characteristics, and you must monitor these parameters continuously</li> <li>– for any lean premix stationary combustion turbine, continuously monitor the appropriate parameters to determine whether the unit is operating in low- NO<sub>x</sub> mode</li> <li>– for any turbine that uses SCR to reduce NO<sub>x</sub> emissions, continuously monitor appropriate parameters to verify the proper operation of the emission controls</li> <li>– for affected units that are also regulated under 40 CFR 75, with state approval, monitor the NO<sub>x</sub> emission rate using the methodology in appendix E to 40 CFR 75 (see text), or the low mass emissions methodology in 40 CFR 75.19 (see text), the requirements for the alternative monitoring can be met by performing the parametric monitoring described in section 2.3 of 40 CFR 75 appendix E or in 40 CFR 75.19(c)(1)(iv)(H) (see text).</li> </ul> </li> </ul> <p>(NOTE: See the text of 40 CFR 60.4350 for details and calculations to use when identifying excess emissions from the continuous emission monitoring equipment.)</p> <p>(NOTE: See AE.20.11.US for applicability and exemption information.)</p> <p>Verify that the facility has developed and keeps on-site a parameter monitoring plan which explains the procedures used to document proper operation of the NO<sub>x</sub> emission controls and the plan:</p> <ul style="list-style-type: none"> <li>– includes the indicators to be monitored and show there is a significant relationship to emissions and proper operation of the NO<sub>x</sub> emission controls</li> <li>– picks ranges (or designated conditions) of the indicators, or describe the process by which such range (or designated condition) will be established</li> <li>– explains the process the facility will use to make certain that data is obtained that are representative of the emissions or parameters being monitored (such as detector location, installation specification if applicable)</li> <li>– describes quality assurance and control practices that are adequate to ensure the continuing validity of the data</li> <li>– describes the frequency of monitoring and the data collection procedures which the facility will use (e.g., the facility is using a computerized data acquisition over a number of discrete data points with the average (or</li> </ul>

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	<p>maximum value) being used for purposes of determining whether an exceedance has occurred)</p> <ul style="list-style-type: none"> <li>– submits justification for the proposed elements of the monitoring.</li> </ul> <p>Verify that, if a proposed performance specification in the plan differs from manufacturer recommendation, the reasons for the differences are explained and the data supporting the justification submitted.</p> <p>(NOTE: The facility may refer to generally available sources of information used to support the justification. The facility may rely on engineering assessments and other data, provided factors are demonstrated which assure compliance or explain why performance testing is unnecessary to establish indicator ranges.)</p> <p>(NOTE: When establishing indicator ranges, the facility may choose to simplify the process by treating the parameters as if they were correlated. Using this assumption, testing can be divided into two cases:</p> <ul style="list-style-type: none"> <li>– all indicators are significant only on one end of range (e.g., for a thermal incinerator controlling volatile organic compounds (VOC) it is only important to insure a minimum temperature, not a maximum)</li> <li>– Some or all indicators are significant on both ends of the range.</li> </ul> <p>In the case where all indicators are significant only on one end of the range, the facility may conduct the study so that each parameter is at the significant limit of its range while conducting emissions testing. If the emissions tests show that the source is in compliance at the significant limit of each parameter, then as long as each parameter is within its limit, the facility is presumed to be in compliance. In the case where some or all indicators are significant on both ends of the range the facility may conduct the study so that each parameter that is significant at both ends of its range assumes its extreme values in all possible combinations of the extreme values (either single or double) of all of the other parameters. For example, if there were only two parameters, A and B, and A had a range of values while B had only a minimum value, the combinations would be A high with B minimum and A low with B minimum. If both A and B had a range, the combinations would be A high and B high, A low and B low, A high and B low, A low and B high. For the case of four parameters all having a range, there are 16 possible combinations.)</p> <p>Verify that affected units that are also subject to 40 CFR 75 and that have state approval to use the low mass emissions methodology in 40 CFR 75.19 (see text) or the NO<sub>x</sub> emission measurement methodology in 40 CFR 75, appendix E, the facility either develops a parameter monitoring plan a QA plan, as described in 40 CFR 75.19(e)(5) or in 40 CFR 75, appendix E, section 2.3 40 CFR 75, appendix B, section 1.3.6.</p> <p>Verify that, for each affected unit required to continuously monitor parameters or emissions, or to periodically determine the fuel sulfur content, reports of excess emissions are submitted and downtime monitored in accordance with 40 CFR 60.7(c) (checklist item AE.1.8.US).</p>

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	<p>Verify that excess emissions are reported for all periods of unit operation, including start-up, shutdown, and malfunction.</p> <p>Verify that, for each affected unit that performs annual performance tests, a written report of the results of each performance test is submitted before the close of business on the 60th day following the completion of the performance test.</p> <p>(NOTE: See the texts of 40 CFR 60.4380 and 60.4385 for details on determining how excess emissions and monitoring downtime defined for NO<sub>x</sub> and SO<sub>x</sub>.)</p> <p>Verify that, if the facility operates an emergency combustion turbine, an initial report is submitted to the EPA Administrator stating the case for exemption from the NO<sub>x</sub> limit.</p> <p>Verify that all reports required under 40 CFR 60.7(c) (see checklist item AE.1.8.US) are postmarked by the 30<sup>th</sup> day following the end of the 6 mo period.</p>

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<b>AE.21</b>  <b>INTERNAL COMBUSTION ENGINES</b>  <b>AE.21.1.US.</b> Stationary RICE must meet certain operating and emission limitations (40 CFR 63.6585, 63.6590(b)(3), 63.6590(c), 63.6600, 63.6601, 63.6602, 63.6603, and 63.6604) [Added July 2004; Revised April 2008; Revised April 2010; Revised October 2010; Revised April 2011; Revised April 2012; Revised April 2013].	<p>Verify that owners/operators of an existing, new, or reconstructed spark ignition 4SRB stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, comply with the emission limitations in Appendix 1-28, Table 1 and the operating limitations in Appendix 1-28, Table 2 which apply to the facility.</p> <p>Verify that owners/operators of the following comply with the emission and operating limitations in Appendix 1-29, Tables 1 and 2 as applicable:</p> <ul style="list-style-type: none"> <li>– a new or reconstructed 2SLB stationary RICE with a site rating of more than 500 brake HP located at major source of HAP emissions</li> <li>– a new or reconstructed 4SLB stationary RICE with a site rating of more than 500 brake HP located at major source of HAP emissions</li> <li>– a new or reconstructed CI stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions.</li> </ul> <p>(NOTE: Owners/operators of any of the following RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions do not need to comply with the emission limitations in Appendix 1-28 or Appendix 1-29:</p> <ul style="list-style-type: none"> <li>– an existing 2SLB stationary RICE</li> <li>– an existing 4SLB stationary RICE</li> <li>– a stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis</li> <li>– an emergency stationary RICE</li> <li>– a limited use stationary RICE.)</li> </ul> <p>Verify that owners and operators of an existing non-emergency stationary CI RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, comply with the emission limitations and the operating limitations in Appendix 1-29 which are applicable.</p> <p>Verify that owners and operators of an existing stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions, complies with the emission limitations in Table 2c (see Appendix 1-29a) which are applicable.</p> <p>Verify that owners or operators of an existing stationary RICE located at an area source of HAP emissions comply with the requirements in Table 2d (see Appendix 1-29a) the operating limitations in Table 2b (see Appendix 1-29) which are applicable.</p>

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	<p>(NOTE: Owners or operators of an existing stationary non-emergency CI RICE greater than 300 HP located at area sources which meet one of the following parameters do not have to meet the numerical CO emission limitations specified in Table 2d (see Appendix 1-29a):</p> <ul style="list-style-type: none"> <li>– the area source is located in an area of Alaska that is not accessible by the Federal Aid Highway System (FAHS)</li> <li>– the stationary RICE is located at an area source that meets the following: <ul style="list-style-type: none"> <li>– the only connection to the FAHS is through the Alaska Marine Highway System (AMHS), or the stationary RICE operation is within an isolated grid in Alaska that is not connected to the statewide electrical grid referred to as the Alaska Railbelt Grid</li> <li>– at least 10 percent of the power generated by the stationary RICE on an annual basis is used for residential purposes</li> <li>– the generating capacity of the area source is less than 12 megawatts, or the stationary RICE is used exclusively for backup power for renewable energy.)</li> </ul> </li> </ul> <p>(NOTE: Owners or operators of existing stationary non-emergency CI RICE greater than 300 HP located at area sources that meet one of the following parameters must meet the management practices that are shown for stationary non-emergency CI RICE less than or equal to 300 HP in Table 2d (see Appendix 1-29a):</p> <ul style="list-style-type: none"> <li>– the area source is located in an area of Alaska that is not accessible by the FAHS</li> <li>– the stationary RICE is located at an area source that meets the following: <ul style="list-style-type: none"> <li>– the only connection to the FAHS is through the AMHS, or the stationary RICE operation is within an isolated grid in Alaska that is not connected to the statewide electrical grid referred to as the Alaska Railbelt Grid</li> <li>– at least 10 percent of the power generated by the stationary RICE on an annual basis is used for residential purposes</li> <li>– the generating capacity of the area source is less than 12 megawatts, or the stationary RICE is used exclusively for backup power for renewable energy.)</li> </ul> </li> </ul> <p>Verify that owners or operators of an existing stationary non-emergency CI RICE with a site rating of more than 300 HP located on an offshore vessel that is an area source of HAP and is a nonroad vehicle that is an Outer Continental Shelf (OCS) meets the following management practices rather than the limits specified in Table 2d (See Appendix 1-29a):</p> <ul style="list-style-type: none"> <li>– change oil every 1,000 h of operation or annually, whichever comes first, with sources having the option to utilize an oil analysis program as described in 40 CFR 63.6625(i) (see text) in order to extend the specified oil change requirement</li> <li>– inspect and clean air filters every 750 h of operation or annually, whichever comes first, and replace as necessary</li> </ul>

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	<ul style="list-style-type: none"> <li>– inspect fuel filters and belts, if installed, every 750 h of operation or annually, whichever comes first, and replace as necessary</li> <li>– inspect all flexible hoses every 1,000 hours of operation or annually, whichever comes first, and replace as necessary.</li> </ul> <p>(NOTE: Owners or operators of an existing non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions that is certified to the Tier 1 or Tier 2 emission standards in Table 1 of 40 CFR 89.112 (see text) and that is subject to an enforceable state or local standard that requires the engine to be replaced no later than 1 June 2018, may until 1 January 2015, or 12 yr after the installation date of the engine (whichever is later), but not later than 1 June 2018, choose to comply with the management practices for stationary non-emergency CI RICE with a site rating of less than or equal to 300 HP in Table 2d (see Appendix 1-29a) instead of the applicable emission limitations in Table 2d (see Appendix 1-29a), operating limitations in Table 2b (see Appendix 1-29), and crankcase ventilation system requirements in 40 CFR 63.6624(g) [see checklist item AE.21.7.US]. The facility must comply with the emission limitations in Table 2d and operating limitations in Table 2b that apply for non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions by 1 January 2015, or 12 yr after the installation date of the engine (whichever is later), but not later than 1 June 2018. The facility must also comply with the crankcase ventilation system requirements in by 1 January 2015, or 12 yr after the installation date of the engine (whichever is later), but not later than 1 June 2018.)</p> <p>(NOTE: Owners or operators of an existing non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions that is certified to the Tier 3 (Tier 2 for engines above 560 kW) emission standards in Table 1 of 40 CFR 89.112 [see text], may comply with the requirements by meeting the requirements for Tier 3 engines (Tier 2 for engines above 560 kW) in 40 CFR 60 subpart IIII [40 CFR 60.4200 through 60.4219] instead of the emission limitations and other requirements that would otherwise apply under this part for existing non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions.)</p> <p>Verify that an existing non-emergency SI 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at area sources of HAP meets the definition of remote stationary RICE (see Definitions) on 19 October 2013, in order to be considered a remote stationary RICE under 40 CFR 63, subpart ZZZZ.</p> <p>Verify that owners and operators of existing non-emergency SI 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at area sources of HAP that meet the definition of remote stationary RICE (see Definitions) as of 19 October 2013 evaluate the status of their stationary RICE every 12 mo.</p> <p>Verify that, when applicable, owners and operators keep records of the initial and annual evaluation of the status of the engine.</p>

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	<p>Verify that, if an annual evaluation indicates that the stationary RICE no longer meets the definition of remote stationary RICE, the owner or operator complies with all of the requirements for existing non-emergency SI 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at area sources of HAP that are not remote stationary RICE within 1 yr of the evaluation.</p> <p>Verify that owners and operators of an existing non-emergency, non-black start CI stationary RICE with a site rating of more than 300 brake HP with a displacement of less than 30 L per cylinder that uses diesel fuel, uses diesel fuel that meets the requirements in 40 CFR 80.510(b) (see text) for nonroad diesel fuel.</p> <p>(NOTE: Beginning 1 January 2015, if the facility owns or operates an existing emergency CI stationary RICE with a site rating of more than 100 brake HP and a displacement of less than 30 liters per cylinder that uses diesel fuel and operates or is contractually obligated to be available for more than 15 h per calendar year for the purposes specified in 40 CFR 63.6640(f)(2)(ii) and (iii) or that operates for the purpose specified in 40 CFR 63.6640(f)(4)(ii), the facility must use diesel fuel that meets the requirements in 40 CFR 80.510(b) for nonroad diesel fuel, except that any existing diesel fuel purchased (or otherwise obtained) prior to 1 January 2015, may be used until depleted.)</p> <p>(NOTE: Beginning 1 January 2015, if the facility owns or operates a new emergency CI stationary RICE with a site rating of more than 500 brake HP and a displacement of less than 30 liters per cylinder located at a major source of HAP that uses diesel fuel and operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in 40 CFR 63.6640(f)(2)(ii) and (iii), the facility must use diesel fuel that meets the requirements in 40 CFR 80.510(b) for nonroad diesel fuel, except that any existing diesel fuel purchased (or otherwise obtained) prior to 1 January 2015, may be used until depleted.)</p> <p>(NOTE: Existing CI stationary RICE located in Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, at area sources in areas of Alaska that meet either 40 CFR 63.6603(b)(1) or 40 CFR 63.6603(b)(2), or are on offshore vessels that meet 40 CFR 63.6603(c) are exempt from the requirements of this section.)</p> <p>Verify that owners/operators of a new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at major source of HAP emissions manufactured on or after 1 January 2008, comply with the emission limitations in Appendix 1-29 which apply to them.</p> <p>(NOTE: This checklist item applies to owners or operators of a stationary RICE at a major or area source of HAP emissions, except if the stationary RICE is being tested at a stationary RICE test cell/stand. A stationary RICE is any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differs from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR</p>

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	<p>1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition. A major source of HAP emissions is a plant site that emits or has the potential to emit any single HAP at a rate of 10 tons (9.07 megagrams) or more per year or any combination of HAP at a rate of 25 tons (22.68 megagrams) or more per year, except that for oil and gas production facilities, a major source of HAP emissions is determined for each surface site. An area source of HAP emissions is a source that is not a major source.)</p> <p>(NOTE: If the facility is an owner or operator of an area source subject to these requirements [40 CFR 63, subpart ZZZZ], the facility's status as an entity subject to a standard or other requirements does not subject the facility to the obligation to obtain a permit under 40 CFR 70 or 40 CFR 71, provided the facility is not required to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a) for a reason other than the facility's status as an area source.)</p> <p>(NOTE: If the facility has a stationary RICE used for national security purposes, the facility may be eligible to request an exemption from the requirements of these regulations.)</p> <p>(NOTE: The following emergency stationary RICE are not subject to 40 CFR 63, subpart ZZZZ:</p> <ul style="list-style-type: none"> <li>– existing residential emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the following purposes and that do not operated to supply power as part of a financial arrangement: <ul style="list-style-type: none"> <li>– for emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies, or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3</li> <li>– for periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency</li> </ul> </li> <li>– existing commercial emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the following purposes and that do not operate to supply power as part of a financial arrangement: <ul style="list-style-type: none"> <li>– for emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies, or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3</li> <li>– for periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– existing institutional emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the following purposes and that do not operate to supply power as part of a financial arrangement:               <ul style="list-style-type: none"> <li>– for emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies, or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3</li> <li>– for periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency.</li> </ul> </li> </ul> <p>(NOTE: The stationary RICE must meet the definition of an emergency stationary RICE in 40 CFR 63.6675 [see Definitions], which includes operating according to the provisions specified in 40 CFR 63.6640(f) [see checklist item AE.21.98.US].)</p> <p>(NOTE: See the definitions of “Affected Source,” “Existing Stationary RICE,” “New Stationary RICE,” and “Reconstructed Stationary RICE.”)</p> <p>Verify that the requirements of 40 CFR 60, Subpart IIII (40 CFR 60.4200 through 60.4219), for compression ignition engines or 40 CFR 60, subpart JJJJ, for spark ignition engines are met for the following as applicable:</p> <ul style="list-style-type: none"> <li>– a new or reconstructed stationary RICE located at an area source</li> <li>– a new or reconstructed 2SLB stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions</li> <li>– a new or reconstructed 4SLB stationary RICE with a site rating of less than 250 brake HP located at a major source of HAP emissions</li> <li>– a new or reconstructed spark ignition 4 stroke rich burn (4SRB) stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions</li> <li>– a new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis</li> <li>– a new or reconstructed emergency or limited use stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions</li> <li>– a new or reconstructed compression ignition (CI) stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions.</li> </ul> <p>(NOTE: The following stationary RICE do not have to meet the requirements of 40 CFR 63, Subpart A or Subpart ZZZZ and initial notification is also not necessary:</p> <ul style="list-style-type: none"> <li>– an existing spark ignition 2SLB station RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions</li> </ul>

<p style="text-align: center;"><b>COMPLIANCE CATEGORY</b>  <b>AIR EMISSIONS MANAGEMENT</b>  <b>U.S. TEAM Guide</b></p>	
<p style="text-align: center;"><b>REGULATORY REQUIREMENTS:</b></p>	<p style="text-align: center;"><b>REVIEWER CHECKS</b>  <b>December 2018</b></p>
<p><b>AE.21.2.US.</b> Certain stationary RICE need only comply with initial notification requirements (40 CFR 63.6590(b)(1)) [<b>Added July 2004; Revised April 2008; Revised April 2010; Revised July 2010; Revised April 2013</b>].</p>	<ul style="list-style-type: none"> <li>– an existing spark ignition 4 stroke lean burn (4SIB) stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions</li> <li>– existing emergency stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions</li> <li>– existing emergency stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions that does not operate or is not contractually obligated to be available for more than 15 hours per calendar year for the following purposes: <ul style="list-style-type: none"> <li>– for emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies, or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3</li> <li>– for periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency.)</li> </ul> </li> </ul> <p>(NOTE: A stationary RICE which is an existing spark ignition 2 stroke lean burn (2SLB) stationary RICE, an existing spark ignition 4 stroke lean burn (4SLB) stationary RICE, an existing compression ignition (CI) stationary RICE, an existing emergency stationary RICE, an existing limited use stationary RICE, or an existing stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, does not have to meet these requirements.)</p> <p>Verify that the following stationary RICE meet the initial notification requirements outlined in 40 CFR 63.6645(f) (see checklist item AE.21.9.US):</p> <ul style="list-style-type: none"> <li>– the stationary RICE is a new or reconstructed emergency stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions that does not operate or is not contractually obligated to be available for more than 15 h per calendar year for the following purposes: <ul style="list-style-type: none"> <li>– for emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies, or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3</li> <li>– for periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency</li> </ul> </li> <li>– the stationary RICE is a new or reconstructed limited use stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions.</li> </ul> <p>(NOTE: These affected sources do not have to meet the other requirements under 40 CFR 63, Subpart A or 40 CFR 63, Subpart ZZZZ.)</p>

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<p><b>AE.21.3.US.</b> A new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis must meet limited requirements (40 CFR 63.6590(b)(2)) [Added July 2004; Revised April 2008; Revised October 2010].</p>	<p>Verify that a new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis meets the following:</p> <ul style="list-style-type: none"> <li>– submit a Notification of Compliance Status as detailed in 40 CFR 63.6645(f) (see checklist item AE.21.9.US)</li> <li>– submit an annual report as detailed in 40 CFR 63.6650(g)</li> <li>– keep records of daily fuel usage monitors as detailed in 40 CFR 63.6655(c).</li> <li>– monitor and record fuel usage daily with separate fuel meters to measure the volumetric flow rate of each fuel</li> <li>– operate the stationary RICE in a manner that reasonably minimizes HAP emissions.</li> </ul> <p>(NOTE: These stationary RICE do not have to meet the emission limitations and operating limitations 40 CFR 63, Subpart ZZZZ.)</p>
<p><b>AE.21.4.US.</b> Stationary RICE must meet certain general compliance requirements (40 CFR 63.6605) [Added July 2004; Revised April 2010; Revised April 2013].</p>	<p>Verify that the facility is in compliance with the applicable emission limitations, operating limitations, and other applicable requirements at all times.</p> <p>Verify that any affected source is operated and maintained at all times in a manner consistent with safety and good air pollution control practices for minimizing emissions.</p> <p>Verify that associated air pollution control equipment and monitoring equipment is operated in a manner consistent with safety and good air pollution control practices for minimizing emissions.</p> <p>(NOTE: The general duty to minimize emissions does not require facilities to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.)</p> <p>(NOTE: See checklist item AE.21.1.US for the information on applicability and exemptions from this requirement.)</p>
<p><b>AE.21.5.US.</b> Stationary RICE must conduct initial performance test or other initial compliance demonstrations in a timely manner (40 CFR 63.6610, 63.6611, and 63.6612)</p>	<p>(NOTE: This checklist item applies to a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions.)</p> <p>Verify that the initial performance test or other initial compliance demonstrations in Appendix 1-30 that apply are conducted within 180 days after the specified compliance date.</p>

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<p><b>[Added July 2004; Revised April 2008; Revised April 2010; Revised October 2010].</b></p>	<p>Verify that, if construction or reconstruction started between 19 December 2002 and 15 June 2004 and own or operate stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, the facility must demonstrate initial compliance with either the proposed emission limitations or the promulgated emission limitations no later than 10 February 2005 or no later than 180 days after startup of the source, whichever is later,</p> <p>Verify that, if construction or reconstruction started between 19 December 2002 and 15 June 2004 and own or operate stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, and the facility chose to comply with the proposed emission limitations when demonstrating initial compliance, a second performance test to demonstrate compliance must be done with the promulgated emission limitations by 13 December 2007 or after startup of the source, whichever is later.</p> <p>(NOTE: An owner or operator is not required to conduct an initial performance test on units for which a performance test has been previously conducted, but the test must meet all of the following conditions:</p> <ul style="list-style-type: none"> <li>– the test was conducted using the same methods specified in this subpart [i.e., 40 CFR 63, Subpart ZZZZ], and these methods were followed correctly</li> <li>– the test is not older than 2 yr</li> <li>– the test is reviewed and accepted by the Administrator</li> <li>– either no process or equipment changes must have been made since the test was performed, or the owner or operator is able to demonstrate that the results of the performance test, with or without adjustments, reliably demonstrate compliance despite process or equipment changes</li> <li>– the test is conducted at any load condition within plus or minus 10 percent of 100 percent load.)</li> </ul> <p>Verify that, if the facility owns or operates a new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at a major source of HAP emissions, the initial performance test is conducted within 240 days after the compliance date that is specified for the stationary RICE and according to the provisions specified in Appendix 1-30, as appropriate.</p> <p>(NOTE: Owners and operators of an existing stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions or an existing stationary RICE located at an area source of HAP emissions must comply with the dates/schedule for performance testing.)</p> <p>Verify that owners/operators conduct any applicable initial performance test or other initial compliance demonstration according to Table 4 (see Appendix 1-30) and Table 5 (see Appendix 1-33) within 180 days after the compliance date that is specified for the stationary RICE.</p>

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<p><b>AE.21.6.US.</b> Stationary RICE having to comply with emissions limitations and operating limitations must perform subsequent performance tests (40 CFR 63.6615, and 63.6620) [Added July 2004; Revised April 2010; Revised April 2013].</p>	<p>(NOTE: An owner or operator is not required to conduct an initial performance test on a unit for which a performance test has been previously conducted, but the test must meet all of the following conditions:</p> <ul style="list-style-type: none"> <li>– the test must have been conducted using the required methods, and these methods must have been followed correctly</li> <li>– the test must not be older than 2 yr</li> <li>– the test must be reviewed and accepted by the Administrator either no process or equipment changes must have been made since the test was performed, or the owner or operator is able to demonstrate that the results of the performance test, with or without adjustments, reliably demonstrate compliance despite process or equipment changes.</li> </ul> <p>(NOTE: See checklist item AE.21.1.US for the information on applicability and exemptions from this requirement.)</p> <p>Verify that if the stationary RICE has to comply with emissions limitations and operating limitations, subsequent performance tests as specified in Appendix 1-31 are performed.</p> <p>(NOTE: See checklist item AE.21.1.US for the information on applicability and exemptions from this requirement.)</p> <p>Verify that each applicable performance test in Appendices 1-30 and 1-31 is conducted.</p> <p>Verify that each performance test is conducted according to the requirements in Table 4 (see Appendix 1-30).</p> <p>(NOTE: If the facility owns or operates a non-operational stationary RICE that is subject to performance testing, it is not necessary to start up the engine solely to conduct the performance test. Owners and operators of a non-operational engine can conduct the performance test when the engine is started up again. Then, the test must be conducted at any load condition within plus or minus 10 percent of 100 percent load for the following stationary RICE:</p> <ul style="list-style-type: none"> <li>– non-emergency 4SRB stationary RICE with a site rating of greater than 500 brake HP located at a major source of HAP emissions</li> <li>– new non-emergency 4SLB stationary RICE with a site rating of greater than or equal to 250 brake HP located at a major source of HAP emissions</li> <li>– new non-emergency 2SLB stationary RICE with a site rating of greater than 500 brake HP located at a major source of HAP emissions</li> <li>– new non-emergency CI stationary RICE with a site rating of greater than 500 brake HP located at a major source of HAP emissions.)</li> </ul> <p>Verify that three separate test runs are done for each performance test required and each test run lasts at least 1 h unless otherwise specified by regulation.</p>

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<p><b>AE.21.7.US.</b> Stationary RICE having to comply with emissions limitations and operating limitations must meet monitoring, installation, operation, and maintenance requirements (40 CFR 63.6625) [Added July 2004; Revised April 2008; Revised April 2010; Revised October 2010; Revised April 2011; Revised April 2013].</p>	<p>(NOTE: Use Equation 1 of 40 CFR 63.6620(e) to determine compliance with the percent reduction requirement.)</p> <p>(NOTE: If the facility complies with the emission limitation to reduce CO and are not using an oxidation catalyst, if the facility complies with the emission limitation to reduce formaldehyde and are not using NSCR, or if the facility complies with the emission limitation to limit the concentration of formaldehyde in the stationary RICE exhaust and the facility is not using an oxidation catalyst or NSCR, the facility must petition the Administrator for operating limitations to be established during the initial performance test and continuously monitored thereafter; or for approval of no operating limitations. The initial performance test must not be done until after the petition has been approved by the Administrator.)</p> <p>(NOTE: See checklist item AE.21.1.US for the information on applicability and exemptions from this requirement.)</p> <p>Verify that, if the facility elects to install a CEMS as specified in Table 5 (see Appendix 1-33), the facility installs, operates, and maintains a CEMS to monitor CO and either O<sub>2</sub> or CO<sub>2</sub> at both the inlet and the outlet of the control device (as necessary) according to the following requirements:</p> <ul style="list-style-type: none"> <li>– each CEMS is installed, operated, and maintained according to the applicable performance specifications of 40 CFR 60, appendix B</li> <li>– an initial performance evaluation must be conducted and an annual relative accuracy test audit (RATA) of each CEMS according to the requirements in 40 CFR 63.8 and according to the applicable performance specifications of 40 CFR 60, appendix B as well as daily and periodic data quality checks in accordance with 40 CFR 60, appendix F, procedure 1</li> <li>– as specified in 40 CFR 63.8(c)(4)(ii), each CEMS completes a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-min period and there are at least two data points, with each representing a different 15-min period, to have a valid hour of data</li> <li>– the CEMS data is reduced as specified in 40 CFR 63.8(g)(2) and recorded in ppm or ppb (as appropriate for the applicable limitation) at 15 percent oxygen or the equivalent CO<sub>2</sub> concentration.</li> </ul> <p>Verify that, if the facility is required to install a continuous parameter monitoring system (CPMS) as specified in table 5 of 40 CFR 63, Subpart ZZZZ (see Appendix 1-33), the facility also installs, operates, and maintains each CPMS according to the following requirements:</p> <ul style="list-style-type: none"> <li>– install, operate, and maintain each CPMS in continuous operation according to the procedures in the site-specific monitoring plan</li> <li>– the CPMS collects data at least once every 15 min</li> </ul>

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	<ul style="list-style-type: none"> <li>– for a CPMS for measuring temperature range, the temperature sensor has a minimum tolerance of 2.8 degrees C (5 degrees F) or 1 percent of the measurement range, whichever is larger</li> <li>– the CPMS equipment performance evaluation, system accuracy audits, or other audit procedures specified in the site-specific monitoring plan are done at least annually</li> <li>– a performance evaluation of each CPMS is done in accordance with the site-specific monitoring plan</li> <li>– prepare a site-specific monitoring plan that addresses the following monitoring system design, data collection, and the quality assurance and quality control elements: <ul style="list-style-type: none"> <li>– the performance criteria and design specifications for the monitoring system equipment, including the sample interface, detector signal analyzer, and data acquisition and calculations</li> <li>– sampling interface (e.g., thermocouple) location such that the monitoring system provides representative measurements</li> <li>– equipment performance evaluations, system accuracy audits, or other audit procedures</li> <li>– ongoing operation and maintenance procedures in accordance with provisions in 40 CFR 63.8(c)(1)(ii) and 63.8(c)(3)</li> <li>– ongoing reporting and recordkeeping procedures in accordance with provisions in 40 CFR 63.10(c), 63.10(e)(1), and 63.10(e)(2)(i).</li> </ul> </li> </ul> <p>(NOTE: For an affected source required to install a CPMS, compliance with the emissions limitations and operating limitations is required on 9 March 2011 and the requirements for the CPMS are applicable 6 September 2011.)</p> <p>(NOTE: A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.)</p> <p>(NOTE: Any 15-min period for which the monitoring system is out-of-control and data is not available for required calculations constitute a deviation from the monitoring requirements.)</p> <p>Verify that, if the facility is operating a new or reconstructed stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, the facility:</p> <ul style="list-style-type: none"> <li>– monitors and records fuel usage daily with separate fuel meters to measure the volumetric flow rate of each fuel</li> <li>– the stationary RICE is operated in a manner which reasonably minimizes HAP emissions.</li> </ul>

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	<p>(NOTE: See checklist item AE.21.1.US for the information on applicability and exemptions from this requirement.)</p> <p>Verify that, if the facility is operating a new or reconstructed emergency 4SLB stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at a major source of HAP emissions, a non-resettable hour meter is installed prior to the startup of the engine.</p> <p>Verify that owners and operators any of the following stationary RICE operate and maintain the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or a facility-developed maintenance plan which provides, to the extent practicable, for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions:</p> <ul style="list-style-type: none"> <li>– an existing stationary RICE with a site rating of less than 100 HP located at a major source of HAP emissions</li> <li>– an existing emergency or black start stationary RICE with a site rating of less than or equal to 500 HP located at a major source of HAP emissions</li> <li>– an existing emergency or black start stationary RICE located at an area source of HAP emissions</li> <li>– an existing non-emergency, non-black start stationary CI RICE with a site rating less than or equal to 300 HP located at an area source of HAP emissions</li> <li>– an existing non-emergency, non-black start 2SLB stationary RICE located at an area source of HAP emissions</li> <li>– an existing non-emergency, non-black start stationary RICE located at an area source of HAP emissions which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis</li> <li>– an existing non-emergency, non-black start 4SLB stationary RICE with a site rating less than or equal to 500 HP located at an area source of HAP emissions</li> <li>– an existing non-emergency, non-black start 4SRB stationary RICE with a site rating less than or equal to 500 HP located at an area source of HAP emissions</li> <li>– an existing, non-emergency, non-black start 4SLB stationary RICE with a site rating greater than 500 HP located at an area source of HAP emissions that is operated 24 h or less per calendar year</li> <li>– an existing, non-emergency, non-black start 4SRB stationary RICE with a site rating greater than 500 HP located at an area source of HAP emissions that is operated 24 h or less per calendar year.</li> </ul> <p>Verify that, if the facility owns or operates an existing emergency stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions or an existing emergency stationary RICE located at an area source of HAP emissions, non-resettable hour meter is installed if one is not already installed.</p>

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	<p>Verify that, if the facility owns or operates an existing non-emergency, non-black start CI engine greater than or equal to 300 HP that is not equipped with a closed crankcase ventilation system, it meets one of the following:</p> <ul style="list-style-type: none"> <li>– install a closed crankcase ventilation system that prevents crankcase emissions from being emitted to the atmosphere</li> <li>– install an open crankcase filtration emission control system that reduces emissions from the crankcase by filtering the exhaust stream to remove oil mist, particulates and metals.</li> </ul> <p>Verify that owners and operators of an existing non-emergency, non-black start CI engine greater than or equal to 300 HP that is not equipped with a closed crankcase ventilation system follow the manufacturer's specified maintenance requirements for operating and maintaining the open or closed crankcase ventilation systems and replacing the crankcase filters, or request the Administrator to approve different maintenance requirements that are as protective as manufacturer requirements.</p> <p>(NOTE: Existing CI engines located at area sources in areas of Alaska that meet either of the following do not have to meet the requirements for existing non-emergency, non-black start CI engine greater than or equal to 300 HP:</p> <ul style="list-style-type: none"> <li>– the area source is located in an area of Alaska that is not accessible by the Federal Aid Highway System (FAHS)</li> <li>– the stationary RICE is located at an area source that meets the following: <ul style="list-style-type: none"> <li>– the only connection to the FAHS is through the Alaska Marine Highway System (AMHS), or the stationary RICE operation is within an isolated grid in Alaska that is not connected to the statewide electrical grid referred to as the Alaska Railbelt Grid</li> <li>– at least 10 percent of the power generated by the stationary RICE on an annual basis is used for residential purposes</li> <li>– the generating capacity of the area source is less than 12 megawatts, or the stationary RICE is used exclusively for backup power for renewable energy.)</li> </ul> </li> </ul> <p>(NOTE: Existing CI engines located on offshore vessels that are an existing stationary RICE with a site rating of more than 300 HP located at on an offshore vessel that is an area source of HAP and is a nonroad vehicle that is an OCS source which are following the management practices in 40 CFR 63.6603(c) [see checklist item AE.21.1.US] do not have to meet the requirements detailed in this checklist item for facilities owning or operating existing non-emergency, non-black start CI engine greater than or equal to 300 HP.)</p> <p>Verify that, if the facility operates a new, reconstructed, or existing stationary engine, the facility minimizes the engine's time spent at idle during startup and minimizes the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 min, after which time the emission standards applicable to</p>

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	<p>all times other than startup in Tables 1a, 2a, 2c, and 2d (see Appendices 1-28, 1-29, and 1-29a).</p> <p>(NOTE: If the facility owns or operates a stationary CI engine that is subject to the work, operation or management practices in items 1 or 2 of Table 2c (see Appendix 1-29a) or in items 1 or 4 of Table 2d (see Appendix 1-29a), the facility has the option of utilizing an oil analysis program in order to extend the specified oil change requirement in Tables 2c and 2d. The oil analysis must be performed at the same frequency specified for changing the oil in Table 2c or 2d. The analysis program must at a minimum analyze the following three parameters: Total Base Number, viscosity, and percent water content. The condemning limits for these parameters are as follows:</p> <ul style="list-style-type: none"> <li>– Total Base Number is less than 30 percent of the Total Base Number of the oil when new</li> <li>– viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new</li> <li>– percent water content (by volume) is greater than 0.5.</li> </ul> <p>If all of these condemning limits are not exceeded, the engine owner or operator is not required to change the oil. If any of the limits are exceeded, the engine owner or operator must change the oil within 2 business days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil within 2 business days or before commencing operation, whichever is later. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.)</p> <p>(NOTE: If the facility owns or operates a stationary SI engine that is subject to the work, operation or management practices in items 6, 7, or 8 of Table 2c (see Appendix 1-29a) or in items 5, 6, 7, 9, or 11 of Table 2d (see Appendix 1-29a), the facility has the option of utilizing an oil analysis program in order to extend the specified oil change requirement in Tables 2c and 2d. The oil analysis must be performed at the same frequency specified for changing the oil in Table 2c or 2d. The analysis program must at a minimum analyze the following three parameters: Total Acid Number, viscosity, and percent water content. The condemning limits for these parameters are as follows:</p> <ul style="list-style-type: none"> <li>– Total Acid Number increases by more than 3.0 milligrams of potassium hydroxide (KOH) per gram from Total Acid Number of the oil when new</li> <li>– viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new</li> <li>– percent water content (by volume) is greater than 0.5.</li> </ul> <p>If all of these condemning limits are not exceeded, the engine owner or operator is not required to change the oil. If any of the limits are exceeded, the engine owner or operator must change the oil within 2 business days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil within 2 business days or before</p>

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<p><b>AE.21.8.US.</b> Stationary RICE must demonstrate initial compliance with the emissions limitations and operating limitations (40 CFR 63.6630, 63.6635, and 63.6640) [Added July 2004; Revised April 2008; Revised April 2010; Revised October 2010; Revised April 2011; Revised April 2013].</p>	<p>commencing operation, whichever is later. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.)</p> <p>Verify that initial compliance is demonstrated for each emission limitation, operating limitation, and other requirements that apply according to Appendix 1-33.</p> <p>Verify that, during the initial performance test, each operating limitation in Appendix 1-28 and Appendix 1-29 that applies is established.</p> <p>Verify that the Notification of Compliance Status containing the results of the initial compliance demonstration is submitted according to the requirements in 40 CFR 63.6645.</p> <p>(NOTE: See checklist item AE.21.1.US for the information on applicability and exemptions from this requirement.)</p> <p>(NOTE: Non-emergency 4SRB stationary RICE complying with the requirement to reduce formaldehyde emissions by 76 percent or more can demonstrate initial compliance with the formaldehyde emission limit by testing for THC instead of formaldehyde. The average reduction of emissions of THC determined from the performance test must be equal to or greater than 30 percent.)</p> <p>Verify that the initial compliance demonstration required for existing non-emergency 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 h per calendar year are conducted according to the following requirements:</p> <ul style="list-style-type: none"> <li>– the compliance demonstration consists of at least three test runs</li> <li>– each test run is at least 15 min duration, except that each test conducted using the method in appendix A to 40 CFR 63, Subpart ZZZZ consists of at least one measurement cycle and include at least 2 min of test data phase measurement</li> <li>– if demonstrating compliance with the CO concentration or CO percent reduction requirement, measure CO emissions using one of the CO measurement methods specified in Table 4 (see Appendix 1-30), or using appendix A to 40 CFR 63, subpart ZZZZ</li> <li>– if demonstrating compliance with the THC percent reduction requirement, measure THC emissions using Method 25A, reported as propane, of 40 CFR 60, appendix A</li> <li>– measure O<sub>2</sub> using one of the O<sub>2</sub> measurement methods specified in Table 4 (see Appendix of this subpart. Measurements to determine O<sub>2</sub> concentration must be made at the same time as the measurements for CO or THC concentration.</li> </ul>

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	<p>– if demonstrating compliance with the CO or THC percent reduction requirement, measure CO or THC emissions and O<sub>2</sub> emissions simultaneously at the inlet and outlet of the control device.</p> <p>Verify that, except for monitor malfunctions, associated repairs, required performance evaluations, and required quality assurance or control activities, monitoring is done continuously at all times that the stationary RICE is operating.</p> <p>(NOTE: A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.)</p> <p>(NOTE: Facilities may not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities in data averages and calculations used to report emission or operating levels.)</p> <p>Verify that all the valid data collected during all other periods is used.</p> <p>Verify that continuous compliance with each emission limitation, operating limitation, and other requirements in Appendix 1-28, Appendix 1-29, and Appendix 1-29a is demonstrated according to methods specified in Appendix 1-34, Table 6.</p> <p>Verify that the facility reports each instance they did not meet applicable required emissions limitations or operating limitations.</p> <p>(NOTE: These instances where applicable required emissions limitations or operating limitations are not met are deviations from the emission and operating limitations.)</p> <p>Verify that deviations are reported according to the requirements in 40 CFR 63.6650 (see checklist item number AE.21.10.US).</p> <p>(NOTE: If the facility changes their catalyst, the values of the operating parameters measured during the initial performance test must be reestablished. When reestablishing the values of the operating parameters, also conduct a performance test to demonstrate that the facility is meeting the required emission limitation applicable to the stationary RICE.)</p> <p>Verify that the annual compliance demonstration required for existing non-emergency 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 h per calendar year are conducted according as follows:</p> <p>– the compliance demonstration consists of at least one test run</p>

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	<ul style="list-style-type: none"> <li>– each test run is of at least 15 min duration, except that each test conducted using the method in appendix A consists of at least one measurement cycle and includes at least 2 min of test data phase measurement</li> <li>– if demonstrating compliance with the CO concentration or CO percent reduction requirement, measure CO emissions using one of the CO measurement methods specified in Table 4 (see Appendix 1-30), or using appendix A</li> <li>– if demonstrating compliance with the THC percent reduction requirement, measure THC emissions using Method 25A, reported as propane, of 40 CFR part 60, appendix A</li> <li>– measure O2 using one of the O2 measurement methods specified in Table 4 (see Appendix 1-30) and measurements to determine O2 concentration are made at the same time as the measurements for CO or THC concentration</li> <li>– if demonstrating compliance with the CO or THC percent reduction requirement, measure CO or THC emissions and O2 emissions simultaneously at the inlet and outlet of the control device.</li> </ul> <p>Verify that, if the results of the annual compliance demonstration show that the emissions exceed the levels specified in Table 6 (see Appendix 1-34), the stationary RICE is shut down as soon as safely possible, and appropriate corrective action taken (e.g., repairs, catalyst cleaning, catalyst replacement).</p> <p>Verify that the stationary RICE is retested within 7 days of being restarted and the emissions must meet the levels specified in Table 6 (see Appendix 1-34).</p> <p>(NOTE: If the retest shows that the emissions continue to exceed the specified levels, the stationary RICE must again be shut down as soon as safely possible, and the stationary RICE may not operate, except for purposes of startup and testing, until the owner/operator demonstrates through testing that the emissions do not exceed the levels specified in Table 6 [see Appendix 1-34].)</p> <p>(NOTE: For new, reconstructed, and rebuilt stationary RICE, deviations from the emission or operating limitations that occur during the first 200 hours of operation from engine startup (engine burn-in period) are not violations. Rebuilt stationary RICE means a stationary RICE that has been rebuilt as that term is defined in 40 CFR 94.11(a).)</p> <p>Verify that each instance is reported in which the facility did not meet the requirements in 40 CFR 63, Subpart ZZZZ, Table 8 (i.e., General Provisions, see text) that apply to the facility.</p> <p>(NOTE: If the facility owns or operates a new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions (except new or reconstructed 4SLB engines greater than or equal to 250 and less than or equal to 500 brake HP), a new or reconstructed stationary RICE located at an area source of HAP emissions, or any of the following RICE with a site</p>

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	<p>rating of more than 500 brake HP located at a major source of HAP emissions, the facility does not need to comply with the requirements in 40 CFR 63, Subpart ZZZZ, Table 8 (i.e., General Provisions, see text):</p> <ul style="list-style-type: none"> <li>– an existing 2SLB stationary RICE</li> <li>– an existing 4SLB stationary RICE</li> <li>– an existing emergency stationary RICE</li> <li>– an existing limited use stationary RICE</li> <li>– an existing stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis.)</li> </ul> <p>(NOTE: If the facility owns or operates any of the following RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, the facility does not need to comply with the requirements in 40 CFR 63, Subpart ZZZZ, Table 8 (i.e., General Provisions, see text), except for the initial notification requirements:</p> <ul style="list-style-type: none"> <li>– a new or reconstructed stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis</li> <li>– a new or reconstructed emergency stationary RICE</li> <li>– a new or reconstructed limited use stationary RICE.)</li> </ul> <p>(NOTE: In order for an engine to be considered an emergency stationary RICE under 40 CFR 63, subpart ZZZZ, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year is prohibited.)</p> <p>Verify that an emergency stationary RICE is operated according to the following parameters:</p> <ul style="list-style-type: none"> <li>– there is no time limit on the use of emergency stationary RICE in emergency situations</li> <li>– an emergency stationary RICE is operated for any combination of the following purposes for a maximum of 100 h per calendar year: <ul style="list-style-type: none"> <li>– for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine</li> <li>– for emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies, or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3</li> <li>– for periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– emergency stationary RICE located at major sources of HAP are operated for up to 50 h per calendar year in non-emergency situations and the 50 h of operation in non-emergency situations are counted as part of the 100 h per calendar year for maintenance and testing and emergency demand response</li> <li>– emergency stationary RICE located at area sources of HAP are operated for up to 50 h per calendar year in non-emergency situations and the 50 h of operation in non-emergency situations are counted as part of the 100 h per calendar year for maintenance and testing and emergency demand response.</li> </ul> <p>(NOTE: The 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity. But, for emergency stationary RICE located at area sources of HAP, the 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity except as follows:</p> <ul style="list-style-type: none"> <li>– prior to 3 May 2014, the 50 hours per year for non-emergency situations can be used for peak shaving or non-emergency demand response to generate income for a facility, or to otherwise supply power as part of a financial arrangement with another entity if the engine is operated as part of a peak shaving (load management program) with the local distribution system operator and the power is provided only to the facility itself or to support the local distribution system</li> <li>– the 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met: <ul style="list-style-type: none"> <li>– the engine is dispatched by the local balancing authority or local transmission and distribution system operator</li> <li>– the dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region</li> <li>– the dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines</li> <li>– the power is provided only to the facility itself or to support the local transmission and distribution system</li> <li>– the owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine (NOTE: The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator).</li> </ul> </li> </ul> <p>Any allowed operation for non-emergency situations counts as part of the allowed 100 hours per calendar year.)</p>

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<p><b>AE.21.9.US.</b> Stationary RICE must submit certain notifications and reports (40 CFR 63.6645 and 62.6650) [Added July 2004; Revised April 2008; Revised April 2010; Revised October 2010; Revised April 2013].</p>	<p>(NOTE: See checklist item AE.21.1.US for the information on applicability and exemptions from this requirement.)</p> <p>Verify that facilities submit all of the notifications in 40 CFR 63.7(b) and 63.7(c), 63.8(e), 63.8(f)(4) and 63.8(f)(6), 63.9(b) through 63.9(e), 63.9(g) and 63.9(h) [see text] that apply the Stationary RICE to you by the dates specified if the facility owns or operates any of the following:</p> <ul style="list-style-type: none"> <li>– an existing stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions</li> <li>– an existing stationary RICE located at an area source of HAP emissions</li> <li>– a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions</li> <li>– a new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 HP located at a major source of HAP emissions.</li> </ul> <p>(NOTE: The above notification requirements do not apply if the facility owns or operates an existing stationary RICE less than 100 HP, an existing stationary emergency RICE, or an existing stationary RICE that is not subject to any numerical emission standards.)</p> <p>Verify that, if the facility starts up a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions before the effective date of 40 CFR 63, Subpart ZZZZ, submit an Initial Notification not later than 13 December 2004.</p> <p>Verify that, if the facility starts up a new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions on or after 16 August 2004, the facility submits an Initial Notification not later than 120 days after becoming subject to 40 CFR 63, Subpart ZZZZ.</p> <p>(NOTE: If the facility starts up a stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions before the effective date of 40 CFR 63, Subpart ZZZZ the facility is required to submit an initial notification not later than 16 July 2008.)</p> <p>Verify that, if the facility starts up a new or reconstructed stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions on or after 18 March 2008 and the facility is required to submit an initial notification, the Initial Notification is submitted not later than 120 days after the facility become subject to 40 CFR 63, Subpart ZZZZ.</p> <p>Verify that, if the facility is required to submit an Initial Notification but are otherwise not affected by the requirements of 40 CFR 63, Subpart ZZZZ, in accordance with 40 CFR 63.6590(b) (see checklist items AE.21.2.US and AE.21.3.US), the notification includes the information in 40 CFR 63.9(b)(2)(i)</p>

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	<p>through 63.9(b)(2)(v) (see text), and a statement that the stationary RICE has no additional requirements and explain the basis of the exclusion (for example, that it operates exclusively as an emergency stationary RICE if it has a site rating of more than 500 brake HP located at a major source of HAP emissions).</p> <p>Verify that, if the facility is required to conduct a performance test, the facility submits a Notification of Intent to conduct a performance test at least 60 days before the performance test is scheduled to begin.</p> <p>Verify that, if the facility is required to conduct a performance test or other initial compliance demonstration as specified in Appendix 1-30 and Appendix 1-33, the facility submits a Notification of Compliance Status.</p> <p>Verify that, for each initial compliance demonstration required in Appendix 1-33 that does not include a performance test, the facility submits the Notification of Compliance Status before the close of business on the 30th day following the completion of the initial compliance demonstration.</p> <p>Verify that, for each initial compliance demonstration required in Appendix 1-33 that includes a performance test conducted according to the requirements in Appendix 1-31, the facility submits the Notification of Compliance Status, including the performance test results, before the close of business on the 60th day following the completion of the performance test.</p> <p>Verify that, if the facility owns or operates an existing non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions that is certified to the Tier 1 or Tier 2 emission standards in Table 1 of 40 CFR 89.112 and subject to an enforceable state or local standard requiring engine replacement and the facility intends to meet management practices rather than emission limits, as specified in 40 CFR. 63.6603(d) (see checklist item AE.21.1.US), the facility submits notification by 3 March 2013, stating that they intend to use the provision in 40 CFR 63.6603(d) and identifying the state or local regulation that the engine is subject to.</p> <p>Verify that the facility submits each report in Table 7 (see Appendix 1-32) that is applicable.</p> <p>Verify that, unless the Administrator has approved a different schedule for submission of reports, the facility submits each report by the date in Table 7 (see Appendix 1-32) and according to the following:</p> <ul style="list-style-type: none"> <li>– for semiannual Compliance reports, submit the first Compliance report covers the period beginning on the compliance date specified for the affected source and ending on June 30 or December 31, whichever date is the first date following the end of the first calendar half after the specified compliance date</li> <li>– for semiannual Compliance reports, the first Compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date</li> </ul>

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	<p>follows the end of the first calendar half after the compliance date that is specified for the affected source</p> <ul style="list-style-type: none"> <li>– for semiannual Compliance reports, each subsequent Compliance report covers the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31</li> <li>– for semiannual Compliance reports, each subsequent Compliance report is postmarked or delivered no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period</li> <li>– for each stationary RICE that is subject to permitting regulations pursuant to 40 CFR part 70 or 71, and if the permitting authority has established dates for submitting semiannual reports, submit the first and subsequent Compliance reports according to the dates the permitting authority has established instead of according to the dates in this checklist item</li> <li>– for annual Compliance reports, the first Compliance report covers the period beginning on the compliance date that is specified for the affected source and ending on December 31</li> <li>– for annual Compliance reports, the first Compliance report is postmarked or delivered no later than January 31 following the end of the first calendar year after the compliance date that is specified for the affected source</li> <li>– for annual Compliance reports, each subsequent Compliance report covers the annual reporting period from January 1 through December 31</li> <li>– for annual Compliance reports, each subsequent Compliance report is postmarked or delivered no later than January 31.</li> </ul> <p>Verify that, for each deviation from an emission or operating limitation that occurs for a stationary RICE where the facility is not using a CMS to comply with the emission or operating limitations, the Compliance report must contain the following information</p> <ul style="list-style-type: none"> <li>– company name and address</li> <li>– statement by a responsible official, with that official's name, title, and signature, certifying the accuracy of the content of the report</li> <li>– date of report and beginning and ending dates of the reporting period</li> <li>– in the case of a malfunction during the reporting period, include the number, duration, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded</li> <li>– a description of actions taken by an owner or operator during a malfunction of an affected source to minimize emissions, including actions taken to correct a malfunction</li> <li>– the total operating time of the stationary RICE at which the deviation occurred during the reporting period</li> <li>– information on the number, duration, and cause of deviations (including unknown cause, if applicable), as applicable, and the corrective action taken.</li> </ul> <p>Verify that, for each deviation from an emission or operating limitation occurring</p>

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	<p>for a stationary RICE where the facility is using a CMS to comply with the emission and operating limitations, the following information is included:</p> <ul style="list-style-type: none"> <li>– company name and address</li> <li>– statement by a responsible official, with that official’s name, title, and signature, certifying the accuracy of the content of the report</li> <li>– date of report and beginning and ending dates of the reporting period</li> <li>– in the case of a malfunction during the reporting period, include the number, duration, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded</li> <li>– a description of actions taken by an owner or operator during a malfunction of an affected source to minimize emissions, including actions taken to correct a malfunction</li> <li>– the date and time that each malfunction started and stopped</li> <li>– the date, time, and duration that each CMS was inoperative, except for zero (low-level) and high-level checks</li> <li>– the date, time, and duration that each CMS was out-of-control, including the information in 40 CFR 63.8(c)(8)</li> <li>– the date and time that each deviation started and stopped, and whether each deviation occurred during a period of malfunction or during another period</li> <li>– a summary of the total duration of the deviation during the reporting period, and the total duration as a percent of the total source operating time during that reporting period</li> <li>– a breakdown of the total duration of the deviations during the reporting period into those that are due to control equipment problems, process problems, other known causes, and other unknown causes</li> <li>– a summary of the total duration of CMS downtime during the reporting period, and the total duration of CMS downtime as a percent of the total operating time of the stationary RICE at which the CMS downtime occurred during that reporting period</li> <li>– an identification of each parameter and pollutant (CO or formaldehyde) that was monitored at the stationary RICE</li> <li>– a brief description of the stationary RICE</li> <li>– a brief description of the CMS</li> <li>– the date of the latest CMS certification or audit</li> <li>– a description of any changes in CMS, processes, or controls since the last reporting period.</li> </ul> <p>Verify that each affected source that has obtained a title V operating permit pursuant to 40 CFR part 70 or 71 reports all deviations in the semiannual monitoring report.</p> <p>(NOTE: If an affected source submits a Compliance report pursuant to Table 7 (see Appendix 1-32), or as part of, the title V semiannual monitoring report, and the Compliance report includes all required information concerning deviations from any emission or operating limitation, submission of the Compliance report satisfies any</p>

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	<p>obligation to report the same deviations in the semiannual monitoring report. However, submission of a Compliance report does not otherwise affect any obligation the affected source may have to report deviations from permit requirements to the permit authority.)</p> <p>Verify that, if the facility is operating as a new or reconstructed stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, the facility submits an annual report including the following information according to Table 7 (see Appendix 1-32) by the date specified unless the Administrator has approved a different schedule:</p> <ul style="list-style-type: none"> <li>– fuel flow rate of each fuel and the heating values that were used in your calculations</li> <li>– demonstration that the percentage of heat input provided by landfill gas or digester gas is equivalent to 10 percent or more of the total fuel consumption on an annual basis</li> <li>– the operating limits provided in the facility’s federally enforceable permit, and any deviations from these limits</li> <li>– any problems or errors suspected with the meters.</li> </ul> <p>Verify that, if the facility owns or operates an emergency stationary RICE with a site rating of more than 100 brake HP that operates or is contractually obligated to be available for more than 15 h per calendar year for the following purposes or operates 50 h/yr for non-emergency situations to supply power as part of a financial arrangement with another entity, an annual report is submitted.</p> <ul style="list-style-type: none"> <li>– for emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies, or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3</li> <li>– for periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency.</li> </ul> <p>Verify that the first annual report for an emergency stationary RICE with a site rating of more than 100 brake HP that operates or is contractually obligated to be available for more than 15 h per calendar year calendar year 2015 and is submitted no later than 31 March 2016 and subsequent annual reports for each calendar year are submitted no later than March 31 of the following calendar year.</p> <p>(NOTE: For these emergency generators, the annual report must be submitted electronically using the reporting form in the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA’s Central Data Exchange (CDX) (<a href="http://www.epa.gov/cdx">www.epa.gov/cdx</a>). However, if the reporting form is not available in</p>

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<b>AE.21.10.US.</b> Stationary RICE must keep certain records (40 CFR 63.6655 and 63.6660) [Added July 2004; Revised April 2010; Revised October 2010; Revised April 2013].	<p>CEDRI at the time that the report is due, the written report must be submitted to the Administrator.)</p> <p>(NOTE: See checklist item AE.21.1.US for the information on applicability and exemptions from this requirement.)</p> <p>Verify that the following records are kept:</p> <ul style="list-style-type: none"> <li>– a copy of each notification and report submitted to comply with the applicable regulations, including all documentation supporting any Initial Notification or Notification of Compliance Status</li> <li>– records of the occurrence and duration of each malfunction of operation (i.e., process equipment) or the air pollution control and monitoring equipment</li> <li>– records of required performance tests and performance evaluations</li> <li>– records of all required maintenance performed on the air pollution control and monitoring equipment</li> <li>– records of actions taken during periods of malfunction to minimize emissions in accordance with 40 CFR 63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation</li> <li>– for each CEMS or CPMS, the following records:             <ul style="list-style-type: none"> <li>– records described in 40 CFR 63.10(b)(2)(vi) through 63.10(b)(2) (xi)</li> <li>– previous (i.e., superseded) versions of the performance evaluation plan as required in 40 CFR 63.8(d)(3)</li> <li>– requests for alternatives to the relative accuracy test for CEMS or CPMS</li> </ul> </li> <li>– if operating a new or reconstructed stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, the records of daily fuel usage monitors</li> <li>– the records required in Appendix 1-34, Table 6 to show continuous compliance with each applicable emission or operating limitation.</li> </ul> <p>Verify that records of the maintenance conducted on the stationary RICE are kept in order to demonstrate that owners/operators operated and maintained the stationary RICE and after-treatment control device (if any) according to the facilities' maintenance plan if the facility owns or operates any of the following stationary RICE:</p> <ul style="list-style-type: none"> <li>– an existing stationary RICE with a site rating of less than 100 brake HP located at a major source of HAP emissions</li> <li>– an existing stationary emergency RICE</li> <li>– an existing stationary RICE located at an area source of HAP emissions subject to management practices as shown in Table 2d to 40 CFR Subpart ZZZZ (see Appendix 1-29a).</li> </ul>

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<p><b>AE.21.11.US.</b> Checklist item deleted [Added July 2004; Revised April 2010; Deleted October 2013].</p>	<p>Verify that, if the facility owns or operates any of the following stationary RICE, records are kept of the hours of operation of the engine that is recorded through the non-resettable hour meter.</p> <ul style="list-style-type: none"> <li>– an existing emergency stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions that does not meet the standards applicable to non-emergency engines</li> <li>– an existing emergency stationary RICE located at an area source of HAP emissions that does not meet the standards applicable to non-emergency engines.</li> </ul> <p>Verify that, in relation to the non-resettable hour meter, the facility documents how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation.</p> <p>(NOTE: If the engines are used for the following purposes or operates 50 h/yr for non-emergency situations to supply power as part of a financial arrangement with another entity, the owner or operator must keep records of the notification of the emergency situation, and the date, start time, and end time of engine operation:</p> <ul style="list-style-type: none"> <li>– for emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies, or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3</li> <li>– for periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency.)</li> </ul> <p>Verify that records are in a form suitable and readily available for expeditious review.</p> <p>Verify that each record is kept for 5 yr following the date of each occurrence, measurement, maintenance, corrective action, report, or record.</p> <p>Verify that each record is readily accessible in hard copy or electronic form for at least 5 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record.</p> <p>(NOTE: See checklist item AE.21.1.US for the information on applicability and exemptions from this requirement.)</p> <p>(NOTE: This checklist item was deleted because it was a duplicate of AE.21.10.US.)</p>

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<p><b>AE.21.12.US.</b> Owners or operators of a stationary CI internal combustion engine are required to meet specific emissions standards for non-emergency engines (40 CFR 60.4200, 60.4204, and 60.4206) [Added October 2006; Revised July 2011; Revised October 2016].</p>	<p>Verify that the owners and operators of pre-2007 model year non-emergency stationary CI ICE with a displacement of less than 10 L per cylinder must comply with the emission standards in Appendix 1-35.</p> <p>Verify that owners and operators of pre-2007 model year non-emergency stationary CI ICE with a displacement of greater than or equal to 10 L per cylinder and less than 30 L per cylinder comply with the emission standards in 40 CFR 94.8(a)(1) for exhaust emission from marine compression ignition engines.</p> <p>Verify that owners and operators of 2007 model year and later non-emergency stationary CI ICE with a displacement of less than 30 L per cylinder comply with the emission standards for new CI engines in 40 CFR 60.4201 (applies to manufacturers) for their 2007 model year and later stationary CI ICE, as applicable.</p> <p>Verify that owners and operators of non-emergency stationary CI engines with a displacement of greater than or equal to 30 L per cylinder meet the following requirements:</p> <ul style="list-style-type: none"> <li>– for engines installed prior to 1 January 2012, limit the emissions of NOX in the stationary CI internal combustion engine exhaust to the following: <ul style="list-style-type: none"> <li>– 17.0 grams per kilowatt-hour (g/KW-hr) (12.7 grams per horsepower-hr (g/HP-hr)) when maximum engine speed is less than 130 revolutions per minute (rpm)</li> <li>– <math>45 \cdot n^{-0.2}</math> g/KW-hr (<math>34 \cdot n^{-0.2}</math> g/ HP-hr) when maximum engine speed is 130 or more but less than 2,000 rpm, where n is maximum engine speed</li> <li>– 9.8 g/KW-hr (7.3 g/HP-hr) when maximum engine speed is 2,000 rpm or more</li> </ul> </li> <li>– for engines installed on or after 1 January 2012 and before 1 January 2016, limit the emissions of NOX in the stationary CI internal combustion engine exhaust to the following: <ul style="list-style-type: none"> <li>– 14.4 g/KW-hr (10.7 g/HP-hr) when maximum engine speed is less than 130 rpm</li> <li>– <math>44 \cdot n^{-0.23}</math> g/KW-hr (<math>33 \cdot n^{-0.23}</math> g/HP-hr) when maximum engine speed is greater than or equal to 130 but less than 2,000 rpm and where n is maximum engine speed</li> <li>– 7.7 g/KW-hr (5.7 g/HP-hr) when maximum engine speed is greater than or equal to 2,000 rpm</li> </ul> </li> <li>– for engines installed on or after 1 January 2016, limit the emissions of NOX in the stationary CI internal combustion engine exhaust to the following: <ul style="list-style-type: none"> <li>– 3.4 g/KW-hr (2.5 g/HP-hr) when maximum engine speed is less than 130 rpm</li> <li>– <math>9.0 \cdot n^{-0.20}</math> g/KW-hr (<math>6.7 \cdot n^{-0.20}</math> g/HP-hr) where n (maximum engine speed) is 130 or more but less than 2,000 rpm</li> <li>– 2.0 g/KW-hr (1.5 g/HP-hr) where maximum engine speed is greater than or equal to 2,000 rpm</li> </ul> </li> </ul>

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	<p>– reduce particulate matter (PM) emissions by 60 percent or more, or limit the emissions of PM in the stationary CI internal combustion engine exhaust to 0.15 g/KW-hr (0.11 g/HP-hr).</p> <p>Verify that owners and operators of non-emergency stationary CI ICE with a displacement of less than 30 L per cylinder who conduct performance tests in-use meet the not-to-exceed (NTE) standards as indicated in 40 CFR 60.4212 (see text).</p> <p>Verify that owners and operators of any modified or reconstructed non-emergency stationary CI ICE subject 40 CFR 60, Subpart IIII meets the emission standards applicable to the model year, maximum engine power, and displacement of the modified or reconstructed non-emergency stationary CI ICE that are specified above.)</p> <p>Verify that owners and operators of stationary CI ICE operate and maintain stationary CI ICE that achieve the required emission standards as required in over the entire life of the engine.</p> <p>(NOTE: This checklist item applies to:</p> <ul style="list-style-type: none"> <li>– manufacturers of stationary CI ICE with a displacement of less than 30 L per cylinder where the model year is: <ul style="list-style-type: none"> <li>– 2007 or later, for engines that are not fire pump engines</li> <li>– the model year listed in Appendix 1-36 or later model year, for fire pump engines</li> </ul> </li> <li>– owners and operators of stationary CI ICE that commence construction after 11 July 2005, where the stationary CI ICE are: <ul style="list-style-type: none"> <li>– manufactured after 1 April 2006, and are not fire pump engines, or</li> <li>– manufactured as a certified National Fire Protection Association (NFPA) fire pump engine after 1 July 2006</li> </ul> </li> <li>– owners and operators of any stationary CI ICE that are modified or reconstructed after 11 July 2005 and any person that modifies or reconstructs any stationary CI ICE after 11 July 2005.</li> </ul> <p>For the purposes of this 40 CFR 60, Subpart IIII, the date that construction commences is the date the engine is ordered by the owner or operator.)</p> <p>(NOTE: This checklist item is not applicable to stationary CI ICE being tested at a stationary CI ICE test cell/stand.)</p> <p>(NOTE: If you are an owner or operator of an area source subject to 40 CFR 60, Subpart IIII [40 CFR 60.4200 through 60.4219], the facility is exempt from the obligation to obtain a permit under 40 CFR 70 or 40 CFR 71 if you are not required to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a) for a reason other than the facility's status as an area source under 40 CFR 60, Subpart IIII.)</p> <p>(NOTE: Stationary CI ICE may be eligible for exemption from the requirements of this subpart as described in 40 CFR 1068, Subpart C (or the exemptions described</p>

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<p><b>AE.21.13.US.</b> Owners or operators of a stationary CI internal combustion engine must meet specific emission standards for emergency engines (40 CFR 60.4205 and 60.4206) [Added October 2006; Revised July 2011].</p>	<p>in 40 CFR 89, Subpart J and 40 CFR 94, Subpart J, for engines that would need to be certified to standards in those parts), except that owners and operators, as well as manufacturers, may be eligible to request an exemption for national security.)</p> <p>(NOTE: Owners and operators of facilities with CI ICE that are acting as temporary replacement units and that are located at a stationary source for less than 1 year and that have been properly certified as meeting the standards that would be applicable to such engine under the appropriate nonroad engine provisions, are not required to meet any other provisions under 40 CFR 60, Subpart III with regard to such engines.)</p> <p>Verify that owners and operators of stationary CI ICE certified to the standards in 40 CFR 1039 (i.e., requirements for manufacturers) and equipped with AECDs as specified in 40 CFR 1039.665, <i>Special Provisions for Use of Engines in Emergency Situations</i> meet the Tier 1 certification emission standards for new nonroad CI engines in 40 CFR 89.112 [see text] while the AECD is activated during a qualified emergency situation.</p> <p>(NOTE: According to 40 CFR 1039.665, a “qualified emergency situation” is one in which the condition of an engine's emission controls poses a significant direct or indirect risk to human life. An example of a direct risk would be an emission control condition that inhibits the performance of an engine being used to rescue a person from a life-threatening situation. An example of an indirect risk would be an emission control condition that inhibits the performance of an engine being used to provide electrical power to a data center that routes “911” emergency response telecommunications.)</p> <p>Verify that, when the qualified emergency situation has ended and the AECD is deactivated, the engine resumes meeting the otherwise applicable emission standards.</p> <p>(NOTE: See checklist item AE.21.12.US. for details on applicability and exemptions.)</p> <p>Verify that owners and operators of pre-2007 model year emergency stationary CI ICE with a displacement of less than 10 L per cylinder that are not fire pump engines comply with the emission standards in Appendix 1-35.</p> <p>Verify that owners and operators of pre-2007 model year non-emergency stationary CI ICE with a displacement of greater than or equal to 10 L per cylinder and less than 30 L per cylinder that are not fire pump engines comply with the emission standards in 40 CFR 94.8(a)(1) for exhaust emission from marine compression ignition engines.</p> <p>Verify that owners and operators of 2007 model year and later emergency stationary CI ICE with a displacement of less than 30 L per cylinder that are not fire pump engines comply with the emission standards for new nonroad CI engines in 40 CFR</p>

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<p><b>AE.21.14.US.</b> Owners or operators of a stationary CI internal combustion engine must meet specific fuel</p>	<p>60.4202 (applies to manufacturers) for all pollutants, for the same model year and maximum engine power for their 2007 model year and later emergency stationary CI ICE.</p> <p>Verify that owners and operators of fire pump engines with a displacement of less than 30 L per cylinder comply with the emission standards in Appendix 1-37 for all pollutants.</p> <p>Verify that owners and operators of emergency stationary CI engines with a displacement of greater than or equal to 30 L per cylinder meet the following requirements:</p> <ul style="list-style-type: none"> <li>– for engines installed prior to 1 January 2012, limit the emissions of NOX in the stationary CI internal combustion engine exhaust to the following: <ul style="list-style-type: none"> <li>– 17.0 g/KW-hr (12.7 g/HP-hr) when maximum engine speed is less than 130 rpm</li> <li>– <math>45 \cdot n^{-0.2}</math> g/KW-hr (<math>34 \cdot n^{-0.2}</math> g/HP-hr) when maximum engine speed is 130 or more but less than 2,000 rpm, where n is maximum engine speed</li> <li>– 9.8 g/KW-hr (7.3 g/HP-hr) when maximum engine speed is 2,000 rpm or more</li> </ul> </li> <li>– for engines installed on or after 1 January 2012, limit the emissions of NOX in the stationary CI internal combustion engine exhaust to the following: <ul style="list-style-type: none"> <li>– 14.4 g/KW-hr (10.7 g/HP-hr) when maximum engine speed is less than 130 rpm</li> <li>– <math>44 \cdot n^{-0.23}</math> g/KW-hr (<math>33 \cdot n^{-0.23}</math> g/HP-hr) when maximum engine speed is greater than or equal to 130 but less than 2,000 rpm and where n is maximum engine speed</li> <li>– 7.7 g/KW-hr (5.7 g/HP-hr) when maximum engine speed is greater than or equal to 2,000 rpm</li> </ul> </li> <li>– limit the emissions of PM in the stationary CI internal combustion engine exhaust to 0.40 g/KW-hr (0.30 g/HP-hr).</li> </ul> <p>Verify that owners and operators of emergency stationary CI ICE with a displacement of less than 30 liters per cylinder who conduct performance tests in-use must meet the NTE standards as indicated in 40 CFR 60.4212 (see text).</p> <p>Verify that owners and operators of any modified or reconstructed emergency stationary CI ICE subject to 40 CFR 60, Subpart IIII meets the emission standards applicable to the model year, maximum engine power, and displacement of the modified or reconstructed CI ICE that are specified in this checklist item.</p> <p>Verify that, beginning 1 October 2007, owners and operators of stationary CI ICE subject to 40 CFR 60, Subpart IIII (40 CFR 60.4200 through 60.4219) use diesel fuel that meets the requirements of 40 CFR 80.510(a) (see AE.55.5.US).</p>

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<p>requirements (40 CFR 60.4207 and 60.4217) [Added October 2006; Revised July 2011; Revised April 2013].</p> <p><b>AE.21.15.US.</b> Owners and operators are required to meet certain deadlines when importing or installing stationary CI ICE produced in the previous model year (40 CFR 60.4200(a)(4) and 60.4208) [Added October 2006; Revised July 2011].</p>	<p>(NOTE: Beginning 1 September 2012, owners and operators of stationary CI ICE subject to 40 CFR 60, Subpart IIII with a displacement of greater than or equal to 30 L per cylinder are no longer subject to the above requirement and must use fuel that meets a maximum per-gallon sulfur content of 1,000 ppm.)</p> <p>Verify that, beginning 1 October 2010, owners and operators of stationary CI ICE subject to 40 CFR 60, Subpart IIII with a displacement of less than 30 L per cylinder that use diesel fuel use diesel fuel that meets the requirements of 40 CFR 80.510(b) for nonroad diesel fuel, except that any existing diesel fuel purchased (or otherwise obtained) prior to 1 October 2010, may be used until depleted.</p> <p>(NOTE: Stationary CI ICE that have a national security exemption are also exempt from the fuel requirements.)</p> <p>(NOTE: Owners and operators of stationary CI ICE that do not use diesel fuel may petition the Administrator for approval of alternative emission standards, if they can demonstrate that they use a fuel that is not the fuel on which the manufacturer of the engine certified the engine and that the engine cannot meet the applicable standards required in 40 CFR 60.4204 [see checklist item AE.21.12.US] or 60 CFR 60.4205 [see checklist item AE.21.13.US] using such fuels and that use of such fuel is appropriate and reasonably necessary, considering cost, energy, technical feasibility, human health and environmental, and other factors, for the operation of the engine.)</p> <p>(NOTE: This checklist item applies to all owners and operators of stationary CI ICE that commence construction after 11 July 2005.)</p> <p>Verify that, after 31 December 2008, owners and operators do not install stationary CI ICE (excluding fire pump engines) that do not meet the applicable requirements for 2007 model year engines.</p> <p>Verify that, after 31 June 2010, owners and operators do not install stationary CI ICE with a maximum engine power of less than 19 KW (25 HP) (excluding fire pump engines) that do not meet the applicable requirements for 2008 model year engines.</p> <p>Verify that, after 31 December 2014, owners and operators do not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 19 KW (25 HP) and less than 56 KW (75 HP) that do not meet the applicable requirements for 2013 model year non-emergency engines.</p> <p>Verify that, after 31 December 2013, owners and operators do not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 56 KW (75 HP) and less than 130 KW (175 HP) that do not meet the applicable requirements for 2012 model year non-emergency engines.</p> <p>Verify that, after 31 December 2012, owners and operators do not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal</p>

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<p><b>AE.21.16.US.</b> Owners or operators of a stationary CI internal combustion engine must meet monitoring requirements (40 CFR 60.4209) [Added October 2006; Revised July 2011].</p> <p><b>AE.21.17.US.</b> In order to be compliant, owners and operators of a stationary CI internal combustion engines, including emergency stationary ICE, must meet certain requirements (40 CFR 60.4211 and 60.4213) [Added October 2006; Revised July 2011; Revised</p>	<p>to 130 KW (175 HP), including those above 560 KW (750 HP), that do not meet the applicable requirements for 2011 model year non-emergency engines.</p> <p>Verify that, after 31 June 2017, owners and operators do not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 560 KW (750 HP) that do not meet the applicable requirements for 2015 model year non-emergency engines.</p> <p>Verify that after 31 December 2018, owners and operators do not install non-emergency stationary CI ICE with a maximum engine power greater than or equal to 600 KW (804 HP) and less than 2,000 KW (2,680 HP) and a displacement of greater than or equal to 10 L per cylinder and less than 30 L per cylinder that do not meet the applicable requirements for 2017 model year non-emergency engines.</p> <p>(NOTE: In addition to the requirements specified in 40 CFR 60.4204 [see checklist item AE.21.12.US] and 60.4205 [see checklist item AE.21.113.US], it is prohibited to import stationary CI ICE with a displacement of less than 30 liters per cylinder that do not meet the applicable requirements specified in this checklist item after the dates specified in this checklist item.)</p> <p>(NOTE: The requirements of this checklist item do not apply to owners or operators of stationary CI ICE that have been modified, reconstructed, and do not apply to engines that were removed from one existing location and reinstalled at a new location.)</p> <p>Verify that owners or operators of an emergency stationary CI internal combustion engine that does not meet the standards applicable to non-emergency engines install a non-resettable hour meter prior to startup of the engine.</p> <p>Verify that owners or operators of a stationary CI internal combustion engine equipped with a diesel particulate filter to achieve compliance, install the diesel particulate filter with a backpressure monitor that notifies the owner or operator when the high backpressure limit of the engine is approached.</p> <p>Verify that owner or operator of a stationary CI internal combustion engine also meets the monitoring requirements specified in 40 CFR 60.4211 (see AE.21.17.US).</p> <p>Verify that owners or operators do all of the following:</p> <ul style="list-style-type: none"> <li>– operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's emission-related written instructions</li> <li>– change only those emission-related settings that are permitted by the manufacturer</li> <li>– meet the requirements of 40 CFR 89, 94 and/or 1068, as they apply.</li> </ul> <p>Verify that, if you are an owner or operator of a pre-2007 model year stationary CI internal combustion engine and must comply with the emission standards specified</p>

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<p><b>April 2013; Revised October 2016].</b></p>	<p>in 40 CFR 60.4204(a) (see AE.21.12.US) or 60.4205(a) (see AE.21.13.US), or if you are an owner or operator of a CI fire pump engine that is manufactured prior to the model years in Appendix 1-36 and must comply with the emission standards specified in 40 CFR 60.4205 (see AE.21.13.US), compliance is demonstrated according to one of the following methods:</p> <ul style="list-style-type: none"> <li>– purchasing an engine certified according to 40 CFR 89 or 40 CFR 94, as applicable, for the same model year and maximum engine power and the engine is installed and configured according to the manufacturer's specifications</li> <li>– keeping records of performance test results for each pollutant for a test conducted on a similar engine and the test was conducted using the same methods specified in 40 CFR 60, Subpart IIII (40 CFR 60.4200 through 60.4219) and these methods must have been followed correctly</li> <li>– keeping records of engine manufacturer data indicating compliance with the standards</li> <li>– keeping records of control device vendor data indicating compliance with the standards</li> <li>– conducting an initial performance test to demonstrate compliance with the emission standards according to the test methods specified in 40 CFR 60.4212 (see text), as applicable.</li> </ul> <p>Verify that, if you are an owner or operator of a 2007 model year and later stationary CI internal combustion engine and must comply with the emission standards specified in 40 CFR 60.4204(b) (see AE.21.12.US) or 60.4205(b) (see AE.21.13.US), or if you are an owner or operator of a CI fire pump engine that is manufactured during or after the model year that applies to your fire pump engine power rating in Appendix 1-36 and must comply with the emission standards specified in 40 CFR 60.4205(c), comply by purchasing an engine certified to the emission standards in 40 CFR 60.4204(b) (see AE.21.12.US), or 60.4205(b) or 60.4205(c) (see AE.21.13.US), as applicable, for the same model year and maximum (or in the case of fire pumps, NFPA nameplate) engine power.</p> <p>Verify that the engine is installed and configured according to the manufacturer's specifications.</p> <p>Verify that, if you are an owner or operator and must comply with the emission standards specified in 40 CFR 60.4204(c) (see AE.21.12.US) or 40 CFR 60.4205(d) (see AE.21.13.US), compliance is demonstrated according to the following requirements:</p> <ul style="list-style-type: none"> <li>– conducting an initial performance test to demonstrate initial compliance with the emission standards as specified in 40 CFR 60.4213 (see text)</li> <li>– establishing operating parameters to be monitored continuously to ensure the stationary internal combustion engine continues to meet the emission standards (NOTE: The owner or operator must petition the Administrator for approval of</li> </ul>

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	<p>operating parameters to be monitored continuously and the petition includes the following information</p> <ul style="list-style-type: none"> <li>– identification of the specific parameters proposed for monitoring continuously</li> <li>– a discussion of the relationship between these parameters and NO<sub>x</sub> and PM emissions, identifying how the emissions of these pollutants change with changes in these parameters, and how limitations on these parameters will serve to limit NO<sub>x</sub> and PM emissions</li> <li>– a discussion of how the upper and/or lower values will be established for these parameters which will establish the limits on these parameters in the operating limitations</li> <li>– a discussion identifying the methods and the instruments that will be used to monitor these parameters, as well as the relative accuracy and precision of these methods and instruments</li> <li>– a discussion identifying the frequency and methods for recalibrating the instruments used for monitoring these parameters</li> </ul> <p>– for non-emergency engines with a displacement of greater than or equal to 30 L per cylinder, conducting annual performance tests to demonstrate continuous compliance with the emission standards as specified in 40 CFR 60.4213 (see text).</p> <p>Verify that owners or operators of a modified or reconstructed stationary CI internal combustion engine required to comply with the emission standards specified in 40 CFR 60.4204(e) (see checklist item AE.21.12.US) or 40 CFR 60.4205(f) (see checklist item AE.21.13.US), demonstrate compliance according to one of the following methods:</p> <ul style="list-style-type: none"> <li>– purchasing, or otherwise owning or operating, an engine certified to the emission standards in 40 CFR 60.4204(e) or 40 CFR 60.4205(f), as applicable</li> <li>– conducting a performance test to demonstrate initial compliance with the emission standards within 60 days after the engine starts operation or after the modification or reconstruction according to the requirements specified in 40 CFR 60.4212 (see text) or 40 CFR 60.4213 (see AE.21.17.US), as appropriate</li> </ul> <p>(NOTE: In order for a stationary ICE to be considered an emergency stationary ICE, it does not operate more than 50 h/yr other than during emergency operation, maintenance and testing, and emergency demand response. There is no time limit on the use of emergency stationary ICE in emergency situations. See the text of 40 CFR 60.4211(f) for details on emergency stationary ICE operations and agreements.)</p> <p>Verify that, if the facility does not install, configure, operate, and maintain the engine and control device according to the manufacturer's emission-related written instructions, or there is a change in the emission-related settings in a way that is not permitted by the manufacturer, the facility demonstrates compliance as follows:</p>

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	<ul style="list-style-type: none"> <li>– for a stationary CI internal combustion engine with maximum engine power less than 100 HP, keep a maintenance plan and records of conducted maintenance to demonstrate compliance, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions</li> <li>– if the engine and control device are installed and configured according to the manufacturer's emission-related written instructions, or the emission-related settings have been changed in a way that is not permitted by the manufacturer, conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 yr</li> <li>– if the stationary CI internal combustion engine is greater than or equal to 100 HP and less than or equal to 500 HP, keep a maintenance plan and records of conducted maintenance, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions as well as conducting an initial performance test to demonstrate compliance with the applicable emission standards according to one of the following: <ul style="list-style-type: none"> <li>– within 1 yr of startup, or within 1 year after an engine and control device is no longer installed configured, operated, and maintained in accordance with the manufacturer's emission-related written instructions</li> <li>– within 1 yr after a change in the emission-related settings in a way that is not permitted by the manufacturer</li> </ul> </li> <li>– if the stationary CI internal combustion engine is greater than 500 HP, keep a maintenance plan and records of conducted maintenance and, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions as well as conducting an initial performance test to demonstrate compliance with the applicable emission standards according to one of the following: <ul style="list-style-type: none"> <li>– within 1 yr of startup</li> <li>– within 1 yr after an engine and control device is no longer installed, configured, operated, and maintained in accordance with the manufacturer's emission-related written instructions</li> <li>– within 1 year after you change emission-related settings in a way that is not permitted by the manufacturer</li> </ul> </li> <li>– if the stationary CI internal combustion engine is greater than 500 HP, conduct subsequent performance testing every 8,760 h of engine operation or 3 yr, whichever comes first, thereafter to demonstrate compliance with the applicable emission standards.</li> </ul> <p>(NOTE: The requirements for operators and prohibited acts specified in 40 CFR 1039.665, <i>Special Provisions for Use of Engines in Emergency Situations</i> apply to owners or operators of stationary CI ICE equipped with AECDs for qualified emergency situations as allowed by 40 CFR 1039.665.)</p> <p>(NOTE: According to 40 CFR 1039.665, a “qualified emergency situation” is one in which the condition of an engine's emission controls poses a significant direct or</p>

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<p><b>AE.21.18.US.</b> Owners or operators of a stationary CI internal combustion engine with a must meet specific notification, reporting, and recordkeeping requirements (40 CFR 60.4214) [Added October 2006; Revised April 2013; Revised October 2016].</p>	<p>indirect risk to human life. An example of a direct risk would be an emission control condition that inhibits the performance of an engine being used to rescue a person from a life-threatening situation. An example of an indirect risk would be an emission control condition that inhibits the performance of an engine being used to provide electrical power to a data center that routes “911” emergency response telecommunications.)</p> <p>(NOTE: See the text of 40 CFR 60.4213 for information on how owners and operators of stationary CI ICE with a displacement of greater than or equal to 30 liters per cylinder must conduct performance tests.)</p> <p>Verify that owners and operators of non-emergency stationary CI ICE that are greater than 2,237 KW (3,000 HP), or have a displacement of greater than or equal to 10 L per cylinder, or are pre-2007 model year engines that are greater than 130 KW (175 HP) and not certified, meet the following requirements:</p> <ul style="list-style-type: none"> <li>– submit an initial notification as required in 40 CFR 60.7(a)(1) (see checklist item AE.1.8.US) including the following information: <ul style="list-style-type: none"> <li>– name and address of the owner or operator</li> <li>– the address of the affected source</li> <li>– engine information including make, model, engine family, serial number, model year, maximum engine power, and engine displacement</li> <li>– emission control equipment</li> <li>– fuel used</li> </ul> </li> <li>– keep records of the following information: <ul style="list-style-type: none"> <li>– all notifications submitted to comply with 40 CFR 60, Subpart IIII [40 CFR 60.4200 through 60.4219) and all documentation supporting any notification</li> <li>– maintenance conducted on the engine</li> <li>– if the stationary CI internal combustion is a certified engine, documentation from the manufacturer that the engine is certified to meet the emission standards</li> <li>– if the stationary CI internal combustion is not a certified engine, documentation that the engine meets the emission standards.</li> </ul> </li> </ul> <p>(NOTE: If the stationary CI internal combustion engine is an emergency stationary internal combustion engine, the owner or operator is not required to submit an initial notification. Starting with the model years in Appendix 1-38, if the emergency engine does not meet the standards applicable to non-emergency engines in the applicable model year, the owner or operator must keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. The owner must record the time of operation of the engine and the reason the engine was in operation during that time.)</p> <p>Verify that, if the stationary CI internal combustion engine is equipped with a diesel particulate filter, the owner or operator keeps records of any corrective action taken</p>

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	<p>after the backpressure monitor has notified the owner or operator that the high backpressure limit of the engine is approached.</p> <p>Verify that, if the facility owns or operates an emergency stationary CI ICE with a maximum engine power more than 100 HP that operates or is contractually obligated to be available for more than 15 h per calendar year for the following, the facility submits an annual report:</p> <ul style="list-style-type: none"> <li>– for emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies, or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3</li> <li>– for periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency.</li> </ul> <p>(NOTE: if the emergency stationary CI ICE with maximum engine power more than 100 HP supplies power as part of a financial arrangement with another entity it must also submit an annual report.)</p> <p>Verify that the required annual report contains the following information:</p> <ul style="list-style-type: none"> <li>– company name and address where the engine is located</li> <li>– date of the report and beginning and ending dates of the reporting period</li> <li>– engine site rating and model year</li> <li>– latitude and longitude of the engine in decimal degrees reported to the fifth decimal place</li> <li>– hours operated, including the date, start time, and end time for engine operation</li> <li>– number of hours the engine is contractually obligated to be available</li> <li>– hours spent for operation for the purposes specified in a financial agreement with another entity including the date, start time, and end time for engine operation for those purposes.</li> </ul> <p>Verify that the annual report identifies the entity that dispatched the engine and the situation that necessitated the dispatch of the engine.</p> <p>(NOTE: The first annual report must cover the calendar year 2015 and must be submitted no later than 31 March 2016. Subsequent annual reports for each calendar year must be submitted no later than March 31 of the following calendar year. The annual report must be submitted electronically using the specific reporting form in the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (<a href="http://www.epa.gov/cdx">www.epa.gov/cdx</a>). However, if the reporting form specific is not available in CEDRI at the time that the report is due, the written report must be submitted to the Administrator.)</p>

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<p><b>AE.21.19.US.</b> Stationary CI ICE used in Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, or Alaska must meet special requirements (40 CFR 60.4215 and 60.4216) [Added October 2006; Revised July 2011; Revised October 2016].</p>	<p>(NOTE: The requirements for operators and prohibited acts specified in 40 CFR 1039.665, <i>Special Provisions for Use of Engines in Emergency Situations</i> apply to owners or operators of stationary CI ICE equipped with AECDs for qualified emergency situations as allowed by 40 CFR 1039.665.)</p> <p>(NOTE: According to 40 CFR 1039.665, a “qualified emergency situation” is one in which the condition of an engine's emission controls poses a significant direct or indirect risk to human life. An example of a direct risk would be an emission control condition that inhibits the performance of an engine being used to rescue a person from a life-threatening situation. An example of an indirect risk would be an emission control condition that inhibits the performance of an engine being used to provide electrical power to a data center that routes “911” emergency response telecommunications.)</p> <p>Verify that stationary CI ICE with a displacement of less than 30 L per cylinder that are used in Guam, American Samoa, or the Commonwealth of the Northern Mariana Islands meet the applicable emission standards in 40 CFR 60.4205 (see checklist item AE.21.13.US).</p> <p>(NOTE: Stationary CI ICE that are used in Guam, American Samoa, or the Commonwealth of the Northern Mariana Islands are not required to meet the fuel requirements in 40 CFR 60.4207[see AE.21.14.US].)</p> <p>Verify that stationary CI ICE with a displacement of greater than or equal to 30 L per cylinder that are used in Guam, American Samoa, or the Commonwealth of the Northern Mariana Islands meet the following emission standards:</p> <ul style="list-style-type: none"> <li>– for engines installed prior to 1 January 2012, limit the emissions of NOX in the stationary CI internal combustion engine exhaust to the following: <ul style="list-style-type: none"> <li>– 17.0 g/KW-hr (12.7 g/HP-hr) when maximum engine speed is less than 130 rpm</li> <li>– <math>45 \cdot n^{-0.2}</math> g/KW-hr (<math>34 \cdot n^{-0.2}</math> g/HP-hr) when maximum engine speed is 130 or more but less than 2,000 rpm, where n is maximum engine speed</li> <li>– 9.8 g/KW-hr (7.3 g/HP-hr) when maximum engine speed is 2,000 rpm or more</li> </ul> </li> <li>– for engines installed on or after 1 January 2012, limit the emissions of NOX in the stationary CI internal combustion engine exhaust to the following: <ul style="list-style-type: none"> <li>– 14.4 g/KW-hr (10.7 g/HP-hr) when maximum engine speed is less than 130 rpm</li> <li>– <math>44 \cdot n^{-0.23}</math> g/KW-hr (<math>33 \cdot n^{-0.23}</math> g/HP-hr) when maximum engine speed is greater than or equal to 130 but less than 2,000 rpm and where n is maximum engine speed</li> <li>– 7.7 g/KW-hr (5.7 g/HP-hr) when maximum engine speed is greater than or equal to 2,000 rpm</li> </ul> </li> </ul>

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<p><b>AE.21.20.US.</b> Owners and operators of stationary SI ICE with a maximum engine power less than or equal to 19 KW (25 HP) must meet specific emissions limitations (40 CFR 60.4230(a)(4),</p>	<p>– limit the emissions of PM in the stationary CI internal combustion engine exhaust to 0.40 g/KW-hr (0.30 g/HP-hr).</p> <p>Verify that, prior to 1 December 2010, owners and operators of stationary CI ICE with a displacement of less than 30 L per cylinder located in areas of Alaska not accessible by the FAHS refer to 40 CFR 69 to determine the applicable diesel fuel requirements.</p> <p>(NOTE: Owners and operators of stationary CI ICE with a displacement of less than 10 liters per cylinder located in remote areas of Alaska may meet the requirements of 40 CFR 60, Subpart IIII by installing engines meeting the requirements of 40 CFR 94 or 1042, as appropriate, rather than the otherwise applicable requirements of 40 CFR 89 and 1039.)</p> <p>(NOTE: Owners and operators of stationary CI ICE that are located in remote areas of Alaska may choose to meet the applicable emission standards for emergency engines in 40 CFR 60.4202 [see checklist item AE.21.12.US] and 60.4205 [AE.21.13.US], and not those for non-emergency engines in 40 CFR 60.4201 (applies to manufacturers) and 60.4204 [see checklist item AE.21.12.US] except that for 2014 model year and later non-emergency CI ICE, the owner or operator of any such engine that was not certified as meeting Tier 4 PM standards, must meet the applicable requirements for PM in 40 CFR 60.4201 (applies to manufacturers) and 60.4204 [see checklist item AE.21.12.US] or install a PM emission control device that achieves PM emission reductions of 85 percent, or 60 percent for engines with a displacement of greater than or equal to 30 liters per cylinder, compared to engine-out emissions.)</p> <p>(NOTE: The provisions of 40 CFR 60.4207 do not apply to owners and operators of pre-2014 model year stationary CI ICE subject to 40 CFR 60, Subpart IIII that are located in remote areas of Alaska.)</p> <p>(NOTE: Owners and operators of stationary CI ICE subject to 40 CFR 60, Subpart IIII that are located in remote areas of Alaska are not prohibited from using fuels mixed with used lubricating oil, in volumes of up to 1.75 percent of the total fuel. The sulfur content of the used lubricating oil must be less than 200 ppm. The used lubricating oil must meet the on-specification levels and properties for used oil in 40 CFR 279.11.)</p> <p>Verify that owners and operators of stationary SI ICE with a maximum engine power less than or equal to 19 KW (25 HP) manufactured on or after 1 July 2008, comply with the certification emission standards and other requirements for new nonroad SI engines in 40 CFR 90 (see text, applies to manufacturers).</p>

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<p>60.4230(a)(5), 60.4233(a), 60.4234, and 60.4235) [Added April 2008; Revised October 2011].</p>	<p>Verify that owners and operators of stationary SI ICE operate and maintain stationary SI ICE that achieves the required emission standards over the entire life of the engine.</p> <p>Verify that owners and operators of stationary SI ICE that use gasoline use gasoline that meets the per gallon sulfur limit in 40 CFR 80.195 (see text, gasoline sulfur standards for refiners and importers).</p> <p>(NOTE: This checklist item applies to owners, and operators of stationary spark ignition (SI) internal combustion engines (ICE) as follows:</p> <ul style="list-style-type: none"> <li>– owners and operators of stationary SI ICE that commence construction after 12 June 2006, where the stationary SI ICE are manufactured: <ul style="list-style-type: none"> <li>– on or after 1 July 2007, for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP)</li> <li>– on or after 1 January 2008, for lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP</li> <li>– on or after 1 July 2008, for engines with a maximum engine power less than 500 HP</li> <li>– on or after 1 January 2009, for emergency engines with a maximum engine power greater than 19 KW (25 HP)</li> </ul> </li> <li>– owners and operators of stationary SI ICE that are modified or reconstructed after 12 June 2006 and any person that modifies or reconstructs any stationary SI ICE after 12 June 2006.</li> </ul> <p>(NOTE: For the purposes of this checklist item, the date that construction commences is the date the engine is ordered by the owner or operator.)</p> <p>(NOTE: The following exemptions and waivers apply:</p> <ul style="list-style-type: none"> <li>– the provisions of this checklist item are not applicable to stationary SI ICE being tested at an engine test cell/stand</li> <li>– as the owner or operator of a subject to the requirements for stationary SI ICE is exempt from the obligation to obtain a permit under 40 CFR 70 or 40 CFR 71, provided the facility is not required to obtain a permit or a reason other than their status as an area source</li> <li>– stationary SI ICE using alcohol-based fuels are considered gasoline engines.)</li> </ul> <p>(NOTE: Stationary SI ICE may be eligible for exemption from the requirements of this checklist item as described in 40 CFR 1068, subpart C (or the exemptions described in 40 CFR 90 (see text, applies to manufacturers) and 40 CFR 1048, for engines that would need to be certified to standards in those parts), except that owners and operators, as well as manufacturers, may be eligible to request an exemption for national security.)</p> <p>(NOTE: Owners and operators of facilities with ICE that are acting as temporary replacement units and that are located at a stationary source for less than 1 yr and</p>

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<p><b>AE.21.21.US.</b> Owners and operators of stationary SI ICE with a maximum engine power less than or equal to 19 KW (25 HP) that start construction after 12 June 2006 must meet specific emissions limitations (40 CFR 60.4233(b), 60.4324, and 60.4235) [Added April 2008].</p>	<p>that have been properly certified as meeting the standards that would be applicable to such engine under the appropriate nonroad engine provisions, are not required to meet any other provisions under checklist item with regard to such engines.)</p> <p>(NOTE: See checklist item AE.21.20.US for additional applicability information.)</p> <p>(NOTE: This checklist item applies specifically to owners and operators of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) that use gasoline.)</p> <p>Verify that owners and operators of stationary SI ICE operate and maintain stationary SI ICE that achieves the required emission standards over the entire life of the engine.</p> <p>Verify that owners and operators of stationary SI ICE that use gasoline use gasoline that meets the per gallon sulfur limit in 40 CFR 80.195 (see text, gasoline sulfur standards for refiners and importers).</p> <p>(NOTE: This checklist item applies specifically to owners and operators of stationary SI ICE that commence construction after 12 June 2006, where the stationary SI ICE are manufactured:</p> <ul style="list-style-type: none"> <li>– on or after 1 July 2007, for engines with a maximum engine power greater than or equal to 500 HP [except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP]</li> <li>– on or after 1 January 2008, for lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP</li> <li>– on or after 1 July 2008, for engines with a maximum engine power less than 500 HP</li> <li>– on or after 1 January 2009, for emergency engines with a maximum engine power greater than 19 KW [25 HP].)</li> </ul> <p>(NOTE: These requirements do not apply to emergency stationary ICE with a maximum engine power greater than 25 HP and less than 130 HP.)</p> <p>Verify that owners/operators of stationary SI ICE with a maximum engine power &gt; 19 KW (25 HP) which meet the parameters of this checklist item and use gasoline maintain with the following emission limitations set for manufacturers for their stationary SI ICE:</p> <ul style="list-style-type: none"> <li>– for stationary SI ICE manufactured on or after 1 July 2008, the certification emission standards and other requirements for new nonroad SI engines in 40 CFR 1048</li> <li>– for emergency stationary ICE with a maximum engine power greater than or equal to 130 HP and manufactured on or after 1 January 2009, the certification emission standards and other requirements for new nonroad SI engines in 40 CFR 1048.</li> </ul>

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<p><b>AE.21.22.US.</b> Owners and operators of stationary SI ICE with a maximum engine power &gt; 19 KW (25 HP) manufactured on or after 12 June 2006 that are rich burn engines that use LPG must comply with specific emission limitations (40 CFR 60.4233(c), 60.4324, and 60.4235) [Added April 2008].</p>	<p>Verify that owners/operators of emergency stationary SI ICE with &gt; 25 HP and &lt; 130 HP that are manufactured on or after 1 January 2009 meet the Phase 1 emission standards in 40 CFR 90.103, applicable to class II engines, and other requirements for new nonroad SI engines in 40 CFR 90 (see text, applies to manufacturers).</p> <p>(NOTE: Stationary SI internal combustion engine manufacturers may certify their stationary SI ICE with a maximum engine power less than or equal to 30 KW (40 HP) with a total displacement less than or equal to 1,000 c3 to the certification emission standards and other requirements for new nonroad SI engines in 40 CFR 90 [see text, applies to manufacturers].)</p> <p>(NOTE: See checklist item AE.21.20.US for additional applicability information.)</p> <p>Verify that owners and operators of stationary SI ICE operate and maintain stationary SI ICE that achieves the required emission standards over the entire life of the engine.</p> <p>Verify that owners and operators of stationary SI ICE that use gasoline use gasoline that meets the per gallon sulfur limit in 40 CFR 80.195 (see text, gasoline sulfur standards for refiners and importers).</p> <p>(NOTE: These requirements do not apply to emergency stationary ICE with a maximum engine power greater than 25 HP and less than 130 HP.)</p> <p>Verify that owners/operators of stationary SI ICE with a maximum engine power &gt; 19 KW (25 HP) ) that are rich burn engines that use LPG maintain the certification emission standards and other requirements for new nonroad SI engines in 40 CFR 1048 set for manufacturers for their stationary SI ICE.</p> <p>Verify that owners/operators of emergency stationary ICE with a maximum engine power greater than or equal to 130 HP that are rich burn engines that use LPG and are manufactured after 1 January 2009 maintain the certification emission standards and other requirements for new nonroad SI engines in 40 CFR 1048 set for manufacturers for their stationary SI ICE.</p> <p>(NOTE: Stationary SI internal combustion engine manufacturers must certify their emergency stationary SI ICE &gt; 25 HP and &lt; 130 HP that are manufactured on or after the applicable date in 1 January 2009 to the Phase 1 emission standards in 40 CFR 90.103, applicable to class II engines, and other requirements for new nonroad SI engines in 40 CFR 90 [see text, applies to manufacturers].)</p> <p>(NOTE: Stationary SI internal combustion engine manufacturers may certify their stationary SI ICE with a maximum engine power less than or equal to 30 KW (40 HP) with a total displacement less than or equal to 1,000 cc to the certification</p>

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<p><b>AE.21.23.US.</b> Owners and operators of stationary SI ICE with a maximum engine power &gt; 19 KW (25 HP) and &lt; 75 KW (100 HP) (except gasoline and rich burn engines that use LPG) must meet specific emissions limitations (40 CFR 60.4233(d), 60.4324, and 60.4235) [Added April 2008].</p>	<p>emission standards and other requirements for new nonroad SI engines in 40 CFR 90 [see text, applies to manufacturers].)</p> <p>(NOTE: See checklist item AE.21.20.US for additional applicability information.)</p> <p>Verify that owners and operators of stationary SI ICE operate and maintain stationary SI ICE that achieves the required emission standards over the entire life of the engine.</p> <p>Verify that owners and operators of stationary SI ICE that use gasoline use gasoline that meets the per gallon sulfur limit in 40 CFR 80.195 (see text, gasoline sulfur standards for refiners and importers).</p> <p>Verify that owners and operators of stationary SI ICE with a maximum engine power &gt; 19 KW (25 HP) and &lt; 75 KW (100 HP) (except gasoline and rich burn engines that use LPG) comply with:</p> <ul style="list-style-type: none"> <li>– the emission standards for field testing in 40 CFR 1048.101(c) for their non-emergency stationary SI ICE</li> <li>– the emission standards in Appendix 1-39 for their emergency stationary SI ICE.</li> </ul> <p>(NOTE: Owners and operators of stationary SI ICE with a maximum engine power &gt; 19 KW (25 HP) and &lt; 75 KW (100 HP) manufactured prior to 1 January 2011, that were certified to the standards in Appendix 1-39 applicable to engines with a maximum engine power greater than or equal to 100 HP and &lt; 500 HP, may optionally choose to meet those standards.)</p>
<p><b>AE.21.24.US.</b> Owners and operators of stationary SI ICE with a maximum engine power greater than or equal to 75 KW (100 HP) (except gasoline and rich burn engines that use LPG) must meet specific emissions limitations (40 CFR 60.4233(e), 60.4324, and 60.4235) [Added April 2008].</p>	<p>(NOTE: See checklist item AE.21.20.US for additional applicability information.)</p> <p>Verify that owners and operators of stationary SI ICE operate and maintain stationary SI ICE that achieves the required emission standards over the entire life of the engine.</p> <p>Verify that owners and operators of stationary SI ICE that use gasoline use gasoline that meets the per gallon sulfur limit in 40 CFR 80.195 (see text, gasoline sulfur standards for refiners and importers).</p> <p>Verify that owners and operators of stationary SI ICE with a maximum engine power greater than or equal to 75 KW (100 HP) (except gasoline and rich burn engines that use LPG) comply with the emission standards in Appendix 1-39 for their stationary SI ICE.</p> <p>(NOTE: If a stationary SI ICE with a maximum engine power greater than or equal to 100 HP (except gasoline and rich burn engines that use LPG) was manufactured</p>

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<p><b>AE.21.25.US.</b> Owners and operators of any modified or reconstructed stationary SI ICE must meet specific emissions limitations (40 CFR 60.4233(f)) [Added April 2008; Revised July 2011].</p>	<p>prior to 1 January 2011 and was certified to the certification emission standards in 40 CFR 1048 applicable to engines that are not severe duty engines, the owners and operators may meet the CO certification (not field testing) standard for which the engine was certified if the stationary SI ICE was certified to a carbon monoxide (CO) standard above the standard in Appendix 1-39.)</p> <p>Verify that the following stationary SI ICE meeting the requirements for manufacturers (see 40 CFR 60.4231 [see text]):</p> <ul style="list-style-type: none"> <li>– SI ICE with a maximum engine power less than or equal to 19 KW (25 HP), that are modified or reconstructed after 12 June 2006, must comply with emission standards</li> <li>– SI ICE with a maximum engine power less than or equal to 19 KW (25 HP) with a date of manufacture prior to 1 July 2008 must comply with the emission standards</li> <li>– stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) that are gasoline engines and are modified or reconstructed after 12 June 2006, must comply with the emission standards</li> <li>– stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) with a date of manufacture prior to 1 July 2008 (or January 1, 2009 for emergency engines) must comply with the emission standards</li> <li>– stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) that are rich burn engines that use LPG, that are modified or reconstructed after 12 June 2006, must comply with emission standards</li> <li>– stationary SI ICE engines with a date of manufacture prior to 1 July 2008 (or 1 January 2009 for emergency engines) must comply with the emission standards</li> </ul> <p>Verify that owners and operators of stationary SI natural gas and lean burn LPG engines with a maximum engine power greater than 19 KW (25 HP), that are modified or reconstructed after 12 June 2006, comply with the same emission standards in 40 CFR 60.4233(d) or 40 CFR 60.4233(e), except that such owners and operators of non-emergency engines and emergency engines greater than or equal to 130 HP meet the following:</p> <ul style="list-style-type: none"> <li>– a nitrogen oxides (NOX) emission standard of 3.0 grams per HP-hour (g/HP-hr)</li> <li>– a CO emission standard of 4.0 g/HP-hr (5.0 g/HP-hr for non-emergency engines less than 100 HP)</li> <li>– a volatile organic compounds (VOC) emission standard of 1.0 g/HP-hr.</li> </ul> <p>Verify that owners and operators of stationary SI natural gas and lean burn LPG engines with a maximum engine power greater than 19 KW (25 HP) meet the following alternative standards depending on the date of engine manufacture and type of engine:</p>

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	<ul style="list-style-type: none"> <li>– NOX emission standard of 250 ppmvd at 15 percent oxygen ( O<sub>2</sub> )</li> <li>– a CO emission standard 540 ppmvd at 15 percent O<sub>2</sub> (675 ppmvd at 15 percent O<sub>2</sub> for non-emergency engines less than 100 HP)</li> <li>– a VOC emission standard of 86 ppmvd at 15 percent O<sub>2</sub>.</li> </ul> <p>(NOTE: The alternative standards apply where the date of manufacture of the engine is:</p> <ul style="list-style-type: none"> <li>– prior to 1 July 2007, for non-emergency engines with a maximum engine power greater than or equal to 500 HP (except lean burn natural gas engines and LPG engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP);</li> <li>– prior to 1 July 2008, for non-emergency engines with a maximum engine power less than 500 HP;</li> <li>– prior to 1 January 2009, for emergency engines;</li> <li>– prior to 1 January 2008, for non-emergency lean burn natural gas engines and LPG engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP.)</li> </ul> <p>Verify that owners and operators of stationary SI landfill/digester gas ICE engines with a maximum engine power greater than 19 KW (25 HP), that are modified or reconstructed after 12 June 2006, comply with the emission standards in 40 CFR 60.4233(e) (see checklist item AE.21.24.US) for stationary landfill/digester gas engines.</p> <p>Verify that stationary SI landfill/digester gas ICE engines with maximum engine power less than 500 HP and a date of manufacture prior to 1 July 2008 comply with the emission standards specified in 40 CFR 60.4233(e) (see checklist item AE.21.24.US) for stationary landfill/digester gas ICE with a maximum engine power less than 500 HP manufactured on 1 July 2008.</p> <p>Verify that stationary SI landfill/digester gas ICE engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines greater than or equal to 500 HP and less than 1,350 HP) and a date of manufacture prior to 1 July 2007 comply with the emission standards specified in 40 CFR 60.4233(e) (see checklist item AE.21.24.US) for stationary landfill/digester gas ICE with a maximum engine power greater than or equal to 500 HP (except lean burn engines greater than or equal to 500 HP and less than 1,350 HP) manufactured on 1 July 2007.</p> <p>Verify that lean burn engines greater than or equal to 500 HP and less than 1,350 HP with a date of manufacture prior to 1 January 2008 comply with the emission standards specified in 40 CFR 60.4233(e) (see checklist item AE.21.24.US) for stationary landfill/digester gas ICE that are lean burn engines greater than or equal to 500 HP and less than 1,350 HP and manufactured on 1 January 2008.</p>

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<p><b>AE.21.26.US.</b> Owners and operators must meet specific deadlines for importing or installing stationary SI ICE produced in the prior model year (40 CFR 60.4230(a)(6) and 60.4236) <b>[Added April 2008; Revised July 2011]</b></p>	<p>(NOTE: This checklist item is applicable to all owners and operators of stationary SI ICE that commence construction after 12 June 2006.)</p> <p>Verify that, after 1 July 2010, owners and operators do not install stationary SI ICE with a maximum engine power of less than 500 HP that do not meet the applicable requirements in 40 CFR 60.4233 (see checklist items AE.21.20.US through AE.21.25.US).</p> <p>Verify that, after 1 July 2009, owners and operators do not install stationary SI ICE with a maximum engine power of greater than or equal to 500 HP that do not meet the applicable requirements in 40 CFR 60.4233 (see checklist items AE.21.20.US through AE.21.25.US).</p> <p>(NOTE: Lean burn engines with a maximum engine power greater than or equal to 500 HP and &lt; 1,350 HP that do not meet the applicable requirements in 40 CFR 60.4233 (see checklist items AE.21.20.US through AE.21.25.US) may not be installed after 1 January 2010.)</p> <p>(NOTE: For emergency stationary SI ICE with a maximum engine power of greater than 19 KW (25 HP), owners and operators may not install engines that do not meet the applicable requirements in 40 CFR 60.4233 [see checklist items AE.21.20.US through AE.21.25.US] after 1 January 2011.)</p> <p>(NOTE: In addition to the requirements specified in 40 CFR 60.4231 [see text] and 60.4233 [see checklist items AE.21.20.US through AE.21.25.US], it is prohibited to import stationary SI ICE less than or equal to 19 KW (25 HP), stationary rich burn LPG SI ICE, and stationary gasoline SI ICE that do not meet the applicable requirements specified in this checklist item after the dates specified in this checklist item.)</p> <p>(NOTE: The requirements of this checklist item do not apply to owners and operators of stationary SI ICE that have been modified or reconstructed, and they do not apply to engines that were removed from one existing location and reinstalled at a new location.)</p>
<p><b>AE.21.27.US.</b> Owners or operators of an emergency stationary SI internal combustion engine must meet specific monitoring requirements (40 CFR 60.4237) <b>[Added April 2008].</b></p>	<p>Verify that, starting on 1 July 2010, if the emergency stationary SI internal combustion engine that is greater than or equal to 500 HP built on or after 1 July 2010, does not meet the standards applicable to non-emergency engines, the owner or operator installs a non-resettable hour meter.</p> <p>Verify that, starting on 1 January 2011, if the emergency stationary SI internal combustion engine that is greater than or equal to 130 HP and &lt; 500 HP that was built on or after 1 January 2011, does not meet the standards applicable to non-emergency engines, the owner or operator installs a non-resettable hour meter.</p> <p>Verify that owners or operators of an emergency stationary SI internal combustion engine that is &lt; 130 HP, was built on or after 1 July 2008, and does not meet the</p>

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<p><b>AE.21.28.US.</b> Owners or operators of a stationary SI internal combustion engine must meet specific compliance requirements (40 CFR 60.4243) [Added April 2008; Revised July 2011; Revised April 2013].</p>	<p>standards applicable to non-emergency engines, install a non-resettable hour meter upon startup of the emergency engine.</p> <p>Verify that, owners or operators of a stationary SI internal combustion engine manufactured after 1 July 2008 which must comply with the limitations in 40 CFR 60.4233(a) through 60.4233(c) (see checklist items AE.21.20.US through AE.21.22.US):</p> <ul style="list-style-type: none"> <li>– purchase an engine manufacturer-certified to the emission standards in 40 CFR 60.4231(a) through 60.4231(c) (see text) for the same engine class and maximum engine power</li> <li>– one of the following requirements: <ul style="list-style-type: none"> <li>– if operating and maintaining the certified stationary SI internal combustion engine and control device according to the manufacturer's emission-related written instructions, keep records of conducted maintenance to demonstrate compliance, but no performance testing is required for owners or operators</li> <li>– if not operating and maintaining the certified stationary SI internal combustion engine and control device according to the manufacturer's emission-related written instructions, the engine is considered a non-certified engine, compliance is demonstrated as follows and as is appropriate: <ul style="list-style-type: none"> <li>– the owner or operator of a stationary SI internal combustion engine &lt; 100 HP keeps a maintenance plan and records of conducted maintenance to demonstrate compliance and, to the extent practicable, maintains and operates the engine in a manner consistent with good air pollution control practice for minimizing emissions, but no performance testing is required for owners or operators</li> <li>– the owner or operator of a stationary SI internal combustion engine greater than or equal to 100 HP and less than or equal to 500 HP keeps a maintenance plan and records of conducted maintenance and, to the extent practicable, maintains and operates the engine in a manner consistent with good air pollution control practice for minimizing emissions</li> <li>– the owner or operator of a stationary SI internal combustion engine greater than or equal to 100 HP and less than or equal to 500 HP conducts an initial performance test within 1 yr of engine startup to demonstrate compliance</li> <li>– owners or operators of a stationary SI internal combustion engine &gt; 500 HP keeps a maintenance plan and records of conducted maintenance and, to the extent practicable, maintains and operates the engine in a manner consistent with good air pollution control practice for minimizing emissions</li> <li>– owners or operators of a stationary SI internal combustion engine &gt; 500 HP conduct an initial performance test within 1 yr of engine startup and</li> </ul> </li> </ul> </li> </ul>

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	<p>conducts subsequent performance testing every 8,760 h or 3 yr, whichever comes first, thereafter to demonstrate compliance.</p> <p>(NOTE: See the text of 40 CFR 60.4244 for details on conducting performance testing.)</p> <p>Verify that owners or operators of a stationary SI internal combustion engine required to comply with 40 CFR 60.4233(d) or 60.4233(e) (see checklist items AE.21.23.US and AE.21.24.US), demonstrate compliance according to one of the following methods:</p> <ul style="list-style-type: none"> <li>– purchasing an engine certified for the same model year and demonstrating compliance according to one of the methods specified above in this checklist item</li> <li>– purchasing a non-certified engine and demonstrating compliance with the emission standards specified in 40 CFR 60.4233(d) or 60.4233(e) (see checklist items AE.21.23.US and AE.21.24.US) and according to the requirements specified in 40 CFR 60.4244 (see text), as applicable, and according to the following: <ul style="list-style-type: none"> <li>– owners or operators of a stationary SI internal combustion engine &gt; 25 HP and less than or equal to 500 HP keep a maintenance plan and records of conducted maintenance and, to the extent practicable, maintains and operates the engine in a manner consistent with good air pollution control practice for minimizing emissions</li> <li>– owners or operators of a stationary SI internal combustion engine &gt; 25 HP and less than or equal to 500 HP conduct an initial performance test to demonstrate compliance</li> <li>– owners or operators of a stationary SI internal combustion engine &gt; 500 HP keep a maintenance plan and records of conducted maintenance and, to the extent practicable, maintains and operates the engine in a manner consistent with good air pollution control practice for minimizing emissions</li> <li>– owners or operators of a stationary SI internal combustion engine &gt; 500 HP conduct an initial performance test and conduct subsequent performance testing every 8,760 h or 3 yr, whichever comes first, thereafter to demonstrate compliance.</li> </ul> </li> </ul> <p>Verify that owners or operators of a stationary SI internal combustion engine required to comply with the emission standards specified in 40 CFR 60.4233(f) (see checklist item AE.21.25.US) demonstrate compliance as follows</p> <ul style="list-style-type: none"> <li>– owners or operators of a stationary SI internal combustion engine &gt; 25 HP and less than or equal to 500 HP keep a maintenance plan and records of conducted maintenance and, to the extent practicable, maintains and operates the engine in a manner consistent with good air pollution control practice for minimizing emissions</li> </ul>

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	<ul style="list-style-type: none"> <li>– owners or operators of a stationary SI internal combustion engine &gt; 25 HP and less than or equal to 500 HP conduct an initial performance test to demonstrate compliance</li> <li>– owners or operators of a stationary SI internal combustion engine &gt; 500 HP keep a maintenance plan and records of conducted maintenance and, to the extent practicable, maintains and operates the engine in a manner consistent with good air pollution control practice for minimizing emissions</li> <li>– owners or operators of a stationary SI internal combustion engine &gt; 500 HP conduct an initial performance test and conduct subsequent performance testing every 8,760 h or 3 yr, whichever comes first, thereafter to demonstrate compliance.</li> </ul> <p>(NOTE: If the owners or operators of a stationary SI internal combustion engine required to comply with the emission standards specified in 40 CFR 60.4233(f) (see checklist item AE.21.25.US) comply by keeping maintenance plans, maintaining the engine and conducting an initial performance test, they must demonstrate that the non-certified engine complies with the emission standards specified in 40 CFR 60.4233(f) (see checklist item AE.21.25.US).</p> <p>(NOTE: In order for a stationary ICE to be considered an emergency stationary ICE, it does not operate more than 50 h/yr other than during emergency operation, maintenance and testing, and emergency demand response. There is no time limit on the use of emergency stationary ICE in emergency situations. See the text of 40 CFR 60.4243(d) for details on emergency stationary ICE operations and agreements.)</p> <p>Verify that, if owners and operators of stationary SI natural gas fired engines operate their engines using propane for a maximum of 100 h/y as an alternative fuel solely during emergency operations, records are kept of such use.</p> <p>Verify that, if propane is used for more than 100 h/yr in an engine that is not certified to the emission standards when using propane, the owners and operators conduct a performance test to demonstrate compliance with the emission standards of 40 CFR 60.4233 (see checklist item AE.21.10.US through AE.21.25.US).</p> <p>(NOTE: Owners or operators of a stationary SI internal combustion engine that is less than or equal to 500 HP and the owner or operator has purchased a non-certified engine or does not operate and maintain the certified stationary SI internal combustion engine and control device according to the manufacturer's written emission-related instructions, must perform initial performance testing. In these situations, the owner/operator is not required to conduct subsequent performance testing unless the stationary engine is rebuilt or undergoes major repair or maintenance. A rebuilt stationary SI ICE means an engine that has been rebuilt as that term is defined in 40 CFR 94.11(a).)</p> <p>(NOTE: It is expected that air-to-fuel ratio controllers will be used with the operation of three-way catalysts/non-selective catalytic reduction. The AFR</p>

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<p><b>AE.21.29.US.</b> Owners or operators of a stationary SI ICE must meet recordkeeping requirements (40 CFR 60.4245(a) and 60.4245(b)) [Added April 2008].</p>	<p>controller must be maintained and operated appropriately in order to ensure proper operation of the engine and control device to minimize emissions at all times.)</p> <p>Verify that owners/operators of an stationary SI internal combustion engine with maximum engine power greater than or equal to 500 HP that is manufactured after 1 July 2007 and before 1 July 2008, and comply with the emission standards specified in 40 CFR 60.4233(b) or 60.4233(c) (see checklist item AE.21.21.US and AE.21.22.US), comply by one of the following methods:</p> <ul style="list-style-type: none"> <li>– purchasing an engine certified according to 40 CFR 1048 with the engine being installed and configured according to the manufacturer's specifications</li> <li>– keeping records of performance test results for each pollutant for a test conducted on a similar engine where the test has been conducted using the same methods specified in this regulation and these methods must have been followed correctly</li> <li>– keeping records of engine manufacturer data indicating compliance with the standards</li> <li>– keeping records of control device vendor data indicating compliance with the standards.</li> </ul> <p>Verify that owners or operators of a modified or reconstructed stationary SI internal combustion engine which must comply with the emission standards specified in 40 CFR 60.4233(f) (see checklist item AE.21.25.US), demonstrate compliance according to one of the following methods:</p> <ul style="list-style-type: none"> <li>– purchasing, or otherwise owning or operating, an engine certified to the emission standards in 40 CFR 60.4233(f), as applicable</li> <li>– conducting a performance test to demonstrate initial compliance with the emission standards according to the requirements specified in 40 CFR 60.4244 (see text) and conducted within 60 days after the engine commences operation after the modification or reconstruction.</li> </ul> <p>Verify that records of the following information are maintained:</p> <ul style="list-style-type: none"> <li>– all notifications submitted to regulators and all documentation supporting any notification</li> <li>– maintenance conducted on the engine</li> <li>– if the stationary SI internal combustion engine is a certified engine, documentation from the manufacturer that the engine is certified to meet the emission standards and information as required in 40 CFR 90 (see text, applies to manufacturers) and 40 CFR 1048</li> <li>– if the stationary SI internal combustion engine is not a certified engine or is a certified engine operating in a non-certified manner and subject to 40 CFR 60.4243(a)(2) (see checklist item AE.21.28.US), documentation that the engine meets the emission standards.</li> </ul>

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<p><b>AE.21.30.US.</b> Owners or operators of a stationary SI ICE must meet notification and reporting requirements (40 CFR 60.4245(c) through 60.4245(e)) [Added April 2008; Revised April 2013].</p>	<p>Verify that, for all stationary SI emergency ICE greater than or equal to 500 HP manufactured on or after 1 July 2010, that do not meet the standards applicable to non-emergency engines, the owner or operator keeps records of the hours of operation of the engine that is recorded through the non-resettable hour meter.</p> <p>Verify that for all stationary SI emergency ICE greater than or equal to 130 HP and &lt; 500 HP manufactured on or after 1 July 2011 that do not meet the standards applicable to non-emergency engines, the owner or operator keeps records of the hours of operation of the engine that is recorded through the non-resettable hour meter.</p> <p>Verify that, for all stationary SI emergency ICE &gt; 25 HP and &lt; 130 HP manufactured on or after 1 July 2008, that do not meet the standards applicable to non-emergency engines, the owner or operator keeps records of the hours of operation of the engine that is recorded through the non-resettable hour meter.</p> <p>Verify that the owner or operator documents how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation.</p> <p>Verify that owners and operators of stationary SI ICE greater than or equal to 500 HP that have not been certified by an engine manufacturer to meet the emission standards in 40 CFR 60.4231 (see text) submit an initial notification including the following information:</p> <ul style="list-style-type: none"> <li>– name and address of the owner or operator</li> <li>– the address of the affected source</li> <li>– engine information including make, model, engine family, serial number, model year, maximum engine power, and engine displacement</li> <li>– emission control equipment</li> <li>– fuel used.</li> </ul> <p>Verify that owners and operators of stationary SI ICE that are subject to performance testing submit a copy of each performance test within 60 days after the test has been completed.</p> <p>Verify that, if the facility owns or operates an emergency stationary CI ICE with a maximum engine power more than 100 HP that operates or is contractually obligated to be available for more than 15 h per calendar year for the following, the facility submits an annual report:</p> <ul style="list-style-type: none"> <li>– for emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies, or other authorized entity as determined by the Reliability Coordinator, has</li> </ul>

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	<p>declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3</p> <ul style="list-style-type: none"> <li>– for periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency.</li> </ul> <p>(NOTE: if the emergency stationary CI ICE with maximum engine power more than 100 HP supplies power as part of a financial arrangement with another entity it must also submit an annual report.)</p> <p>Verify that the required annual report contains the following information:</p> <ul style="list-style-type: none"> <li>– company name and address where the engine is located</li> <li>– date of the report and beginning and ending dates of the reporting period</li> <li>– engine site rating and model year</li> <li>– latitude and longitude of the engine in decimal degrees reported to the fifth decimal place</li> <li>– hours operated, including the date, start time, and end time for engine operation</li> <li>– number of hours the engine is contractually obligated to be available</li> <li>– hours spent for operation for the purposes specified in a financial agreement with another entity including the date, start time, and end time for engine operation for those purposes.</li> </ul> <p>Verify that the annual report identifies the entity that dispatched the engine and the situation that necessitated the dispatch of the engine.</p> <p>(NOTE: The first annual report must cover the calendar year 2015 and must be submitted no later than 31 March 2016. Subsequent annual reports for each calendar year must be submitted no later than March 31 of the following calendar year. The annual report must be submitted electronically using the specific reporting form in the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (<a href="http://www.epa.gov/cdx">www.epa.gov/cdx</a>). However, if the reporting form specific is not available in CEDRI at the time that the report is due, the written report must be submitted to the Administrator.)</p>



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<b>AE.25</b>  <b>MISCELLANEOUS INCINERATORS</b>  <b>AE.25.1.US.</b> Incinerators over 45 metric tons/day (50 tons/day) charging rate that started construction or modification after 17 August 1971 are required to meet specific emission limitations (40 CFR 60.50 through 60.54).  <b>AE.25.2.US.</b> Incinerators that started construction or modification after 11 June 1973 which combust waste containing more than 10 percent sewage sludge (dry basis) produced by municipal sewage treatment plants, or those that started construction or modification after 11 June 1973 which charge more than 1000 kg (2205 lb) per day municipal sewage sludge (dry basis) are required to meet specific emission standards (40 CFR 60.150 through 60.156).	<p>Verify that the limitations outlined in Appendix 1-2 are met.</p> <p>Verify that particulate matter is discharged in excess of 0.65 g/kg dry sludge input (1.30 lb/ton dry sludge input).</p> <p>Verify that the opacity of emissions does not exceed 20 percent.</p> <p>Verify that, except on multiple hearth, fluidized bed, or electric sludge incinerators with a particulate emission rate less than or equal to 0.38 g/kg of dry sludge input (0.75 lb/ton), a continuously operating flow measuring device to determine either the mass or volume of sludge charged to the incinerator is in place, maintained, and properly calibrated.</p> <p>Verify that a weighing device is available to determine the mass of any municipal solid waste charged to the incinerator when sewage sludge and municipal solid waste are incinerated together.</p> <p>Verify that multiple hearth fluidized bed or electric sludge incinerators equipped with a wet scrubbing device have a continuously operating monitoring device that is calibrated annually to measure and record the pressure drop of the gas flow through the wet scrubbing device.</p> <p>Verify that a monitoring device, which is calibrated at least once every 24 h, is in place and continuously measures and records the oxygen content of the multiple hearth fluidized bed or electric sludge incinerator exhaust gas.</p> <p>Verify that at least one continuously operating temperature measuring device is installed on every hearth in the cooling and drying zones of multiple hearth furnaces and two thermocouples are installed in each hearth in the combustion zone.</p>

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<b>AE.25.3.US.</b> Incinerators that process beryllium-containing waste, beryllium, beryllium oxide, or beryllium alloys are required to meet specific standards (40 CFR 61.30 through 61.34).	<p>Verify that at least one continuously operating temperature measuring device is installed in the drying zone and one on the cooling zone, and a minimum of two in the combustion zones of electric furnaces.</p> <p>Verify that a continuously operating fuel flow measuring device is operating on a multiple hearth fluidized bed or electric sludge incinerators</p> <p>Verify that, for multiple hearth, fluidized bed, or electric sludge incinerators, except those that emit particulates less than 0.38 g/kg of dry sludge input (0.75 lb/ton), a grab sample of the sludge is collected and analyzed every day for the dry sludge content and the volatile solids content.</p> <p>Verify that, for multiple hearth, fluidized bed, or electric sludge incinerators, except for those that emit particulates less than 0.38 g/kg of dry sludge input (0.75 lb/ton), records are kept for 2 yr of the following:</p> <ul style="list-style-type: none"> <li>– the measured oxygen content of the exhaust gas</li> <li>– the rate of sludge charged, the temperatures, fuel flow, and total solids and volatile solids</li> <li>– the measured pressure drop of the gas flow through the wet scrubbing device.</li> </ul> <p>Verify that the operator of any multiple hearth, fluidized bed, or electric sludge incinerator submits a report semiannually detailing the operations of the incinerator.</p> <p>(NOTE: This checklist item applies to the following stationary sources:</p> <ul style="list-style-type: none"> <li>– extraction plants, ceramic plants, foundries, incinerators, and propellant plants which process beryllium ore, beryllium, beryllium oxide, beryllium alloys, or beryllium-containing waste</li> <li>– machine shops which process beryllium, beryllium oxides, or any alloy when such alloy contains more than 5 percent beryllium by weight.)</li> </ul> <p>Verify that emissions to the atmosphere from applicable stationary sources do not exceed 10 grams (0.022 lb) of beryllium over a 24-h period.</p> <p>(NOTE: Rather than meet the requirement for emissions to the atmosphere of beryllium, an owner or operator may request approval from the Administrator to meet an ambient concentration limit on beryllium in the vicinity of the stationary source of 0.01 micrograms/m<sup>3</sup> (4.37x10<sup>-6</sup> gr/ft<sup>3</sup>), averaged over a 30-day period.)</p> <p>Verify that there is no burning of beryllium and/or beryllium-containing waste, except propellants, unless it is done in incinerators, emissions from which must comply with the standard.</p>

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	<p>Verify that, unless a waiver of emission testing is obtained under 40 CFR 61.13, each owner or operator tests emissions from the source according to Method 104 of appendix B to 40 CFR 61.</p> <p>(NOTE: Method 103 of appendix B to this part is approved by the Administrator as an alternative method.</p> <p>Verify that the emission test is performed according to one of the following schedules:</p> <ul style="list-style-type: none"> <li>– within 90 days of the effective date in the case of an existing source or a new source which has an initial startup date preceding the effective date</li> <li>– within 90 days of startup in the case of a new source which did not have an initial startup date preceding the effective date.</li> </ul> <p>Verify that the Administrator is notified at least 30 days prior to an emission test so that he may at his option observe the test.</p> <p>Verify that samples are taken over such a period or periods as are necessary to accurately determine the maximum emissions which will occur in any 24-h period.</p> <p>Verify that, where emissions depend upon the relative frequency of operation of different types of processes, operating hours, operating capacities, or other factors, the calculation of maximum 24-h-period emissions are based on that combination of factors which is likely to occur during the subject period and which result in the maximum emissions.</p> <p>(NOTE: No changes in the operation shall be made, which would potentially increase emissions above that determined by the most recent source test, until a new emission level has been estimated by calculation and the results reported to the Administrator.)</p> <p>Verify that all samples are analyzed and beryllium emissions determined within 30 days after the source test.</p> <p>Verify that all determinations are reported to the Administrator by a registered letter dispatched before the close of the next business day following such determination.</p> <p>Verify that records of emission test results and other data needed to determine total emissions are retained at the source and made available, for inspection by the Administrator, for a minimum of 2 yr.</p> <p>Verify that air sampling sites are located in accordance with a plan approved by the Administrator.</p>

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<p><b>AE.25.4.US.</b> Air curtain incinerators that burn 100 percent yard waste are required to meet emissions, monitoring, recordkeeping, and reporting requirements (40 CFR 60.1435 through 60.1455) [<b>Added April 2001</b>].</p>	<p>(NOTE: Such sites shall be located in such a manner as is calculated to detect maximum concentrations of beryllium in the ambient air.)</p> <p>Verify that all monitoring sites are operated continuously except for a reasonable time allowance for instrument maintenance and calibration, for changing filters, or for replacement of equipment needing major repair.</p> <p>Verify that filters are analyzed and concentrations calculated within 30 days after filters are collected.</p> <p>Verify that records of concentrations at all sampling sites and other data needed to determine such concentrations is retained at the source and made available, for inspection by the Administrator, for a minimum of 2 yr.</p> <p>Verify that concentrations measured at all sampling sites are reported to the Administrator every 30 days by a registered letter.</p> <p>(NOTE: The Administrator may at any time require changes in, or expansion of, the sampling network.)</p> <p>(NOTE: If the air curtain incinerator combusts 100 percent yard waste, it must meet only the emission limits in this checklist item.)</p> <p>Verify that, within 60 days after the air curtain incinerator reaches the maximum load level at which it will operate, but no later than 180 days after its initial startup, the following limits are met:</p> <ul style="list-style-type: none"> <li>– the opacity limit is 10 percent (6-min average) for air curtain incinerators that can combust at least 35 tons per day of municipal solid waste and no more than 250 tons per day of municipal solid waste</li> <li>– the opacity limit is 35 percent (6-min average) during the startup period that is within the first 30 min of operation.</li> </ul> <p>(NOTE: Except during malfunctions, the requirements of this checklist item apply at all times. Each malfunction must not exceed 3 h.)</p> <p>Verify that monitoring of opacity for air curtain incinerators that burn 100 percent yard waste meets the following:</p> <ul style="list-style-type: none"> <li>– use USEPA Reference Method 9 in Appendix A of 40 CFR 60 to determine compliance with the opacity limit</li> <li>– conduct an initial test for opacity as specified in 40 CFR 60.8</li> <li>– after the initial test for opacity, conduct annual tests no more than 13 calendar months following the date of the previous test.</li> </ul>

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<p><b>AE.25.5.US.</b> Air curtain incinerators that burn 100 percent wood wastes, clean lumber and/or yard waste must operate according to certain parameters by 4 October 2004 (40 CFR 62.14765 through 62.14825) [Added January 2004].</p>	<p>Verify that the facility provides a notice of construction that includes the following:</p> <ul style="list-style-type: none"> <li>– intent to construct the air curtain incinerator</li> <li>– planned initial startup date</li> <li>– types of fuels to be combust in the air curtain incinerator</li> <li>– the capacity of the incinerator, including supporting capacity</li> <li>– calculations.</li> </ul> <p>Verify that the facility keeps records of results of all opacity tests onsite in either paper copy or electronic format unless the Administrator approves another format.</p> <p>Verify that all records for each incinerator are kept for at least 5 yr.</p> <p>Verify that all records are made available for submittal to the Administrator or for onsite review by an inspector.</p> <p>Verify that the results (each 6-min average) of the opacity tests are submitted by February 1 of the year following the year of the opacity emission test.</p> <p>Verify that reports are submitted as a paper copy on or before the applicable submittal date, or, if the Administrator agrees, submit reports on electronic media.</p> <p>(NOTE: If the Administrator agrees, the annual reporting dates may be changed.)</p> <p>Verify that the facility keeps a copy of all reports onsite for a period of 5 yr.</p> <p>(NOTE: An air curtain incinerator operates by forcefully projecting a curtain of air across an open chamber or open pit in which combustion occurs. Incinerators of this type can be constructed above or below ground and with or without refractory walls and floor. Air curtain incinerators are different from conventional combustion devices which typically have enclosed fireboxes and controlled air technology such as mass burn, modular, and fluidized bed combustors.)</p> <p>Verify that, after the date the initial test for opacity is required or completed (whichever is earlier), the opacity limitation is 10 percent (6-min average) except that the opacity limitation can be 35 percent (6-min average) during the startup period that is within the first 30 min of operation.</p> <p>(NOTE: The opacity limitations apply at all times except during malfunctions and each malfunction must not exceed 3 h.)</p> <p>Verify that opacity monitoring is done according to Method 9 of 40 CFR 60, Appendix A to determine compliance with the opacity limitation.</p> <p>Verify that an initial test for opacity is done no later than 2 January 2005.</p>

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	<p>Verify that, after the initial test for opacity, the facility conducts annual tests no more than 12 calendar mo following the date of the previous test.</p> <p>Verify that records of results of all initial and annual opacity tests onsite are kept in either paper copy or electronic format, unless the Administrator approves another format, for at least 5 yr.</p> <p>Verify that all records are made available for submittal to the Administrator or for an inspector's onsite review.</p> <p>Verify that an initial report including the following information is submitted no later than 60 days following the initial opacity test:</p> <ul style="list-style-type: none"> <li>– the types of materials to be combusted in the air curtain incinerator</li> <li>– the results (each 6-min average) of the initial opacity tests.</li> </ul> <p>Verify that annual opacity test results are submitted within 12 mo following the previous report.</p> <p>Verify that initial and annual opacity test reports are submitted as electronic or paper copy on or before the applicable submittal date and a copy is kept onsite for a period of 5 yr.</p> <p>(NOTE: Final compliance is achieved when all equipment changes and retrofit installation control devices are done so that, when the affected air curtain incinerator is placed into service, all necessary equipment and air pollution control devices operate as designed and meet the opacity limits.)</p> <p>Verify that, if the facility closes the air curtain incinerator but plans to reopen it prior to the final compliance date, final compliance is achieved by 4 October 2004.</p> <p>Verify that, if the facility closes the air curtain incinerator but plans to restart it after 4 October 2004, any needed emission control retrofits are completed and the air curtain incinerator meets opacity limits on the date the incinerator restarts operation.</p> <p>(NOTE: Facilities with air curtain incinerators that burn 100 percent wood wastes, clean lumber and/or yard waste are subject to the operating permit requirements of title V of the CAA and 40 CFR 70 or 71 until the facility closes the air curtain incinerator and at the time the facility restarts it.)</p> <p>Verify that, if the facility plans to permanently close the air curtain incinerator and not restart it, the facility submits a closure notification, including the date of closure, to the Administrator by 31 June 2004.</p>

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<p><b>AE.25.6.US.</b> A siting analysis is required when starting the construction, reconstruction, or modification of an OSWI unit after 16 June 2006 (40 CFR 60.2880, 60.2881, 60.2885 through 60.2888, 60.2894, and 60.2895) [Added January 2006].</p>	<p>Verify that, if the facility starts construction, reconstruction, or modification of an OSWI unit after 16 June 2006, a siting analysis is done.</p> <p>Verify that the siting analysis considers air pollution control alternatives that minimize, on a site-specific basis, to the maximum extent practicable, potential risks to public health or the environment.</p> <p>(NOTE: In considering such alternatives, the facility may consider costs, energy impacts, nonair environmental impacts, or any other factors related to the practicability of the alternatives.)</p> <p>(NOTE: Analyses of the OSWI unit's impacts that are prepared to comply with State, local, or other Federal regulatory requirements may be used to satisfy this requirement, provided they include the consideration of air pollution control alternatives.)</p> <p>Verify that the siting requirements are complete and submitted prior to commencing construction, reconstruction, or modification.</p> <p>(NOTE: If the facility commences construction, reconstruction, or modification of an OSWI unit after 9 December 2004, but before 16 June 2006, you are not required to prepare the specified siting analysis.)</p> <p>(NOTE: Other solid waste incineration (OSWI) units are very small municipal waste combustion units and institutional waste incineration units. The requirements for OSWI take effect June 16, 2006. Although some of the requirements apply to planning the incineration unit and must be completed even before construction is initiated on the unit (i.e., the preconstruction requirements in 40 CFR 60.2894 and 60.2895). Other requirements such as the emission limitations and operating limits apply when the unit begins operation.)</p> <p>(NOTE: These requirements apply to incineration units which meet all of the following requirements:</p> <ul style="list-style-type: none"> <li>– the incineration unit is a new incineration unit which commenced <ul style="list-style-type: none"> <li>– construction after 9 December 2004.</li> <li>– reconstruction or modification on or after 16 June 2006</li> </ul> </li> <li>– the incineration unit is an OSWI unit as defined in 40 CFR 60.2977 [see the <i>Definitions</i>] or an air curtain incinerator subject to these requirements as described in 40 CFR 60.2888(b) [NOTE: Other solid waste incineration units are very small municipal waste combustion units and institutional waste incineration units as defined in 40 CFR 60.2977].</li> </ul> <p>See also the Definition for the term <i>Excluded OSWI</i>.)</p> <p>(NOTE: These requirements do not affect the incineration unit if the facility makes physical or operational changes to the incineration unit primarily to comply with</p>

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<p><b>AE.25.7.US.</b> OSWI units are required to have a Waste Management Plan after 16 June 2006 (40 CFR 60.2899 through 60.2901) [<b>Added January 2006</b>].</p>	<p>the emission guidelines in 40 CFR Subpart FFFF. Such changes do not qualify as reconstruction or modification.)</p> <p>(NOTE: Air curtain incinerators that burn less than 35 tons per day of municipal solid waste or air curtain incinerators located at institutional facilities burning any amount of institutional waste generated at that facility are subject to these requirements, including the emission limitations specified in Table 1 (see Appendix 1-2a). Air curtain incinerators that burn less than 35 tons per day of the following materials collected from the general public and from residential, commercial, institutional, and industrial sources must meet the requirements in 40 CFR 2970 through 60.2974 (see checklist item AE.25.19.US):</p> <ul style="list-style-type: none"> <li>– 100 percent wood waste</li> <li>– 100 percent clean lumber</li> <li>– 100 percent yard waste</li> <li>– 100 percent mixture of only wood waste, clean lumber, and/or yard waste.</li> </ul> <p>Air curtain incinerators located at institutional facilities that burn only the following materials generated at that facility, are required to meet only the requirements in 40 CFR 60.2970 through 60.2974 (see checklist item AE.25.19.US) and are exempt from all other requirements:</p> <ul style="list-style-type: none"> <li>– 100 percent wood waste</li> <li>– 100 percent clean lumber</li> <li>– 100 percent yard waste</li> <li>– 100 percent mixture of only wood waste, clean lumber, and/or yard waste.)</li> </ul> <p>(NOTE: See checklist item AE.25.6.US for details on when these requirements do and do not apply.)</p> <p>Verify that a waste management plan is submitted prior to commencing construction, reconstruction, or modification.</p> <p>Verify that the waste management plan is a written plan that identifies both the feasibility and the methods used to reduce or separate certain components of solid waste from the waste stream in order to reduce or eliminate toxic emissions from incinerated waste.</p> <p>Verify that the waste management plan includes consideration of the reduction or separation of waste-stream elements such as paper, cardboard, plastics, glass, batteries, or metals; or the use of recyclable materials.</p> <p>Verify that the waste management plan identifies any additional waste management measures and implements those measures the source considers practical and feasible, considering the effectiveness of waste management measures already in place, the costs of additional measures, the emissions reductions expected to be achieved, and any other environmental or energy impacts they might have.</p>

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<b>AE.25.8.US.</b> OSWI unit operators must be trained (40 CFR 60.2905 through 60.2901) [Added January 2006].	<p>(NOTE: See checklist item AE.25.6.US for details on when these requirements do and do not apply.)</p> <p>Verify that the OSWI unit does not operate unless a fully trained and qualified OSWI unit operator is accessible, either at the facility or can be at the facility within 1 h.</p> <p>(NOTE: The trained and qualified OSWI unit operator may operate the OSWI unit directly or be the direct supervisor of one or more other plant personnel who operate the unit.)</p> <p>If all qualified OSWI unit operators are temporarily not accessible, you must follow the procedures in 40 CFR 60.2911 (see checklist item AE.25.10.US).</p> <p>Verify that operator training and qualification is obtained through a State-approved program or by completing an incinerator operator training course that includes, at a minimum, the following elements:</p> <ul style="list-style-type: none"> <li>– training on following subjects listed:             <ul style="list-style-type: none"> <li>– environmental concerns, including types of emissions</li> <li>– basic combustion principles, including products of combustion</li> <li>– operation of the specific type of incinerator to be used by the operator, including proper startup, waste charging, and shutdown procedures</li> <li>– combustion controls and monitoring</li> <li>– operation of air pollution control equipment and factors affecting performance (if applicable)</li> <li>– inspection and maintenance of the incinerator and air pollution control devices</li> <li>– methods to monitor pollutants (including monitoring of incinerator and control device operating parameters) and monitoring equipment calibration procedures, where applicable</li> <li>– actions to correct malfunctions or conditions that may lead to malfunction</li> <li>– bottom and fly ash characteristics and handling procedures.</li> <li>– applicable Federal, State, and local regulations, including OSHA workplace standards</li> <li>– pollution prevention</li> <li>– waste management practices</li> <li>– recordkeeping requirements</li> </ul> </li> <li>– an examination designed and administered by the instructor</li> <li>– written material covering the training course topics that may serve as reference material following completion of the course.</li> </ul> <p>Verify that the operator training course is completed by the latest of the following three dates:</p>

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<p><b>AE.25.9.US.</b> OSWI operators are required to keep specific documentation onsite (40 CFR 60.2910) <b>[Added January 2006]</b>.</p>	<ul style="list-style-type: none"> <li>– 6 mo after OSWI unit startup</li> <li>– 18 December 2006</li> <li>– the date before an employee assumes responsibility for operating the OSWI unit or assumes responsibility for supervising the operation of the OSWI unit.</li> </ul> <p>Verify that operator qualification is obtained by completing a satisfactory training course.</p> <p>(NOTE: Qualification is valid from the date on which the training course is completed and the operator successfully passes the examination.)</p> <p>Verify that, in order to maintain qualification, the OSWI operator completes an annual review or refresher course covering, at a minimum, the following topics:</p> <ul style="list-style-type: none"> <li>– update of regulations</li> <li>– incinerator operation, including startup and shutdown procedures, waste charging, and ash handling</li> <li>– inspection and maintenance</li> <li>– responses to malfunctions or conditions that may lead to malfunction</li> <li>– discussion of operating problems encountered by attendees.</li> </ul> <p>Verify that, if the OSWI operator certification has lapsed, it is renewed by one of the following two methods:</p> <ul style="list-style-type: none"> <li>– for a lapse of less than 3 yr, complete a standard annual refresher course</li> <li>– for a lapse of 3 yr or more, the initial qualification requirements and training.</li> </ul> <p>(NOTE: See checklist item AE.25.6.US for details on when these requirements do and do not apply.)</p> <p>Verify that documentation is available at the facility and readily accessible for all OSWI unit operators that addresses the following topics:</p> <ul style="list-style-type: none"> <li>– summary of the applicable standards</li> <li>– procedures for receiving, handling, and charging waste</li> <li>– incinerator startup, shutdown, and malfunction procedures</li> <li>– procedures for maintaining proper combustion air supply levels</li> <li>– procedures for operating the incinerator and associated air pollution control systems</li> <li>– monitoring procedures for demonstrating compliance with the operating limits</li> <li>– reporting and recordkeeping procedures</li> <li>– the waste management plan required under 60.2899 through 60.2901 (see checklist item AE.25.8.US)</li> <li>– procedures for handling ash.</li> </ul>

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<p><b>AE.25.10.US.</b> If all qualified operators are temporarily not accessible, certain actions must be taken (40 CFR 60.2911) <b>[Added January 2006].</b></p>	<p>Verify that there is a program to review the above listed information with each incinerator operator.</p> <p>Verify that the initial review of the information is done by 18 December 2006 or prior to an employee's assumption of responsibilities for operation of the OSWI unit, whichever date is later.</p> <p>Verify that subsequent annual reviews of the above information are done not later than 12 mo following the previous review.</p> <p>Verify that records are kept showing the names of OSWI unit operators who have completed a review of the information, including the date of the initial review and all subsequent annual reviews.</p> <p>Verify that records are kept showing the names of the OSWI unit operators who have completed the operator training requirements, met the criteria for qualification, and maintained or renewed their qualification.</p> <p>Verify that records include documentation of training, the dates of the initial and refresher training, and the dates of their qualification and all subsequent renewals of such qualifications.</p> <p>Verify that there is a record for each qualified operator of the phone and/or pager number at which they can be reached during operating hours.</p> <p>Verify that this information and the training records are maintained in a manner that they can be readily accessed and are suitable for inspection upon request.</p> <p>(NOTE: See checklist item AE.25.6.US for details on when these requirements do and do not apply.)</p> <p>Verify that, if all qualified operators are temporarily not accessible (i.e., not at the facility and not able to be at the facility within 1 h), one of the following 3 criteria are met, depending on the length of time that a qualified operator is not accessible:</p> <ul style="list-style-type: none"> <li>– when all qualified operators are not accessible for 12 h or less, the OSWI unit is operated by other plant personnel familiar with the operation of the OSWI unit who have completed review of the information specified in 40 CFR 60.2910(a) within the past 12 mo (NOTE: The Administrator does not need to be notified and neither should this be included as a deviation in the annual report)</li> <li>– when all qualified operators are not accessible for more than 12 h, but less than 2 weeks, the OSWI unit is operated by other plant personnel familiar with the operation of the OSWI unit who have completed a review of the information specified in 40 CFR 60.2910(a) (see checklist item AE.25.9.US) within the past 12 mo and:</li> </ul>

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<p><b>AE.25.11.US.</b> OSWI must meet specific emissions limitations and operating limitations (40 CFR 60.2915 through 60.2918) <b>[Added January 2006]</b>.</p>	<ul style="list-style-type: none"> <li>– the period when all qualified operators were not accessible is recorded</li> <li>– this deviation is included in the annual report.</li> </ul> <p>Verify that, when all qualified operators are not accessible for 2 weeks or more, the following two actions are taken:</p> <ul style="list-style-type: none"> <li>– the Administrator is notified of this deviation in writing within 10 days with the notice stating: <ul style="list-style-type: none"> <li>– what caused this deviation</li> <li>– what the facility is doing to ensure that a qualified operator is accessible</li> <li>– when the facility anticipates that a qualified operator will be accessible.</li> </ul> </li> <li>– a status report is submitted to EPA every 4 weeks outlining: <ul style="list-style-type: none"> <li>– what is being done to ensure that a qualified operator is accessible</li> <li>– when it is anticipated that a qualified operator will be accessible</li> <li>– requesting approval from EPA to continue operation of the OSWI unit.</li> </ul> </li> </ul> <p>Verify that the first status report is submitted 4 weeks after notifying the Administrator of the deviation.</p> <p>(NOTE: If EPA notifies the facility that the request to continue operation of the OSWI unit is disapproved, the OSWI unit may continue operation for 90 days, then must cease operation. Operation of the unit may resume if the following requirements are met:</p> <ul style="list-style-type: none"> <li>– a qualified operator is accessible as required</li> <li>– EPA is notified that a qualified operator is accessible and that the facility is resuming operation.</li> </ul> <p>(NOTE: See checklist item AE.25.6.US for details on when these requirements do and do not apply.)</p> <p>Verify that the emissions limitations outlined in Table 1 (see Appendix 1-2a) are met 60 days after the OSWI unit reaches the charge rate at which it will operate, but no later than 180 days after its initial startup.</p> <p>(NOTE: The emission limitations and operating limits apply at all times except during OSWI unit startups, shutdowns, or malfunctions.)</p> <p>Verify that, if the facility uses a wet scrubber to comply with the emission limitations, operating limits are established for four operating parameters (as specified in Table 2 [see Appendix 1-2b]) as described below during the initial performance test:</p> <ul style="list-style-type: none"> <li>– maximum charge rate, calculated using one of the following two different procedures, as appropriate:</li> </ul>

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	<ul style="list-style-type: none"> <li>– for continuous and intermittent units, maximum charge rate is the average charge rate measured during the most recent performance test demonstrating compliance with all applicable emission limitations</li> <li>– for batch units, maximum charge rate is the charge rate measured during the most recent performance test demonstrating compliance with all applicable emission limitations</li> <li>– minimum pressure drop across the wet scrubber, which is calculated as the average pressure drop across the wet scrubber measured during the most recent performance test demonstrating compliance with the particulate matter emission limitations; or minimum amperage to the wet scrubber, which is calculated as the average amperage to the wet scrubber measured during the most recent performance test demonstrating compliance with the particulate matter emission limitations</li> <li>– minimum scrubber liquor flow rate, which is calculated as the average liquor flow rate at the inlet to the wet scrubber measured during the most recent performance test demonstrating compliance with all applicable emission limitations</li> <li>– minimum scrubber liquor pH, which is calculated as the average liquor pH at the inlet to the wet scrubber measured during the most recent performance test demonstrating compliance with the hydrogen chloride and SO<sub>2</sub> emission limitations.</li> </ul> <p>Verify that the facility meets the operating limits established during the initial performance test 60 days after the OSWI unit reaches the charge rate at which it will operate, but no later than 180 days after its initial startup.</p> <p>Verify that, if an air pollution control device other than a wet scrubber or emissions are limited in some other manner to comply with the emission limitations under 40 CFR 60.2915, the facility must petition EPA for specific operating limits, the values of which are to be established during the initial performance test and then continuously monitored thereafter.</p> <p>Verify that, if air pollution control devices other than a wet scrubber or emissions are limited in some other manner, the initial performance test is not done until after the petition has been approved by EPA.</p> <p>Verify that a petition includes the following:</p> <ul style="list-style-type: none"> <li>– identification of the specific parameters you propose to use as operating limits</li> <li>– a discussion of the relationship between these parameters and emissions of regulated pollutants, identifying how emissions of regulated pollutants change with changes in these parameters, and how limits on these parameters will serve to limit emissions of regulated pollutants</li> <li>– a discussion of how you will establish the upper and/or lower values for these parameters that will establish the operating limits on these parameters</li> </ul>

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<b>AE.25.12.US.</b> OSWI must conduct performance testing (40 CFR 60.2922) [Added January 2006].	<ul style="list-style-type: none"> <li>– a discussion identifying the methods you will use to measure and the instruments you will use to monitor these parameters, as well as the relative accuracy and precision of these methods and instruments</li> <li>– a discussion identifying the frequency and methods for recalibrating the instruments you will use for monitoring these parameters.</li> </ul> <p>(NOTE: See checklist item AE.25.6.US for details on when these requirements do and do not apply.)</p> <p>Verify that all performance tests consist of a minimum of three test runs conducted under conditions representative of normal operations.</p> <p>Verify that all performance tests are conducted using the methods in Table 1 (see Appendix 1-2a).</p> <p>Verify that all performance tests are conducted using the minimum run duration specified in Table 1 (see Appendix 1-2a).</p> <p>Verify that Method 1 of appendix A is used to select the sampling location and number of traverse points.</p> <p>Verify that Method 3A or 3B of appendix A are used for gas composition analysis, including measurement of oxygen concentration.</p> <p>Verify that Method 3A or 3B of appendix A are used simultaneously with each method.</p> <p>Verify that all pollutant concentrations, except for opacity, are adjusted to 7 percent oxygen using Equation 1 in 40 CFR 60.2975.</p> <p>Verify that Method 26A of appendix A is used for hydrogen chloride concentration analysis, with the following additional requirements:</p> <ul style="list-style-type: none"> <li>– the probe and filter are conditioned prior to sampling using the following procedure:               <ul style="list-style-type: none"> <li>– assemble the sampling train(s) and conduct a conditioning run by collecting between 14 L/min (0.5 cubic feet/min) and 30 L/min (1.0 cubic feet/min) of gas over a 1-ho period following the sampling procedures outlined in section 8.1.5 of Method 26A of appendix A (NOTE: For the conditioning run, water can be used as the impinger solution)</li> <li>– remove the impingers from the sampling train and replace with a fresh impinger train for the sampling run, leaving the probe and filter (and cyclone, if used) in position and do not recover the filter or rinse the probe before the first run (NOTE: Thoroughly rinse the impingers used in the preconditioning run with deionized water and discard these rinses)</li> </ul> </li> </ul>

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<p><b>AE.25.13.US.</b> OSWI must demonstrate initial and ongoing compliance (40 CFR 60.2927 through 60.2934) [Added January 2006].</p>	<ul style="list-style-type: none"> <li>– the probe and filter assembly are conditioned by the stack gas and are not recovered or cleaned until the end of testing</li> <li>– for the duration of sampling, a temperature around the probe and filter (and cyclone, if used) between 120 °C (248 °F) and 134 °C (273 °F) must be maintained</li> <li>– if water droplets are present in the sample gas stream, the following requirements must be met: <ul style="list-style-type: none"> <li>– the cyclone described in section 6.1.4 of Method 26A of appendix A of is used</li> <li>– the post-test moisture removal procedure described in section 8.1.6 of Method 26A of appendix A is used.</li> </ul> </li> </ul> <p>Verify that the facility uses the results of performance tests to demonstrate compliance with the emission limitations in Table 1 (see Appendix 1-2a).</p> <p>(NOTE: See checklist item AE.25.6.US for details on when these requirements do and do not apply.)</p> <p>Verify that the facility conducts an initial performance test, as required under 40 CFR 60.8, to determine compliance with the emission limitations in Table 1 (see Appendix 1-2a) and to establish operating limits using the procedure in 40 CFR 60.2916 or 40 CFR 60.2917 (see checklist item AE.25.11.US).</p> <p>Verify that the initial performance test is conducted using the test methods listed in Table 1 (see Appendix 1-2a) and the procedures in 40 CFR 60.2922.</p> <p>Verify that the initial performance test is conducted within 60 days after the OSWI unit reaches the charge rate at which it will operate, but no later than 180 days after its initial startup.</p> <p>Verify that an annual performance test is conducted for all of the pollutants in Table 1 (see Appendix 1-2a) for each OSWI unit to determine compliance with the emission limitations.</p> <p>Verify that the annual performance test is conducted using the test methods listed in Table 1 (see Appendix 1-2a) and the procedures in 40 CFR 60.2922.</p> <p>Verify that CO emissions are continuously monitored to determine compliance with the CO emissions limitation.</p> <p>(NOTE: Twelve-hour rolling average values are used to determine compliance. A 12-h rolling average value above the CO emission limit in Table 1 (see Appendix 1-2a) constitutes a deviation from the emission limitation.)</p>

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<p><b>AE.25.14.US.</b> OSWI must have monitoring done (40 CFR 60.2939 through 60.2945) [Added January 2006].</p>	<p>Verify that the operating parameters specified in 40 CFR 60.2916 or established under 40 CFR 60.2917 (see checklist item AE.25.11.US) are continuously monitored.</p> <p>(NOTE: Three-hour rolling average values are used to determine compliance with the operating limits unless a different averaging period is established under 40 CFR 60.2917 [see checklist item AE.25.11.US]. A 3-h rolling average value [unless a different averaging period is established under 40 CFR 60.2917] above the established maximum or below the established minimum operating limits constitutes a deviation from the established operating limits. Operating limits do not apply during performance tests.)</p> <p>Verify that annual performance tests are conducted within 12 mo following the initial performance test and subsequent annual performance tests are conducted within 12 mo following the previous one.</p> <p>(NOTE: The facility can test less often for a given pollutant if there is test data for at least three consecutive annual tests, and all performance tests for the pollutant over that period show that facility complies with the emission limitation. In this case, you do not have to conduct a performance test for that pollutant for the next 2 yr. The facility must conduct a performance test during the 3rd year and no more than 36 mo following the previous performance test.)</p> <p>(NOTE: If the OSWI unit continues to meet the emission limitation for the pollutant, the facility may choose to conduct performance tests for that pollutant every 3rd year, but each test must be within 36 mo of the previous performance test.)</p> <p>Verify that, if a performance test shows a deviation from an emission limitation for any pollutant, annual performance tests are conducted for that pollutant until three consecutive annual performance tests for that pollutant all show compliance.</p> <p>(NOTE: A repeat performance test may be done at any time to establish new values for the operating limits. The Administrator may request a repeat performance test at any time.)</p> <p>(NOTE: See checklist item AE.25.6.US for details on when these requirements do and do not apply.)</p> <p>Verify that continuous emission monitoring systems for CO and for oxygen are installed, calibrated, maintained, and operated.</p> <p>Verify that the oxygen concentration is monitored at each location where CO is monitored.</p>

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	<p>Verify that each continuous emission monitoring system is installed, evaluated, and operated according to the “Monitoring Requirements” in 40 CFR 60.13.</p> <p>Verify that initial, daily, quarterly, and annual evaluations are conducted of the continuous emission monitoring systems that measure CO and oxygen.</p> <p>Verify that the initial evaluation of the CEMS is completed within 60 days after the OSWI unit reaches the maximum load level at which it will operate, but no later than 180 days after its initial startup.</p> <p>Verify that, for initial and annual evaluations, data is collected concurrently (or within 30 to 60 min) using the CO and oxygen CEMS.</p> <p>(NOTE: To validate CO concentration levels, use EPA Method 10, 10A, or 10B of appendix A. Use EPA Method 3 or 3A to measure oxygen. Collect the data during each initial and annual evaluation of your continuous emission monitoring systems following the applicable performance specifications in appendix B. Table 3 (see Appendix 1-2c) shows the required span values and performance specifications that apply to each continuous emission monitoring system.)</p> <p>Verify that the quality assurance procedures in Procedure 1 of appendix F are followed for each continuous emission monitoring system.</p> <p>(NOTE: The procedures include daily calibration drift and quarterly accuracy determinations.)</p> <p>Verify that annual evaluations of the continuous emission monitoring systems are conducted no more than 12 mo after the previous evaluation was conducted.</p> <p>Verify that the continuous emission monitoring systems are evaluated daily and quarterly as specified in appendix F.</p> <p>Verify that, where continuous emission monitoring systems are required, 1-h arithmetic averages are obtained.</p> <p>Verify that the averages for CO are in parts per million by dry volume at 7 percent oxygen.</p> <p>Verify that the 1-h averages of oxygen data from the CEMS is used to determine the actual oxygen level and to calculate emissions at 7 percent oxygen.</p> <p>Verify that at least two data points per hour are obtained in order to calculate a valid 1-h arithmetic average.</p>

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	<p>(NOTE: Section 40 CFR 60.13(e)(2) requires the CEMS to complete at least one cycle of operation (sampling, analyzing, and data recording) for each 15-min period.)</p> <p>Verify that valid 1-h averages are obtained for at least 75 percent of the operating hours per day for at least 90 percent of the operating days per calendar quarter.</p> <p>(NOTE: An operating day is any day the unit combusts any municipal or institutional solid waste.)</p> <p>(NOTE: If the required minimum data is not obtained, the facility has deviated from the data collection requirement regardless of the emission level monitored. If the minimum required data is not obtained, use all valid data from the continuous emission monitoring systems in calculating emission concentrations.)</p> <p>(NOTE: If continuous emission monitoring systems are temporarily unavailable to meet the data collection requirements, refer to Table 3 (see Appendix 1-2c). It shows alternate methods for collecting data when systems malfunction or when repairs, calibration checks, or zero and span checks keep you from collecting the minimum amount of data.)</p> <p>(NOTE: Use Equation 1 in 40 CFR 60.2975 to calculate emissions at 7 percent oxygen. Use Equation 2 in 40 CFR 60.2975 to calculate the 12-h rolling averages for concentrations of CO.)</p> <p>Verify that, if the facility is using a wet scrubber to comply with the emission limitations under 40 CFR 60.2915 (see checklist item AE.25.11.US), the facility has installed, calibrated (to manufacturers' specifications), maintained, and operated devices (or establish methods) for monitoring the value of the operating parameters used to determine compliance with the operating limits listed in Table 2 (see Appendix 1-2b).</p> <p>Verify that these devices (or methods) measure and record the values for these operating parameters at the frequencies indicated in Table 2 (see Appendix 1-2b) at all times.</p> <p>Verify that the facility installs, calibrates (to manufacturers' specifications), maintains, and operates a device or method for measuring the use of any stack that could be used to bypass the control device.</p> <p>(NOTE: The measurement must include the date, time, and duration of the use of the bypass stack.)</p> <p>Verify that, if the facility is using a method or air pollution control device other than a wet scrubber to comply with the emission limitations under 40 CFR 60.2915, the facility installs, calibrates (to the manufacturers' specifications), maintains, and operates the equipment necessary to monitor compliance with the site-specific</p>

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<p><b>AE.25.15.US.</b> Certain records must be kept by OSWI (40 CFR 60.2949 through 60.2950) [Added January 2006].</p>	<p>operating limits established using the procedures in 40 CFR 60.2917 (see checklist item AE.25.11.US).</p> <p>Verify that, except for monitor malfunctions, associated repairs, and required quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments of the monitoring system), all monitoring is conducted at all times the OSWI unit is operating.</p> <p>Verify that the facility obtains valid monitoring data for at least 75 percent of the operating hours per day for at least 90 percent of the operating days per calendar quarter.</p> <p>(NOTE: An operating day is any day the unit combusts any municipal or institutional solid waste.)</p> <p>(NOTE: If the facility does not obtain the required minimum data, the facility has deviated from the data collection requirement regardless of the operating parameter level monitored.)</p> <p>Verify that data recorded during monitor malfunctions, associated repairs, and required quality assurance or quality control activities is not used for meeting these requirements, including data averages and calculations.</p> <p>(NOTE: See checklist item AE.25.6.US for details on when these requirements do and do not apply.)</p> <p>Verify that the following records are kept for a period of at least 5 yr:</p> <ul style="list-style-type: none"> <li>– calendar date of each record</li> <li>– records of the following data: <ul style="list-style-type: none"> <li>– the OSWI unit charge dates, times, weights, and hourly charge rates</li> <li>– liquor flow rate to the wet scrubber inlet every 15 min of operation, as applicable</li> <li>– pressure drop across the wet scrubber system every 15 min of operation or amperage to the wet scrubber every 15 min of operation, as applicable</li> <li>– liquor pH as introduced to the wet scrubber every 15 min of operation, as applicable</li> <li>– for OSWI units that establish operating limits for controls other than wet scrubbers, data collected for all operating parameters used to determine compliance with the operating limits</li> <li>– all 1-h average concentrations of CO emissions</li> <li>– all 12-h rolling average values of CO emissions and all 3-h rolling average values of continuously monitored operating parameters</li> <li>– records of the dates, times, and durations of any bypass of the control device.</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– identification of calendar dates and times for which continuous emission monitoring systems or monitoring systems used to monitor operating limits were inoperative, inactive, malfunctioning, or out of control (except for downtime associated with zero and span and other routine calibration checks) (NOTE: Identify the pollutant emissions or operating parameters not measured, the duration, reasons for not obtaining the data, and a description of corrective actions taken)</li> <li>– identification of calendar dates, times, and durations of malfunctions, and a description of the malfunction and the corrective action taken</li> <li>– identification of calendar dates and times for which monitoring data show a deviation from the CO emissions limit in Table 1 (see Appendix 1-2a) or a deviation from the operating limits in Table or a deviation from other operating limits established under 40 CFR 60.2917 (see checklist item AE.25.11.US) with a description of the deviations, reasons for such deviations, and a description of corrective actions taken</li> <li>– calendar dates when continuous monitoring systems did not collect the minimum amount of data required under 40 CFR 60.2942 and 60.2945 (see checklist item AE.25.14.US)</li> <li>– for CO CEMS, document the results of daily drift tests and quarterly accuracy determinations according to Procedure 1 of appendix F</li> <li>– records of the calibration of any monitoring devices required under 40 CFR 60.2944 (see checklist item AE.25.14.US)</li> <li>– the results of the initial, annual, and any subsequent performance tests conducted to determine compliance with the emission limits and/or to establish operating limits, as applicable (NOTE: Retain a copy of the complete test report including calculations and a description of the types of waste burned during the test)</li> <li>– all documentation produced as a result of the siting requirements of 40 CFR 60.2894 and 60.2895 (see checklist items number AE.25.6.US)</li> <li>– records showing the names of OSWI unit operators who have completed review of the information in 40 CFR 60.2910(a) (see checklist item AE.25.9.US), including the date of the initial review and all subsequent annual reviews</li> <li>– records showing the names of the OSWI unit operators who have completed the operator training requirements, met the criteria for qualification, and maintained or renewed their qualification (NOTE: Records must include documentation of training, the dates of the initial and refresher training, and the dates of their qualification and all subsequent renewals of such qualifications)</li> <li>– for each qualified operator, the phone and/or pager number at which they can be reached during operating hours</li> <li>– equipment vendor specifications and related operation and maintenance requirements for the incinerator, emission controls, and monitoring equipment</li> <li>– the information listed in 40 CFR 60.2910(a) (see checklist item AE.25.9.US).</li> </ul>

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<p><b>AE.25.16.US.</b> Certain reporting must be done by OSWI (40 CFR 60.2952 through 60.2960) [Added January 2006].</p>	<p>Verify that each record is kept onsite for at least 2 yr.</p> <p>(NOTE: The records may be kept offsite for the remaining 3 yr.)</p> <p>Verify that all records are available in either paper copy or computer-readable format that can be printed upon request, unless an alternative format is approved by the Administrator.</p> <p>(NOTE: See checklist item AE.25.6.US for details on when these requirements do and do not apply.)</p> <p>(NOTE: See Table 4 for a summary of the reporting requirements.)</p> <p>Verify that the facility submits a notification prior to commencing construction that includes the following items:</p> <ul style="list-style-type: none"> <li>– a statement of intent to construct</li> <li>– the anticipated date of commencement of construction</li> <li>– all documentation produced as a result of the siting requirements</li> <li>– the waste management plan</li> <li>– anticipated date of initial startup.</li> </ul> <p>Verify that the following information is submitted prior to initial startup:</p> <ul style="list-style-type: none"> <li>– the type(s) of waste to be burned</li> <li>– the maximum design waste burning capacity</li> <li>– the anticipated maximum charge rate</li> <li>– if applicable, the petition for site-specific operating limits</li> <li>– the anticipated date of initial startup.</li> </ul> <p>Verify that the following information is submitted no later than 60 days following the initial performance test and all reports are signed by the facilities manager:</p> <ul style="list-style-type: none"> <li>– the complete test report for the initial performance test results obtained under 40 CFR 60.2927 (see checklist item AE.25.13.US), as applicable</li> <li>– the values for the site-specific operating limits established in 40 CFR 60.2916 or 40 CFR 60.2917 (see checklist item AE.25.11.US).</li> </ul> <p>Verify that an annual report is submitted no later than 12 mo following the submission of the information in 40 CFR 60.2954 and subsequent reports no more than 12 mo following the previous report.</p> <p>Verify that the annual report includes the following:</p> <ul style="list-style-type: none"> <li>– company name and address</li> </ul>

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	<ul style="list-style-type: none"> <li>– statement by the owner or operator, with their name, title, and signature, certifying the truth, accuracy, and completeness of the report</li> <li>– date of report and beginning and ending dates of the reporting period</li> <li>– the values for the established operating limits</li> <li>– if no deviation from any emission limitation or operating limit that applies has been reported, a statement that there was no deviation from the emission limitations or operating limits during the reporting period, and that no monitoring system used to determine compliance with the emission limitations or operating limits was inoperative, inactive, malfunctioning or out of control</li> <li>– the highest recorded 12-h average and the lowest recorded 12-h average, as applicable, for CO emissions and the highest recorded 3-h average and the lowest recorded 3-h average, as applicable, for each operating parameter recorded for the calendar year being reported</li> <li>– information recorded under 40 CFR 60.2949(b)(6) and (c) through (e) (see checklist item AE.25.15.US) for the calendar year being reported</li> <li>– if a performance test was conducted during the reporting period, the results of that test</li> <li>– if the facility met the requirements of 40 CFR 60.2934(a) or (b) (see checklist item number AE.25.13.US), and did not conduct a performance test during the reporting period, state that the facility met the requirements of 40 CFR 60.2934(a) or (b), and, therefore, the facility was not required to conduct a performance test during the reporting period</li> <li>– documentation of periods when all qualified OSWI unit operators were unavailable for more than 12 h, but less than 2 weeks.</li> </ul> <p>Verify that a deviation report is submitted if any recorded 3-h average parameter level is above the maximum operating limit or below the established minimum operating limit, if any recorded 12-h average CO emission rate is above the emission limitation, if the control device was bypassed, or if a performance test was conducted that showed a deviation from any emission limitation.</p> <p>Verify that the deviation report is submitted by August 1 of that year for data collected during the first half of the calendar year (January 1 to June 30), and by February 1 of the following year for data collected during the second half of the calendar year (July 1 to December 31).</p> <p>Verify that , for any pollutant or operating parameter that deviated from the emission limitations or specified operating limits, the deviation report includes the following:</p> <ul style="list-style-type: none"> <li>– the calendar dates and times your unit deviated from the emission limitations or operating limit requirements</li> <li>– the averaged and recorded data for those dates</li> <li>– durations and causes of each deviation from the emission limitations or operating limits and corrective actions</li> </ul>

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<p><b>AE.25.17.US.</b> Certain OSWI must apply for a title V operating permit (40 CFR 60.2966 and 60.2967) [<b>Added January 2006</b>].</p>	<ul style="list-style-type: none"> <li>– a copy of the operating limit monitoring data during each deviation and any test report that documents the emission levels</li> <li>– the dates, times, number, duration, and causes for monitor downtime incidents (other than downtime associated with zero, span, and other routine calibration checks)</li> <li>– whether each deviation occurred during a period of startup, shutdown, or malfunction, or during another period</li> <li>– the dates, times, and durations of any bypass of the control device.</li> </ul> <p>Verify that, if all qualified operators are not accessible for 2 weeks or more, the following actions are taken:</p> <ul style="list-style-type: none"> <li>– a notification of the deviation is submitted within 10 days that includes the following: <ul style="list-style-type: none"> <li>– a statement of what caused the deviation</li> <li>– a description of what you are doing to ensure that a qualified operator is accessible</li> <li>– the anticipated date that a qualified operator will be available</li> </ul> </li> <li>– a status report is submitted to EPA every 4 weeks that includes the following: <ul style="list-style-type: none"> <li>– a description of what is being done to ensure that a qualified operator is accessible</li> <li>– the anticipated date when a qualified operator will be accessible</li> <li>– request approval from EPA to continue operation of the OSWI unit.</li> </ul> </li> </ul> <p>Verify that, If the unit was shut down by EPA due to a failure to provide an accessible qualified operator, the facility must notify EPA that they are resuming operation once a qualified operator is accessible.</p> <p>Verify that the facility submits initial, annual, and deviation reports electronically or in paper format, postmarked on or before the submittal due dates.</p> <p>(NOTE: If the Administrator agrees, the semiannual or annual reporting dates may be changed.)</p> <p>(NOTE: See checklist item AE.25.6.US for details on when these requirements do and do not apply.)</p> <p>Verify that the OSWI owner/operators have applied for, and obtained, a Title V operating permits unless otherwise exempted (see the definition for <i>Excluded OSWI</i>).</p> <p>Verify that, if not subject to an earlier deadline, a complete title V permit application is submitted on or before one of the following dates:</p>

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<p><b>AE.25.18.US.</b> Temporary-use incinerators and air curtain incinerators used in disaster recovery are excluded from the requirements of 40 CFR 60.2880 through 60.2977 (Subpart EEEE) in certain circumstances (40 CFR 60.2969) [Added January 2006].</p>	<ul style="list-style-type: none"> <li>– for a unit that commenced operation as a new source as of 16 December 2005, a complete title V permit application is submitted not later than 18 December 2006</li> <li>– for a unit that does not commence operation as a new source until after 16 December 2005, a complete title V permit application must be submitted not later than 12 mo after the date the unit commences operation as a new source.</li> </ul> <p>(NOTE: If the new OSWI unit subject to these requirements is subject to title V as a result of some triggering requirement(s) other than this regulation (for example, a unit subject to this subpart may be a major source or part of a major source), then the unit may be required to apply for a title V permit prior to the deadlines specified above. If more than one requirement triggers a source's obligation to apply for a title V permit, the 12-mo timeframe for filing a title V permit application is triggered by the requirement that first causes the source to be subject to title V.)</p> <p>(NOTE: A “complete” title V permit application is one that has been determined or deemed complete by the relevant permitting authority under section 503(d) of the Clean Air Act and 40 CFR 70.5(a)(2) or 40 CFR 71.5(a)(2).)</p> <p>(NOTE: You must submit a complete permit application by the relevant application deadline in order to operate after this date in compliance with Federal law.)</p> <p>(NOTE: See checklist item AE.25.6.US for details on when these requirements do and do not apply.)</p> <p>(NOTE: The incinerator or air curtain incinerator is excluded from the requirements of 40 CFR 60, Subpart EEEE if it is used on a temporary basis to combust debris from a disaster or emergency such as a tornado, hurricane, flood, ice storm, high winds, or act of bioterrorism.)</p> <p>Verify that the incinerator or air curtain incinerator is used to combust debris in an area declared a State of Emergency by a local or State government, or the President, under the authority of the Stafford Act, has declared that an emergency or a major disaster exists in the area.</p> <p>(NOTE: If the incinerator or air curtain incinerator is used during a period that begins on the date the unit started operation and lasts 8 weeks or less within the boundaries of the same emergency or disaster declaration area, then it is excluded from the requirements of 40 CFR 60, Subpart EEEE and there is no need to notify the Administrator of its use or meet the emission limitations or other requirements of 40 CFR 60, Subpart EEEE.)</p> <p>Verify that, if the incinerator or air curtain incinerator will be used during a period that begins on the date the unit started operation and lasts more than 8 weeks within the boundaries of the same emergency or disaster declaration area, the Administrator is notified that the temporary-use incinerator or air curtain</p>

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<p><b>AE.25.19.US.</b> Air curtain incinerators that burn only wood waste, clean lumber, and yard waste are only required to meet certain opacity, monitoring, and recordkeeping requirements in certain circumstances (40 CFR</p>	<p>incinerator will be used for more than 8 weeks and permission is requested to continue to operate the unit as follows:</p> <ul style="list-style-type: none"> <li>– the notification is submitted in writing by the date 8 weeks after operation of the temporary-use incinerator or air curtain incinerator starts within the boundaries of the current emergency or disaster declaration area</li> <li>– the notification contains the date the incinerator or air curtain incinerator started operation within the boundaries of the current emergency or disaster declaration area, identification of the disaster or emergency for which the incinerator or air curtain incinerator is being used, a description of the types of materials being burned in the incinerator or air curtain incinerator, a brief description of the size and design of the unit (for example, an air curtain incinerator or a modular starved-air incinerator), the reasons the incinerator or air curtain incinerator must be operated for more than 8 weeks, and the amount of time for which you request permission to operate including the date operation of the unit is expected to cease.</li> </ul> <p>(NOTE: If the notification is submitted on-time and contains all the correct information, the facility may continue to operate the incinerator or air curtain incinerator for another 8 weeks, which is a total of 16 weeks from the date the unit started operation within the boundaries of the current emergency or disaster declaration area without having to meet the emission limitations or other requirements of 40 CFR 60, Subpart EEEE during this period.)</p> <p>Verify that, at the end of 16 weeks from the date the incinerator or air curtain incinerator started operation within the boundaries of the current emergency or disaster declaration area, the facility stops operation of the unit or complies with all requirements of 40 CFR 60, Subpart EEEE unless the Administrator has approved in writing a request to continue operation.</p> <p>(NOTE: If the Administrator has approved in writing the request to continue operation, then the incinerator or air curtain incinerator may continue to operated within the boundaries of the current emergency or disaster declaration area until the date specified in the approval without complying with any other requirements of 40 CFR 60, Subpart EEEE during the approved time period.</p> <p>(NOTE: See checklist item AE.25.6.US for details on when these requirements do and do not apply.)</p> <p>(NOTE: An air curtain incinerator operates by forcefully projecting a curtain of air across an open, integrated combustion chamber (fire box) or open pit or trench (trench burner) in which combustion occurs. For the purpose of 40 CFR 60. Subpart EEEE and subpart FFFF, air curtain incinerators include both firebox and trench burner units.)</p>

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60.2970 through 60.2975) <b>[Added January 2006].</b>	<p>Verify that air curtain incinerators that burn only the following listed materials must meet the requirements in 40 CFR 60.2970 through 60.2974:</p> <ul style="list-style-type: none"> <li>– 100 percent wood waste.</li> <li>– 100 percent clean lumber.</li> <li>– 100 percent yard waste.</li> <li>– 100 percent mixture of only wood waste, clean lumber, and/or yard waste.</li> </ul> <p>Verify that, within 60 days after the air curtain incinerator reaches the charge rate at which it will operate, but no later than 180 days after its initial startup, the following limitations are met:</p> <ul style="list-style-type: none"> <li>– the opacity limitation is 10 percent (6-min average), except during malfunctions</li> <li>– the opacity limitation is 35 percent (6-min average) during the startup period that is within the first 30 min of operation.</li> </ul> <p>Verify that Method 9 of 40 CFR 60, appendix A is used to determine compliance with the opacity limitation.</p> <p>Verify that an initial test for opacity is done as specified in 40 CFR 60.8.</p> <p>(NOTE: After the initial test for opacity, conduct annual tests no more than 12 mo following the date of the previous test. If the air curtain incinerator has been out of operation for more than 12 mo following the date of the previous test, conduct a test for opacity upon startup of the unit.)</p> <p>Verify that, before commencing construction on the air curtain incinerator, the following items are submitted:</p> <ul style="list-style-type: none"> <li>– notification of intent to construct the air curtain incinerator</li> <li>– planned initial startup date</li> <li>– types of materials you to be burned in the air curtain incinerator.</li> </ul> <p>Verify that records of results of all initial and annual opacity tests are kept in either paper copy or computer-readable format that can be printed upon request, unless the Administrator approves another format, for at least 5 yr.</p> <p>Verify that each record is kept onsite for at least 2 yr.</p> <p>(NOTE: The records may be kept off site for the remaining 3 yr.)</p> <p>Verify that all records are available for submittal to the Administrator or for an inspector's review.</p>

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	<p>Verify that the results (each 6-min average) of the initial opacity tests are submitted no later than 60 days following the initial test.</p> <p>Verify that annual opacity test results are submitted within 12 mo following the previous report.</p> <p>Verify that initial and annual opacity test reports are submitted as electronic or paper copy on or before the applicable submittal date.</p> <p>Verify that the facility keeps a copy of the initial and annual reports on site for a period of 5 yr with each report kept onsite for at least 2 yr.</p> <p>(NOTE: The reports may be kept off site for the remaining 3 yr.)</p> <p>(NOTE: If the facility's air curtain incinerator is subject to these requirements, the facility is required to apply for and obtain a title V operating permit as specified in 40 CFR 60.2966 and 60.2967 [see checklist item AE.25.17.US].).</p> <p>(NOTE: See the text of 40 CFR 60.2975 for the equations to be used.)</p>



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<p><b>AE.26</b></p> <p><b>EXISTING COMMERCIAL AND INDUSTRIAL SOLID WASTE INCINERATORS (CISWI)</b></p> <p><b>AE.26.1.US.</b> Combustion units claiming exemption from the regulations for existing CISWI must meet specific requirements (40 CFR 62.14525) [Added January 2004].</p>	<p>Verify that, when the following combustion units claim exemption from the regulatory requirements for CISWI, the owners and operator fulfill the indicated obligations:</p> <ul style="list-style-type: none"> <li>– pathological waste incineration units burning 90 percent or more by weight (on a calendar quarter basis and excluding the weight of auxiliary fuel and combustion air) of pathological waste, low-level radioactive waste, and/or chemotherapeutic waste if the Administrator is notified that the unit meets the exemption criteria and records are maintained on a calendar quarter basis of the weight of pathological waste, low-level radioactive waste, and/or chemotherapeutic waste burned, and the weight of all other fuels and wastes burned in the unit</li> <li>– agricultural waste incineration units burning 90 percent or more by weight (on a calendar quarter basis and excluding the weight of auxiliary fuel and combustion air) of agricultural wastes if the Administrator is notified that the unit meets the exemption criteria and records are maintained on a calendar quarter basis of the weight of agricultural waste burned, and the weight of all other fuels and wastes burned in the unit</li> <li>– municipal waste combustion units that notify the Administrator and keep records on a calendar quarter basis of the weight of municipal solid waste burned, and the weight of all other fuels and wastes burned in the unit if the unit falls into one of the following categories: <ul style="list-style-type: none"> <li>– units that are regulated under 40 CFR 60, Subpart Ea [40 CFR 60.50a through 60.59a, see checklist items AE.35.1.US through AE.35.3.US], Subpart Eb [40 CFR 60.50b through 60.59b, see checklist items AE.36.1.US through AE.36.16.US], Subpart Cb [40 CFR 60.30b through 60.39b, see text of regulation], Subpart AAAA [40 CFR 60.1000 through 60.1465, see checklist items AE.36.17.US through AE.36.28.US], Subpart BBBB: <i>Emission Guidelines and Compliance Times for Small Municipal Waste Combustion Units Constructed On or Before 30 August 1999</i>, or 40 CFR 62, Subpart JJJ: <i>Federal Plan Requirements for Small Municipal Waste Combustion Unit Constructed On or Before 30 August 1999</i></li> <li>– units that burn greater than 30 percent municipal solid waste or refuse-derived fuel, as defined in 40 CFR 60, Subpart Ea [40 CFR 60.50a through 60.59a, see checklist items AE.35.1.US through AE.35.3.US], Subpart Eb [40 CFR 60.50b through 60.59b, see checklist items AE.36.1.US through AE.36.16.US], Subpart AAAA [40 CFR 60.1000 through 60.1465, see</li> </ul> </li> </ul>

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	<p>checklist items AE.36.17.US through AE.36.28.US], and Subpart BBBB: <i>Emission Guidelines and Compliance Times for Small Municipal Waste Combustion Units Constructed On or Before 30 August 1999</i>, and that have the capacity to burn less than 35 tons (32 megagrams) per day of municipal solid waste or refuse-derived fuel</p> <ul style="list-style-type: none"> <li>– medical waste incineration units regulated under 40 CFR 60, Subpart Ec and 40 CFR 60, Subpart Ce: <i>Emission Guidelines and Compliance Times for HMIWI</i>; and 40 CFR 62, Subpart HHH: <i>Federal Plan Requirements for HMIWI Constructed On or Before 20 June 1996</i></li> <li>– small power production facilities that meet the following requirements and notify the Administrator that the unit meets exemption requirements: <ul style="list-style-type: none"> <li>– the unit qualifies as a small power-production facility under section 3(17)(C) of the Federal Power Act (16 U.S.C. 796(17)(C))</li> <li>– the unit burns homogeneous waste (not including refuse-derived fuel) to produce electricity</li> </ul> </li> <li>– cogeneration facilities that meet the following requirements and notify the Administrator that the unit meets exemption requirements: <ul style="list-style-type: none"> <li>– the unit qualifies as a cogeneration facility under section 3(18)(B) of the Federal Power Act (16 U.S.C. 796(18)(B))</li> <li>– the unit burns homogeneous waste (not including refuse-derived fuel) to produce electricity and steam or other forms of energy used for industrial, commercial, heating, or cooling purposes</li> </ul> </li> <li>– hazardous waste combustion units regulated under 40 CFR 63, Subpart EEE: <i>National Emission Standards For HAP from Hazardous Waste Combustors</i></li> <li>– materials recovery units that combust waste for the primary purpose of recovering metals, such as primary and secondary smelters</li> <li>– air curtain incinerators that burn 100 percent wood waste; 100 percent clean lumber; or a 100 percent mixture of only wood waste, clean lumber, and/or yard waste; are required to meet only the requirements 40 CFR 62.14765 through 62.14825 (see checklist item AE.25.5.US) and the title V operating permit requirements</li> <li>– cyclonic barrel burners</li> <li>– rack, part, and drum reclamation units</li> <li>– cement kilns</li> <li>– sewage sludge incinerators regulated under subpart O of 40 CFR 60</li> <li>– combustion units burning materials to recover chemical constituents or to produce chemical compounds where there is an existing commercial market for such recovered chemical constituents or compounds, including: <ul style="list-style-type: none"> <li>– units burning only pulping liquors (i.e., black liquor) that are reclaimed in a pulping liquor recovery process and reused in the pulping process</li> <li>– units burning only spent sulfuric acid used to produce virgin sulfuric acid</li> <li>– units burning only wood or coal feedstock for the production of charcoal</li> <li>– units burning only manufacturing byproduct streams/residues containing catalyst metals which are reclaimed and reused as catalysts or used to produce commercial grade catalysts</li> </ul> </li> </ul>

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<p><b>AE.26.2.US.</b> Operators of CISWI which started construction on or before 30 November 1999 must achieve compliance according to a specific schedule (40 CFR 62.14510, 62.14515, 62.14535 through 62.14565, and 62.14580 through 62.14590) [Added January 2004].</p>	<ul style="list-style-type: none"> <li>– units burning only coke to produce purified CO that is used as an intermediate in the production of other chemical compounds</li> <li>– units burning only hydrocarbon liquids or solids to produce hydrogen, CO, synthesis gas, or other gases for use in other manufacturing processes</li> <li>– units burning only photographic film to recover silver</li> <li>– units granted exemptions resulting from petitions submitted under the provisions of either 40 CFR 60.2025 or 60.2558 (see text of CFR)</li> <li>– laboratory units that burn samples of materials for the purpose of chemical or physical analysis.</li> </ul> <p>(NOTE: If the facility has a recovery unit that is not on this list, the facility can petition the Administrator to add the unit to the list.)</p> <p>Verify that owners and operators of these units claiming exemption submit any records required to support their claims of exemption to the USEPA Administrator (or delegated enforcement authority) upon request.</p> <p>Verify that records are maintained by the unit for at least 5 yr.</p> <p>(NOTE: This applies to a facility that owns or operates a CISWI unit [see definitions] and the CISWI unit is not regulated by a USEPA-approved and currently effective State or Tribal plan, or the CISWI unit is located in any State whose approved State or Tribal plan is subsequently vacated in whole or in part.)</p> <p>Verify that, if the facility plans to continue operation of a regulated CISWI unit, and comes into compliance with the regulations by 4 October 2004, the following requirements are met:</p> <ul style="list-style-type: none"> <li>– the operator training and qualification requirements and inspection requirements (if applicable) (see checklist items AE.26.3.US) are completed by 4 October 2004</li> <li>– a waste management plan is submitted no later than 5 April 2004</li> <li>– final compliance is achieved by 4 October 2004 by incorporating all process changes and complete retrofit construction of control devices, as specified in the final control plan, so that, if the affected CISWI unit is brought online, all necessary process changes and air pollution control devices would operate as designed</li> <li>– the initial performance test is conducted within 90 days after the date when achievement of final compliance is required</li> <li>– an initial report including the results of the initial performance test is submitted no later than 60 days following the initial performance test.</li> </ul> <p>Verify that the waste management plan identifies both the feasibility and the methods used to reduce or separate certain components of solid waste from the waste stream in order to reduce or eliminate toxic emissions from incinerated waste.</p>

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	<p>Verify that the waste management plan includes:</p> <ul style="list-style-type: none"> <li>– consideration of the reduction or separation of waste-stream elements such as paper, cardboard, plastics, glass, batteries, or metals; or the use of recyclable materials</li> <li>– identification of any additional waste management measures.</li> </ul> <p>Verify that the source implemented the additional waste management measures considered practical and feasible, based on the effectiveness of waste management measures already in place, the costs of additional measures, the emissions reductions expected to be achieved, and any other environmental or energy impacts they might have.</p> <p>Verify that, if the facility plans to continue operation of a regulated CISWI unit after 4 October 2004, but before 3 October 2005, the facility petitions for and is granted an extension of the final compliance date as well as meeting the requirements for increments of progress.</p> <p>Verify that, if the facility plans to come into compliance after 4 October 2004, a final control plan is submitted by 5 April 2004 and final compliance is reached by 3 October 2005.</p> <p>Verify that, to achieve the final compliance increment of progress, the facility completes the following requirements:</p> <ul style="list-style-type: none"> <li>– complies with the operator training and qualification requirements and inspection requirements (if applicable) (see checklist items AE.26.3.US) by 4 October 2004</li> <li>– submits a waste management plan no later than 5 April 2004</li> <li>– achieves final compliance by 3 October 2005 by incorporating all process changes and complete retrofit construction of control devices, as specified in the final control plan, so that, when the affected CISWI unit is brought online, all necessary process changes and air pollution control devices operate as designed</li> <li>– conducts the initial performance test within 90 days after the date the facility is required to achieve final compliance</li> <li>– submits an initial report including the result of the initial performance no later than 60 days following the initial performance test.</li> </ul> <p>Verify that the notification of achievement of an increment of progress includes the following:</p> <ul style="list-style-type: none"> <li>– notification of the date that the increment of progress has been achieved</li> <li>– any items required to be submitted with each increment of progress</li> <li>– signature of the owner or operator of the CISWI unit</li> <li>– the date the facility was required to complete the increment of progress.</li> </ul>

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	<p>Verify that the notification for achieving the first increment of progress is postmarked no later than 15 April 2004.</p> <p>(NOTE: Failure to meet an increment of progress is a violation of the standards. If the facility fails to meet an increment of progress, they must submit a notification to the Administrator postmarked within 10 business days after the due date for that increment of progress. The facility must inform the Administrator that they did not meet the increment, and the facility must continue to submit reports each subsequent calendar month until the increment of progress is met.)</p> <p>Verify that the final control plan includes the following:</p> <ul style="list-style-type: none"> <li>– a description of the devices for air pollution control and process changes that will be used to comply with the emission limitations and other requirements</li> <li>– the type(s) of waste to be burned</li> <li>– the maximum design waste burning capacity</li> <li>– the anticipated maximum charge rate</li> <li>– if applicable, the petition for site-specific operating limits</li> <li>– a schedule that includes the date by which the facility will award the contracts to procure emission control equipment or related materials, initiate onsite construction, initiate onsite installation of emission control equipment, and/or incorporate process changes, and the date by which the facility will initiate onsite construction.</li> </ul> <p>Verify that the facility maintains an onsite copy of the final control plan.</p> <p>(NOTE: If changes were made to the CISWI unit after 1 June 2001 that meet the definition of modification or reconstruction after promulgation of the final 40 CFR 60, Subpart CCCC: <i>Standards of Performance for Commercial and Industrial Solid Waste Incineration Units For Which Construction Is Commenced After November 30, 1999 or for Which Modification or Reconstruction Is Commenced On or After 1 June 2001</i>, the CISWI unit is subject to Subpart CCCC and 40 CFR 62, Subpart III [40 CFR 62.14500 through 62.14840, see checklist items AE.26.1.US through AE.26.10.US] no longer applies to that unit. Making physical or operational changes to the existing CISWI unit primarily to comply with 40 CFR 62, Subpart III [40 CFR 62.14500 through 62.14840, see checklist items AE.26.1.US through AE.26.10.US] does not qualify as modification or reconstruction under 40 CFR 60, Subpart CCCC.)</p> <p>(NOTE: If the CISWI unit is in a State that does not have an USEPA-approved State plan or the State's plan has not become effective, this checklist item applies to the CISWI unit until the USEPA approves a State plan that covers the CISWI unit and that State plan becomes effective. However, a State may enforce the requirements of a State regulation while the CISWI unit is still subject to these Federal requirements. After the USEPA approves a State plan covering the CISWI unit, and after that State plan becomes effective, the Federal regulations no longer apply and the unit is subject to the approved and effective State plan.)</p>

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<p><b>AE.26.3.US.</b> Operators of CISWI which started construction on or before 30 November 1999 must meet certain training requirements (40 CFR 62.14510, 62.14515, 62.14595 through 62.14615) <b>[Added January 2004].</b></p>	<p>(NOTE: This applies if to a facility that owns or operates a CISWI unit [see definitions] and the CISWI unit is not regulated by a USEPA-approved and currently effective State or Tribal plan, or the CISWI unit is located in any State whose approved State or Tribal plan is subsequently vacated in whole or in part.)</p> <p>Verify that the facility has a fully trained and qualified CISWI unit operator accessible at all times when the unit is in operation, either at the facility or able to be at the facility within 1 hour.</p> <p>(NOTE: The trained and qualified CISWI unit operator may operate the CISWI unit directly or be the direct supervisor of one or more other plant personnel who operate the unit. If all qualified CISWI unit operators are temporarily not accessible, follow the procedures in 40 CFR 62.14625 (see checklist item AE.26.4.US).)</p> <p>Verify that operator training and qualification is obtained through a State-approved program or by completing an incinerator operator training course.</p> <p>Verify that the incinerator operating course includes:</p> <ul style="list-style-type: none"> <li>– training on environmental concerns, including types of emissions</li> <li>– training on basic combustion principles, including products of combustion</li> <li>– training on the operation of the specific type of incinerator to be used by the operator, including proper startup, waste charging, and shutdown procedures</li> <li>– training on combustion controls and monitoring</li> <li>– training on operation of air pollution control equipment and factors affecting performance (where applicable)</li> <li>– training on inspection and maintenance of the incinerator and air pollution control devices</li> <li>– training on actions to correct malfunctions or conditions that may lead to malfunction</li> <li>– training on bottom and fly ash characteristics and handling procedures</li> <li>– training on applicable Federal, State, and local regulations, including OSHA workplace standards</li> <li>– training on pollution prevention</li> <li>– training on waste management practices</li> <li>– training on recordkeeping requirements</li> <li>– training on methods to continuously monitor CISWI unit and air pollution control device operating parameters and monitoring equipment calibration procedures (where applicable)</li> <li>– an examination designed and administered by the instructor</li> <li>– written material covering the training course topics that can serve as reference material following completion of the course.</li> </ul>

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	<p>Verify that the operator training course is completed by the later of the following two dates:</p> <ul style="list-style-type: none"> <li>– 4 October 2004</li> <li>– 6 mo after an employee assumes responsibility for operating the CISWI unit or assumes responsibility for supervising the operation of the CISWI unit.</li> </ul> <p>(NOTE: Operator qualification is attained by completing an appropriate training course. Qualification is valid from the date on which the training course is completed and the operator successfully passes the examination.)</p> <p>Verify that, to maintain qualification, the operator completes an annual review or refresher course of at least 4 h covering, at a minimum, the following information:</p> <ul style="list-style-type: none"> <li>– update of regulations</li> <li>– incinerator operation, including startup and shutdown procedures, waste charging, and ash handling</li> <li>– inspection and maintenance</li> <li>– responses to malfunctions or conditions that may lead to malfunction</li> <li>– discussion of operating problems encountered by attendees.</li> </ul> <p>(NOTE: For a lapse of less than 3 yr, a lapsed operator must complete a standard annual refresher course. For a lapse of 3 yr or more, the operator must repeat the initial qualification requirements.)</p> <p>(NOTE: If changes were made to the CISWI unit after 1 June 2001 that meet the definition of modification or reconstruction after promulgation of the final 40 CFR 60, Subpart CCCC: <i>Standards of Performance for Commercial and Industrial Solid Waste Incineration Units For Which Construction is Commenced After November 30, 1999 or for Which Modification or Reconstruction Is Commenced On or After 1 June 2001</i>, the CISWI unit is subject to subpart CCCC and 40 CFR 62, Subpart III [40 CFR 62.14500 through 62.14840, see checklist items AE.26.1.US through AE.26.10.US] no longer applies to that unit. Making physical or operational changes to the existing CISWI unit primarily to comply with 40 CFR 62, Subpart III [40 CFR 62.14500 through 62.14840, see checklist items AE.26.1.US through AE.26.10.US] does not qualify as modification or reconstruction under 40 CFR 60, Subpart CCCC.)</p> <p>(NOTE: If the CISWI unit is in a State that does not have an USEPA-approved State plan or the State's plan has not become effective, this checklist item applies to the CISWI unit until the USEPA approves a State plan that covers the CISWI unit and that State plan becomes effective. However, a State may enforce the requirements of a State regulation while the CISWI unit is still subject to these Federal requirements. After the USEPA approves a State plan covering the CISWI unit, and after that State plan becomes effective, the Federal regulations no longer apply and the unit is subject to the approved and effective State plan.)</p>

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<b>AE.26.4.US.</b> When a qualified operator is not accessible for a CISWI which started construction on or before 30 November 1999, certain actions must be taken (40 CFR 62.14510, 62.14515, 62.14625) [Added January 2004].	<p>(NOTE: This applies to a facility that owns or operates a CISWI unit [see definitions] and the CISWI unit is not regulated by a USEPA-approved and currently effective State or Tribal plan, or the CISWI unit is located in any State whose approved State or Tribal plan is subsequently vacated in whole or in part.)</p> <p>Verify that, when all qualified operators are not accessible for more than 8 h, but less than 2 weeks, the CISWI unit is operated by other plant personnel familiar with the operation of the CISWI unit who have completed a review of the information specified in 40 CFR 62.14620(a) (see checklist item AE.26.10.US) within the past 12 mo.</p> <p>(NOTE: Record the period when all qualified operators were not accessible and include this deviation in the annual report.)</p> <p>Verify that, when all qualified operators are not accessible for 2 weeks or more, the following actions are taken:</p> <ul style="list-style-type: none"> <li>– the Administrator is notified of this deviation in writing within 10 days</li> <li>– a status report is submitted to the Administrator every 4 weeks outlining what is being done to ensure that a qualified operator is accessible, stating when it is anticipated that a qualified operator will be accessible and requesting approval from the Administrator to continue operation of the CISWI unit.</li> </ul> <p>Verify that, in the notice to the Administrator, the facility states what caused this deviation, what is being done to ensure that a qualified operator is accessible, and when it is anticipated that a qualified operator will be accessible.</p> <p>Verify that the first status report is submitted 4 weeks after the initial notification of the deviation to the Administrator.</p> <p>(NOTE: If the Administrator notifies the facility that the request to continue operation of the CISWI unit is disapproved, the CISWI unit may continue operation for 90 days, then must cease operation. Operation of the unit may resume if the following requirements are met:</p> <ul style="list-style-type: none"> <li>– a qualified operator is accessible as required</li> <li>– the Administrator is notified that a qualified operator is accessible and that operation is resuming.</li> </ul> <p>(NOTE: If changes were made to the CISWI unit after 1 June 2001 that meet the definition of modification or reconstruction after promulgation of the final 40 CFR 60, Subpart CCCC: <i>Standards of Performance for Commercial and Industrial Solid Waste Incineration Units For Which Construction is Commenced After November 30, 1999 or for Which Modification or Reconstruction Is Commenced On or After 1 June 2001</i>, the CISWI unit is subject to subpart CCCC and 40 CFR 62, Subpart III [40 CFR 62.14500 through 62.14840, see checklist items AE.26.1.US through AE.26.10.US] no longer applies to that unit. Making physical or operational changes to the existing CISWI unit primarily to comply with 40 CFR 62, Subpart III [40 CFR</p>

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<p><b>AE.26.5.US.</b> CISWI which started construction on or before 30 November 1999 must meet certain emissions limitations (40 CFR 62.14510, 62.14515, 62.14630 through 62.14640) [Added January 2004].</p>	<p>62.14500 through 62.14840, see checklist items AE.26.1.US through AE.26.10.US] does not qualify as modification or reconstruction under 40 CFR 60, Subpart CCCC.)</p> <p>(NOTE: If the CISWI unit is in a State that does not have an USEPA-approved State plan or the State's plan has not become effective, this checklist item applies to the CISWI unit until the USEPA approves a State plan that covers the CISWI unit and that State plan becomes effective. However, a State may enforce the requirements of a State regulation while the CISWI unit is still subject to these Federal requirements. After the USEPA approves a State plan covering the CISWI unit, and after that State plan becomes effective, the Federal regulations no longer apply and the unit is subject to the approved and effective State plan.)</p> <p>(NOTE: This applies if to a facility that owns or operates a CISWI unit [see definitions] and the CISWI unit is not regulated by a USEPA-approved and currently effective State or Tribal plan, or the CISWI unit is located in any State whose approved State or Tribal plan is subsequently vacated in whole or in part.)</p> <p>Verify that existing CISWI meet the emission limitations specified in Appendix 1-7a by the applicable final compliance date for the CISWI unit.</p> <p>Verify that, if the facility uses a wet scrubber to comply with the emission limitations, operating limits are established for four operating parameters (as specified in Appendix 1-7b) as follows during the initial performance test:</p> <ul style="list-style-type: none"> <li>– maximum charge rate, calculated using one of the following two different procedures, as appropriate: <ul style="list-style-type: none"> <li>– for continuous and intermittent units, the maximum charge rate is 110 percent of the average charge rate measured during the most recent performance test demonstrating compliance with all applicable emission limitations</li> <li>– for batch units, the maximum charge rate is 110 percent of the daily charge rate measured during the most recent performance test demonstrating compliance with all applicable emission limitations</li> </ul> </li> <li>– minimum pressure drop across the wet scrubber, which is calculated as 90 percent of the average pressure drop across the wet scrubber measured during the most recent performance test demonstrating compliance with the particulate matter emission limitations; or minimum amperage to the wet scrubber, which is calculated as 90 percent of the average amperage to the wet scrubber measured during the most recent performance test demonstrating compliance with the particulate matter emission limitations</li> <li>– minimum scrubber liquor flow rate, which is calculated as 90 percent of the average liquor flow rate at the inlet to the wet scrubber measured during the most recent performance test demonstrating compliance with all applicable emission limitations</li> <li>– minimum scrubber liquor pH, which is calculated as 90 percent of the average liquor pH at the inlet to the wet scrubber measured during the most recent</li> </ul>

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	<p>performance test demonstrating compliance with the hydrogen chloride emission limitation.</p> <p>Verify that the facility meets the operating limits established during the initial performance test on the date the initial performance test is required or completed (whichever is earlier).</p> <p>Verify that, if the facility uses a fabric filter to comply with the emission limitations, each fabric filter system is operated such that the bag leak detection system alarm does not sound more than 5 percent of the operating time during any 6-mo period.</p> <p>(NOTE: In calculating the operating time percentage, if inspection of the fabric filter demonstrates that no corrective action is required, no alarm time is counted. If corrective action is required, each alarm shall be counted as a minimum of 1 hour. If it takes longer than 1 hour to initiate corrective action, the alarm time shall be counted as the actual amount of time taken by you to initiate corrective action.</p> <p>(NOTE: If the facility uses an air pollution control device other than a wet scrubber, or limits emissions in some other manner, to comply with the emission limitations, the facility must petition the Administrator for specific operating limits to be established during the initial performance test and continuously monitored thereafter. The initial performance test must not be conducted until after the petition has been approved by the Administrator.)</p> <p>(NOTE: The emission limitations and operating limits apply at all times except during periods of CISWI unit startup, shutdown, or malfunction. Each malfunction must last no longer than 3 h.)</p> <p>(NOTE: If changes were made to the CISWI unit after 1 June 2001 that meet the definition of modification or reconstruction after promulgation of the final 40 CFR 60, Subpart CCCC: <i>Standards of Performance for Commercial and Industrial Solid Waste Incineration Units For Which Construction is Commenced After November 30, 1999 or for Which Modification or Reconstruction Is Commenced On or After 1 June 2001</i>, the CISWI unit is subject to subpart CCCC and 40 CFR 62, Subpart III [40 CFR 62.14500 through 62.14840, see checklist items AE.26.1.US through AE.26.10.US] no longer applies to that unit. Making physical or operational changes to the existing CISWI unit primarily to comply with 40 CFR 62, Subpart III [40 CFR 62.14500 through 62.14840, see checklist items AE.26.1.US through AE.26.10.US] does not qualify as modification or reconstruction under 40 CFR 60, Subpart CCCC.)</p> <p>(NOTE: If the CISWI unit is in a State that does not have an USEPA-approved State plan or the State's plan has not become effective, this checklist item applies to the CISWI unit until the USEPA approves a State plan that covers the CISWI unit and that State plan becomes effective. However, a State may enforce the requirements of a State regulation while the CISWI unit is still subject to these Federal requirements. After the USEPA approves a State plan covering the CISWI unit, and after that State</p>

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<p><b>AE.26.6.US.</b> CISWI which started construction on or before 30 November 1999 must meet performance testing requirements (40 CFR 62.14510, 62.14515, 62.14650 through 62.14685) [Added January 2004].</p>	<p>plan becomes effective, the Federal regulations no longer apply and the unit is subject to the approved and effective State plan.)</p> <p>(NOTE: This applies if to a facility that owns or operates a CISWI unit [see definitions] and the CISWI unit is not regulated by an USEPA approved and currently effective State or Tribal plan, or the CISWI unit is located in any State whose approved State or Tribal plan is subsequently vacated in whole or in part.)</p> <p>Verify that all performance tests consist of a minimum of three test runs conducted under conditions representative of normal operations.</p> <p>Verify that the waste burned during the performance test is representative of the waste burned under normal operating conditions by maintaining a log of the quantity of waste burned and the types of waste burned during the performance test.</p> <p>Verify that all performance tests are conducted using the minimum run duration specified in Appendix 1-7a.</p> <p>Verify that Method 1 of 40 CFR 60, Appendix A is used to select the sampling location and number of traverse points.</p> <p>Verify that Method 3A or 3B of 40 CFR 60, Appendix A is used for gas composition analysis, including measurement of oxygen concentration.</p> <p>Verify that Method 3A or 3B of 40 CFR 60, Appendix A is used simultaneously with each method.</p> <p>Verify that all pollutant concentrations, except for opacity, are adjusted to 7 percent oxygen using the following equation:</p> $C_{adj} = C_{meas} (20.9-7)/(20.9-\%O_2) \text{ (Eq.1)}$ <p>Where:  <math>C_{adj}</math> = pollutant concentration adjusted to 7 % oxygen;  <math>C_{meas}</math> = pollutant concentration measured on a dry basis;  <math>(20.9-7)</math> = 20.9 % oxygen-7 % oxygen (defined oxygen correction basis);  20.9 = oxygen concentration in air, percent; and  <math>\%O_2</math> = oxygen concentration measured on a dry basis, percent.</p> <p>Verify that the dioxins/furans toxic equivalency is determined by the following procedures in 40 CFR 62.14650(g) (see text for methodology).</p> <p>(NOTE: The results of performance tests are to demonstrate compliance with the emission limitations in Appendix 1-7a.</p>

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	<p>Verify that an initial performance test is done to determine compliance with the emission limitations in Appendix 1-7a and to establish operating limits.</p> <p>(NOTE: The initial performance test must be conducted using the test methods listed in Appendix 1-7a and the procedures in this checklist item.)</p> <p>Verify that the initial performance test is conducted no later than 90 days after the facility's final compliance date.</p> <p>Verify that the facility conducts an annual performance test for particulate matter, hydrogen chloride, and opacity for each CISWI unit to determine compliance with the emission limitations.</p> <p>(NOTE: The annual performance test must be conducted using the test methods listed in Appendix 1-7a and the procedures in this checklist item.)</p> <p>Verify that the operating parameters specified in 40 CFR 62.14635 (see checklist item AE.26.5.US) or established under 40 CFR 62.14640 (see checklist item AE.26.5.US) are continuously monitored.</p> <p>(NOTE: Operation above the established maximum or below the established minimum operating limits constitutes a deviation from the established operating limits. Three-hour rolling average values are used to determine compliance (except for baghouse leak detection system alarms) unless a different averaging period is established under 40 CFR 62.14640 [see checklist item AE.26.5.US]. Operating limits do not apply during performance tests.)</p> <p>Verify that the facility only burns the same types of waste used to establish operating limits during the performance test.</p> <p>Verify that the annual performance tests for particulate matter, hydrogen chloride, and opacity are conducted within 12 mo following the initial performance test.</p> <p>(NOTE: Conduct subsequent annual performance tests within 12 mo following the previous one.)</p> <p>(NOTE: The facility can test less often for a given pollutant if they have test data for at least 3 yr, and all performance tests for the pollutant [particulate matter, hydrogen chloride, or opacity] over 3 consecutive years show that the facility complies with the emission limitation. In this case, the facility does not have to conduct a performance test for that pollutant for the next 2 yr. A performance test must be conducted during the third year and no later than 36 mo following the previous performance test.)</p> <p>(NOTE: If the CISWI unit continues to meet the emission limitation for particulate matter, hydrogen chloride, or opacity, the facility may choose to conduct</p>

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<p><b>AE.26.7.US.</b> CISWI which started construction on or before 30 November 1999 must meet monitoring requirements (40 CFR 62.14510, 62.14515, 62.14690 and 62.14695) [Added January 2004].</p>	<p>performance tests for these pollutants every third year, but each test must be within 36 mo of the previous performance test.)</p> <p>Verify that, if a performance test shows a deviation from an emission limitation for particulate matter, hydrogen chloride, or opacity, annual performance tests are conducted for that pollutant until all performance tests over a 3-yr period show compliance.</p> <p>(NOTE: A repeat performance test may be conducted at any time to establish new values for the operating limits. The Administrator may request a repeat performance test at any time.)</p> <p>Verify that the facility repeats the performance test if the feed stream is different than the feed streams used during any performance test used to demonstrate compliance.</p> <p>(NOTE: If changes were made to the CISWI unit after 1 June 2001 that meet the definition of modification or reconstruction after promulgation of the final 40 CFR 60, Subpart CCCC: <i>Standards of Performance for Commercial and Industrial Solid Waste Incineration Units For Which Construction is Commenced After November 30, 1999 or for Which Modification or Reconstruction Is Commenced On or After 1 June 2001</i>, the CISWI unit is subject to Subpart CCCC and 40 CFR 62, Subpart III [40 CFR 62.14500 through 62.14840, see checklist items AE.26.1.US through AE.26.10.US] no longer applies to that unit. Making physical or operational changes to the existing CISWI unit primarily to comply with 40 CFR 62, Subpart III [40 CFR 62.14500 through 62.14840, see checklist items AE.26.1.US through AE.26.10.US] does not qualify as modification or reconstruction under 40 CFR 60, Subpart CCCC.)</p> <p>(NOTE: If the CISWI unit is in a State that does not have an USEPA-approved State plan or the State's plan has not become effective, this checklist item applies to the CISWI unit until the USEPA approves a State plan that covers the CISWI unit and that State plan becomes effective. However, a State may enforce the requirements of a State regulation while the CISWI unit is still subject to these Federal requirements. After the USEPA approves a State plan covering the CISWI unit, and after that State plan becomes effective, the Federal regulations no longer apply and the unit is subject to the approved and effective State plan.)</p> <p>(NOTE: This applies to a facility that owns or operates a CISWI unit [see definitions] and the CISWI unit is not regulated by a USEPA-approved and currently effective State or Tribal plan, or the CISWI unit is located in any State whose approved State or Tribal plan is subsequently vacated in whole or in part.)</p> <p>Verify that, if the CISWI uses a wet scrubber to comply with the emission limitations, the facility installs, calibrates (to manufacturers' specifications), maintains, and operates devices (or establishes methods) for monitoring the value of the operating</p>

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	<p>parameters used to determine compliance with the operating limits listed in Appendix 1-7b.</p> <p>Verify that the monitoring devices (or methods) measure and record the values for these operating parameters at the frequencies indicated in Appendix 1-7b at all times.</p> <p>(NOTE: Except for monitoring malfunctions, associated repairs, and required quality assurance or quality control activities [including, as applicable, calibration checks and required zero and span adjustments of the monitoring system], all monitoring is conducted at all times the CISWI unit is operating.)</p> <p>Verify that, if a fabric filter is used to comply with the requirements for existing CISWI in 40 CFR 62, Subpart III [40 CFR 62.14500 through 62.14840, see checklist items AE.26.1.US through AE.26.10.US], the facility installs, calibrates, maintains, and continuously operates a bag leak detection system as follows:</p> <ul style="list-style-type: none"> <li>– a bag leak detection system is installed and operated for each exhaust stack of the fabric filter</li> <li>– each bag leak detection system is installed, operated, calibrated, and maintained in a manner consistent with the manufacturer's written specifications and recommendations</li> <li>– the bag leak detection system is certified by the manufacturer to be capable of detecting particulate matter emissions at concentrations of 10 milligrams per actual cubic meter or less</li> <li>– the bag leak detection system sensor provides output of relative or absolute particulate matter loadings</li> <li>– the bag leak detection system is equipped with a device to continuously record the output signal from the sensor</li> <li>– the bag leak detection system is equipped with an alarm system that will sound automatically when an increase in relative particulate matter emissions over a preset level is detected and the alarm is located where it is easily heard by plant operating personnel</li> <li>– for positive pressure fabric filter systems, a bag leak detection system is installed in each baghouse compartment or cell</li> <li>– for negative pressure or induced air fabric filters, the bag leak detector is installed downstream of the fabric filter</li> </ul> <p>(NOTE: Where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors.)</p> <p>Verify that, if the CISWI is using an emission control system other than a wet scrubber to comply with the emission limitations, the facility installs, calibrates (to the manufacturers' specifications), maintains, and operates the equipment necessary to monitor compliance with the site-specific operating limits established using the procedures in 40 CFR 62.14640 (see checklist item AE.26.5.US).</p>

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<p><b>AE.26.8.US.</b> CISWI which started construction on or before 30 November 1999 must meet reporting requirements (40 CFR 62.14510, 62.14515, 62.14710 through 62.14760) [Added January 2004].</p>	<p>Verify that data recorded during monitor malfunctions, associated repairs, and required quality assurance or quality control activities is not used for meeting the requirements for existing CISWI in 40 CFR 62, Subpart III [40 CFR 62.14500 through 62.14840, see checklist items AE.26.1.US through AE.26.10.US], including data averages and calculations.</p> <p>Verify that all the data collected during all other periods is used in assessing compliance with the operating limits.</p> <p>(NOTE: If changes were made to the CISWI unit after 1 June 2001 that meet the definition of modification or reconstruction after promulgation of the final 40 CFR 60, Subpart CCCC: <i>Standards of Performance for Commercial and Industrial Solid Waste Incineration Units For Which Construction is Commenced After November 30, 1999 or for Which Modification or Reconstruction Is Commenced On or After 1 June 2001</i>, the CISWI unit is subject to Subpart CCCC and 40 CFR 62, Subpart III [40 CFR 62.14500 through 62.14840, see checklist items AE.26.1.US through AE.26.10.US] no longer applies to that unit. Making physical or operational changes to the existing CISWI unit primarily to comply with 40 CFR 62, Subpart III [40 CFR 62.14500 through 62.14840, see checklist items AE.26.1.US through AE.26.10.US] does not qualify as modification or reconstruction under 40 CFR 60, Subpart CCCC.)</p> <p>(NOTE: If the CISWI unit is in a State that does not have an USEPA-approved State plan or the State's plan has not become effective, this checklist item applies to the CISWI unit until the USEPA approves a State plan that covers the CISWI unit and that State plan becomes effective. However, a State may enforce the requirements of a State regulation while the CISWI unit is still subject to these Federal requirements. After the USEPA approves a State plan covering the CISWI unit, and after that State plan becomes effective, the Federal regulations no longer apply and the unit is subject to the approved and effective State plan.)</p> <p>(NOTE: This applies to a facility that owns or operates a CISWI unit [see definitions] and the CISWI unit is not regulated by an USEPA approved and currently effective State or Tribal plan, or the CISWI unit is located in any State whose approved State or Tribal plan is subsequently vacated in whole or in part.)</p> <p>Verify that the reporting requirements in Appendix 1-7c are met.</p> <p>Verify that the waste management plan is submitted no later than 5 April 2004.</p> <p>Verify that the following information is submitted no later than 60 days following the initial performance test and is signed by the facilities manager:</p> <ul style="list-style-type: none"> <li>– the complete test report for the initial performance test results, as applicable</li> <li>– the values for the site-specific operating limits established in 40 CFR 62.14635 or 62.14640 (see checklist item AE.26.5.US)</li> </ul>

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	<p>– if using a fabric filter to comply with the emission limitations, documentation that a bag leak detection system has been installed and is being operated, calibrated, and maintained as required.</p> <p>Verify that an annual report is submitted no later than 12 mo following the submission of the information listed above and subsequent reports no more than 12 mo following the previous report.</p> <p>(NOTE: The requirement to submit an annual report does not modify or replace the operating permit requirements of 40 CFR 70 and 71.)</p> <p>Verify that the annual report includes the following:</p> <ul style="list-style-type: none"> <li>– company name and address</li> <li>– statement by a responsible official, with that official's name, title, and signature, certifying the accuracy of the content of the report</li> <li>– date of report and beginning and ending dates of the reporting period</li> <li>– the established values for the operating limits</li> <li>– if no deviation from any emission limitation or operating limit that applies to the CISWI has been reported, a statement that there was no deviation from the emission limitations or operating limits during the reporting period, and that no monitoring system used to determine compliance with the operating limits was inoperative, inactive, malfunctioning, or out of control</li> <li>– the highest recorded 3-h average and the lowest recorded 3-h average, as applicable, for each operating parameter recorded for the calendar year being reported</li> <li>– information recorded when a fabric filter is being used and the data under 40 CFR 62.14700(c) through 62.14700(e) (see checklist item AE.26.9.US) for the calendar year being reported</li> <li>– if a performance test was conducted during the reporting period, the results of that test</li> <li>– if the CISWI met the requirements for reduced performance testing, and did not conduct a performance test during the reporting period, state that the CISWI met the requirements for reduced performance testing, and, therefore, were not required to conduct a performance test during the reporting period</li> <li>– documentation of periods when all qualified CISWI unit operators were unavailable for more than 8 h, but less than 2 weeks.</li> </ul> <p>Verify that a deviation report is submitted if any recorded 3-h average parameter level is above the maximum operating limit or below the minimum operating limit established under 40 CFR 62, Subpart III [40 CFR 62.14500 through 62.14840, see checklist items AE.26.1.US through AE.26.10.US], if the bag leak detection system alarm sounds for more than 5 percent of the operating time for any 6-mo reporting period, or if a performance test was conducted that yielded results that deviated from any emission limitation.</p>

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	<p>Verify that the deviation report is submitted by 1 August of that year for data collected during the first half of the calendar year (1 January to 30 June), and by 1 February of the following year for data collected during the second half of the calendar year (1 July to 31 December).</p> <p>Verify that, in the deviation report for any pollutant or parameter that deviated from the emission limitations or operating limits, include the following information:</p> <ul style="list-style-type: none"> <li>– the calendar dates and times the unit deviated from the emission limitations or operating limit requirements</li> <li>– the averaged and recorded data for those dates</li> <li>– duration and causes of each deviation from the emission limitations or operating limits and the corrective actions</li> <li>– a copy of the operating limit monitoring data during each deviation and any test report that documents the emission levels</li> <li>– the dates, times, number, duration, and causes for monitoring downtime incidents (other than downtime associated with zero, span, and other routine calibration checks)</li> <li>– whether each deviation occurred during a period of startup, shutdown, or malfunction, or during another period.</li> </ul> <p>Verify that, if all qualified operators are not accessible for 2 weeks or more, the following reports are submitted:</p> <ul style="list-style-type: none"> <li>– within 10 days of each deviation, submit a notification that includes the following: <ul style="list-style-type: none"> <li>– a statement of what caused the deviation</li> <li>– a description of what is being done to ensure that a qualified operator is accessible</li> <li>– the anticipated date that a qualified operator will be available</li> </ul> </li> <li>– a status report is submitted to the Administrator every 4 weeks that includes the following information: <ul style="list-style-type: none"> <li>– a description of what is being done to ensure that a qualified operator is accessible</li> <li>– the anticipated date that a qualified operator will be accessible</li> <li>– request for approval from the Administrator to continue operation of the CISWI unit.</li> </ul> </li> </ul> <p>(NOTE: If the unit was shut down by the Administrator due to a failure to provide an accessible qualified operator, the facility must notify the Administrator that the CISWI is resuming operation once a qualified operator is accessible.)</p> <p>Verify that the facility submits the notifications as provided by 40 CFR 60.7 (see checklist item AE.1.8.US).</p>

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<p><b>AE.26.9.US.</b> CISWI which started construction on or before 30 November 1999 must meet recordkeeping requirements (40 CFR 62.14510, 62.14515, 62.14700 and 62.14705) <b>[Added January 2004].</b></p>	<p>(NOTE: Submit initial, annual, and deviation reports electronically or in paper format, postmarked on or before the submittal due dates.)</p> <p>(NOTE: If the Administrator agrees, the semiannual or annual reporting dates may be changed.)</p> <p>(NOTE: If changes were made to the CISWI unit after 1 June 2001 that meet the definition of modification or reconstruction after promulgation of the final 40 CFR 60, Subpart CCCC: <i>Standards of Performance for Commercial and Industrial Solid Waste Incineration Units For Which Construction is Commenced After November 30, 1999 or for Which Modification or Reconstruction Is Commenced On or After 1 June 2001</i>, the CISWI unit is subject to Subpart CCCC and 40 CFR 62, Subpart III [40 CFR 62.14500 through 62.14840, see checklist items AE.26.1.US through AE.26.10.US] no longer applies to that unit. Making physical or operational changes to the existing CISWI unit primarily to comply with 40 CFR 62, Subpart III [40 CFR 62.14500 through 62.14840, see checklist items AE.26.1.US through AE.26.10.US] does not qualify as modification or reconstruction under 40 CFR 60, Subpart CCCC.)</p> <p>(NOTE: If the CISWI unit is in a State that does not have an USEPA-approved State plan or the State's plan has not become effective, this checklist item applies to the CISWI unit until the USEPA approves a State plan that covers the CISWI unit and that State plan becomes effective. However, a State may enforce the requirements of a State regulation while the CISWI unit is still subject to these Federal requirements. After the USEPA approves a State plan covering the CISWI unit, and after that State plan becomes effective, the Federal regulations no longer apply and the unit is subject to the approved and effective State plan.)</p> <p>(NOTE: This applies if to a facility that owns or operates a CISWI unit [see definitions] and the CISWI unit is not regulated by a USEPA-approved and currently effective State or Tribal plan, or the CISWI unit is located in any State whose approved State or Tribal plan is subsequently vacated in whole or in part.)</p> <p>Verify that records are kept for 5 years and they are all dated.</p> <p>Verify that the following records are kept:</p> <ul style="list-style-type: none"> <li>– the CISWI unit charge dates, times, weights, and hourly charge rates</li> <li>– liquor flow rate to the wet scrubber inlet every 15 min of operation, as applicable</li> <li>– pressure drop across the wet scrubber system every 15 min of operation or amperage to the wet scrubber every 15 min of operation, as applicable</li> <li>– liquor pH as introduced to the wet scrubber every 15 min of operation, as applicable</li> <li>– for affected CISWI units that establish operating limits for controls other than wet scrubbers, maintain data collected for all operating parameters used to determine compliance with the operating limits</li> </ul>

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	<ul style="list-style-type: none"> <li>– if a fabric filter is used to comply with the emission limitations, record the date, time, and duration of each alarm and the time corrective action was initiated and completed, and a brief description of the cause of the alarm and the corrective action taken</li> <li>– the percent of operating time during each 6-mo period that the alarm sounds</li> <li>– identification of calendar dates and times for which monitoring systems used to monitor operating limits were inoperative, inactive, malfunctioning, or out of control (except for downtime associated with zero and span and other routine calibration checks), including the operating parameters not measured, the duration, reasons for not obtaining the data, and a description of corrective actions taken</li> <li>– identification of calendar dates, times, and durations of malfunctions, and a description of the malfunction and the corrective action taken</li> <li>– identification of calendar dates and times for which data show a deviation from the operating limits in Appendix 1-7b or a deviation from other established operating limits with a description of the deviations, reasons for such deviations, and a description of corrective actions taken</li> <li>– the results of the initial, annual, and any subsequent performance tests conducted to determine compliance with the emission limits and/or to establish operating limits, as applicable, including a copy of the complete test report including calculations</li> <li>– records showing the names of CISWI unit operators who have completed the required information review, including the date of the initial review and all subsequent annual reviews</li> <li>– records showing the names of the CISWI operators who have completed the operator training requirements, met the criteria for qualification, and maintained or renewed their qualification, including documentation of training, the dates of the initial and refresher training, and the dates of their qualification and all subsequent renewals of such qualifications</li> <li>– for each qualified operator, the phone and/or pager number at which they can be reached during operating hours</li> <li>– records of calibration of any monitoring devices</li> <li>– equipment vendor specifications and related operation and maintenance requirements for the incinerator, emission controls, and monitoring equipment.</li> </ul> <p>Verify that the following records are kept onsite:</p> <ul style="list-style-type: none"> <li>– summary of the applicable standards for existing CISWI</li> <li>– procedures for receiving, handling, and charging waste</li> <li>– incinerator startup, shutdown, and malfunction procedures</li> <li>– procedures for maintaining proper combustion air supply levels</li> <li>– procedures for operating the incinerator and associated air pollution control systems</li> <li>– monitoring procedures for demonstrating compliance with the incinerator operating limits</li> <li>– reporting and recordkeeping procedures</li> </ul>

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<p><b>AE.26.10.US.</b> CISWI which started construction on or before 30 November 1999 must meet documentation and review requirements (40 CFR 62.14510, 62.14515, 62.14620) [Added January 2004].</p>	<ul style="list-style-type: none"> <li>– the waste management plan</li> <li>– procedures for handling ash</li> <li>– a list of the wastes burned during the performance test.</li> </ul> <p>Verify that, on a daily basis, a log of the quantity of waste burned and the types of waste burned is kept (always required).</p> <p>Verify that all records are available onsite in either paper copy or computer-readable format that can be printed upon request, unless an alternative format is approved by the Administrator.</p> <p>(NOTE: If changes were made to the CISWI unit after 1 June 2001 that meet the definition of modification or reconstruction after promulgation of the final 40 CFR 60, Subpart CCCC: <i>Standards of Performance for Commercial and Industrial Solid Waste Incineration Units For Which Construction is Commenced After November 30, 1999 or for Which Modification or Reconstruction Is Commenced On or After 1 June 2001</i>, the CISWI unit is subject to Subpart CCCC and 40 CFR 62, Subpart III [40 CFR 62.14500 through 62.14840, see checklist items AE.26.1.US through AE.26.10.US] no longer applies to that unit. Making physical or operational changes to the existing CISWI unit primarily to comply with 40 CFR 62, Subpart III [40 CFR 62.14500 through 62.14840, see checklist items AE.26.1.US through AE.26.10.US] does not qualify as modification or reconstruction under 40 CFR 60, Subpart CCCC.)</p> <p>(NOTE: If the CISWI unit is in a State that does not have an USEPA-approved State plan or the State's plan has not become effective, this checklist item applies to the CISWI unit until the USEPA approves a State plan that covers the CISWI unit and that State plan becomes effective. However, a State may enforce the requirements of a State regulation while the CISWI unit is still subject to these Federal requirements. After the USEPA approves a State plan covering the CISWI unit, and after that State plan becomes effective, the Federal regulations no longer apply and the unit is subject to the approved and effective State plan.)</p> <p>(NOTE: This applies if to a facility that owns or operates a CISWI unit [see definitions] and the CISWI unit is not regulated by an USEPA approved and currently effective State or Tribal plan, or the CISWI unit is located in any State whose approved State or Tribal plan is subsequently vacated in whole or in part.)</p> <p>Verify that documentation is available at the facility and readily accessible for all CISWI unit operators.</p> <p>Verify that documentation and training records are maintained in a manner that they can be readily accessed and are suitable for inspection upon request.</p> <p>Verify that the following documentation is kept:</p>

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	<ul style="list-style-type: none"> <li>– summary of the applicable standards in 40 CFR 62, Subpart III [40 CFR 62.14500 through 62.14840, see checklist items AE.26.1.US through AE.26.10.US]</li> <li>– procedures for receiving, handling, and charging waste</li> <li>– incinerator startup, shutdown, and malfunction procedures</li> <li>– procedures for maintaining proper combustion air supply levels</li> <li>– procedures for operating the incinerator and associated air pollution control systems</li> <li>– monitoring procedures for demonstrating compliance with the incinerator operating limits</li> <li>– reporting and recordkeeping procedures</li> <li>– the waste management plan</li> <li>– procedures for handling ash</li> <li>– a list of the wastes burned during the performance test.</li> </ul> <p>Verify that there is a program for reviewing the documentation with each employee who operates the incinerator.</p> <p>Verify that the initial documentation review is conducted by the later of the following two dates:</p> <ul style="list-style-type: none"> <li>– 4 October 2004</li> <li>– 2 mo after being assigned to operate the CISWI unit.</li> </ul> <p>Verify that subsequent annual reviews of the documentation are conducted no later than 12 mo following the previous review.</p> <p>Verify that the facility also maintains the following information:</p> <ul style="list-style-type: none"> <li>– records showing the names of all plant personnel who operate the CISWI unit who have completed the documentation review, including the date of the initial review and all subsequent annual reviews</li> <li>– records showing the names of all plant personnel who operate the CISWI unit who have completed the operator training requirements, met the criteria for qualification, and maintained or renewed their qualification, including: <ul style="list-style-type: none"> <li>– documentation of training</li> <li>– the dates of the initial refresher training</li> <li>– the dates of their qualification and all subsequent renewals of such qualifications</li> </ul> </li> <li>– for each qualified operator, the phone and/or pager number at which they can be reached during operating hours.</li> </ul> <p>(NOTE: If changes were made to the CISWI unit after 1 June 2001 that meet the definition of modification or reconstruction after promulgation of the final 40 CFR 60, Subpart CCCC: <i>Standards of Performance for Commercial and Industrial Solid Waste Incineration Units For Which Construction is Commenced After November</i></p>

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	<p><i>30, 1999 or for Which Modification or Reconstruction Is Commenced On or After 1 June 2001, the CISWI unit is subject to Subpart CCCC and 40 CFR 62, Subpart III [40 CFR 62.14500 through 62.14840, see checklist items AE.26.1.US through AE.26.10.US] no longer applies to that unit. Making physical or operational changes to the existing CISWI unit primarily to comply with 40 CFR 62, Subpart III [40 CFR 62.14500 through 62.14840, see checklist items AE.26.1.US through AE.26.10.US] does not qualify as modification or reconstruction under 40 CFR 60, Subpart CCCC.)</i></p> <p>(NOTE: If the CISWI unit is in a State that does not have an USEPA-approved State plan or the State's plan has not become effective, this checklist item applies to the CISWI unit until the USEPA approves a State plan that covers the CISWI unit and that State plan becomes effective. However, a State may enforce the requirements of a State regulation while the CISWI unit is still subject to these Federal requirements. After the USEPA approves a State plan covering the CISWI unit, and after that State plan becomes effective, the Federal regulations no longer apply and the unit is subject to the approved and effective State plan.)</p>

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<b>MEDICAL WASTE INCINERATORS</b>  <b>AE.30 General</b>  <b>AE.30.1.US.</b> Hospital/medical/infectious waste incinerators (HMIWIs) which started construction after 20 June 1996 or which started modification after 16 March 1998 must meet specific emissions limitations. (40 CFR 60.50c(a), 40 CFR 60.52c)) [Added December 1997].	<p>(NOTE: Affected HMIWIs subject to this subpart are not subject to the requirements of 40 CFR 64.)</p> <p>(NOTE: HMIWIs shall operate pursuant to a permit issued under the USEPA-approved state operating permit program by 15 December 2000 or on the effective date of a CAA Title V permit, whichever date is later.)</p> <p>Verify that, on or after the date on which the initial performance test is completed or is required to be completed, whichever date comes first, no owner or operator of an HMIWI discharges into the atmosphere:</p> <ul style="list-style-type: none"> <li>– from that HMIWI, any gases that contain stack emissions in excess of the limits presented in Appendix 1-7d</li> <li>– from the stack of that HMIWI, any gases that exhibit greater than 10 percent opacity (6-min block average)</li> </ul> <p>Verify that, on or after the date on which the initial performance test is completed or is required to be completed, whichever date comes first, no owner or operator utilizing a large HMIWI discharges into the atmosphere visible emissions of combustion ash from an ash conveying system (including conveyor transfer points) in excess of 5 percent of the observation period (i.e., 9 min per 3-h period), as determined by USEPA Reference Method 22, except:</p> <ul style="list-style-type: none"> <li>– visible emissions discharged inside buildings or enclosures of ash conveying systems</li> <li>– during maintenance and repair of ash conveying systems.</li> </ul> <p>(NOTE: Maintenance and/or repair shall not exceed 10 operating days per calendar quarter unless the owner or operator obtains written approval from the state agency establishing a date whereby all necessary maintenance and repairs of ash conveying systems shall be completed.)</p> <p>(NOTE: Existing medical waste incinerators will be required to comply with new regulations as USEPA approves state-developed plans under 40 CFR 60, Subpart Ce [40 CFR 60.30e through 60.39e, see text of regulation]. The deadline for compliance with the new regulations will be no later than 15 September 2002.)</p> <p>(NOTE: The requirements of Subpart Ec do not apply to the following (40 CFR 60.50c(b) through 60.50c(h)):</p>

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<p><b>AE.30.2.US.</b> HMIWIs equipped with a dry scrubber followed by a fabric filter, a wet scrubber, or a dry scrubber followed by a fabric filter and a wet scrubber must comply with specific operating parameters (40 CFR 60.56c(d), 60.56c(h) through 60.56c(j)) [Added December 1997; Revised July 2013].</p>	<ul style="list-style-type: none"> <li>– a combustor during periods when only pathological waste, low-level radioactive waste, and/or chemotherapeutic waste (see definitions) is burned, provided the owner or operator of the combustor: <ul style="list-style-type: none"> <li>– notifies the Administrator of an exemption claim</li> <li>– keeps records on a calendar quarter basis of the periods of time when only pathological waste, low-level radioactive waste and/or chemotherapeutic waste is burned</li> </ul> </li> <li>– any co-fired combustor (see definitions) if the owner or operator: <ul style="list-style-type: none"> <li>– notifies the Administrator of an exemption claim</li> <li>– provides an estimate of the relative amounts of hospital waste, medical/infectious waste, and other fuels and wastes to be combusted; and</li> <li>– keeps records on a calendar quarter basis of the weight of hospital waste and medical/infectious waste combusted, and the weight of all other fuels and wastes combusted at the co-fired combustor</li> </ul> </li> <li>– any combustor required to have a permit under section 3005 of the Solid Waste Disposal Act (SWDA)</li> <li>– any combustor which meets the applicability requirements under 40 CFR 60, Subpart Cb [40 CFR 60.30b through 60.39b, see text of regulation], Subpart Ea [40 CFR 60.50a through 60.59a, see checklist items AE.35.1.US through AE.35.3.US], or Subpart Eb [40 CFR 60.50b through 60.59b, see checklist items AE.36.1.US through AE.36.16.US] (standards or guidelines for certain municipal waste combustors)</li> <li>– any pyrolysis unit (see definitions)</li> <li>– cement kilns firing hospital waste and/or medical/infectious waste</li> <li>– physical or operational changes made to an existing HMIWI solely for the purpose of complying with emission guidelines under 40 CFR 60, Subpart Ce [40 CFR 60.30e through 60.39e, see text of regulation] are not considered a modification and do not result in an existing HMIWI becoming subject to this subpart.)</li> </ul> <p>(NOTE: See checklist item AE.30.1.US for applicability information.)</p> <p>Verify that facilities equipped with the following control systems operate within the parameters in Appendix 1-7e measured as a 3-h rolling averages (calculated each hour as the average of the previous 3 operating hours) at all times:</p> <ul style="list-style-type: none"> <li>– a dry scrubber followed by a fabric filter</li> <li>– a wet scrubber</li> <li>– a dry scrubber followed by a fabric filter and a wet scrubber.</li> </ul> <p>(NOTE: Operating parameter limits do not apply during performance tests.)</p>

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<p><b>AE.30.3.US.</b> HMIWIs equipped with a dry scrubber followed by a fabric filter are required to meet additional operating parameters (40 CFR 60.56c(e) and 60.56c(h)) [Added December 1997].</p>	<p>(NOTE: A facility may conduct a repeat performance test within 30 days of violation of applicable operating parameters to demonstrate that the facility is not in violation of the applicable emission limit.)</p> <p>Verify that, if the facility is using an air pollution control device other than a dry scrubber followed by a fabric filter, a wet scrubber, or a dry scrubber followed by a fabric filter and a wet scrubber, the facility petitions the Administrator for additional site-specific operating parameters to be established during the initial performance test and continuously monitored thereafter.</p> <p>(NOTE: The initial performance test cannot be conducted until after the petition has been approved by the Administrator.)</p> <p>(NOTE: A facility may conduct a repeat performance test at any time to establish new values for the operating parameters. The USEPA Administrator may request a repeat performance test at any time as well.)</p> <p>(NOTE: See checklist item AE.30.1.US for applicability information.)</p> <p>Verify that the HMIWI is not operated above the maximum charge rate and below the minimum secondary chamber temperature simultaneously.</p> <p>(NOTE: See Appendix 1-7e for operating parameters.)</p> <p>Verify that the HMIWI is not operated above the maximum fabric filter inlet temperature and below the minimum dioxin/furan sorbent flow rate simultaneously.</p> <p>Verify that the HMIWI is not operated above the maximum charge rate and below the minimum HCl sorbent flow rate simultaneously.</p> <p>Verify that the facility does not use the bypass stack except during startup, shutdown, or malfunction.</p> <p>(NOTE: A facility may conduct a repeat performance test within 30 days of violation of applicable operating parameters to demonstrate that the facility is not in violation of the applicable emission limit.)</p>
<p><b>AE.30.4.US.</b> HMIWIs equipped with a wet scrubber are required to meet additional operating parameters (40 CFR 60.56c(f) and 60.56c(h)) [Added December 1997].</p>	<p>(NOTE: See checklist item AE.30.1.US for applicability information.)</p> <p>Verify that the HMIWI is not operated above the maximum charge rate and below the minimum pressure drop across the wet scrubber or below the minimum horsepower or amperage to the system simultaneously.</p> <p>(NOTE: See Appendix 1-7e for operating parameters.)</p>

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<p><b>AE.30.5.US.</b> HMIWIs equipped with a dry scrubber followed by a fabric filter and a wet scrubber are required to meet additional operating parameters (40 CFR 60.56c(g) and 60.56c(h)) <b>[Added December 1997]</b>.</p>	<p>Verify that the HMIWI is not operated above the maximum charge rate and below the minimum secondary chamber temperature simultaneously.</p> <p>Verify that the HMIWI is not operated above the maximum charge rate, below the minimum secondary chamber temperature, and below the minimum scrubber liquor flow rate simultaneously.</p> <p>Verify that the HMIWI is not operated above the maximum charge rate and below the minimum scrubber liquor pH simultaneously.</p> <p>Verify that the HMIWI is not operated above the maximum flue gas temperature and above the maximum charge rate simultaneously.</p> <p>Verify that the facility does not use the bypass stack except during startup, shutdown, or malfunction.</p> <p>(NOTE: A facility may conduct a repeat performance test within 30 days of violation of applicable operating parameters to demonstrate that the facility is not in violation of the applicable emission limit.)</p> <p>(NOTE: See checklist item AE.30.1.US for applicability information.)</p> <p>Verify that the HMIWI does not operate above the maximum charge rate and below the minimum secondary chamber temperature simultaneously.</p> <p>(NOTE: See Appendix 1-7e for operating parameters.)</p> <p>Verify that the HMIWI does not operate above the maximum fabric filter inlet temperature, above the maximum charge rate, and below the minimum dioxin/furan sorbent flow rate simultaneously.</p> <p>Verify that the HMIWI does not operate above the maximum charge rate and below the maximum scrubber liquor pH simultaneously.</p> <p>Verify that the HMIWI does not operate above the maximum charge rate and below the minimum Hg sorbent flow rate simultaneously.</p> <p>Verify that the facility does not use the bypass stack except during startup, shutdown, or malfunction.</p> <p>(NOTE: A facility may conduct a repeat performance test within 30 days of violation of applicable operating parameters to demonstrate that the facility is not in violation of the applicable emission limit.)</p>
<p><b>AE.30.6.US.</b> HMIWI operators are required to be</p>	<p>(NOTE: See checklist item AE.30.1.US for applicability information.)</p>

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<p>trained, qualified, and available (40 CFR 60.53c(a) through 60.53c(g)) [<b>Added December 1997</b>].</p>	<p>Verify that a trained and qualified HMIWI operator is accessible, either at the facility or available within 1 h, at all times that the HMIWI is being operated.</p> <p>(NOTE: The trained and qualified HMIWI operator may operate the HMIWI directly or be the direct supervisor of one or more HMIWI operators.)</p> <p>Verify that HMIWI operators were trained at a state-approved program or by completing the following requirements:</p> <ul style="list-style-type: none"> <li>– 24 h of training on the following subjects: <ul style="list-style-type: none"> <li>– environmental concerns, including pathogen destruction and types of emissions</li> <li>– basic combustion principles, including products of combustion</li> <li>– operation of the type of incinerator to be used by the operator, including proper startup, waste charging, and shutdown procedures</li> <li>– combustion controls and monitoring</li> <li>– operation of air pollution control equipment and factors affecting performance (if applicable)</li> <li>– methods to monitor pollutants (continuous emission monitoring systems and monitoring of HMIWI and air pollution control device operating parameters) and equipment calibration procedures (where applicable)</li> <li>– inspection and maintenance of the HMIWI, air pollution control devices, and continuous emission monitoring systems</li> <li>– actions to correct malfunctions or conditions that may lead to malfunction</li> <li>– bottom and fly ash characteristics and handling procedures</li> <li>– applicable Federal, state, and local regulations</li> <li>– work safety procedures</li> <li>– pre-startup inspections</li> <li>– recordkeeping requirements</li> </ul> </li> <li>– an examination designed and administered by the instructor</li> <li>– reference material distributed to the attendees covering the course topics.</li> </ul> <p>Verify that HMIWI operators have obtained qualification by:</p> <ul style="list-style-type: none"> <li>– completion of a training course described above</li> <li>– either 6-mo experience as an HMIWI operator, 6-mo experience as a direct supervisor of an HMIWI operator, or completion of at least two burn cycles under the observation of two qualified HMIWI operators.</li> </ul> <p>(NOTE: Qualification is valid from the date on which the examination is passed or the completion of the required experience, whichever is later.)</p>

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<b>AE.30.7.US.</b> HMIWIs must prepare a waste management plan (40 CFR 60.55c) [ <b>Added December 1997</b> ].	<p>Verify that HMIWI operators have maintained qualification by completing and passing an annual review or refresher course of at least 4 h covering, at a minimum, the following:</p> <ul style="list-style-type: none"> <li>– update of regulations</li> <li>– incinerator operation, including startup and shutdown procedures</li> <li>– inspection and maintenance</li> <li>– responses to malfunctions or conditions that may lead to malfunction</li> <li>– discussion of operating problems encountered by attendees.</li> </ul> <p>(NOTE: A lapsed qualification shall be renewed by one of the following methods:</p> <ul style="list-style-type: none"> <li>– for a lapse of less than 3 yr, the HMIWI operator shall complete and pass a standard annual refresher course as described above</li> <li>– for a lapse of 3 yr or more, the HMIWI operator shall complete and pass a training course as described above.)</li> </ul> <p>(NOTE: See checklist item AE.30.1.US for applicability information.)</p> <p>Verify that the HMIWI has prepared a waste management plan.</p> <p>Verify that the waste management plan identifies both the feasibility and the approach to separate certain components of solid waste from the health care waste stream in order to reduce the amount of toxic emissions from incinerated waste.</p> <p>(NOTE: A waste management plan may include, but is not limited to:</p> <ul style="list-style-type: none"> <li>– elements such as:             <ul style="list-style-type: none"> <li>– paper</li> <li>– cardboard</li> <li>– plastics</li> <li>– glass</li> <li>– battery</li> <li>– metal recycling</li> </ul> </li> <li>– purchasing recycled or recyclable products.)</li> </ul> <p>(NOTE: A waste management plan may include different goals or approaches for different areas or departments of the facility and need not include new waste management goals for every waste stream.)</p> <p>(NOTE: A waste management plan should identify, where possible, reasonably available additional waste management measures, taking into account the effectiveness of waste management measures already in place, the costs of additional measures, the emission reductions expected to be achieved, and any other environmental or energy impacts they might have.)</p>

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<p><b>AE.30.8.US.</b> HMIWIs for which construction is commenced after 15 September 1997 must prepare an analysis of the impacts of the HMIWI (40 CFR 60.54c) [Added December 1997].</p>	<p>Verify that the American Hospital Association's publication entitled "An Ounce of Prevention: Waste Reduction Strategies for Health Care Facilities" was considered in the development of the waste management plan.</p> <p>(NOTE: See checklist item AE.30.1.US for applicability information.)</p> <p>Verify that, if the facility commenced construction after 15 September 1997, an impact analysis was prepared.</p> <p>Verify that, if the facility has not yet commenced construction, an impact analysis is being prepared.</p> <p>Verify that the impact analysis considers air pollution control alternatives that minimize, on a site-specific basis, to the maximum extent practicable, potential risks to public health or the environment.</p> <p>(NOTE: In considering alternatives, the analysis may consider:</p> <ul style="list-style-type: none"> <li>– costs</li> <li>– energy impacts</li> <li>– non-air environmental impacts</li> <li>– any other factors related to the practicability of the alternatives.)</li> </ul> <p>(NOTE: Analyses of facility impacts prepared to comply with state, local, or other Federal regulatory requirements may be used to satisfy the facility impact analysis requirement, as long as they include the consideration of air pollution control alternatives as specified above.)</p> <p>Verify that the facility impact analysis was submitted to the regulatory authority.</p>
<p><b>AE.30.9.US.</b> HMIWIs which are exempted from the requirements for HMIWI that started construction on or before 20 June 1996 that are not covered by an USEPA approved and effective State or Tribal plan are required to meet certain requirements (40 CFR 62.14400 through 62.14403) [Added October 2000].</p>	<p>(NOTE: See checklist item AE.30.1.US for applicability information.)</p> <p>(NOTE: See Appendix 1-7f for exempted facilities.)</p> <p>(NOTE: 40 CFR 62 contains a list of all States and Tribal areas with approved Clean Air Act section 111(d)/129 plan in effect.)</p> <p>Verify that owners or operators of sources that qualify for the exemptions in paragraphs 1 or 2 of Appendix 1-7f submit records required to support their claims of exemption to the USEPA Administrator (or delegated enforcement authority) upon request.</p> <p>Verify that records required under 1 and 2 of Appendix 1-7f are maintained by the source for a period of at least 5 yr.</p>

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<p><b>AE.30.10.US.</b> HMIWI that started construction on or before 20 June 1996 that are not covered by an USEPA approved and effective State or Tribal plan are required to meet certain emissions requirements (40 CFR 62.14400, 62.14401, 62.14411 through 62.14413) [Added October 2000].</p>	<p>(NOTE: A facility which commenced modification of an existing HMIWI after 16 March 1998 is subject to 40 CFR 60.50c through 60.58c (see checklist items AE.30.1.US through AE.30.8.US) and is not subject these requirements. If physical or operational changes were made to the existing HMIWI solely for the purpose of complying with these requirements, these changes are not considered a modification, and the HMIWI is not subject to 40 CFR 60.50c through 60.58c.)</p> <p>(NOTE: See checklist item AE.30.1.US for applicability information.)</p> <p>(NOTE: See Appendix 1-7f for exempted facilities.)</p> <p>(NOTE: 40 CFR 62 contains a list of all States and Tribal areas with approved Clean Air Act section 111(d)/129 plan in effect.)</p> <p>Verify that the HMIWI is operated in compliance with the emission limit requirements for the HMIWI size category listed in Appendix 1-7g.</p> <p>Verify that HMIWIs (regardless of size category) do not discharge into the atmosphere from the stack any gases that exhibit greater than 10 percent opacity (6-min block average).</p> <p>(NOTE: The emission limits and stack opacity requirements apply at all times except during periods of startup, shutdown, or malfunction, provided that no hospital waste or medical/infectious waste is charged to the HMIWI during periods of startup, shutdown, or malfunction.)</p>
<p><b>AE.30.11.US.</b> HMIWI that started construction on or before 20 June 1996 that are not covered by an USEPA approved and effective State or Tribal plan are required to meet certain operator training requirements (40 CFR 62.14400, 62.14401, 62.14420 through 62.14423) [Added October 2000].</p>	<p>(NOTE: See checklist item AE.30.1.US for applicability information.)</p> <p>(NOTE: See Appendix 1-7f for exempted facilities.)</p> <p>(NOTE: 40 CFR 62 contains a list of all States and Tribal areas with approved Clean Air Act section 111(d)/129 plan in effect.)</p> <p>Verify that the facility has a fully trained and qualified HMIWI operator, either at the facility or able to be at the facility within 1 h.</p> <p>(NOTE: The trained and qualified HMIWI operator may operate the HMIWI directly or be the direct supervisor of one or more HMIWI operators.)</p> <p>(NOTE: The HMIWI operator can obtain training and qualification through a State-approved program or, if there are no State-approved training and qualification programs available or if the operator does not want to participate in a State-approved program, then the operator must complete a training course that includes all the content requirements and satisfies the qualification requirements)</p>

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	<p>Verify that the training course includes 24 h of training that includes all of the following subjects:</p> <ul style="list-style-type: none"> <li>– environmental concerns, including pathogen destruction and types of emissions</li> <li>– basic combustion principles, including products of combustion</li> <li>– operation of the type of incinerator to be used by the operator, including proper startup, waste charging, and shutdown procedures</li> <li>– combustion controls and monitoring</li> <li>– operation of air pollution control equipment and factors affecting performance (if applicable)</li> <li>– methods to monitor pollutants (continuous emission monitoring systems and monitoring of HMIWI and air pollution control device operating parameters) and equipment calibration procedures (where applicable)</li> <li>– inspection and maintenance of the HMIWI, air pollution control devices, and continuous emission monitoring systems</li> <li>– actions to correct malfunctions and conditions that may lead to malfunction</li> <li>– bottom and fly ash characteristics and handling procedures</li> <li>– applicable Federal, State, and local regulations</li> <li>– work safety procedures</li> <li>– prestartup inspections</li> <li>– recordkeeping requirements.</li> </ul> <p>Verify that the training course includes an examination designed and administered by the instructor and reference material distributed to the attendees covering the course topics.</p> <p>Verify that operators who do not participate in a State-approved program:</p> <ul style="list-style-type: none"> <li>– complete a training course that satisfies the above requirements</li> <li>– has either 6 mo experience as an HMIWI operator, 6 mo experience as a direct supervisor of an HMIWI operator, or completion of at least two burn cycles under the observation and supervision of two qualified HMIWI operators.</li> </ul> <p>Verify that, in order to remain qualified, operators who do not participate in a State-approved program complete and pass an annual review or refresher course of at least 4 h covering, at a minimum, the following:</p> <ul style="list-style-type: none"> <li>– update of regulations</li> <li>– incinerator operation, including startup and shutdown procedures</li> <li>– inspection and maintenance</li> <li>– responses to malfunctions or conditions that may lead to malfunction</li> <li>– discussion of operating problems encountered by attendees.</li> </ul> <p>(NOTE: If the operator's qualification lapses, he or she must renew it by one of the following methods:</p>

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<p><b>AE.30.12.US.</b> Small rural HMIWI that started construction on or before 20 June 1996 that are not covered by an USEPA approved and effective State or Tribal plan are required to meet certain inspection and repair requirements (40 CFR 62.14400, 62.14401, 62.14440 through 62.14443) [Added October 2000].</p>	<ul style="list-style-type: none"> <li>– for a lapse of less than 3 yr, complete and pass a standard annual refresher course</li> <li>– for a lapse of 3 yr or more, complete and pass a training course.</li> </ul> <p>(NOTE: See checklist item AE.30.1.US for applicability information.)</p> <p>(NOTE: See Appendix 1-7f for exempted facilities.)</p> <p>(NOTE: 40 CFR 62 contains a list of all States and Tribal areas with approved Clean Air Act section 111(d)/129 plan in effect.)</p> <p>Verify that small rural HMIWIs are inspected by 15 August 2001.</p> <p>Verify that inspections are done annually.</p> <p>Verify that, at a minimum, the following are done during the inspection:</p> <ul style="list-style-type: none"> <li>– inspect all burners, pilot assemblies, and pilot sensing devices for proper operation, and clean pilot flame sensor as necessary</li> <li>– check for proper adjustment of primary and secondary chamber combustion air, and adjust as necessary</li> <li>– inspect hinges and door latches, and lubricate as necessary</li> <li>– inspect dampers, fans, and blowers for proper operation</li> <li>– inspect HMIWI door and door gaskets for proper sealing</li> <li>– inspect motors for proper operation</li> <li>– inspect primary chamber refractory lining, and clean and repair/replace lining as necessary</li> <li>– inspect incinerator shell for corrosion and/or hot spots</li> <li>– inspect secondary/tertiary chamber and stack, and clean as necessary</li> <li>– inspect mechanical loader, including limit switches, for proper operation, if applicable</li> <li>– visually inspect waste bed (grates), and repair/ seal, as necessary</li> <li>– for the burn cycle that follows the inspection, document that the incinerator is operating properly and make any necessary adjustments</li> <li>– inspect air pollution control device(s) for proper operation, if applicable</li> <li>– inspect waste heat boiler systems to ensure proper operation, if applicable</li> <li>– inspect bypass stack components</li> <li>– ensure proper calibration of thermocouples, sorbent feed systems and any other monitoring equipment</li> <li>– generally observe that the equipment is maintained in good operating condition.</li> </ul> <p>Verify that any necessary repairs are completed within 10 operating days of the inspection unless written approval is obtained from the USEPA Administrator (or</p>

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	delegated enforcement authority) establishing a different date when all necessary repairs of the HMIWI must be completed.



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<p><b>MEDICAL WASTE INCINERATORS</b></p> <p><b>AE.32</b>  <b>Monitoring</b></p> <p><b>AE.32.1.US.</b> HMIWIs must conduct performance testing in accordance with specific provisions to determine compliance with emission limits (40 CFR 60.56c(b)) [Added December 1997].</p>	<p>(NOTE: See checklist item AE.30.1.US for applicability information.)</p> <p>(NOTE: The emission limits apply at all times except during periods of startup, shutdown, or malfunction, provided that no hospital waste or medical/infectious waste is charged to the HMIWI during startup, shutdown, or malfunction.)</p> <p>Verify that an initial performance test was conducted using approved testing methodology.</p> <p>(NOTE: The use of the bypass stack during any performance test shall invalidate that performance test.)</p> <p>Verify that, following the date on which the initial performance test was completed or was required to be completed, whichever date comes first, the facility determines compliance with:</p> <ul style="list-style-type: none"> <li>– the opacity limit by conducting an annual performance test (no more than 12 mo following the previous performance test) using appropriate procedures and test methods</li> <li>– the PM, CO, and HCl emission limits by conducting an annual performance test (no more than 12 mo following the previous performance test) using appropriate procedures and test methods</li> </ul> <p>(NOTE: If all three performance tests over a 3-yr period indicate compliance with the emission limit for a pollutant (PM, CO, or HCl), the facility may forego a performance test for that pollutant for the subsequent 2 yr.)</p> <p>(NOTE: At a minimum, a performance test for PM, CO, and HCl shall be conducted every third year (no more than 36 mo following the previous performance test.) If a performance test conducted every third year indicates compliance with the emission limit for a pollutant (PM, CO, or HCl), the facility may forego a performance test for that pollutant for an additional 2 yr.)</p> <p>(NOTE: If any performance test indicates noncompliance with the respective emission limit, a performance test for that pollutant shall be conducted annually until all annual performance tests over a 3-yr period indicate compliance with the emission limit.)</p>

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<p><b>AE.32.2.US.</b> HMIWIs must install, calibrate, maintain, and operate monitoring devices or establish methods to monitor operating parameters at applicable frequencies at all times except during periods of startup and shutdown (40 CFR 60.57c) [<b>Added December 1997</b>].</p>	<p>Verify that large HMIWIs annually determine compliance with the visible emission limits for fugitive emissions from fly ash/bottom ash storage and handling.</p> <p>Verify that facilities using a CEMS to demonstrate compliance with any of the emission limits:</p> <ul style="list-style-type: none"> <li>– determine compliance with the appropriate emission limit(s) using a 12-h rolling average, calculated each hour as the average of the previous 12 operating hours (not including startup, shutdown, or malfunction)</li> <li>– operate all CEMS in accordance with the applicable procedures under appendices B and F of 40 CFR 60.</li> </ul> <p>(NOTE: Existing medical waste incinerators will be required to comply with new regulations as USEPA approves State-developed plans under 40 CFR 60, Subpart Ce [40 CFR 60.30e through 60.39e, see text of regulation]. The deadline for compliance with the new regulations will be no later than 15 September 2002.)</p> <p>(NOTE: See checklist item AE.30.1.US for applicability information.)</p> <p>Verify that calibration of the monitoring devices is completed to manufacturer’s specifications.</p> <p>Verify that, where a device is not installed, calibrated, maintained, and operated, a method has been established for monitoring the applicable operating parameters.</p> <p>Verify that the monitoring devices or methods used measure and record values for all operating parameters listed in Appendix 1-7e at the frequencies indicated at all times except during startup and shutdown.</p> <p>Verify that the facility is using (and appropriately calibrating, maintaining, and operating) a monitoring device or method to measure the use of the bypass stack including date, time, and duration.</p> <p>Verify that, if the Administrator developed site-specific operating parameters, the facility is using the equipment necessary to monitor these parameters.</p> <p>Verify that the facility is obtaining monitoring data at all times during HMIWI operation, except during periods of monitoring equipment malfunction, calibration, and repair.</p> <p>(NOTE: At a minimum, valid monitoring data must be obtained for 75 percent of the operating hours per day and for 90 percent of the operating days per calendar quarter that the HMIWI is combusting hospital waste and/or medical/infectious waste.)</p>

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<p><b>AE.32.3.US.</b> HMIWI that started construction on or before 20 June 1996 that are not covered by an USEPA approved and effective State or Tribal plan are required to meet certain performance testing and monitoring requirements (40 CFR 62.14400, 62.14401, 62.14450 through 62.14455) [<b>Added October 2000</b>].</p>	<p>(NOTE: Existing medical waste incinerators will be required to comply with new regulations as USEPA approves State-developed plans under 40 CFR 60, Subpart Ce [40 CFR 60.30e through 60.39e, see text of regulation]. The deadline for compliance with the new regulations will be no later than 15 September 2002.)</p> <p>(NOTE: See checklist item AE.30.1.US for applicability information.)</p> <p>(NOTE: See Appendix 1-7f for exempted facilities.)</p> <p>(NOTE: 40 CFR 62 contains a list of all States and Tribal areas with approved Clean Air Act section 111(d)/129 plan in effect.)</p> <p>Verify that, for small rural HMIWIs:</p> <ul style="list-style-type: none"> <li>– an initial performance test is conducted for PM, opacity, CO, dioxin/furan, and Hg using the test methods and procedures outlined in 40 CFR 62.14452</li> <li>– after the initial performance test is completed or is required to be completed compliance with the opacity limit is determined by conducting an annual performance test (no more than 12 mo following the previous performance test) using the applicable procedures and test methods listed in 40 CFR 62.14452.</li> </ul> <p>(NOTE: The 2,000 lb/wk limitation for small rural HMIWI does not apply during performance tests.)</p> <p>(NOTE: The USEPA Administrator may request a repeat performance test at any time.)</p> <p>Verify that, for an HMIWI that is not a small rural HMIWI:</p> <ul style="list-style-type: none"> <li>– an initial performance test for PM, opacity, CO, dioxin/furan, HCl, Pb, Cd, and Hg is conducted using the test methods and procedures outlined in 40 CFR 62.14452</li> <li>– after the initial performance test is completed or is required to be completed, the facility: <ul style="list-style-type: none"> <li>– determines compliance with the opacity limit by conducting an annual performance test (no more than 12 mo following the previous performance test) using the applicable procedures and test methods listed in 40 CFR 62.14452</li> <li>– determines compliance with the PM, CO, and HCl emission limits by conducting an annual performance test (no more than 12 mo following the previous performance test) using the applicable procedures and test methods listed in 40 CFR 62.14452.</li> </ul> </li> </ul> <p>(NOTE: If all three performance tests over a 3-yr period indicate compliance with the emission limit for a pollutant (PM, CO, or HCl), the facility may forego a</p>

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	<p>performance test for that pollutant for the next 2 yr. At a minimum, the facility must conduct a performance test for PM, CO, and HCl every third year (no more than 36 mo following the previous performance test). If a performance test conducted every third year indicates compliance with the emission limit for a pollutant (PM, CO, or HCl), a performance test may be foregone for that pollutant for an additional 2 yr. If any performance test indicates noncompliance with the respective emission limit, the facility must conduct a performance test for that pollutant annually until all annual performance tests over a 3-year period indicate compliance with the emission limit.)</p> <p>Verify that all performance tests consist of a minimum of three test runs conducted under representative operating conditions.</p> <p>Verify that the minimum sample time is 1 h per test run unless otherwise indicated.</p> <p>(NOTE See the text of 40 CFR 62.14452 for more details on how performance testing is to be conducted.)</p> <p>Verify that, if the HMIWI is a small rural HMIWI, or the HMIWI is equipped with a dry scrubber followed by a fabric filter, a wet scrubber, or a dry scrubber followed by a fabric filter and wet scrubber:</p> <ul style="list-style-type: none"> <li>– appropriate maximum and minimum operating parameters, indicated in Appendix 1-7h are established as site-specific operating parameters during the initial performance test to determine compliance with the emission limits</li> <li>– after the date on which the initial performance test is completed or is required to be completed, whichever comes first, the HMIWI does not operate above any of the applicable maximum operating parameters or below any of the applicable minimum operating parameters listed in Appendix 1-7h and measured as 3-h rolling averages (calculated each hour as the average of the previous 3 operating hours), at all times except during startup, shutdown, malfunction, and performance tests.</li> </ul> <p>Verify that, if the HMIWI is not a small rural HMIWI, and an air pollution control device other than a dry scrubber followed by a fabric filter, a wet scrubber, or a dry scrubber followed by a fabric filter and a wet scrubber is in use to comply with the emission limits, the facility petitions the USEPA Administrator for site-specific operating parameters to be established during the initial performance test and continuously monitors those parameters thereafter.</p> <p>(NOTE: The initial performance test cannot be conducted until the USEPA Administrator has approved the petition.)</p> <p>Verify that the facility installs, calibrates (to manufacturers' specifications), maintains, and operates devices (or establishes methods) for monitoring the applicable maximum and minimum operating parameters listed in Appendix 1-7h such that these devices (or methods) measure and record values for the operating</p>

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	<p>parameters at the frequencies indicated in Appendix 1-7h at all times except during periods of startup and shutdown.</p> <p>Verify that, for charge rate, the device measures and records the date, time, and weight of each charge fed to the HMIWI automatically, meaning that the only intervention from an operator during the process would be to load the charge onto the weighing device.</p> <p>Verify that for batch HMIWI, the maximum charge rate is measured on a daily basis (the amount of waste charged to the unit each day).</p> <p>Verify that, for all HMIWI except small rural HMIWI, the facility installs, calibrates, (to manufacturers' specifications), maintains, and operates a device or method for measuring the use of the bypass stack, including the date, time, and duration of such use.</p> <p>Verify that, for all HMIWI except small rural HMIWI, if controls other than a dry scrubber followed by a fabric filter, a wet scrubber, or a dry scrubber followed by a fabric filter and a wet scrubber are used to comply with the emission limits the facility installs, calibrates (to manufacturers' specifications), maintains, and operates the equipment necessary to monitor the site-specific operating parameters.</p> <p>Verify that monitoring data is obtained at all times during HMIWI operation except during periods of monitoring equipment malfunction, calibration, or repair.</p> <p>Verify that, at a minimum, valid monitoring data is obtained for 75 percent of the operating hours per day for 90 percent of the operating days per calendar quarter that the HMIWI is combusting hospital waste and/or medical/infectious waste.</p> <p>(NOTE: See Appendix 1-7i for details on the ramifications of going outside a parameter limit.)</p> <p>(NOTE: Existing medical waste incinerators will be required to comply with new regulations as USEPA approves State-developed plans under 40 CFR 60, Subpart Ce [40 CFR 60.30e through 60.39e, see text of regulation]. The deadline for compliance with the new regulations will be no later than 15 September 2002.)</p>





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	<p>Verify that the annual report is signed by the facilities manager and includes:</p> <ul style="list-style-type: none"> <li>– the values for the site-specific operating parameters</li> <li>– the highest maximum operating parameter and the lowest minimum operating parameter, as applicable, for each operating parameter recorded for the calendar year being reported</li> <li>– the highest maximum operating parameter and the lowest minimum operating parameter, as applicable for each site-specific operating parameter for the calendar year preceding the year being reported, in order to provide the USEPA Administrator with a summary of the performance of the HMIWI over a 2-yr period</li> <li>– any information, recorded for the calendar year being reported, related to: <ul style="list-style-type: none"> <li>– identification of calendar days for which data on emission rates or operating parameters as described above have not been obtained, with an identification of the emission rates or operating parameters not measured, reasons for not obtaining the data, and a description of corrective actions taken</li> <li>– identification of calendar days, times, and durations of malfunctions with description of the malfunction and the corrective action taken</li> <li>– identification of calendar days for which data on emission rates or operating parameters as described above exceeded the applicable limits, with a description of the exceedances, reasons for such exceedances, and a description of corrective actions taken</li> </ul> </li> <li>– any information, recorded for the calendar year preceding the year being reported, in order to provide the USEPA Administrator with a summary of the performance of the HMIWI over a 2-yr period, related to: <ul style="list-style-type: none"> <li>– identification of calendar days for which data on emission rates or operating parameters as described above have not been obtained, with an identification of the emission rates or operating parameters not measured, reasons for not obtaining the data, and a description of corrective actions taken</li> <li>– identification of calendar days, times, and durations of malfunctions with a description of the malfunction and the corrective action taken</li> <li>– identification of calendar days for which data on emission rates or operating parameters as described above exceeded the applicable limits, with a description of the exceedances, reasons for such exceedances, and a description of corrective actions taken</li> </ul> </li> <li>– if a performance test was conducted during the reporting period, the results of that test</li> <li>– if no exceedances or malfunctions were reported for the calendar year being reported, a statement that no exceedances occurred during the reporting period</li> <li>– any use of the bypass stack, the duration, reason for malfunction, and corrective action taken.</li> </ul>

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<p><b>AE.34.3.US.</b> HMIWIs must maintain specific documentation at the facility (40 CFR 60.53c(h) through 60.53c(j)) [Added December 1997].</p>	<p>Verify that the facility submits semiannual reports no later than 60 days following the reporting period containing any recorded information regarding:</p> <ul style="list-style-type: none"> <li>– identification of calendar days for which data on emission rates or operating parameters as described above have not been obtained, with an identification of the emission rates or operating parameters not measured, reasons for not obtaining the data, and a description of corrective actions taken</li> <li>– identification of calendar days, times and durations of malfunctions, a description of the malfunction, and the corrective action taken</li> <li>– identification of calendar days for which data on emission rates or operating parameters as described above exceeded the applicable limits, with a description of the exceedances, reasons for such exceedances, and a description of corrective actions taken.</li> </ul> <p>(NOTE: The first semiannual reporting period ends 6 mo following the submission of information as required above. Subsequent reports shall be submitted no later than 6 calendar months following the previous report. The facilities manager shall sign all reports.)</p> <p>Verify that all records specified above are maintained onsite in either paper copy or computer-readable format, unless the Administrator approves an alternative format.</p> <p>(NOTE: Existing medical waste incinerators will be required to comply with new regulations as USEPA approves State-developed plans under 40 CFR 60, Subpart Ce [40 CFR 60.30e through 60.39e, see text of regulation]. The deadline for compliance with the new regulations will be no later than 15 September 2002.)</p> <p>(NOTE: See checklist item AE.30.1.US for applicability information.)</p> <p>Verify that the following documentation is maintained at the HMIWI:</p> <ul style="list-style-type: none"> <li>– summary of the applicable standards</li> <li>– description of basic combustion theory applicable to an HMIWI</li> <li>– procedures for receiving, handling, and charging waste</li> <li>– HMIWI startup, shutdown, and malfunction procedures</li> <li>– procedures for maintaining proper combustion air supply levels</li> <li>– procedures for operating the HMIWI and associated air pollution control systems within the standards established under this subpart</li> <li>– procedures for responding to periodic malfunction or conditions that may lead to malfunction</li> <li>– procedures for monitoring HMIWI emissions</li> <li>– reporting and recordkeeping procedures</li> <li>– procedures for handling ash.</li> </ul>

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<b>AE.34.4.US.</b> HMIWIs must maintain specified information for a period of at least 5 yr (40 CFR 60.58c(b)) <b>[Added December 1997].</b>	<p>Verify that a program has been established that requires all HMIWI operators to review annually the information in all required documentation.</p> <p>(NOTE: The initial review of the information in all required documentation shall be conducted by 16 September 1998 or prior to assumption of responsibilities affecting HMIWI operation, whichever date is later.)</p> <p>Verify that subsequent reviews of the information in all required documentation are conducted annually.</p> <p>Verify that all required documentation is kept in a readily accessible location for all HMIWI operators.</p> <p>(NOTE: All required documentation, as well as all training records, shall be available for inspection by the USEPA or its delegated enforcement agent upon request.)</p> <p>(NOTE: Existing medical waste incinerators will be required to comply with new regulations as USEPA approves State-developed plans under 40 CFR 60, Subpart Ce [40 CFR 60.30e through 60.39e, see text of regulation]. The deadline for compliance with the new regulations will be no later than 15 September 2002.)</p> <p>(NOTE: See checklist item AE.30.1.US for applicability information.)</p> <p>(NOTE: Required records should be maintained onsite in either a paper copy or a computer-readable format.)</p> <p>Verify that the facility maintains the following information (as applicable) for a period of at least 5 yr:</p> <ul style="list-style-type: none"> <li>– calendar date of each record</li> <li>– records of the following data: <ul style="list-style-type: none"> <li>– concentrations of any pollutant listed in 60.52c or measurements of opacity as determined by the CEMS</li> <li>– results of fugitive emissions tests</li> <li>– HMIWI charge dates, times, and weights and hourly charge rates</li> <li>– fabric filter inlet temperatures during each minute of operation</li> <li>– amount and type of dioxin/furan sorbent used during each hour of operation</li> <li>– amount and type of Hg sorbent used during each hour of operation</li> <li>– amount and type of HCl sorbent used during each hour of operation</li> <li>– secondary chamber temperatures recorded during each minute of operation</li> <li>– liquor flow rate to the wet scrubber inlet during each minute of operation</li> </ul> </li> </ul>

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<p><b>AE.34.5.US.</b> HMIWI that started construction on or before 20 June 1996 that are not covered by an USEPA approved and effective State or Tribal plan are required to</p>	<ul style="list-style-type: none"> <li>– horsepower or amperage to the wet scrubber during each minute of operation</li> <li>– pressure drop across the wet scrubber system during each minute of operation</li> <li>– temperature at the outlet from the wet scrubber during each minute of operation</li> <li>– pH at the inlet to the wet scrubber during each minute of operation</li> <li>– records indicating use of the bypass stack, including dates, times, and durations</li> <li>– for site-specific operating parameters, all operating parameter data collected</li> <li>– identification of calendar days for which data on emission rates or operating parameters have not been obtained, with an identification of the emission rates or operating parameters not measured, reasons for not obtaining the data, and a description of corrective actions taken</li> <li>– identification of calendar days, times, and durations of malfunctions with a description of the malfunction and the corrective action taken</li> <li>– identification of calendar days for which data on emission rates or operating parameters exceeded the applicable limits, with a description of the exceedances, reasons for such exceedances, and a description of corrective actions taken.</li> <li>– the results of the initial, annual, and any subsequent performance tests conducted to determine compliance with the emission limits and/or to establish operating parameters</li> <li>– all documentation produced as a result of the siting requirements</li> <li>– records showing the names of HMIWI operators who completed the review of information (see checklist item AE.34.2.US.), including the date of the initial review and all subsequent annual reviews</li> <li>– records showing the names of HMIWI operators who have completed training, including documentation of training and dates of training</li> <li>– records showing the names of the HMIWI operators who have met the criteria for qualification and the dates of their qualification</li> <li>– records of calibration of any monitoring devices.</li> </ul> <p>(NOTE: Existing medical waste incinerators will be required to comply with new regulations as USEPA approves State-developed plans under 40 CFR 60, Subpart Ce [40 CFR 60.30e through 60.39e, see text of regulation]. The deadline for compliance with the new regulations will be no later than 15 September 2002.)</p> <p>(NOTE: See checklist item AE.30.1.US for applicability information.)</p> <p>(NOTE: See Appendix 1-7f for exempted facilities.)</p>

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<p>meet certain documentation requirements (40 CFR 62.14400, 62.14401, 62.14424, 62.14425, 62.14430 through 62.14432) <b>[Added October 2000]</b>.</p>	<p>(NOTE: 40 CFR 62 contains a list of all States and Tribal areas with approved Clean Air Act section 111(d)/129 plan in effect.)</p> <p>Verify that the following are maintained at the facility:</p> <ul style="list-style-type: none"> <li>– summary of the applicable standards</li> <li>– description of basic combustion theory applicable to an HMIWI</li> <li>– procedures for receiving, handling, and charging waste</li> <li>– procedures for startup, shutdown, and malfunction</li> <li>– procedures for maintaining proper combustion air supply levels</li> <li>– procedures for operating the HMIWI and associated air pollution control systems</li> <li>– procedures for responding to malfunction or conditions that may lead to malfunction</li> <li>– procedures for monitoring HMIWI emissions</li> <li>– reporting and recordkeeping procedures</li> <li>– procedures for handling ash.</li> </ul> <p>Verify that required documentation is kept in a readily accessible location for all HMIWI operators.</p> <p>(NOTE: This information, along with records of training, must be available for inspection by the USEPA or its delegated enforcement agent upon request.</p> <p>Verify that there is a program for reviewing the information in the documentation annually with each HMIWI operator.</p> <p>Verify that the initial review of the information is done by 15 February 2001, or prior to assumption of responsibilities affecting HMIWI operation, whichever is later.</p> <p>Verify that the facility has a waste management plan that identifies both the feasibility of, and the approach for, separating certain components of solid waste from the health care waste stream in order to reduce the amount of toxic emissions from incinerated waste.</p> <p>(NOTE: The waste management plan may address, but is not limited to, paper, cardboard, plastics, glass, battery, or metal recycling, or purchasing recycled or recyclable products. The waste management plan may include different goals or approaches for different areas or departments of the facility and need not include new waste management goals for every waste stream. When the waste management plan is developed it should identify, where possible, reasonably available additional waste management measures, taking into account the effectiveness of waste management measures already in place, the costs of additional measures, the</p>

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<p><b>AE.34.6.US.</b> HMIWI that started construction on or before 20 June 1996 that are not covered by an USEPA approved and effective State or Tribal plan are required to meet certain recordkeeping requirements (40 CFR 62.14400, 62.14401, 62.14460 through 62.14462) [<b>Added October 2000</b>].</p>	<p>emission reductions expected to be achieved, and any other potential environmental or energy impacts they might have.)</p> <p>Verify that, when developing the waste management plan, the American Hospital Association publication entitled “Ounce of Prevention: Waste Reduction Strategies for Health Care Facilities” is considered.</p> <p>(NOTE: This publication (AHA Catalog No. 057007) is available for purchase from the American Hospital Association (AHA) Service, Inc., Post Office Box 92683, Chicago, Illinois 60675-2683.)</p> <p>Verify that the waste management plan is submitted with the initial report, which is due 60 days after the initial performance test.</p> <p>(NOTE: Existing medical waste incinerators will be required to comply with new regulations as USEPA approves State-developed plans under 40 CFR 60, Subpart Ce [40 CFR 60.30e through 60.39e, see text of regulation]. The deadline for compliance with the new regulations will be no later than 15 September 2002.)</p> <p>(NOTE: See checklist item AE.30.1.US for applicability information.)</p> <p>(NOTE: See Appendix 1-7f for exempted facilities.)</p> <p>(NOTE: 40 CFR 62 contains a list of all States and Tribal areas with approved Clean Air Act section 111(d)/129 plan in effect.)</p> <p>Verify that the following records are maintained:</p> <ul style="list-style-type: none"> <li>– calendar date of each record</li> <li>– records of the following data: <ul style="list-style-type: none"> <li>– concentrations of any pollutant listed in Table 1 and/or measurements of opacity</li> <li>– the HMIWI charge dates, times, and weights and hourly charge rates</li> <li>– fabric filter inlet temperatures during each minute of operation, as applicable</li> <li>– amount and type of dioxin/furan sorbent used during each hour of operation, as applicable</li> <li>– amount and type of Hg sorbent used during each hour of operation, as applicable</li> <li>– amount and type of HCl sorbent used during each hour of operation, as applicable</li> <li>– secondary chamber temperatures recorded during each minute of operation</li> <li>– liquor flow rate to the wet scrubber inlet during each minute of operation, as applicable</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– horsepower or amperage to the wet scrubber during each minute of operation, as applicable</li> <li>– pressure drop across the wet scrubber system during each minute of operation, as applicable</li> <li>– temperature at the outlet from the wet scrubber during each minute of operation, as applicable</li> <li>– the pH at the inlet to the wet scrubber during each minute of operation, as applicable</li> <li>– records of the annual equipment inspections, any required maintenance, and any repairs not completed within 10 operating days of an inspection or the time frame established by the USEPA Administrator or delegated enforcement authority, as applicable</li> <li>– records indicating use of the bypass stack, including dates, times, and durations</li> <li>– if complying by monitoring site-specific operating parameters, monitor all operating data collected</li> <li>– identification of calendar days for which data on emission rates or operating parameters were not obtained, with an identification of the emission rates or operating parameters not measured, reasons for not obtaining the data, and a description of corrective actions taken</li> <li>– identification of calendar days, times and durations of malfunctions, and a description of the malfunction and the corrective action taken</li> <li>– identification of calendar days for which data on emission rates or operating parameters exceeded the applicable limits, with a description of the exceedances, reasons for such exceedances, and a description of corrective actions taken</li> <li>– the results of the initial, annual, and any subsequent performance tests conducted to determine compliance with the emission limits and/or to establish operating parameters, as applicable</li> <li>– records showing the names of HMIWI operators who have completed review of the documentation, including the date of the initial review and all subsequent annual reviews</li> <li>– records showing the names of the HMIWI operators who have completed the operator training requirements, including documentation of training and the dates of the training</li> <li>– records showing the names of the HMIWI operators who have met the criteria for qualification and the dates of their qualification</li> <li>– records of calibration of any monitoring devices.</li> </ul> <p>Verify that records are maintained for at least 5 yr onsite in either paper copy or computer-readable format, unless the USEPA Administrator approves an alternative format.</p> <p>(NOTE: Existing medical waste incinerators will be required to comply with new regulations as USEPA approves State-developed plans under 40 CFR 60, Subpart</p>

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<b>AE.34.7.US.</b> HMIWI that started construction on or before 20 June 1996 that are not covered by an USEPA approved and effective State or Tribal plan are required to meet certain reporting requirements (40 CFR 62.14400, 62.14401, 62.14463 through 62.14465) [Added October 2000].	<p>Ce [40 CFR 60.30e through 60.39e, see text of regulation]. The deadline for compliance with the new regulations will be no later than 15 September 2002.)</p> <p>(NOTE: See checklist item AE.30.1.US for applicability information.)</p> <p>(NOTE: See Appendix 1-7f for exempted facilities.)</p> <p>(NOTE: 40 CFR 62 contains a list of all States and Tribal areas with approved Clean Air Act section 111(d)/129 plan in effect.)</p> <p>Verify that the following are submitted to the USEPA Administrator (or delegated enforcement authority) no later than 60 days following the initial performance test:</p> <ul style="list-style-type: none"> <li>– the initial performance test data</li> <li>– the values for the site-specific operating parameters, as applicable</li> <li>– the waste management plan.</li> </ul> <p>Verify that the facility submits an annual report to the USEPA Administrator (or delegated enforcement authority) no more than 1 yr following the submission of the initial test data, site-specific values, and the waste management plan.</p> <p>Verify that subsequent reports are submitted no more than 1 yr following the previous report.</p> <p>(NOTE: Once the unit is subject to permitting requirements under title V of the Clean Air Act, the facility must submit these reports semiannually.)</p> <p>Verify that the annual report includes the following information, as applicable:</p> <ul style="list-style-type: none"> <li>– the highest maximum operating parameter and the lowest minimum operating parameter for each operating parameter recorded for the calendar year being reported, as applicable</li> <li>– the highest maximum operating parameter and the lowest minimum operating parameter, as applicable, for each operating parameter recorded for the calendar year preceding the year being reported, in order to provide a summary of the performance of the HMIWI over a 2-yr period</li> <li>– any information recorded when parameters are exceeded, malfunctions, or emission rates/operating parameters were not measured for the calendar year being reported</li> <li>– any information recorded rates/operating parameters were not measured for the calendar year preceding the year being reported, in order to provide a summary of the performance of the HMIWI over a 2-yr period</li> <li>– the results of any performance test conducted during the reporting period</li> <li>– if no exceedances or malfunctions occurred during the calendar year being reported, a statement that no exceedances occurred during the reporting period</li> </ul>

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	<ul style="list-style-type: none"> <li>– any use of the bypass stack, duration of such use, reason for malfunction, and corrective action taken</li> <li>– records of the annual equipment inspections, any required maintenance, and any repairs not completed within 10 days of an inspection or the time frame established by the USEPA Administrator (or delegated enforcement authority).</li> </ul> <p>Verify that semiannual reports containing any information related to the submission of the initial test data, site-specific values, and the waste management plan are submitted no later than 60 days following the end of the semiannual reporting period.</p> <p>(NOTE: The first semiannual reporting period ends 6 mo following the submission of information no later than 60 days following the initial performance test. Subsequent reports must be submitted no later than 6 calendar mo following the previous report.)</p> <p>Verify that the facilities manager signs all reports.</p> <p>(NOTE: Existing medical waste incinerators will be required to comply with new regulations as USEPA approves State-developed plans under 40 CFR 60, Subpart Ce [40 CFR 60.30e through 60.39e, see text of regulation]. The deadline for compliance with the new regulations will be no later than 15 September 2002.)</p>

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<b>AE.35</b>  <b>MUNICIPAL WASTE COMBUSTORS</b>  <b>AE.35.1.US.</b> Municipal waste combustors with a capacity greater than 225 Mg/ day (250 tons/day) of municipal solid waste or refuse-derived fuel are required to meet specific operational standards (40 CFR 60.50a, through 60.58a) [Revised December 1995].	<p>(NOTE: These requirements apply to municipal waste combustor units that started construction after 20 December 1989 and on or before 20 September 1994. They also apply to units that have undergone modification or reconstruction starting after 20 December 1989 and on or before 19 June 1996.)</p> <p>Verify that gases are not discharged that contain the following constituents in excess of the least stringent amount listed:</p> <ul style="list-style-type: none"> <li>– 10 percent opacity (6-min average)</li> <li>– dioxin/furan in excess of 30 ng/dscm (12 gr/billion dscf), corrected to 7 percent oxygen (dry basis)</li> <li>– SO<sub>2</sub> in excess of 20 percent of the potential SO<sub>2</sub> emission rate or 30 ppm by volume, corrected to 7 percent oxygen</li> <li>– hydrogen chloride in excess of 5 percent of the potential hydrogen chloride emission rate (95 percent reduction by weight or volume), or 25 ppm by volume, corrected to 7 percent oxygen (dry basis)</li> <li>– NO<sub>x</sub> emissions in excess of 180 ppm by volume corrected to 7 percent oxygen (dry basis)</li> <li>– particulates in excess of 34 mg/dscm (0.015 gr/dscf), corrected to 7 percent oxygen (dry basis).</li> </ul> <p>Verify that municipal waste combustors meet the operating standards for CO emissions outlined in Appendix 1-8.</p> <p>Verify that the following operating practices are implemented:</p> <ul style="list-style-type: none"> <li>– combustors do not operate at a load level greater than 110 percent of the maximum demonstrated municipal waste combustor unit load</li> <li>– combustors do not operate at a temperature exceeding 17 degrees C (30 degrees F) above the maximum demonstrated particulate matter control device temperature.</li> </ul> <p>Verify that actions are being taken to ensure that, by 11 February 1993 or within 24 mo after the startup of operation (whichever is later), each chief municipal waste combustor operator and shift supervisor is certified.</p> <p>(NOTE: Exempted from these requirements are:</p> <ul style="list-style-type: none"> <li>– any unit combusting a single item waste stream of tires if the unit:             <ul style="list-style-type: none"> <li>– notifies the Administrator of an exemption claim</li> <li>– provides data documenting that the unit qualifies for the exemption</li> </ul> </li> </ul>

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<p><b>AE.35.2.US.</b> Municipal waste combustors with a capacity greater than 225 Mg/ day (250 tons/day) of municipal solid waste or refuse-derived fuel are required to meet specific notification requirements (40 CFR 60.50a, 60.59a(a), 60.59a(e) through 60.59a(g)) [Revised December 1995].</p>	<ul style="list-style-type: none"> <li>– cofired combustors at a plant with a capacity greater than 225 Mg/day (250 tons/day) if the owner or operator:               <ul style="list-style-type: none"> <li>– notifies the Administrator of an exemption claim</li> <li>– provides a copy of the Federally enforceable permit</li> <li>– keeps a record on a calendar quarter of the weight of the municipal solid waste combusted at the cofired combustor and the weight of all other fuels combusted at the cofired combustor</li> </ul> </li> <li>– cofired combustors that are subject to a Federally enforceable permit limiting the operation of the combustor to no more than 225 Mg/day (250 tons) of municipal solid waste or refuse-derived fuel</li> <li>– physical or operational changes made to an existing unit so it will comply with emissions guidelines</li> <li>– a qualifying small power production facility that burns homogeneous waste (such as auto tires or used oil, but not including refuse-derived fuel) for the production of electric energy if the owner or operator:               <ul style="list-style-type: none"> <li>– notifies the Administrator of an exemption claim</li> <li>– provides data documenting that the unit qualifies for the exemption</li> </ul> </li> <li>– a qualifying cogeneration facility that burns homogeneous waste (such as auto tires or used oil, but not including refuse-derived fuel) for the production of electric energy and steam or forms of useful energy that are used for industrial, commercial, heating, or cooling purposes if the owner or operator:               <ul style="list-style-type: none"> <li>– notifies the Administrator of an exemption claim</li> <li>– provides data documenting that the unit qualifies for the exemption</li> </ul> </li> <li>– any unit required to have a permit under section 3005 of the SWDA</li> <li>– any materials recovery facility (including primary and secondary smelters) that combust waste for the primary purpose of recovering metals</li> <li>– pyrolysis/combustion units that are an integrated part of a plastics/rubber recycling unit if the owner or operator:               <ul style="list-style-type: none"> <li>– keeps records of the weight of plastics, rubber, and/or rubber tires processed on a calendar quarter basis</li> <li>– keeps records of the weight of chemical plant feedstocks and petroleum refinery feedstocks produced and marketed on a calendar quarter basis</li> <li>– keeps records of the name and address of the purchaser of the feedstock.)</li> </ul> </li> </ul> <p>(NOTE: See checklist item AE.35.1.US for information on the applicability of this checklist item.)</p> <p>Verify that, if a new municipal waste combustor is starting to operate, a notice to construct, planned startup date, and fuels to be used at the combustor was provided to the USEPA. This notification requirement also applies to cofired combustors and municipal waste combustors that burn tires only.</p> <p>Verify that the following reports are submitted to the USEPA administrator:</p>

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<p><b>AE.35.3.US.</b> Municipal waste combustors with a capacity greater than 225 Mg/day (250 tons/day) of municipal solid waste or refuse-derived fuel are required to meet specific recordkeeping requirements (40 CFR 60.50a, 60.56a(f), 60.59a(b), 60.59a(i), and 60.59a(j)) [Added December 1995].</p>	<ul style="list-style-type: none"> <li>– quarterly compliance reports for SO<sub>2</sub>, NO, CO, load level, and particulate matter control device temperature</li> <li>– quarterly excess emissions reports for opacity</li> <li>– annual performance tests results for particulate matter, dioxin/furan, and hydrogen chloride</li> <li>– quarterly reports of the daily weights of municipal solid waste and every other fuel fired when records of this information is required to be kept.</li> </ul> <p>(NOTE: See checklist item AE.35.1.US for information on the applicability if this checklist item.)</p> <p>Verify that the operating manual is at the municipal waste combustor is updated yearly by a certified operator and indicates:</p> <ul style="list-style-type: none"> <li>– applicable standards</li> <li>– description of basic combustion theory applicable to an MWC unit</li> <li>– procedures for receiving, handling, and feeding municipal solid waste</li> <li>– startup, shutdown, and malfunction procedures</li> <li>– procedures for maintaining correct combustion air supply levels</li> <li>– operational provisions for meeting emission standards</li> <li>– response procedures for emergency situations</li> <li>– monitoring procedures for particulate matter carryover</li> <li>– procedures for handling ash and MWC unit emissions</li> <li>– procedures for monitoring emissions</li> <li>– reporting and recordkeeping requirements.</li> </ul> <p>Verify that a copy of the operating manual is kept accessible.</p> <p>Verify that the following records are maintained for 2 yr:</p> <ul style="list-style-type: none"> <li>– emissions rates</li> <li>– dates when excess emissions were identified and the reason for excess emissions</li> <li>– operating days when the minimum numbers of hours of SO<sub>2</sub> or NO<sub>x</sub> emissions or operational data have not been obtained and the reasons</li> <li>– identification of the times when SO<sub>2</sub> or NO<sub>x</sub> emissions or operational data have been excluded from the calculation of average emission rates or parameters and the reason for exclusion</li> <li>– results of daily SO<sub>2</sub>, NO<sub>x</sub>, and CO continuous emission monitoring systems drift tests and accuracy assessments</li> <li>– results of all annual performance tests</li> <li>– continuous emissions monitoring data for opacity, SO<sub>2</sub>, NO<sub>x</sub>, and CO; load level data; and particulate matter control device temperature data</li> <li>– names of the persons who have completed the review of the operating manual</li> </ul>

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	<ul style="list-style-type: none"> <li>– weights of municipal solid waste and other fuel combusted when being used in a cofired combustor with a municipal waste capacity greater than 225 Mg/day (250 tons)</li> <li>– the amount of nonmedical and medical waste combusted on a daily basis for combustors firing both medical waste and other municipal solid waste, unless it is assumed that the total heat input to the combustor is from municipal solid waste with a design heating value of 10,500 kJ/kg (4500 Btu/lb).</li> </ul>

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<p><b>AE.36</b></p> <p><b>NEW MUNICIPAL WASTE COMBUSTORS</b></p> <p><b>AE.36.1.US.</b> Each MWC unit with a combustion capacity greater than 250 tons/day of municipal solid waste is required to meet general emissions standards (40 CFR 60.50b(a), 50.50b(b), 60.52b(a), 60.52b(b), 60.53b(a), and 60.58b(a)(1)(iii)) <b>[Revised December 1997; Revised January 2002; Revised July 2006].</b></p>	<p>(NOTE: These requirements apply to units for which construction is started after 20 September 1994 or for which modification or reconstruction is started after 19 June 1996. These requirements become effective 19 June 1996.)</p> <p>(NOTE: Any waste combustion unit that is capable of combusting more than 250 tons per day of municipal solid waste and is subject to a federally enforceable permit limiting the maximum amount of municipal solid waste that may be combusted in the unit to less than or equal to 11 tons per day is not subject to the requirements in 40 CFR 60.50b through 60.59b if the owner or operator:</p> <ul style="list-style-type: none"> <li>– notifies the EPA of an exemption claim</li> <li>– provides a copy of the federally enforceable permit that limits the firing of municipal solid waste to less than 11 tons per day</li> <li>– keeps records of the amount of municipal solid waste fired on a daily basis.)</li> </ul> <p>(NOTE: See the definition of Exempted New Municipal Waste Combustors.)</p> <p>Verify that, on and after the date on which the initial performance test is completed or is required to be completed, no affected facility discharges into the atmosphere any gases that:</p> <ul style="list-style-type: none"> <li>– any gases that contain particulate matter in excess of the following limits: <ul style="list-style-type: none"> <li>–for affected facilities that commenced construction, modification, or reconstruction after 20 September 1994, and on or before 29 December 2005, the emission limit is 24 milligrams/dscm, corrected to 7 percent oxygen</li> <li>–for affected facilities that commenced construction, modification, or reconstruction after 19 December 2005, the emission limit is 20 milligrams/dscm, corrected to 7 percent oxygen</li> </ul> </li> <li>– exhibit greater than 10 percent opacity (6-min average)</li> <li>– contain cadmium in excess of the following limits <ul style="list-style-type: none"> <li>–for affected facilities that commenced construction, modification, or reconstruction after 20 September 1994, and on or before 19 December 2005, the emission limit is 20 micrograms/dscm, corrected to 7 percent oxygen</li> <li>–for affected facilities that commenced construction, modification, or reconstruction after 19 December 2005, the emission limit is 10 micrograms/dscm, corrected to 7 percent oxygen</li> </ul> </li> <li>– contain mercury in excess of the following limits:</li> </ul>

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	<ul style="list-style-type: none"> <li>– for affected facilities that commenced construction, modification, or reconstruction after 20 September 1994 and on or before 19 December 2005, the emission limit is 80 micrograms/dscm or 15 percent of the potential mercury emission concentration (85-percent reduction by weight), corrected to 7 percent oxygen, whichever is less stringent</li> <li>– for affected facilities that commenced construction, modification, or reconstruction after 19 December 2005, the emission limit is 50 micrograms/dscm, or 15 percent of the potential mercury emission concentration (85-percent reduction by weight), corrected to 7 percent oxygen, whichever is less stringent</li> <li>– contain SO<sub>2</sub> in excess of 30 ppmv or 20 percent of the potential SO<sub>2</sub> emissions concentration, corrected to 7 percent oxygen (dry basis), whichever is less stringent</li> <li>– contain HCL in excess of 25 ppmv or 5 percent of the potential HCL emission concentration, corrected to 7 percent oxygen (dry basis), whichever is less stringent</li> <li>– contain CO in excess of the emissions limits specified in Appendix 1-8a</li> <li>– contains lead in excess of the following limits: <ul style="list-style-type: none"> <li>– for affected facilities that commenced construction, modification, or reconstruction after 20 September 1994, and on or before 19 December 2005, the emission limit is 200 micrograms/dscm, corrected to 7 percent oxygen</li> <li>– for affected facilities that commenced construction, modification, or reconstruction after 19 December 2005, the emission limit is 140 micrograms/dscm, corrected to 7 percent oxygen.</li> </ul> </li> </ul> <p>(NOTE: For the purpose of compliance with the CO emission limits, if a loss of boiler water level control (e.g., boiler waterwall tube failure) or a loss of combustion air control (e.g., loss of combustion air fan, induced draft fan, combustion grate bar failure) is determined to be a malfunction, the duration of the malfunction period is limited to 15 h per occurrence. During such periods of malfunction, monitoring data shall be dismissed or excluded from compliance calculations, but shall be recorded and reported in accordance with the provisions of 40 CFR 60.59b(d)(7) [see checklist item AE.36.14.US.] )</p> <p>(NOTE: Physical or operational changes made to an existing municipal waste combustor unit primarily for the purpose of complying with emission guidelines under 40 CFR 60.30b through 60.39b are not considered a modification or reconstruction and do not result in an existing municipal waste combustor unit becoming subject to 40 CFR 60.50b through 60.59b.)</p> <p>(NOTE: A qualifying small power production facility, as defined in section 3(17)(C) of the Federal Power Act (16 U.S.C. 796(17)(C)), that burns homogeneous waste (such as automotive tires or used oil, but not including refuse-derived fuel) for the production of electric energy is not subject to 40 CFR 60.50b through 60.59b if the</p>

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	<p>owner or operator of the facility notifies EPA of this exemption and provides data documenting that the facility qualifies for this exemption.)</p> <p>(NOTE: A qualifying cogeneration facility, as defined in section 3(18)(B) of the Federal Power Act (16 U.S.C. 796(18)(B)), that burns homogeneous waste (such as automotive tires or used oil, but not including refuse-derived fuel) for the production of electric energy and steam or forms of useful energy (such as heat) that are used for industrial, commercial, heating, or cooling purposes, is not subject to 40 CFR 60.50b through 60.59b if the owner or operator of the facility notifies EPA of this exemption and provides data documenting that the facility qualifies for this exemption.)</p> <p>(NOTE: A qualifying cogeneration facility, as defined in section 3(18)(B) of the Federal Power Act (16 U.S.C. 796(18)(B)), that burns homogeneous waste (such as automotive tires or used oil, but not including refuse-derived fuel) for the production of electric energy and steam or forms of useful energy (such as heat) that are used for industrial, commercial, heating, or cooling purposes, is not subject to 40 CFR 60.50b through 60.59b if the owner or operator of the facility notifies the EPA Administrator of this exemption and provides data documenting that the facility qualifies for this exemption.)</p> <p>(NOTE: Any unit combusting a single-item waste stream of tires is not subject 40 CFR 60.50b through 60.59b if the owner or operator of the unit:</p> <ul style="list-style-type: none"> <li>– notifies the EPA Administrator of an exemption claim</li> <li>– provides data documenting that the unit qualifies for this exemption.)</li> </ul> <p>(NOTE: Any unit required to have a permit under section 3005 of the <i>Solid Waste Disposal Act</i> is not subject to 40 CFR 60.50b through 60.59b.)</p> <p>(NOTE: Any materials recovery facility (including primary or secondary smelters) that combusts waste for the primary purpose of recovering metals is not subject 40 CFR 60.50b through 60.59b.)</p> <p>(NOTE: Any cofired combustor, with a combustion capacity greater than 250 tons/day is not subject to 40 CFR 60.50b through 60.59b if the owner or operator of the cofired combustor:</p> <ul style="list-style-type: none"> <li>– notifies the EPA Administrator of an exemption claim</li> <li>– provides a copy of the federally enforceable permit</li> <li>– keeps a record on a calendar quarter basis of the weight of municipal solid waste combusted at the cofired combustor and the weight of all other fuels combusted at the cofired combustor.)</li> </ul> <p>(NOTE: Air curtain incinerators located at a plant with a combustion capacity greater than 250 tons/day and that combust a fuel stream composed of 100 percent yard waste are exempt from all provisions of 40 CFR 60.50b through 60.59b except the opacity limit under 40 CFR 60.56b [see checklist item AE.36.4.US], the testing procedures under 40 CFR 60.58b(l) [see checklist item AE.36.7.US], and the</p>

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<p><b>AE.36.2.US.</b> Each MWC unit with a combustion capacity greater than 250 tons/day of municipal solid waste is required to meet specific NO<sub>x</sub> emissions standards (40 CFR 60.50b(a) and 60.52b(d)) <b>[Revised December 1997]</b>.</p> <p><b>AE.36.3.US.</b> Each MWC unit with a combustion capacity greater than 250 tons/day of municipal solid waste is required to meet specific combustor fugitive ash emissions standards (40 CFR 60.50b(a), 60.55b, and 60.58b(k)(4)) <b>[Revised December 1997]</b>.</p>	<p>reporting and recordkeeping provisions under 40 CFR 60.59b(e) and 59b(i) [see checklist item AE.36.16.US].)</p> <p>(NOTE: Air curtain incinerators located at plants with a combustion capacity greater than 250 tons/day combusting municipal solid waste other than yard waste are subject to 40 CFR 60.50b through 60.59b.)</p> <p>(NOTE: Pyrolysis/combustion units that are an integrated part of a plastics/rubber recycling unit are not subject 60.50b through 60.59b if the owner or operator of the plastics/rubber recycling unit keeps records of the weight of plastics, rubber, and/or rubber tires processed on a calendar quarter basis; the weight of chemical plant feedstocks and petroleum refinery feedstocks produced and marketed on a calendar quarter basis; and the name and address of the purchaser of the feedstocks. The combustion of gasoline, diesel fuel, jet fuel, fuel oils, residual oil, refinery gas, petroleum coke, liquified petroleum gas, propane, or butane produced by chemical plants or petroleum refineries that use feedstocks produced by plastics/rubber recycling units are not subject 40 CFR 60.50b through 60.59b.)</p> <p>(NOTE: Cement kilns firing municipal solid waste are not subject to 40 CFR 60.50b through 60.59b.)</p> <p>(NOTE: See checklist item AE.36.1.US for information on the applicability of this checklist item.)</p> <p>Verify that, on and after the date on which the initial performance test is completed or is required to be completed, no affected facility discharges into the atmosphere any gases that contain NO<sub>x</sub> in excess of 180 ppmv, corrected to 7 percent oxygen (dry basis).</p> <p>Verify that, after the first year of operation following the date on which the initial performance test is completed, the facility does not discharge gases which contain NO<sub>x</sub> in excess of 150 ppmv, corrected to 7 percent oxygen (dry basis).</p> <p>(NOTE: See checklist item AE.36.1.US for information on the applicability of this checklist item.)</p> <p>Verify that, on and after the date on which the initial performance test is completed or is required to be completed, no affected facility discharges into the atmosphere visible emissions of combustion ash from an ash conveying system (including conveyor transfer points) in excess of 5 percent of the observation period (i.e., 9-min/3-h period).</p> <p>Verify that performance tests for fugitive ash are conducted annually.</p>

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<p><b>AE.36.4.US.</b> Each air curtain incinerator with the capacity to combust greater than 250 tons of municipal solid waste is required to meet specific opacity standards (40 CFR 60.56b) <b>[Revised December 1997]</b>.</p> <p><b>AE.36.5.US.</b> Each MWC unit with a combustion capacity greater than 250 tons/day of municipal solid waste that started construction after 20 September 1994 but on or before 20 November 1997 is required to meet organic emissions standards (40 CFR 60.50b(a) and 60.52b(c)(1)) <b>[Revised December 1997]</b>.</p> <p><b>AE.36.6.US.</b> Each MWC unit with a combustion capacity greater than 250 tons/day of municipal solid waste for which construction, modification, or reconstruction is started after 20 November 1997 is required to meet specific</p>	<p>(NOTE: This requirement does not cover visible emissions discharged inside buildings or enclosures of ash conveying systems. But the requirements do apply to visible emissions discharged into the atmosphere from buildings or enclosures of ash conveying systems.)</p> <p>(NOTE: These requirements do not apply during maintenance and repair of ash conveying systems.)</p> <p>(NOTE: These requirements apply to incinerators which combust a fuel feed stream composed of 100 percent yard waste and no other municipal solid waste materials. These requirements become effective 19 June 1996.)</p> <p>Verify that at no time are gases discharged that exhibit greater than 10 percent opacity (6-min average).</p> <p>(NOTE: An opacity level of up to 35 percent (6-min average) is permitted during startup periods during the first 30 min of operation of the unit.)</p> <p>(NOTE: See the definition of Exempted New Municipal Waste Combustors.)</p> <p>(NOTE: These requirements become effective 19 June 1996.)</p> <p>Verify that, on and after the date on which the initial performance test is completed or is required to be completed, no affected facility for which construction, modification, or reconstruction started on or before 27 November 1997 discharges into the atmosphere any gases that:</p> <ul style="list-style-type: none"> <li>– contain dioxin/furan emissions that exceed 30 ng/dscm (total mass), corrected to 7 percent oxygen for the first 3 yr following the date of initial startup</li> <li>– contain dioxin furan emissions that exceed 13 ng/dscm (total mass), corrected to 7 percent oxygen after the first 3 yr following the date of initial startup.</li> </ul> <p>(NOTE: See the definition of Exempted New Municipal Waste Combustors.)</p> <p>Verify that, on and after the date on which the initial performance test is completed or is required to be completed, no affected facility discharges into the atmosphere any gases that: contain dioxin/furan emissions that exceed 13 ng/dscm (total mass), corrected to 7 percent oxygen.</p> <p>(NOTE: See the definition of Exempted New Municipal Waste Combustors.)</p>

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<p>organic emissions standards (40 CFR 60.50b(a) and 60.52b(c)(2)) <b>[Revised December 1997]</b>.</p> <p><b>AE.36.7.US.</b> The owner or operator of an affected facility are required to install, calibrate, maintain, and operate continuous emissions monitoring systems (CEMs) and conduct annual performance tests for specified emissions (40 CFR 60.50b(a) and 60.58b) <b>[Revised December 1997; Revised July 2006]</b>.</p>	<p>(NOTE: See checklist item AE.36.1.US for information on the applicability of this checklist item.)</p> <p>Verify that the owner or operator of an affected facility installs, calibrates, maintains, and operates a continuous emission monitoring system for measuring the oxygen or CO<sub>2</sub> content of the flue gas at each location where CO, SO<sub>2</sub>, NO<sub>x</sub> emissions, or particulate matter (if the owner or operator elects to continuously monitor emissions of particulates) are monitored and the output of the system is recorded and complies with the following test procedures and test methods:</p> <ul style="list-style-type: none"> <li>– the span value of the oxygen (or 20 percent CO<sub>2</sub>) monitor is 25 percent oxygen (or 20 percent CO<sub>2</sub>)</li> <li>– the monitor is installed, evaluated, and operated in accordance with 40 CFR 60.13 (see text)</li> <li>– the initial performance evaluation is completed no later than 180 days after the date of initial startup of the affected facility</li> <li>– the monitor conforms to Performance Specification 3 in appendix B of this 40 CFR 60 except for section 2.3 (relative accuracy requirement)</li> <li>– the quality assurance procedures of 40 CFR Part 60, appendix F, except for section 5.1.1 (relative accuracy test audit), applies to the monitor</li> <li>– if CO<sub>2</sub> is selected for use in diluent corrections, the relationship between oxygen and CO<sub>2</sub> levels is established during the initial performance test according to the procedures and methods specified in paragraphs 40 CFR 60.58b(b)(6)(i) through 60.58b (b)(6)(iv) and, if needed, the relationship is reestablished during performance compliance tests</li> <li>– submit the relationship between CO<sub>2</sub> and oxygen concentrations to EPA as part of the initial performance test report and, if applicable, as part of the annual test report if the relationship is reestablished during the annual performance test</li> <li>– during a loss of boiler water level control or loss of combustion air control malfunction period, a diluent cap of 14 percent for oxygen or 5 percent for CO<sub>2</sub> may be used in the emissions calculations for SO<sub>2</sub> and NO<sub>x</sub>.</li> </ul> <p>Verify that the following procedures and test methods are used to determine compliance with emission limits for particulates and opacity:</p> <ul style="list-style-type: none"> <li>– the EPA Reference Method 1 is used to select sampling site and number of traverse points</li> <li>– the EPA Reference Method 3, 3A or 3B, or as an alternative ASME PTC-19-10-1981--Part 10, as applicable, is used for gas analysis</li> <li>– EPA Reference Method 5 is used for determining compliance with the particulate matter emission limit:</li> </ul>

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	<ul style="list-style-type: none"> <li>– the minimum sample volume is 1.7 cubic meters</li> <li>– the probe and filter holder heating systems in the sample train is set to provide a gas temperature no greater than 160 °C</li> <li>– an oxygen or CO<sub>2</sub> measurement is obtained simultaneously with each Method 5 run</li> <li>– the owner or operator of an affected facility may request that compliance with the particulate matter emission limit be determined using CO<sub>2</sub> measurements corrected to an equivalent of 7 percent oxygen</li> <li>– all performance tests shall consist of three test runs and the average of the particulate matter emission concentrations from the three test runs is used to determine compliance</li> <li>– EPA Reference Method 9 shall be used for determining compliance with the opacity limit</li> <li>– an initial performance test for particulate matter emissions and opacity will be conducted as required under 40 CFR 60.8</li> <li>– the owner or operator of an affected facility installs, calibrates, maintains, and operates a continuous opacity monitoring system for measuring opacity and shall follow the methods and procedures specified in 40 CFR 60.58b(c)(8)(i) through 60.58b(c)(8)(iv) (see text)</li> <li>– following the date that the initial performance test for particulate matter is completed or is required to be completed for an affected facility, the owner or operator conducts a performance test for particulate matter on a calendar year basis (no less than 9 calendar months and no more than 15 calendar months following the previous performance test; and completes five performance tests in each 5-year calendar period)</li> <li>– the owner or operator of an affected facility who elects to continuously monitor particulate matter emissions instead of conducting performance testing using EPA Method 5 installs, calibrates, maintains, and operates a CEM system and complies with the procedural requirements specified in paragraphs 40 CFR 60.58b(c)(10)(i) through 60.58b(c)(10)(xiv) (see text)</li> <li>– following the date that the initial performance test for opacity is completed or is required to be completed, the owner or operator conducts a performance test for opacity on an annual basis (no less than 9 calendar months and no more than 15 calendar months following the previous performance test; and must complete five performance tests in each 5-year calendar period) using the specified test method.</li> </ul> <p>(NOTE: In place of particulate matter testing with EPA Reference Method 5, an owner or operator may elect to install, calibrate, maintain, and operate a continuous emission monitoring system for monitoring particulate matter emissions discharged to the atmosphere and record the output of the system.)</p> <p>Verify that the following procedures and test methods are used to determine the emission limits for cadmium, lead, and mercury:</p>

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	<ul style="list-style-type: none"> <li>– use EPA Reference Method 1 for determining the location and number of sampling points</li> <li>– use EPA Reference Method 3, 3A, or 3B, or as an alternative ASME PTC-19-10-1981--Part 10, as applicable, for flue gas analysis</li> <li>– use EPA Reference Method 29 for determining compliance with the cadmium and lead emission limits</li> <li>– obtain an oxygen or CO<sub>2</sub> measurement simultaneously with each Method 29 test run for cadmium and lead</li> <li>– all performance tests consist of a minimum of three test runs conducted under representative full load operating conditions</li> <li>– use the average of the cadmium or lead emission concentrations from three test runs or more to determine compliance</li> <li>– following the date of the initial performance test or the date on which the initial performance test is required to be completed, the owner or operator of an affected facility conducts a performance test for compliance with the emission limits for cadmium and lead on a calendar year basis (no less than 9 calendar months and no more than 15 calendar months following the previous performance test; and must complete five performance tests in each 5-year calendar period).</li> </ul> <p>(NOTE: The owner or operator of an affected facility may request that compliance with the cadmium or lead emission limit be determined using CO<sub>2</sub> measurements corrected to an equivalent of 7 percent oxygen.)</p> <p>(NOTE: In place of cadmium and lead testing with EPA Reference Method 29 as an alternative ASTM D6784-02, an owner or operator may elect to install, calibrate, maintain, and operate a CEMS for monitoring cadmium and lead emissions discharged to the atmosphere and record the output of the system.)</p> <p>Verify that the following procedures and test methods are used to determine compliance with the mercury emission limit:</p> <ul style="list-style-type: none"> <li>– use EPA Reference Method 1 for determining the location and number of sampling points</li> <li>– use EPA Reference Method 3, 3A, or 3B, or as an alternative ASME PTC-19-10-1981--Part 10, as applicable, for flue gas analysis</li> <li>– use EPA Reference Method 29 or as an alternative ASTM D6784-02 to determine the mercury emission concentration</li> <li>– the minimum sample volume when using Method 29 as an alternative ASTM D6784-02 for mercury is 1.7 m<sup>3</sup></li> <li>– an oxygen (or CO<sub>2</sub>) measurement is obtained simultaneously with each Method 29 or as an alternative ASTM D6784-02 test run for mercury</li> <li>– the percent reduction in the potential mercury emissions is calculated using the equations in the text of the regulation</li> <li>– all performance tests consist of a minimum of three test runs conducted under representative full load operating conditions</li> </ul>

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	<ul style="list-style-type: none"> <li>– the average of the mercury emission concentrations or percent reductions from three test runs or more is used to determine compliance</li> <li>– the owner or operator of an affected facility conducts an initial performance test for mercury emissions as required under 40 CFR 60.8 of subpart A</li> <li>– following the date that the initial performance test for mercury is completed or is required to be completed, the owner or operator of an affected facility conducts a performance test for mercury emissions on a calendar year basis (no less than 9 calendar months and no more than 15 calendar months from the previous performance test; and must complete five performance tests in each 5-year calendar period)</li> <li>– the owner or operator of an affected facility where activated carbon injection is used to comply with the mercury emission limit follows the procedures specified in paragraph 40 CFR 60.58b(m) for measuring and calculating carbon usage.</li> </ul> <p>(NOTE: The owner or operator of an affected facility may request that compliance with the mercury emission limit be determined using CO<sub>2</sub> measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and CO<sub>2</sub> levels for the affected facility shall be established as specified in the text of 40 CFR 60.58b(b)(6).)</p> <p>(NOTE: In place of mercury testing with EPA Reference Method 29 or as an alternative ASTM D6784-02, an owner or operator may elect to install, calibrate, maintain, and operate a continuous emission monitoring system or a continuous automated sampling system for monitoring mercury emissions discharged to the atmosphere and record the output of the system as appropriate. The owner or operator who elects to continuously monitor mercury in place of mercury testing with EPA Reference Method 29 or as an alternative ASTM D6784-02 is not required to complete performance testing for mercury as specified in 40 CFR 60.58b(d)(2)(ix).)</p> <p>Verify that the following procedures and test methods are used to determine compliance with the SO<sub>2</sub> emission limit:</p> <ul style="list-style-type: none"> <li>– EPA Reference Method 19, section 4.3, is used to calculate the daily geometric average SO<sub>2</sub> emission concentration</li> <li>– EPA Reference Method 19, section 5.4, is used to determine the daily geometric average percent reduction in the potential SO<sub>2</sub> emission concentration</li> <li>– conduct an initial performance test for SO<sub>2</sub> emissions as required under 40 CFR 60.8 of subpart A determine compliance with the emissions limit by using the continuous emission monitoring system to measure SO<sub>2</sub> and calculating a 24-h daily geometric average emission concentration or a 24-hour daily geometric average percent reduction using EPA Reference Method 19, sections 4.3 and 5.4, as applicable</li> </ul>

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	<ul style="list-style-type: none"> <li>– install, calibrate, maintain, and operate a continuous emission monitoring system for measuring SO<sub>2</sub> emissions discharged to the atmosphere and record the output of the system</li> <li>– following the date that the initial performance test for SO<sub>2</sub> is completed or is required to be completed, compliance with the SO<sub>2</sub> emission limit is determined based on the 24-h daily geometric average of the hourly arithmetic average emission concentrations using continuous emission monitoring system outlet data if compliance is based on an emission concentration, or continuous emission monitoring system inlet and outlet data if compliance is based on a percent reduction.</li> <li>– valid continuous monitoring system hourly averages are obtained as specified in the text of the regulation for 90 percent of the operating hours per calendar quarter</li> <li>– and 95 percent of the operating days per calendar year that the affected facility is combusting municipal solid waste</li> <li>– 1-hour arithmetic averages are expressed in parts per million corrected to 7 percent oxygen (dry basis) and used to calculate the 24-hour daily geometric average emission concentrations and daily geometric average emission percent reductions</li> <li>– all valid continuous emission monitoring system data will be used in calculating average emission concentrations and percent reductions even if the minimum continuous emission monitoring system data requirements are not met</li> <li>– the procedures under 40 CFR 60.13 shall be followed for installation, evaluation, and operation of the continuous emission monitoring system</li> <li>– the initial performance evaluation is completed no later than 180 days after the date of initial startup of the municipal waste combustor</li> <li>– the continuous emission monitoring system is operated according to Performance Specification 2 in 40 CFR 60, appendix B</li> <li>– for sources that have actual inlet emissions less than 100 parts per million dry volume, the relative accuracy criterion for inlet SO<sub>2</sub> CEMS should be no greater than 20 percent of the mean value of the reference method test data in terms of the units of the emission standard, or 5 ppmdv absolute value of the mean difference between the reference method and the continuous emission monitoring systems, whichever is greater</li> <li>– quarterly accuracy determinations and daily calibration drift tests are performed in accordance with procedure 1 in 40 CFR 60, appendix F</li> <li>– when SO<sub>2</sub> emissions data are not obtained because of CEMS breakdowns, repairs, calibration checks, and/or zero and span adjustments, emissions data shall be obtained by using other monitoring systems as approved by EPA or EPA Reference Method 19 to provide, as necessary, valid emissions data for a minimum of 90 percent of the hours per calendar quarter and 95 percent of the hours per calendar year that the affected facility is operated and combusting municipal solid waste.</li> </ul>

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	<p>(NOTE: The owner or operator of an affected facility may request that compliance with the SO<sub>2</sub> emission limit be determined using CO<sub>2</sub> measurements corrected to an equivalent of 7 percent oxygen.)</p> <p>Verify that the following procedures and test methods are used to determine compliance with the hydrogen chloride emission limit:</p> <ul style="list-style-type: none"> <li>– EPA Reference Method 26 or 26A, as applicable, is used to determine the hydrogen chloride emission concentration with a minimum sampling time of 1 h</li> <li>– an oxygen (or CO<sub>2</sub>) measurement is obtained simultaneously with each test run for hydrogen chloride</li> <li>– the percent reduction in potential hydrogen chloride emissions is calculated based on an equation in the text of the regulation</li> <li>– all performance tests will consist of three test runs and the average of the hydrogen chloride emission concentrations or percent reductions from the three test runs is used to determine compliance</li> <li>– an initial performance test for hydrogen chloride is done as required under 40 CFR 60.8</li> <li>– following the date that the initial performance test for hydrogen chloride is completed or is required to be completed, the owner or operator of an affected facility conducts a performance test for hydrogen chloride emissions on an annual basis (no more than 12 calendar months following the previous performance test).</li> </ul> <p>(NOTE: In place of hydrogen chloride testing with EPA Reference Method 26 or 26A, an owner or operator may elect to install, calibrate, maintain, and operate a continuous emission monitoring system for monitoring hydrogen chloride emissions discharged to the atmosphere and record the output of the system as required.</p> <p>(NOTE: The owner or operator of an affected facility may request that compliance with the hydrogen chloride emission limit be determined using CO<sub>2</sub> measurements corrected to an equivalent of 7 percent oxygen.)</p> <p>Verify that the following procedures and test methods are used to determine compliance with the limits for dioxin/furan emissions:</p> <ul style="list-style-type: none"> <li>– EPA Reference Method 1 is used for determining the location and number of sampling points</li> <li>– EPA Reference Method 3, 3A, or 3B, or as an alternative ASME PTC-19-10-1981--Part 10, as applicable, are used for flue gas</li> <li>– EPA Reference Method 23 is used for determining the dioxin/furan emission concentration</li> <li>– an initial performance test is conducted for dioxin/furan emissions as required under 40 CFR 60.8</li> </ul>

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	<ul style="list-style-type: none"> <li>– following the date that the initial performance test for dioxins/furans is completed the owner or operator of an affected facility conducts performance tests for dioxin/furan emissions</li> <li>– all performance tests will consist of three test runs and the average of the dioxin/furan emission concentrations from the three test runs is used to determine compliance</li> <li>– in place of dioxin/furan sampling and testing with EPA Reference Method 23, an owner or operator may elect to sample dioxin/furan by installing, calibrating, maintaining, and operating a continuous automated sampling system for monitoring dioxin/furan emissions discharged to the atmosphere, recording the output of the system, and analyzing the sample using EPA Method 23.</li> </ul> <p>(NOTE: The owner or operator of an affected facility may request that compliance with the dioxin/furan emission limit be determined using CO<sub>2</sub> measurements corrected to an equivalent of 7 percent oxygen.)</p> <p>Verify that the following procedures and test methods are used to determine compliance with the limits for NO<sub>x</sub> emissions:</p> <ul style="list-style-type: none"> <li>– EPA Reference Method 19, section 4.1, is used for determining the daily arithmetic average NO<sub>x</sub> emission concentration.</li> <li>– an initial performance test for NO<sub>x</sub> is done as required under 40 CFR 60.8</li> <li>– compliance with the NO<sub>x</sub> emission limit is determined by using the continuous emission monitoring</li> <li>– system specified for measuring NO<sub>x</sub> and calculating a 24-h daily arithmetic average emission concentration using EPA Reference Method 19, section 4.1</li> <li>– install, calibrate, maintain, and operate a continuous emission monitoring system for measuring NO<sub>x</sub> discharged to the atmosphere, and record the output of the system</li> <li>– following the date that the initial performance test for NO<sub>x</sub> is completed or is required to be completed compliance with the emission limit for NO<sub>x</sub> required is determined based on the 24-h daily arithmetic average of the hourly emission concentrations using continuous emission monitoring system outlet data</li> <li>– at a minimum, valid continuous emission monitoring system hourly averages shall be obtained for 90 percent of the operating hours per calendar quarter and for 95 percent of the operating hours per calendar year that the affected facility is combusting municipal solid waste</li> <li>– all valid continuous emission monitoring system data is used in calculating emission averages even if the minimum continuous emission monitoring system data requirements section are not met</li> <li>– the procedures under 40 CFR 60.13, subpart A are followed for installation, evaluation, and operation of the continuous emission monitoring system</li> <li>– the initial performance evaluation is completed no later than 180 days after the date of initial startup of the municipal waste combustor unit</li> </ul>

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<p><b>AE.36.8.US.</b> Each MWC unit with a combustion capacity greater than 250 tons/day of municipal solid waste is required to meet specific operating standards (40 CFR 60.50b(a) 60.53b(b), and 60.53b(c)) <b>[Revised December 1997; Revised July 2006].</b></p>	<ul style="list-style-type: none"> <li>– the owner or operator of an affected facility operates the continuous emission monitoring system according to Performance Specification 2 in 40 CFR 60, appendix B and follows the procedures and methods specified in the text of the regulation</li> <li>– quarterly accuracy determinations and daily calibration drift tests are performed in accordance with procedure 1 in 40 CFR 60, appendix F</li> <li>– when NO<sub>x</sub> continuous emission data are not obtained because of continuous emission monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments, emissions data is obtained using other monitoring systems as approved by EPA or EPA Reference Method 19 to provide, as necessary, valid emissions data for a minimum of 90 percent of the hours per calendar quarter and 95 percent of the hours per calendar year the unit is operated and combusting municipal solid waste.</li> </ul> <p>(NOTE: The owner or operator of an affected facility may request that compliance with the NO<sub>x</sub> emission limit be determined using CO<sub>2</sub> measurements corrected to an equivalent of 7 percent oxygen.)</p> <p>(NOTE: See the definition of Exempted New Municipal Waste Combustors.)</p> <p>(NOTE: These requirements apply to units for which construction is started after 20 September 1994 or for which modification or reconstruction is started after 19 June 1996. These requirements become effective 19 June 1996.)</p> <p>(NOTE: See checklist item AE.36.1.US for information on the applicability of this checklist item.)</p> <p>Verify that no affected facility operates at a load level greater than 110 percent of the maximum demonstrated municipal waste combustor unit load except:</p> <ul style="list-style-type: none"> <li>– during the annual dioxin/furan or mercury performance test and the 2 weeks preceding the annual dioxin/furan or mercury performance test, no municipal waste combustor unit load limit is applicable if the following waiver provisions are met</li> <li>– when the municipal waste combustor unit load limit is waived in writing by the Administrator for the purpose of evaluating system performance, testing new technology or control technologies, diagnostic testing, or related activities for the purpose of improving facility performance or advancing the state-of-the-art for controlling facility emissions (NOTE: The municipal waste combustor unit load limit continues to apply, and remains enforceable, until and unless the Administrator grants the waiver).</li> </ul> <p>Verify that no affected facility operates at a temperature, measured at the particulate matter control device inlet, exceeding 17 °C above the maximum demonstrated particulate matter control device temperature except:</p>

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<p><b>AE.36.9.US.</b> Operators of a MWC unit with a combustion capacity greater than 250 tons/day of municipal solid waste are required to have a site-specific operating manual (40 CFR 60.50b(a) and 60.54b(e) through 60.54b(g)) <b>[Revised December 1997]</b>.</p>	<ul style="list-style-type: none"> <li>– during the annual dioxin/furan or mercury performance test and the 2 weeks preceding the annual dioxin/furan or mercury performance test, no particulate matter control device temperature limitations are applicable if the waiver provisions are met</li> <li>– the particulate matter control device temperature limits are waived in writing by the Administrator for the purpose of evaluating system performance, testing new technology or control technologies, diagnostic testing, or related activities for the purpose of improving facility performance or advancing the state-of-the-art for controlling facility emissions (NOTE: The temperature limits continue to apply, and remain enforceable, until and unless the Administrator grants the waiver.</li> </ul> <p>(NOTE: See the definition of Exempted New Municipal Waste Combustors.)</p> <p>(NOTE: These requirements apply to units for which construction is started after 20 September 1994 or for which modification or reconstruction is started after 19 June 1996.)</p> <p>Verify that the facility has a site-specific operating manual which addresses the following:</p> <ul style="list-style-type: none"> <li>– a summary of the applicable standards</li> <li>– a description of basic combustion theory applicable to a MWC</li> <li>– procedures for receiving, handling, and feed municipal solid waste</li> <li>– MWC unit startup, shutdown, and malfunction procedures</li> <li>– procedures for maintaining proper combustion air supply levels</li> <li>– procedures for operating the MWC unit within the regulatory standards</li> <li>– procedures for responding to periodic upset or off-specification conditions</li> <li>– procedures for minimizing particulate matter carryover</li> <li>– procedures for handling ash</li> <li>– procedures for monitoring MWC unit emissions</li> <li>– reporting and recordkeeping procedures.</li> </ul> <p>Verify that the manual is updated yearly.</p> <p>Verify that the operating manual is kept in a readily accessible location.</p> <p>Verify that the facility has an annual training program for the following to review the operating manual:</p> <ul style="list-style-type: none"> <li>– chief facility operators</li> <li>– shift supervisors</li> <li>– control room operators</li> <li>– ash handlers</li> <li>– maintenance personnel</li> </ul>

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<p><b>AE.36.10.US.</b> Operators of each MWC unit with a combustion capacity greater than 250 tons/day of municipal solid waste are required to meet specific training and certification requirements (40 CFR 60.50b(a) and 60.54b(a) through 60.54b(d)) [<b>Revised December 1997; Revised July 2006</b>].</p>	<p>– crane/load handlers.</p> <p>Verify that training is done by the following dates, whichever is later:</p> <ul style="list-style-type: none"> <li>– 19 December 1996</li> <li>– the date 6 mo after startup</li> <li>– the date prior to the day the person assumes responsibilities affecting MWC unit operation</li> </ul> <p>Verify that refresher training is done annually.</p> <p>(NOTE: See the definition of Exempted New Municipal Waste Combustors.)</p> <p>(NOTE: These requirements apply to units for which construction is started after 20 September 1994 or for which modification or reconstruction is started after 19 June 1996. These requirements become effective 19 December 1996 or 6 mo after the date of startup of an affected facility, whichever is later.)</p> <p>(NOTE: See checklist item AE.36.1.US for information on the applicability of this checklist item.)</p> <p>Verify that, within 6 mo of the startup of a new facility or on 19 December 1996, whichever is later, each chief facility operator and shift supervisor has obtained and is maintaining one of the following:</p> <ul style="list-style-type: none"> <li>– a current provisional operator certification from either ASME or a State certification program</li> <li>– full certification or has scheduled a full certification exam with either the ASME or a state certification program</li> </ul> <p>Verify that the MWC facility is not operated at any time unless one of the following persons is on duty and at the affected facility:</p> <ul style="list-style-type: none"> <li>– a fully certified chief facility operator</li> <li>– a provisionally certified chief facility operator who is scheduled to take the full certification exam</li> <li>– a fully certified shift supervisor</li> <li>– a provisionally certified shift supervisor who is scheduled to take the full certification exam.</li> </ul> <p>(NOTE: If both the certified chief facility operator and certified shift supervisor are unavailable, a provisionally certified control room operator on site at the municipal waste combustion unit may fulfill the certified operator requirement. Depending on the length of time that a certified chief facility operator and certified shift supervisor</p>

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	<p>are away, the owner or operator of the affected facility must meet one of the following three criteria:</p> <ul style="list-style-type: none"> <li>– when the certified chief facility operator and certified shift supervisor are both off site for 12 h or less, and no other certified operator is on site, the provisionally certified control room operator may perform the duties of the certified chief facility operator or certified shift supervisor</li> <li>– when the certified chief facility operator and certified shift supervisor are off site for more than 12 h, but for two weeks or less, and no other certified operator is on site, the provisionally certified control room operator may perform the duties of the certified chief facility operator or certified shift supervisor without notice to, or approval by, the Administrator (NOTE: The owner or operator of the affected facility must record the period when the certified chief facility operator and certified shift supervisor are off site and include that information in the annual report)</li> <li>– when the certified chief facility operator and certified shift supervisor are off site for more than two weeks, and no other certified operator is on site, the provisionally certified control room operator may perform the duties of the certified chief facility operator or certified shift supervisor without approval by the Administrator; and the owner or operator of the affected facility takes the following two actions: <ul style="list-style-type: none"> <li>– notify the Administrator in writing stating what caused the absence and what actions are being taken by the owner or operator of the facility to ensure that a certified chief facility operator or certified shift supervisor is on site as expeditiously as practicable</li> <li>– submit a status report and corrective action summary to the Administrator every four weeks following the initial notification and if the Administrator provides notice that the status report or corrective action summary is disapproved, the municipal waste combustion unit may continue operation for 90 days, but then must cease operation (NOTE: If corrective actions are taken in the 90-day period such that the Administrator withdraws the disapproval, municipal waste combustion unit operation may continue.)</li> </ul> </li> </ul> <p>Verify that all chief facility operators, shift supervisors, and control room operators complete the USEPA or state MWC operator training course no later than 6 mo after the date of startup or by 19 December 1996, whichever is later.</p> <p>(NOTE: A provisionally certified operator who is newly promoted or recently transferred to a shift supervisor position or a chief facility operator position at the municipal waste combustion unit may perform the duties of the certified chief facility operator or certified shift supervisor without notice to, or approval by, the Administrator for up to 6 mo before taking the ASME QRO certification exam.)</p> <p>(NOTE: See the definition of Exempted New Municipal Waste Combustors.)</p>

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<p><b>AE.36.11.US.</b> When applying for an initial construction permit after 19 December 1995, for each MWC unit with a combustion capacity greater than 250 tons/day of municipal solid waste, specific procedures are required to be followed (40 CFR 60.50b(a) and 60.57b(a)) <b>[Revised December 1997; Revised July 2006].</b></p>	<p>(NOTE: These requirements apply to units for which construction is started after 20 September 1994 or for which modification or reconstruction is started after 19 June 1996. These requirements become effective 19 June 1996.)</p> <p>(NOTE: See checklist item AE.36.1.US for information on the applicability of this checklist item.)</p> <p>Verify that the owner or operator of an affected facility prepares a materials separation plan, for the affected facility and its service area.</p> <p>Verify that the plan is made available to the public as follows:</p> <ul style="list-style-type: none"> <li>– distribute the preliminary draft plan to the principal public libraries in the area where the affected facility is to be constructed</li> <li>– publish a notification of a public meeting in the principal newspapers serving the area where the affected facility is to be constructed and where the waste treated by the facility will primarily be collected, including: <ul style="list-style-type: none"> <li>– the date, time, and location of the public meeting</li> <li>– the location of the libraries where the plan may be found, including normal business hours of the libraries</li> <li>– an agenda of the issues to be discussed</li> <li>– the dates of the public comment period.</li> </ul> </li> </ul> <p>Verify that a public meeting was conducted and comments accepted according to the following parameters:</p> <ul style="list-style-type: none"> <li>– the meeting was in the county where the facility is to be located</li> <li>– the meeting occurs 30 days or more after making the preliminary draft materials separation plan available.</li> </ul> <p>Verify that responses to the comments from the public meeting are prepared and the document summarizing responses is made available to the public in the service area where the facility is to be located.</p> <p>Verify that a final draft materials separation plan is prepared that considers the public comments.</p> <p>Verify that the owner or operator submits to EPA a copy of the notification of the public meeting, a transcript of the public meeting, the document summarizing responses to public comments, and copies of both the preliminary and final draft materials separation plans on or before the time the facility's application for a construction permit is submitted under 40 CFR 51, subpart I, or 40 CFR 52, as applicable.</p> <p>Verify that a final materials separation plan is prepared and is submitted as a part of the initial notification of construction.</p>

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<p><b>AE.36.12.US.</b> When applying for an initial construction permit after 19 December 1995, for a MWC unit with a combustion capacity greater than 250 tons/day of municipal solid waste, a siting analysis is required (40 CFR 60.50b(a) and 60.57b(b)) <b>[Revised December 1997]</b>.</p>	<p>(NOTE: See the definition of Exempted New Municipal Waste Combustors.)</p> <p>(NOTE: These requirements apply to units for which construction is started after 20 September 1994 or for which modification or reconstruction is started after 19 June 1996. These requirements become effective 19 June 1996.)</p> <p>(NOTE: See the definition of Exempted New Municipal Waste Combustors.)</p> <p>Verify that, when the initial construction permit is applied for, a siting analysis is prepared for the facility and its service area.</p> <p>Verify that the siting analysis is an analysis of the impact of the facility on ambient air quality, visibility, solids, and vegetation.</p> <p>Verify that the siting analysis considers pollution control alternatives that minimize, on a site-specific basis, to the maximum extent practicable, potential risks to the public health or environment.</p> <p>Verify that the siting analysis plan and the final draft materials separation plan are made available to the public as follows:</p> <ul style="list-style-type: none"> <li>– distribute the plans to the principal public libraries in the area where the affected facility is to be constructed</li> <li>– publish a notification of a public meeting in the principal newspapers serving the area where the affected facility is to be constructed and where the waste treated by the facility will primarily be collected, including: <ul style="list-style-type: none"> <li>– the date, time, and location of the public meeting</li> <li>– the location of the libraries where the plans may be found, including normal business hours of the libraries</li> <li>– an agenda of the issues to be discussed</li> <li>– the dates of the public comment period.</li> </ul> </li> </ul> <p>Verify that a public meeting was conducted and comments accepted according to the following parameters:</p> <ul style="list-style-type: none"> <li>– the meeting was in the county where the facility is to be located</li> <li>– the meeting occurs 30 days or more after making the plans available.</li> <li>–</li> </ul> <p>Verify that responses to the comments from the public meeting are prepared and the document summarizing responses is made available to the public in the service area where the facility is to be located.</p> <p>Verify that a final draft materials separation plan is prepared that considers the public comments</p>

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<p><b>AE.36.13.US.</b> When construction started after 20 December 1994 for a MWC unit with a combustion capacity greater than 250 tons/day of municipal solid waste, a siting analysis is required (40 CFR 60.50b(a) and 60.57b(c)) <b>[Revised December 1997]</b>.</p> <p><b>AE.36.14.US.</b> Owners and operators of MWC units with a combustion capacity greater than 250 tons/day of municipal solid waste are required to perform specific recordkeeping requirements (40 CFR 60.50b(a) and 60.59b(d)) <b>[Revised December 1997; Revised July 2006]</b>.</p>	<p>Verify that copies of the notification of public meeting, transcript of the public meeting, the document summarizing response to the public comments, and the siting analysis are submitted to the Administrator on or before the time the facility's application for a construction permit is submitted.</p> <p>(NOTE: These requirements apply to units for which construction is started after 20 September 1994 or for which modification or reconstruction is started after 19 June 1996. These requirements become effective 19 June 1996.)</p> <p>Verify that a siting analysis plan was done as a part of the initial notification of construction.</p> <p>(NOTE: See the definition of Exempted New Municipal Waste Combustors.)</p> <p>(NOTE: These requirements apply to units for which construction is started after 20 September 1994 or for which modification or reconstruction is started after 19 June 1996. These requirements become effective 19 June 1996.)</p> <p>(NOTE: See checklist item AE.36.1.US for information on the applicability of this checklist item.)</p> <p>Verify that the owner or operator of an affected facility that is required to comply with the requirements in 40 CFR 60.52b through 60.55b and 60.57b (see checklist items AE.36.1.US. through AE.36.3.US., AE.36.5.US., AE.36.6.US., AE.36.8.US. through AE.36.13.US.) maintains the following information:</p> <ul style="list-style-type: none"> <li>– the calendar date of each record</li> <li>– the emissions concentrations and parameter measures using CEMS for the following: <ul style="list-style-type: none"> <li>– all 6-min average opacity levels</li> <li>– all 1-h average SO<sub>2</sub> emission concentrations</li> <li>– all 1-h average NO<sub>x</sub> emission concentrations</li> <li>– all 1-h average CO emission concentrations, MWC unit load measurements, and particulate matter control device inlet temperatures</li> <li>– for owners and operators who elect to continuously monitor particulate matter, cadmium, lead, mercury, or hydrogen chloride emissions instead of conducting performance testing using EPA manual test methods, all 1-hour average particulate matter, cadmium, lead, mercury, or hydrogen chloride emission concentrations</li> <li>– all 24-h daily geometric average SO<sub>2</sub> emission concentration and all 24-h daily geometric average percent reductions in SO<sub>2</sub> emissions</li> <li>– all 24-h daily arithmetic average NO<sub>x</sub> emission concentrations</li> <li>– all 4-h block or 24-h daily arithmetic average CO emission concentrations</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– all 4-h block arithmetic average MWC unit load levels and particulate matter control device inlet temperatures</li> <li>– for owners and operators who elect to continuously monitor particulate matter, cadmium, lead, mercury, or hydrogen chloride emissions instead of conducting performance testing using EPA manual test methods, all 24-hour daily arithmetic average particulate matter, cadmium, lead, mercury, or hydrogen chloride emission concentrations</li> <li>– for owners and operators who elect to use a continuous automated sampling system to monitor mercury or dioxin/furan instead of conducting performance testing using EPA manual test methods, all integrated 24-h mercury concentrations or all integrated 2-week dioxin/furan concentrations</li> <li>– identification of the calendar dates when any of the required average emission concentration, percent reductions, operating parameters, or opacity levels are above applicable limits and the reasons for each excess and a description of the corrective actions taken</li> <li>– identification of the calendar dates and hours for which the minimum number of hours of the following data have not been obtained, or continuous automated sampling systems were not operated as required, and including reasons for not obtaining sufficient data and a description of corrective actions taken: <ul style="list-style-type: none"> <li>– SO<sub>2</sub> emission data</li> <li>– NO<sub>x</sub> emission data</li> <li>– CO emissions data</li> <li>– municipal waste combustor unit load data</li> <li>– particulate matter control device temperature data</li> </ul> </li> <li>– for owners and operators who elect to continuously monitor particulate matter, cadmium, lead, mercury, or hydrogen chloride emissions instead of performance testing by EPA manual test methods, particulate matter, cadmium, lead, mercury, or hydrogen chloride emissions data</li> <li>– for owners and operators who elect to use continuous automated sampling systems for dioxins/furans or mercury, dates and times when the sampling systems were not operating or were not collecting a valid sample</li> <li>– identification of each occurrence that SO<sub>2</sub> emissions data, NO<sub>x</sub> emissions data, particulate matter emissions data, cadmium emissions data, lead emissions data, mercury emissions data, hydrogen chloride emissions data, or dioxin/furan emissions data dioxin/furan emissions data (for owners and operators who elect to continuously monitor particulate matter, cadmium, lead, mercury, or hydrogen chloride, or who elect to use continuous automated sampling systems for dioxin/furan or mercury emissions, instead of conducting performance testing using EPA manual test methods) or operational data (i.e., CO emissions, unit load, and particulate matter control device temperature) have been excluded from the calculation of average emission concentrations or parameters, and the reasons for excluding the data</li> <li>– results of daily drift tests and quarterly accuracy determinations for SO<sub>2</sub>, NO<sub>x</sub>, and CO CEMS</li> </ul>

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	<ul style="list-style-type: none"> <li>– test reports documenting the results of the initial performance test and annual performance tests as follows (including the supporting calculations):               <ul style="list-style-type: none"> <li>– results of tests to determine compliance with the particulate matter, opacity, cadmium, lead, mercury, dioxin/furan, HCL, and fugitive emissions initial dioxin/furan performance test and all subsequent performance tests, the MWC unit load and the maximum demonstrated particulate matter control device temperature (for each particulate matter control device)</li> <li>– initial dioxin/furan performance test and all subsequent dioxin/furan performance tests, the maximum demonstration particulate matter control device temperature (for each particulate matter control device)</li> </ul> </li> <li>– an owner or operator who elects to continuously monitor emissions instead of performance testing by EPA manual methods maintains the following records:               <ul style="list-style-type: none"> <li>– for owners and operators who elect to continuously monitor particulate matter instead of conducting performance testing using EPA manual test methods), the results of daily drift tests and quarterly accuracy determinations for particulate matter</li> <li>– for owners and operators who elect to continuously monitor cadmium, lead, mercury, or hydrogen chloride instead of conducting EPA manual test methods, the results of all quality evaluations, such as daily drift tests and periodic accuracy determinations, specified in the approved site-specific performance evaluation test plan</li> <li>– for owners and operators who elect to use continuous automated sampling systems for dioxin/furan or mercury, the results of all quality evaluations specified in the approved site-specific performance evaluation test plan.</li> </ul> </li> </ul> <p>Verify that, for each MWC subject to siting requirements, the siting analysis, final materials separation plan, a record of the location and date of the public meetings, and the documentation of the responses to public comments are kept on file.</p> <p>Verify that the following personnel information is kept on file:</p> <ul style="list-style-type: none"> <li>– the names of the MWC chief facility operator, shift supervisor, and control room operators who have been provisionally certified by the ASME or an equivalent state approved certification program, including the dates of initial and renewal certification and documentation of current certification</li> <li>– the names of the MWC chief facility operator, shift supervisor, and control room operators who have been fully certified by the ASME or an equivalent state approved certification program, including the dates of initial and renewal certification and documentation of current certification</li> <li>– the names of the MWC chief facility operator, shift supervisor, and control room operators who have completed the USEPA MWC operator training course or an equivalent state approved certification program, including documentation of training completion</li> <li>– records of when a certified operator is temporarily off site, including:</li> </ul>

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	<ul style="list-style-type: none"> <li>– if the certified chief facility operator and certified shift supervisor are off site for more than 12 hours, but for 2 weeks or less, and no other certified operator is on site, record the dates that the certified chief facility operator and certified shift supervisor were off site</li> <li>– when all certified chief facility operators and certified shift supervisors are off site for more than 2 weeks and no other certified operator is on site, keep records of four items: <ul style="list-style-type: none"> <li>– time of day that all certified persons are off site</li> <li>– conditions that cause those people to be off site</li> <li>– corrective actions taken by the owner or operator of the affected facility to ensure a certified chief facility operator or certified shift supervisor is on site as soon as practicable</li> <li>– copies of the written reports submitted every 4 weeks that summarize the actions taken by the owner or operator of the affected facility to ensure that a certified chief facility operator or certified shift supervisor will be on site as soon as practicable</li> </ul> </li> <li>– the names of persons who have completed a review of the operating manual, including the date of the initial review and subsequent annual reviews.</li> </ul> <p>Verify that affected facilities which apply activated carbon for mercury or dioxin/furan control maintain the following additional records:</p> <ul style="list-style-type: none"> <li>– the average carbon mass feed rate (in kg/h or lb/h) during initial mercury performance test and all subsequent annual performance tests, with supporting calculations</li> <li>– the average carbon mass feed rate (in kg/h or lb/h) during the initial dioxin/furan performance test and all subsequent annual performance tests, with supporting calculations</li> <li>– the average carbon mass feed rate (in kg/h or lb/h) estimated for each hour of operation, with supporting calculations</li> <li>– the total carbon usage for each calendar quarter</li> <li>– carbon injection system operating parameter data for the parameters that are the primary indicators of carbon feed rate</li> <li>– identification of the calendar dates when the average carbon mass feed rates were less than either of the hourly carbon feed rates estimated during performance tests for mercury emissions with reasons for such feed rates and a description of corrective actions taken</li> <li>– identification of the calendar dates when the average carbon mass feed rates recorded were less than either of the hourly carbon feed rates estimated during performance tests for dioxin/furan emissions with reasons for such feed rates and a description of corrective actions taken.</li> </ul> <p>Verify that records are kept for at least 5 yr.</p> <p>(NOTE: See the definition of Exempted New Municipal Waste Combustors.)</p>

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<p><b>AE.36.15.US.</b> Owners and operators of MWC units with a combustion capacity greater than 250 tons/day of municipal solid waste are required to perform specific reporting requirements (40 CFR 60.50b(a) and 60.59b) [Revised December 1997; Revised July 2006].</p>	<p>(NOTE: These requirements apply to units for which construction is started after 20 September 1994 or for which modification or reconstruction is started after 19 June 1996. These requirements become effective 19 June 1996.)</p> <p>(NOTE: See checklist item AE.36.1.US for information on the applicability of this checklist item.)</p> <p>Verify that the owner or operator submits the following on or before the date the application for a construction permit is submitted:</p> <ul style="list-style-type: none"> <li>– the preliminary and final draft materials separation plan</li> <li>– a copy of the notification of public meeting</li> <li>– a transcript of the public meeting</li> <li>– a copy of the document summarizing responses to public comments.</li> </ul> <p>Verify that, when needed, the owner operator has submitted a notification of construction that included the following information:</p> <ul style="list-style-type: none"> <li>– intent to construct</li> <li>– planned initial startup date</li> <li>– the types of fuels that the owner or operator plans to combust in the affected facility</li> <li>– the MWC unit capacity and supporting calculations</li> <li>– documents associated with siting requirements, including: <ul style="list-style-type: none"> <li>– the siting analysis</li> <li>– the final materials separation plan</li> <li>– a copy of the notification of the public meeting</li> <li>– a transcript of the public meeting</li> <li>– a copy of the document summarizing responses to public comments.</li> </ul> </li> </ul> <p>Verify that the owner or operator of an affected facility submits the following information in the initial performance test report:</p> <ul style="list-style-type: none"> <li>– initial performance test data for SO<sub>2</sub>, NO<sub>x</sub>, CO, MWC unit load level, and particulate matter control device inlet temperature</li> <li>– the test report documenting the initial performance test recorded for particulate matter, opacity, cadmium, lead, mercury, dioxins/furans, HCL, and fugitive ash emissions</li> <li>– the performance evaluation of the CEMS</li> <li>– the maximum demonstrated MWC unit load and maximum demonstrated particulate matter control device inlet temperature established during initial dioxin/furan performance test</li> <li>– the average carbon mass feed rate for an affected facility that applies activated carbon injection for mercury control.</li> </ul>

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	<p>Verify that following the first year of municipal waste combustor operation, the owner or operator of an affected facility submits an annual report that includes the following, as applicable, no later than February 1 of each year following the calendar year in which the data were collected</p> <ul style="list-style-type: none"> <li>– a summary of data collected for all pollutants and parameters regulated including: <ul style="list-style-type: none"> <li>– a list of the particulate matter, opacity, cadmium, lead, mercury, dioxin/furan, HCL, and fugitive ash emission levels achieved during the performance test</li> <li>– a list of the highest emission level recorded for SO<sub>2</sub>, NO<sub>x</sub>, CO, particulate matter, cadmium, lead, mercury, hydrogen chloride, and dioxin/furan (for owners and operators who elect to continuously monitor particulate matter, cadmium, lead, mercury, hydrogen chloride, and dioxin/furan emissions instead of conducting performance testing using EPA manual test methods), municipal waste combustor unit load level, and particulate matter control device inlet temperature based on the data recorded</li> <li>– the highest opacity level measured</li> <li>– periods when valid data were not obtained summary of the above data for the calendar year preceding the year being reported</li> <li>– the total number of hours per calendar quarter and hours per calendar year that valid data for SO<sub>2</sub>, NO<sub>x</sub>, CO, municipal waste combustor unit load, or particulate matter control device temperature data were not obtained</li> <li>– for owners and operators who elect to continuously monitor particulate matter, cadmium, lead, mercury, and hydrogen chloride emissions instead of conducting performance testing using EPA manual test methods, the total number of hours per calendar quarter and hours per calendar year that valid data for particulate matter, cadmium, lead, mercury, and hydrogen chloride were not obtained</li> <li>– for each continuously monitored pollutant or parameter, the hours of valid emissions data per calendar quarter and per calendar year expressed as a percent of the hours per calendar quarter or year that the affected facility was operating and combusting municipal solid waste</li> <li>– for owners and operators who elect to use continuous automated sampling systems for dioxin/furan or mercury, the total number of hours per calendar quarter and hours per calendar year that the sampling systems were not operating or were not collecting a valid sample</li> <li>– the number of hours during which the continuous automated sampling system was operating and collecting a valid sample as a percent of hours per calendar quarter or year that the affected facility was operating and combusting municipal solid waste</li> <li>– periods when valid data were excluded from the calculation of average emission concentrations or parameters:</li> <li>– the total number of hours that data for SO<sub>2</sub>, NO<sub>x</sub>, CO, municipal waste combustor unit load, and particulate matter control device temperature</li> </ul> </li> </ul>

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	<p>were excluded from the calculation of average emission concentrations or parameters</p> <ul style="list-style-type: none"> <li>– for owners and operators who elect to continuously monitor particulate matter, cadmium, lead, mercury, or hydrogen chloride emissions instead of conducting performance testing using EPA manual test methods, the total number of hours that data for particulate matter, cadmium, lead, mercury, or hydrogen chloride were excluded from the calculation of average emission concentrations or parameters</li> <li>– for owners and operators who elect to use continuous automated sampling systems for dioxin/furan or mercury, the total number of hours that data for mercury and dioxin/furan were excluded from the calculation of average emission concentrations or parameters based on the data recorded</li> </ul> <p>– highlights of any emission or parameter levels that did not achieve the emission of parameter limits required</p> <p>– a notification of intent to begin the reduced dioxin/furan performance testing schedule during the following calendar year and notification of intent to apply the average carbon mass feed rate and associated carbon injection system operating parameter levels as established in 40 CFR 60.58b(m) to similarly designed and equipped units on site</p> <p>– documentation of periods when all certified chief facility operators and certified shift supervisors are off site for more than 12 h.</p> <p>(NOTE: Once the unit is subject to permitting requirements under Title V of the CAAA90, this annual report becomes semiannual.)</p> <p>Verify that the owner or operator of an affected facility submits the following information semiannually for any recorded pollutant or parameter that exceeds the applicable limitations:</p> <ul style="list-style-type: none"> <li>– calendar dates when limitations are exceeded</li> <li>– a copy of the test report documenting the emissions levels and the corrective actions taken</li> <li>– identification of the calendar dates when the carbon injection system operating parameters that are the primary indicators of the carbon mass feed rate are below the levels estimated during the performance tests and the reasons for the occurrence and a description of the corrective actions taken (this must also include the average carbon mass feed rate (in kg/h or lb/h) estimated for each hour of operation, with supporting calculations).</li> </ul> <p>Verify that the semiannual exceedance report is submitted as follows:</p> <ul style="list-style-type: none"> <li>– if the reported data was collected during the first calendar half, the report is submitted by 1 August following the first calendar half</li> <li>– if the reported data was collected during the second calendar half, the report is submitted by 1 February of the year following the second calendar half.</li> </ul>

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	<p>(NOTE: See the definition of Exempted New Municipal Waste Combustors.)</p> <p>Verify that owners and operators who elect to continuously monitor particulate matter, cadmium, lead, mercury, or hydrogen chloride, or who elect to use continuous automated sampling systems for dioxin/furan or mercury emissions, notify the Administrator one month prior to starting or stopping use of the particulate matter, cadmium, lead, mercury, hydrogen chloride, and dioxin/furan continuous emission monitoring systems or continuous automated sampling systems.</p> <p>Verify that the owner or operator of an affected source who elects to install a continuous emission monitoring system for cadmium, lead, mercury, or hydrogen chloride maintains the following records relevant to the continuous emission monitoring system:</p> <ul style="list-style-type: none"> <li>– all required continuous emission monitoring measurements (including monitoring data recorded during unavoidable continuous emission monitoring system breakdowns and out-of-control periods)</li> <li>– the date and time identifying each period during which the continuous emission monitoring system was inoperative except for zero (low-level) and high-level checks</li> <li>– the date and time identifying each period during which the continuous emission monitoring system was out of control</li> <li>– the specific identification (i.e., the date and time of commencement and completion) of each period of excess emissions and parameter monitoring exceedances, as defined in the standard, that occurs during startups, shutdowns, and malfunctions of the affected source</li> <li>– the specific identification (i.e., the date and time of commencement and completion) of each time period of excess emissions and parameter monitoring exceedances, as defined in the standard, that occurs during periods other than startups, shutdowns, and malfunctions of the affected source</li> <li>– the nature and cause of any malfunction (if known)</li> <li>– the corrective action taken to correct any malfunction or preventive measures adopted to prevent further malfunctions</li> <li>– the nature of the repairs or adjustments to the continuous emission monitoring system that was inoperative or out of control</li> <li>– all procedures that are part of a quality control program developed and implemented for the continuous emission monitoring system.</li> </ul> <p>Verify that the owner or operator of an affected source who elects to install a continuous emission monitoring system for cadmium, lead, mercury, or hydrogen chloride submits the following reports relevant to the continuous emission monitoring system:</p> <ul style="list-style-type: none"> <li>– when more than one continuous emission monitoring system is used to measure the emissions from one affected source (e.g., multiple breechings, multiple</li> </ul>

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	<p>outlets), report the results as required for each continuous emission monitoring system</p> <ul style="list-style-type: none"> <li>– submit to EPA for approval, the site-specific monitoring plan, including the site-specific performance evaluation test plan for the continuous emission monitoring system</li> <li>– submit information concerning all out-of-control periods for each continuous emission monitoring system, including start and end dates and hours and descriptions of corrective actions taken, in the annual or semiannual reports.</li> </ul> <p>Verify that the owner or operator of an affected source who elects to install a continuous emission monitoring system for cadmium, lead, mercury, or hydrogen chloride maintain copies of the site-specific monitoring plan on record for the life of the affected source to be made available for inspection, upon request, by the Administrator.</p> <p>Verify that, if the site-specific monitoring plan is revised and approved, the owner or operator keeps previous (i.e., superseded) versions of the plan on record to be made available for inspection, upon request, by the Administrator, for a period of 5 years after each revision to the plan.</p> <p>Verify that the owner or operator of an affected source who elects to install a continuous automated sampling system for dioxin/furan or mercury, maintains the following records and reports the information relevant to the continuous automated sampling system:</p> <ul style="list-style-type: none"> <li>– all required 24-hour integrated mercury concentration or 2-week integrated dioxin/furan concentration data (including any data obtained during unavoidable system breakdowns and out-of-control periods)</li> <li>– the date and time identifying each period during which the continuous automated sampling system was inoperative</li> <li>– the date and time identifying each period during which the continuous automated sampling system was out of control</li> <li>– the specific identification (i.e., the date and time of commencement and completion) of each period of excess emissions and parameter monitoring exceedances, as defined in the standard, that occurs during startups, shutdowns, and malfunctions of the affected source</li> <li>– the specific identification (i.e., the date and time of commencement and completion) of each time period of excess emissions and parameter monitoring exceedances, as defined in the standard, that occurs during periods other than startups, shutdowns, and malfunctions of the affected source</li> <li>– the nature and cause of any malfunction (if known)</li> <li>– the corrective action taken to correct any malfunction or preventive measures adopted to prevent further malfunctions</li> <li>– the nature of the repairs or adjustments to the continuous automated sampling system that was inoperative or out of control</li> </ul>

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<p><b>AE.36.16.US.</b> Owners or operators of air curtain incinerators are required to follow specific reporting recordkeeping requirements (40 CFR 60.50b(a), 60.59b(c), 60.59(e), and 60.59b(i)) <b>[Revised December 1997].</b></p>	<ul style="list-style-type: none"> <li>– all procedures that are part of a quality control program developed and implemented for the continuous automated sampling system</li> <li>– when more than one continuous automated sampling system is used to measure the emissions from one affected source (e.g., multiple breechings, multiple outlets), the owner or operator reports the results as required for each system</li> <li>– submit to EPA for approval, the site-specific monitoring plan, including the site-specific performance evaluation test plan for the continuous emission monitoring system</li> <li>– submit information concerning all out-of-control periods for each continuous automated sampling system, including start and end dates and hours and descriptions of corrective actions taken in the required annual or semiannual reports.</li> </ul> <p>Verify that the owner or operator maintains copies of the site-specific monitoring plan on record for the life of the affected source to be made available for inspection, upon request, by the Administrator.</p> <p>Verify that, if the site-specific monitoring plan is revised and approved, the owner or operator keeps previous (i.e., superseded) versions of the plan on record to be made available for inspection, upon request, by the Administrator, for a period of 5 years after each revision to the plan.</p> <p>(NOTE: These requirements apply to units for which construction is started after 20 September 1994 or for which modification or reconstruction is started after 19 June 1996. These requirements become effective 19 June 1996.)</p> <p>(NOTE: See the definition of Exempted New Municipal Waste Combustors.)</p> <p>Verify that owners/operators of air curtain incinerators provide a construction notification which includes the following information:</p> <ul style="list-style-type: none"> <li>– intent to construct</li> <li>– planned initial startup date</li> <li>– the types of fuels that the owner or operator plans to combust in the affected facility</li> <li>– the MWC unit capacity, MWC plant capacity, and supporting calculations</li> <li>– documents associated with siting requirements, including: <ul style="list-style-type: none"> <li>– the siting analysis</li> <li>– the final materials separation plan</li> <li>– a copy of the notification of the public meeting</li> <li>– a transcript of the public meeting</li> <li>– a copy of the document summarizing responses to public comments.</li> </ul> </li> </ul>

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<p><b>AE.36.17.US.</b> Certain facilities can be exempted from the requirements of 40 CFR 60, Subpart AAAA if specific parameters are met (40 CFR 60.1020) [Added April 2001].</p>	<p>Verify that records of the results of initial opacity performance test and subsequent performance tests are kept for at least 5 yr.</p> <p>Verify that the results of the initial opacity performance test and all subsequent annual tests are submitted by 1 February of the year following the year of the performance test.</p> <p>(NOTE: If 40 CFR 60, Subpart AAAA [40 CFR 60.1000 through 60.1465, see checklist items AE.36.17.US through AE.36.28.US] applies to the municipal waste combustion unit, then 40 CFR 60, Subpart E (40 CFR 60.50 through 60.54, see checklist item AE.25.1.US) does not apply to the municipal waste combustion unit (40 CFR 60.1025).)</p> <p>Verify that small municipal waste combustion units that combust less than 11 tons per day seeking exemption from the requirements of 40 CFR 60, Subpart AAAA [40 CFR 60.1000 through 60.1465, see checklist items AE.36.17.US through AE.36.28.US] meet the following:</p> <ul style="list-style-type: none"> <li>– the municipal waste combustion unit is subject to a federally enforceable permit limiting the amount of municipal solid waste combusted to less than 11 tons per day</li> <li>– the Administrator is notified that the unit qualifies for the exemption</li> <li>– the Administrator is provided with a copy of the federally enforceable permit</li> <li>– daily records are kept of the amount of municipal solid waste combusted.</li> </ul> <p>Verify that small power production facilities seeking exemption from the requirements of 40 CFR 60, Subpart AAAA [40 CFR 60.1000 through 60.1465, see checklist items AE.36.17.US through AE.36.28.US] meet the following:</p> <ul style="list-style-type: none"> <li>– the unit qualifies as a small power production facility under section 3(17)(C) of the Federal Power Act (16 U.S.C. 796(17)(C))</li> <li>– the unit combusts homogeneous waste (excluding refuse-derived fuel) to produce electricity</li> <li>– the Administrator is notified that the unit qualifies for the exemption</li> <li>– the Administrator is provided with documentation that the unit qualifies for the exemption.</li> </ul> <p>Verify that cogeneration facilities seeking exemption from the requirements of 40 CFR 60, Subpart AAAA [40 CFR 60.1000 through 60.1465, see checklist items AE.36.17.US through AE.36.28.US] meet the following:</p> <ul style="list-style-type: none"> <li>– the unit qualifies as a cogeneration facility under section 3(18)(B) of the Federal Power Act (16 U.S.C. 796(18)(B))</li> </ul>

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	<ul style="list-style-type: none"> <li>– the unit combusts homogeneous waste (excluding refuse-derived fuel) to produce electricity and steam or other forms of energy used for industrial, commercial, heating, or cooling purposes</li> <li>– the Administrator is notified that the unit qualifies for the exemption</li> <li>– the Administrator is provided with documentation that the unit qualifies for the exemption.</li> </ul> <p>Verify that municipal waste combustion units that combust only tires seeking exemption from the requirements of 40 CFR 60, Subpart AAAAA [40 CFR 60.1000 through 60.1465, see checklist items AE.36.17.US through AE.36.28.US] meet the following:</p> <ul style="list-style-type: none"> <li>– the municipal waste combustion unit combusts a single-item waste stream of tires and no other municipal waste (the unit can co-fire coal, fuel oil, natural gas, or other nonmunicipal solid waste)</li> <li>– the Administrator is notified that the unit qualifies for the exemption</li> <li>– the Administrator is provided with documentation that the unit</li> <li>– qualifies for the exemption,</li> </ul> <p>Verify that hazardous waste combustion units seeking exemption from the requirements of 40 CFR 60, Subpart AAAAA [40 CFR 60.1000 through 60.1465, see checklist items AE.36.17.US through AE.36.28.US] have a permit for the unit under section 3005 of the <i>Solid Waste Disposal Act</i>.</p> <p>(NOTE: Materials recovery units are exempt from this 40 CFR 60, Subpart AAAAA [40 CFR 60.1000 through 60.1465, see checklist items AE.36.17.US through AE.36.28.US] if the unit combusts waste mainly to recover metals. Primary and secondary smelters qualify for the exemption.)</p> <p>Verify that co-fired combustors seeking exemption from the requirements of 40 CFR 60, Subpart AAAAA [40 CFR 60.1000 through 60.1465, see checklist items AE.36.17.US through AE.36.28.US] meet the following requirements:</p> <ul style="list-style-type: none"> <li>– the unit has a federally enforceable permit limiting the combustion of municipal solid waste to 30 percent of the total fuel input by weight</li> <li>– the Administrator is notified that the unit qualifies for the exemption</li> <li>– the Administrator is provided with a copy of the federally enforceable permit</li> <li>– record the weights, each quarter, of municipal solid waste and of all other fuels combusted.</li> </ul> <p>Verify that plastics/rubber recycling units seeking exemption from the requirements of 40 CFR 60, Subpart AAAAA [40 CFR 60.1000 through 60.1465, see checklist items AE.36.17.US through AE.36.28.US] meet the following requirements:</p> <ul style="list-style-type: none"> <li>– the pyrolysis/combustion unit is an integrated part of a plastics/rubber recycling unit</li> </ul>

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<p><b>AE.36.18.US.</b> As a part of preconstruction requirements for new small waste combustors, a Material Separation Plan must be developed according to certain parameters (40 CFR 60.1010, 60.1015, 60.1050 through 60.1105) [Added April 2001].</p>	<ul style="list-style-type: none"> <li>– record the weights, each quarter, of plastics, rubber, and rubber tires processed</li> <li>– record the weights, each quarter, of feed stocks produced and marketed from chemical plants and petroleum refineries</li> <li>– keep the name and address of the purchaser of those feedstocks.</li> </ul> <p>Verify that units that combust fuels made from products of plastics/rubber recycling plants seeking exemption from the requirements of 40 CFR 60, Subpart AAAA [40 CFR 60.1000 through 60.1465, see checklist items AE.36.17.US through AE.36.28.US] meet the following requirements:</p> <ul style="list-style-type: none"> <li>– the unit combusts gasoline, diesel fuel, jet fuel, fuel oils, residual oil, refinery gas, petroleum coke, liquified petroleum gas, propane, or butane produced by chemical plants or petroleum refineries that use feedstocks produced by plastics/rubber recycling units</li> <li>– the unit does not combust any other municipal solid waste.</li> </ul> <p>(NOTE: Cement kilns are exempt from 40 CFR 60, Subpart AAA if the cement kiln combusts municipal solid waste.)</p> <p>(NOTE: If an air curtain incinerator combusts 100 percent yard waste, it is only required to meet the requirements under 40 CFR. 60.1435 through 60.1455.)</p> <p>(NOTE: If 40 CFR 60, Subpart AAAA [40 CFR 60.1000 through 60.1465, see checklist items AE.36.17.US through AE.36.28.US] applies to the municipal waste combustion unit, then 40 CFR 60, Subpart E (40 CFR 60.50 through 60.54, see checklist item AE.25.1.US) does not apply to the municipal waste combustion unit (40 CFR 60.1025).)</p> <p>(NOTE: This checklist item applies if the municipal waste combustion unit is a new municipal waste combustion unit and the unit has the capacity to combust at least 35 tons per day but no more than 250 tons per day of municipal solid waste or refuse-derived fuel, A new municipal waste combustion unit is one that either started construction after 31 August 1999 or started reconstruction or modification after 6 June 2001.)</p> <p>(NOTE: This checklist item does not apply to municipal waste combustion unit if physical or operational changes are made to an existing municipal waste combustion unit primarily to comply with the emission guidelines in 40 CFR 60, Subpart BBBB [40 CFR 60.1500 through 60.1940, see text of regulation]. Such changes do not qualify as reconstruction or modification.)</p> <p>Verify that a materials separation plan is prepared for a municipal waste combustion unit if construction of a new small municipal waste combustion unit was started after 6 December 2000.</p>

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	<p>(NOTE: If construction of the municipal waste combustion unit started after 30 August 30 1999 but before 6 December 2000, the facility is not required to prepare the materials separation plan specified in this subpart.)</p> <p>Verify that a materials separation plan is prepared if the facility is required to submit an initial application for a construction permit, under 40 CFR 51, Subpart I, or 40 CFR 52, as applicable, for the reconstruction or modification of the municipal waste combustion unit.</p> <p>Verify that the plan identifies a goal and an approach for separating certain components of municipal solid waste for a given service area prior to waste combustion and making them available for recycling.</p> <p>(NOTE: Analyses conducted under the requirements of 40 CFR 51, Subpart I, or 40 CFR 52, to comply with some of the materials separation requirements.)</p> <p>Verify that the facility prepares and submits a draft materials separation plan for the municipal waste combustion unit and its service area, including the identification of a goal and an approach for separating certain components of municipal solid waste for a given service area prior to waste combustion and making them available for recycling.</p> <p>(NOTE: A materials separation plan may:</p> <ul style="list-style-type: none"> <li>– include such elements as dropoff facilities, buy-back or deposit-return incentives, programs for curbside pickup, and centralized systems for mechanical separation</li> <li>– include different goals or approaches for different subareas in the service area</li> <li>– exclude materials separation activities for certain subareas or, if warranted, the entire service area</li> <li>– distribution of the draft materials separation plan to the main public libraries in the area where the municipal waste combustion unit will be constructed</li> <li>– publish a notice of a public meeting in the main newspapers that serve two areas: <ul style="list-style-type: none"> <li>– the area where the municipal waste combustion unit will be constructed</li> <li>– the areas where the waste combusted by the municipal waste combustion unit will be collected</li> </ul> </li> <li>– include the following items in the notice of the public meeting: <ul style="list-style-type: none"> <li>– the date of the public meeting</li> <li>– the time of the public meeting</li> <li>– the location of the public meeting</li> <li>– the location of the public libraries where the public can find the materials separation plan, including the normal business hours of each library</li> <li>– an agenda of the topics that will be discussed at the public meeting</li> <li>– the beginning and ending dates of the public comment period on the draft materials separation plan.</li> </ul> </li> </ul>

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Verify that the facility accepts:

- comments at the public meeting
- written comments anytime during the period that begins on the date the document is distributed to the main public libraries and ends 30 days after the date of the public meeting.

Verify that the facility holds a public meeting in the county where the municipal waste combustion unit will be constructed and the meeting is scheduled to occur at least 30 days after the draft materials separation plan is made available to the public.

Verify that a transcript of the public meeting on the draft materials separation plan is prepared.

(NOTE: The public meeting may be combined with any other public meeting required as part of any other Federal, State, or local permit review. However, it may not be combined with the public meeting required for the siting analysis. At the public meeting, the facility is encouraged to address the following topics for the draft materials separation plan:

- expected size of the service area for your municipal waste combustion unit
- amount of waste to be collected in the service area
- types and estimated amounts of materials proposed for separation
- methods proposed for materials separation
- amount of residual waste for disposal
- alternate disposal methods for handling the residual waste
- where the facility's responses to public comments on the draft materials separation plan will be available for inspection
- where the revised materials separation plan will be available for inspection.)

Verify that the facility:

- prepares written responses to any public comments received during the public comment period and summarize the responses to public
- comments in a document that is separate from the revised materials separation plan
- makes the comment response document available to the public in the service area where the municipal waste combustion unit will be constructed and distribute the document at least to the main public libraries used to announce the public meeting
- prepares a revised materials separation plan for the municipal waste combustion unit that includes, as appropriate, changes made in response to any public comments received during the public comment period.

Verify that the following items are submitted to the Administrator by the date the facility submits the application for a construction permit under 40 CFR 51, Subpart I, or 40 CFR 52:

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<p><b>AE.36.19.US.</b> As a part of preconstruction requirements new small waste combustors, a siting analysis must be developed according to certain parameters (40 CFR 60.1010, 60.1015, 60.1110 through 60.1150) [Added April 2001].</p>	<ul style="list-style-type: none"> <li>– the draft materials separation plan</li> <li>– the revised materials separation plan</li> <li>– the notice of the public meeting for the draft materials separation plan</li> <li>– a transcript of the public meeting on your draft materials separation plan</li> <li>– the document that summarizes the facility’s responses to the public</li> <li>– comments received during the public comment period on the draft</li> <li>– materials separation plan.</li> </ul> <p>(NOTE: If the facility is not required to submit an application for a construction permit under 40 CFR 51, Subpart I, or 40 CFT Part 52, submit the listed items to the Administrator by the date of the notice of construction.)</p> <p>Verify that the revised materials separation plan is made available to the public as part of the siting analysis procedures.</p> <p>Verify that, at the public meeting for review of the siting analysis, the following areas are discussed:</p> <ul style="list-style-type: none"> <li>– differences between the revised materials separation plan and the draft materials separation plan discussed at the first public meeting</li> <li>– questions about the revised materials separation plan.</li> </ul> <p>Verify that the revised materials separation plan is made available to the public as part of the siting analysis procedures.</p> <p>Verify that, at the public meeting for review of the siting analysis, the following areas are discussed:</p> <ul style="list-style-type: none"> <li>– differences between the revised materials separation plan and the draft materials separation plan discussed at the first public meeting</li> <li>– questions about the revised materials separation plan.</li> </ul> <p>(NOTE: If 40 CFR 60, Subpart AAAA [40 CFR 60.1000 through 60.1465, see checklist items AE.36.17.US through AE.36.28.US] applies to the municipal waste combustion unit, then 40 CFR 60, Subpart E (40 CFR 60.50 through 60.54, see checklist item AE.25.1.US) does not apply to the municipal waste combustion unit (40 CFR 60.1025).)</p> <p>(NOTE: This checklist item applies if the municipal waste combustion unit is a new municipal waste combustion unit and the unit has the capacity to combust at least 35 tons per day but no more than 250 tons per day of municipal solid waste or refuse-derived fuel. A new municipal waste combustion unit is one that either started construction after 31 August 1999 or started reconstruction or modification after 6 June 2001.)</p>

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	<p>(NOTE: This checklist item does not apply to municipal waste combustion unit if physical or operational changes are made to an existing municipal waste combustion unit primarily to comply with the emission guidelines in 40 CFR 60, Subpart BBBB [40 CFR 60.1500 through 60.1940, see text of regulation]. Such changes do not qualify as reconstruction or modification.).</p> <p>Verify that a siting analysis is done if:</p> <ul style="list-style-type: none"> <li>– the facility commences construction of a small municipal waste combustion unit after 6 December 2000</li> <li>– the facility is required to submit an initial application for a construction permit, under 40 CFR 51, Subpart I, or 40 CFR 52, as applicable, for the reconstruction or modification of the municipal waste combustion unit.</li> </ul> <p>(NOTE: If construction on the municipal waste combustion unit starts after 30 August 1999, but before 6 December 2000 a siting analysis is not required to be prepared.)</p> <p>Verify that the siting analysis includes:</p> <ul style="list-style-type: none"> <li>– an analysis of how the municipal waste combustion unit affects: <ul style="list-style-type: none"> <li>– ambient air quality</li> <li>– visibility</li> <li>– soils</li> <li>– vegetation</li> </ul> </li> <li>– an analysis of alternatives for controlling air pollution that minimize potential risks to the public health and the environment.</li> </ul> <p>Verify that the siting analysis considers other major industrial facilities near the proposed site.</p> <p>(NOTE: The analysis can be used to determine whether the benefits of the proposed facility significantly outweigh the environmental and social costs resulting from its location and construction.)</p> <p>Verify that the siting analysis is made available to the public by:</p> <ul style="list-style-type: none"> <li>– distributing the siting analysis and revised materials separation plan to the main public libraries in the area where the municipal waste combustion unit will be constructed</li> <li>– publish a notice of a public meeting in the main newspapers that serve the following two areas: <ul style="list-style-type: none"> <li>– the area where the municipal waste combustion unit will be constructed</li> <li>– the areas where the waste that the municipal waste combustion unit combusts will be collected</li> </ul> </li> <li>– including the following items in the notice of the public meeting:</li> </ul>

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	<ul style="list-style-type: none"> <li>– the date of the public meeting</li> <li>– the time of the public meeting</li> <li>– the location of the public meeting</li> <li>– the location of the public libraries where the public can find the siting analysis and revised materials separation plan, including the normal business hours of each library</li> <li>– an agenda of the topics that will be discussed at the public meeting</li> <li>– the beginning and ending dates of the public comment period on the siting analysis and revised materials separation plan.</li> </ul> <p>Verify that the facility accepts the following types of comments on the siting analysis:</p> <ul style="list-style-type: none"> <li>– verbal comments at the public meeting</li> <li>– written comments anytime during the period that begins on the date the document is distributed to the main public libraries and ends 30 days after the date of the public meeting.</li> </ul> <p>Verify that a public meeting is held to discuss and accept comments on the siting analysis and the revised materials separation plan as follows:</p> <ul style="list-style-type: none"> <li>– hold the public meeting in the county where the municipal waste combustion unit is to be constructed</li> <li>– schedule the public meeting to occur at least 30 days after making the siting analysis and revised materials separation plan available to the public</li> <li>– prepare a transcript of the public meeting on the siting analysis.</li> </ul> <p>Verify that, for public comments, the following actions are taken:</p> <ul style="list-style-type: none"> <li>– prepare written responses to any public comments on the siting analysis and the revised materials separation plan received during the public comment period and summarize the responses to public comments in a document that is separate from the materials separation plan and siting analysis</li> <li>– make the comment response document available to the public in the service area where the municipal waste combustion unit is to be constructed and distribute the document at least to the main public libraries used to announce the public meeting for the siting analysis</li> <li>– prepare a revised siting analysis for the municipal waste combustion unit that includes, as appropriate, changes made in response to any public comments received during the public comment period.</li> </ul> <p>Verify that the following are submitted as a part of the notice of construction:</p> <ul style="list-style-type: none"> <li>– the siting analysis</li> <li>– the notice of the public meeting on the siting analysis</li> </ul>

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<p><b>AE.36.20.US.</b> Operators at new small waste combustors are required to be trained (40 CFR 60.1010, 60.1015, 60.1155 through 60.1180 [Added April 2001].</p>	<ul style="list-style-type: none"> <li>– a transcript of the public meeting on the siting analysis</li> <li>– the document that summarizes responses to the public comments received during the public comment period.</li> </ul> <p>(NOTE: If 40 CFR 60, Subpart AAAA [40 CFR 60.1000 through 60.1465, see checklist items AE.36.17.US through AE.36.28.US] applies to the municipal waste combustion unit, then 40 CFR 60, Subpart E (40 CFR 60.50 through 60.54, see checklist item AE.25.1.US) does not apply to the municipal waste combustion unit (40 CFR 60.1025).)</p> <p>(NOTE: This checklist item applies if the municipal waste combustion unit is a new municipal waste combustion unit and the unit has the capacity to combust at least 35 tons per day but no more than 250 tons per day of municipal solid waste or refuse-derived fuel. A new municipal waste combustion unit is one that either started construction after 31 August 1999 or started reconstruction or modification after 6 June 2001.)</p> <p>(NOTE: This checklist item does not apply to municipal waste combustion unit if physical or operational changes are made to an existing municipal waste combustion unit primarily to comply with the emission guidelines in 40 CFR 60, Subpart BBBB [40 CFR 60.1500 through 60.1940, see text of regulation]. Such changes do not qualify as reconstruction or modification.).</p> <p>Verify that chief facility operators, shift supervisors, and control room operators complete the USEPA or State-approved operator training course by the later of these dates:</p> <ul style="list-style-type: none"> <li>– 6 mo after municipal waste combustion unit initial startup</li> <li>– 6 December 2001</li> <li>– the date before an employee assumes responsibilities that affect operation of the municipal waste combustion unit.</li> </ul> <p>Verify that all employees with responsibilities that affect how a municipal waste combustion unit operates complete the plant-specific training course, including at least the following types of employees:</p> <ul style="list-style-type: none"> <li>– chief facility operators</li> <li>– shift supervisors</li> <li>– control room operators</li> <li>– ash handlers</li> <li>– maintenance personnel</li> <li>– crane or load handlers.</li> </ul>

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<p><b>AE.36.21.US.</b> Operators at new small waste combustors are required to be certified (40 CFR 60.1010, 60.1015, 60.1185 through 60.1195) [Added April 2001].</p>	<p>Verify that, for plant-specific training at a particular plant, a specific operating manual for that plant is developed by the later of two dates:</p> <ul style="list-style-type: none"> <li>– 6 mo after the municipal waste combustion unit initial startup</li> <li>– 6 December 2001.</li> </ul> <p>Verify that there is a program to review the plant-specific operating manual with people whose responsibilities affect the operation of the municipal waste combustion unit and complete the initial review by the later of three dates:</p> <ul style="list-style-type: none"> <li>– 6 mo after the municipal waste combustion unit initial startup</li> <li>– 6 December 2001</li> <li>– the date before an employee assumes responsibilities that affect operation of the municipal waste combustion unit.</li> </ul> <p>Verify that the plant-specific operating manual is reviewed and updated annually.</p> <p>Verify that the plant-specific operating manual includes the following:</p> <ul style="list-style-type: none"> <li>– a summary of all applicable requirements</li> <li>– a description of the basic combustion principles that apply to municipal waste combustion units</li> <li>– procedures for receiving, handling, and feeding municipal solid waste</li> <li>– procedures to be followed during periods of startup, shutdown, and malfunction of the municipal waste combustion unit</li> <li>– procedures for maintaining a proper level of combustion air supply</li> <li>– procedures for operating the municipal waste combustion unit in compliance</li> <li>– procedures for responding to periodic upset or off-specification conditions</li> <li>– procedures for minimizing carryover of particulate matter</li> <li>– procedures for handling ash</li> <li>– procedures for monitoring emissions from the municipal waste combustion unit</li> <li>– procedures for recordkeeping and reporting.</li> </ul> <p>Verify that the operating manual is kept in an easily accessible location and is available for review or inspection by all employees who must review it and by the Administrator.</p> <p>(NOTE: If 40 CFR 60, Subpart AAAAA [40 CFR 60.1000 through 60.1465, see checklist items AE.36.17.US through AE.36.28.US] applies to the municipal waste combustion unit, then 40 CFR 60, Subpart E (40 CFR 60.50 through 60.54, see checklist item AE.25.1.US) does not apply to the municipal waste combustion unit (40 CFR 60.1025).)</p> <p>(NOTE: This checklist item applies if the municipal waste combustion unit is a new municipal waste combustion unit and the unit has the capacity to combust at least 35</p>

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	<p>tons per day but no more than 250 tons per day of municipal solid waste or refuse-derived fuel. A new municipal waste combustion unit is one that either started construction after 31 August 1999 or started reconstruction or modification after 6 June 2001.)</p> <p>(NOTE: This checklist item does not apply to municipal waste combustion unit if physical or operational changes are made to an existing municipal waste combustion unit primarily to comply with the emission guidelines in 40 CFR 60, Subpart BBBB [40 CFR 60.1500 through 60.1940, see text of regulation]. Such changes do not qualify as reconstruction or modification.)</p> <p>Verify that each chief facility operator and shift supervisor obtains and keeps a current provisional operator certification from the American Society of Mechanical Engineers (QRO-1-1994) or a current provisional operator certification from the State certification program.</p> <p>Verify that each chief facility operator and shift supervisor obtains a provisional certification by the later of three dates:</p> <ul style="list-style-type: none"> <li>– 6 mo after the municipal waste combustion unit initial startup</li> <li>– 6 December 2001</li> <li>– 6 mo after they transfer to the municipal waste combustion unit or 6 months after they are hired to work at the municipal waste combustion unit.</li> </ul> <p>Verify that each chief facility operator and shift supervisor takes one of three actions:</p> <ul style="list-style-type: none"> <li>– obtain a full certification from the American Society of Mechanical Engineers or a state certification program in the appropriate state</li> <li>– schedule a full certification exam with the American Society of Mechanical Engineers (QRO-1-1994)</li> <li>– schedule a full certification exam with the appropriate state certification program.</li> </ul> <p>Verify that the chief facility operator and shift supervisor obtains the full certification or be scheduled to take the certification exam by the later of three dates:</p> <ul style="list-style-type: none"> <li>– 6 mo after the municipal waste combustion unit initial startup</li> <li>– 6 December 2001</li> <li>– 6 mo after they transfer to the municipal waste combustion unit or 6 months after they are hired to work at the municipal waste combustion unit.</li> </ul> <p>Verify that, after the required date for certification, the municipal waste combustor is not operated unless one of the following is on duty:</p> <ul style="list-style-type: none"> <li>– a fully certified chief facility operator</li> </ul>

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<p><b>AE.36.22.US.</b> New small waste combustors are required to be operated according to specific parameters (40 CFR 60.1010, 60.1015, 60.1200 through</p>	<ul style="list-style-type: none"> <li>– a provisionally certified chief facility operator who is scheduled to take the full certification exam</li> <li>– a fully certified shift supervisor</li> <li>– a provisionally certified shift supervisor who is scheduled to take the full certification exam.</li> </ul> <p>(NOTE: If the certified chief facility operator and certified shift supervisor both are unavailable, a provisionally certified control room operator at the municipal waste combustion unit may fulfill the certified operator requirement.)</p> <p>Verify that, depending on the length of time that a certified chief facility operator and certified shift supervisor are away, one of the following must be met:</p> <ul style="list-style-type: none"> <li>– when the certified chief facility operator and certified shift supervisor are both offsite for 12 h or less, and no other certified operator is onsite, the provisionally certified control room operator may perform those duties without notice to, or approval by, the Administrator</li> <li>– when the certified chief facility operator and certified shift supervisor are offsite for more than 12 h, but for 2 weeks or less, and no other certified operator is onsite, the provisionally certified control room operator may perform those duties without notice to, or approval by, the Administrator if the period when the certified chief facility operator and certified shift supervisor are offsite is recorded and that information is included in the annual report</li> <li>– when the certified chief facility operator and certified shift supervisor are offsite for more than 2 weeks, and no other certified operator is onsite, the provisionally certified control room operator may perform those duties without notice to, or approval by, the Administrator if the following actions are taken: <ul style="list-style-type: none"> <li>– notify the Administrator in writing and state what caused the absence and what is being done to ensure that a certified chief facility operator or certified shift supervisor is onsite</li> <li>– submit a status report and corrective action summary to the Administrator every 4 weeks following the initial notification and if the Administrator notifies the facility that the status report or corrective action summary is disapproved, the municipal waste combustion unit may continue operation for 90 days, but then must cease operation. (NOTE: If corrective actions are taken in the 90-day period such that the Administrator withdraws the disapproval, municipal waste combustion unit operation may continue.</li> </ul> </li> </ul> <p>(NOTE: If 40 CFR 60, Subpart AAAA [40 CFR 60.1000 through 60.1465, see checklist items AE.36.17.US through AE.36.28.US] applies to the municipal waste combustion unit, then 40 CFR 60, Subpart E (40 CFR 60.50 through 60.54, see checklist item AE.25.1.US) does not apply to the municipal waste combustion unit (40 CFR 60.1025).)</p>

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60.1205) [Added April 2001].	<p>(NOTE: This checklist item applies if the municipal waste combustion unit is a new municipal waste combustion unit and the unit has the capacity to combust at least 35 tons per day but no more than 250 tons per day of municipal solid waste or refuse-derived fuel. A new municipal waste combustion unit is one that either started construction after 31 August 1999 or started reconstruction or modification after 6 June 2001.)</p> <p>(NOTE: This checklist item does not apply to municipal waste combustion unit if physical or operational changes are made to an existing municipal waste combustion unit primarily to comply with the emission guidelines in 40 CFR 60, Subpart BBBB [40 CFR 60.1500 through 60.1940, see text of regulation]. Such changes do not qualify as reconstruction or modification.).</p> <p>Verify that the municipal waste combustion unit is not operated at loads greater than 110 percent of the maximum demonstrated load of the municipal waste combustion unit (4-h block average).</p> <p>Verify that the municipal waste combustion unit is not operated so that the temperature at the inlet of the particulate matter control device exceeds 17 oC above the maximum demonstrated temperature of the particulate matter control device (4-h block average).</p> <p>Verify that, if the municipal waste combustion unit uses activated carbon to control dioxins/furans or mercury emissions, the facility maintains an 8-h block average carbon feed rate at or above the highest average level established during the most recent dioxins/furans or mercury test.</p> <p>Verify that, if the municipal waste combustion unit uses activated carbon to control dioxins/furans or mercury emissions, the total carbon usage is evaluated for each calendar quarter and the total amount of carbon purchased and delivered to the municipal waste combustion plant is at or above the required quarterly usage of carbon.</p> <p>(NOTE: The facility may choose to evaluate required quarterly carbon usage on a municipal waste combustion unit basis for each individual municipal waste combustion unit at the plant.)</p> <p>(NOTE: The municipal waste combustion unit is exempt from limits on load level, temperature at the inlet of the particulate matter control device, and carbon feed rate during any of five situations:</p> <ul style="list-style-type: none"> <li>– during annual tests for dioxins/furans</li> <li>– during annual mercury tests (for carbon feed rate requirements only)</li> <li>– during the 2 weeks preceding the annual tests for dioxins/furans</li> <li>– during the 2 weeks preceding the annual mercury tests (for carbon feed rate requirements only)</li> <li>– whenever the Administrator or delegated State authority permits the facility to do any of five activities:</li> </ul>

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<b>AE.36.23.US.</b> New small waste combustors are required to meet certain emissions limitations (40 CFR 60.1010, 60.1015, 60.1210 through 60.1220) [Added April 2001].	<ul style="list-style-type: none"> <li>– evaluate system performance</li> <li>– test new technology or control technologies</li> <li>– perform diagnostic testing</li> <li>– perform other activities to improve the performance of your municipal waste combustion unit</li> <li>– perform other activities to advance the state of the art for emission controls for the municipal waste combustion unit.)</li> </ul> <p>(NOTE: The operating requirements apply at all times except during periods of municipal waste combustion unit startup, shutdown, or malfunction.)</p> <p>Verify that each startup, shutdown, or malfunction does not last for longer than 3 h.</p> <p>(NOTE: If 40 CFR 60, Subpart AAAA [40 CFR 60.1000 through 60.1465, see checklist items AE.36.17.US through AE.36.28.US] applies to the municipal waste combustion unit, then 40 CFR 60, Subpart E (40 CFR 60.50 through 60.54, see checklist item AE.25.1.US) does not apply to the municipal waste combustion unit (40 CFR 60.1025).)</p> <p>(NOTE: This checklist item applies if the municipal waste combustion unit is a new municipal waste combustion unit and the unit has the capacity to combust at least 35 tons per day but no more than 250 tons per day of municipal solid waste or refuse-derived fuel. A new municipal waste combustion unit is one that either started construction after 31 August 1999 or started reconstruction or modification after 6 June 2001.)</p> <p>(NOTE: This checklist item does not apply to municipal waste combustion unit if physical or operational changes are made to an existing municipal waste combustion unit primarily to comply with the emission guidelines in 40 CFR 60, Subpart BBBB [40 CFR 60.1500 through 60.1940, see text of regulation]. Such changes do not qualify as reconstruction or modification.)</p> <p>Verify that the emission limits specified Tables 1 and 2 of Appendix 1-8b are met 60 days after the municipal waste combustion unit reaches the maximum load level but no later than 180 days after its initial startup.</p> <p>(NOTE: These emission limits apply at all times except during periods of municipal waste combustion unit startup, shutdown, or malfunction.)</p> <p>Verify that each startup, shutdown, or malfunction does not last for longer than 3 h.</p> <p>(NOTE: A maximum of 3 h of test data can be dismissed from compliance calculations during periods of startup, shutdown, or malfunction. During startup, shutdown, or malfunction periods longer than 3 h, emissions data cannot be</p>

<p style="text-align: center;"><b>COMPLIANCE CATEGORY</b>  <b>AIR EMISSIONS MANAGEMENT</b>  <b>U.S. TEAM Guide</b></p>	
<p style="text-align: center;"><b>REGULATORY REQUIREMENTS:</b></p>	<p style="text-align: center;"><b>REVIEWER CHECKS</b>  <b>December 2018</b></p>
<p><b>AE.36.24.US.</b> New small waste combustors are required to meet certain continuous emissions monitoring requirements (40 CFR 60.1010, 60.1015, 60.1225 through 60.1280) [Added April 2001].</p>	<p>discarded from compliance calculations and all provisions under 40 CFR 60.11(d) apply.</p> <p>(NOTE: If 40 CFR 60, Subpart AAAA [40 CFR 60.1000 through 60.1465, see checklist items AE.36.17.US through AE.36.28.US] applies to the municipal waste combustion unit, then 40 CFR 60, Subpart E (40 CFR 60.50 through 60.54, see checklist item AE.25.1.US) does not apply to the municipal waste combustion unit (40 CFR 60.1025).)</p> <p>(NOTE: This checklist item applies if the municipal waste combustion unit is a new municipal waste combustion unit and the unit has the capacity to combust at least 35 tons per day but no more than 250 tons per day of municipal solid waste or refuse-derived fuel. A new municipal waste combustion unit is one that either started construction after 31 August 1999 or started reconstruction or modification after 6 June 2001.)</p> <p>(NOTE: This checklist item does not apply to municipal waste combustion unit if physical or operational changes are made to an existing municipal waste combustion unit primarily to comply with the emission guidelines in 40 CFR 60, Subpart BBBB [40 CFR 60.1500 through 60.1940, see text of regulation]. Such changes do not qualify as reconstruction or modification.)</p> <p>Verify that the facility installs, calibrates, maintains, and operates continuous emission monitoring systems for oxygen (or CO<sub>2</sub>), SO<sub>2</sub>, and CO.</p> <p>Verify that, if the facility operates a Class I municipal waste combustion unit, it installs, calibrates, maintains, and operates a CEMS for NO<sub>x</sub>.</p> <p>Verify that the CEMS for SO<sub>2</sub>, NO<sub>x</sub>, and oxygen (or CO) are installed at the outlet of the air pollution control device.</p> <p>Verify that each CEMS is installed, evaluated, and operated according to the “Monitoring Requirements” in 40 CFR 60.13.</p> <p>Verify that the oxygen (or CO<sub>2</sub>) concentration is monitored at each location where SO<sub>2</sub> and CO are monitored</p> <p>Verify that, if the facility operates a Class I municipal waste combustion unit, the oxygen (or CO<sub>2</sub>) concentration is monitored at the location where NO<sub>x</sub> are monitored.</p> <p>(NOTE: The facility may choose to monitor CO<sub>2</sub> instead of oxygen as a diluent gas. If the facility chooses to monitor CO<sub>2</sub>, then an oxygen monitor is not required, and the facility must follow the requirements in 40 CFR 60.1255.)</p>

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	<p>Verify that, if the facility chooses to demonstrate compliance by monitoring the percent reduction of SO<sub>2</sub>, the facility also installs CEMS for SO<sub>2</sub> and oxygen (or CO<sub>2</sub>) at the inlet of the air pollution control device.</p> <p>(NOTE: If the facility prefers to use an alternative SO<sub>2</sub> monitoring method, such as parametric monitoring, or cannot monitor emissions at the inlet of the air pollution control device to determine percent reduction, the facility can apply to the Administrator for approval to use an alternative monitoring method under 40 CFR 60.13(i).)</p> <p>(NOTE: The data from the continuous emission monitoring systems for SO<sub>2</sub>, NO<sub>x</sub>, and CO are used to demonstrate continuous compliance with the specified emission limits. To demonstrate compliance for dioxins/furans, cadmium, lead, mercury, particulate matter, opacity, hydrogen chloride, and fugitive ash, see 40 CFR 60.1290.)</p> <p>Verify that the facility conducts initial, daily, quarterly, and annual evaluations of the continuous emission monitoring systems that measure oxygen (or CO<sub>2</sub>), SO<sub>2</sub>, NO<sub>x</sub> (Class I municipal waste combustion units only), and CO.</p> <p>Verify that the initial evaluation of the continuous emission monitoring systems is completed within 60 days after the municipal waste combustion unit reaches the maximum load level at which it will operate, but no later than 180 days after its initial startup.</p> <p>(NOTE: For initial and annual evaluations, collect data concurrently (or within 30 to 60 min) using the oxygen (or CO<sub>2</sub>) CEMS, the SO<sub>2</sub>, NO<sub>x</sub>, or CO CEMS, as appropriate, and the appropriate test methods specified in Table 3 of Appendix 1-8b. Collect the data during each initial and annual evaluation of the continuous emission monitoring systems following the applicable performance specifications in Appendix B of 40 CFR 60. Table 4 of Appendix 1-8b shows the performance specifications that apply to each continuous emission monitoring system. Follow the quality assurance procedures in Procedure 1 of Appendix F of 40 CFR 60 for each continuous emission monitoring system.</p> <p>(NOTE: The oxygen (or CO<sub>2</sub>) CEMS is exempt from two requirements:</p> <ul style="list-style-type: none"> <li>– the relative accuracy requirement</li> <li>– the relative accuracy test audit.)</li> </ul> <p>Verify that the facility conducts annual evaluations of the CEMS no more than 13 mo after the previous evaluation was conducted.</p> <p>Verify that the facility evaluates the CEMS daily and quarterly as specified in Appendix F of 40 CFR 60.</p>

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	<p>(NOTE: See 40 CFR 60.1255 for details on how to monitor CO<sub>2</sub> instead of oxygen as a diluent gas.)</p> <p>Verify that, where CEMS are required, 1-h arithmetic averages are obtained and the averages for SO<sub>2</sub>, NO<sub>x</sub>, and CO are in ppmv at 7 percent oxygen (or the equivalent CO<sub>2</sub> level).</p> <p>(NOTE: Use the 1-h averages of oxygen (or carbon dioxide) data from the CEMS to determine the actual oxygen (or CO<sub>2</sub>) level and to calculate emissions at 7 percent oxygen (or the equivalent CO<sub>2</sub> level).)</p> <p>Verify that the facility obtains at least two data points per hour in order to calculate a valid 1-h arithmetic average.</p> <p>(NOTE: 40 CFR 60.13(e)(2) requires the CEMS to complete at least one cycle of operation (sampling, analyzing, and data recording) for each 15-min period.)</p> <p>Verify that the facility obtains valid 1-h averages for 75 percent of the operating hours per day for 90 percent of the operating days per calendar quarter.</p> <p>(NOTE: An operating day is any day the unit combusts any municipal solid waste or refuse-derived fuel. Even if the required amount of minimum data is obtained, all valid data from the continuous emission monitoring systems must be used in calculating emission concentrations and percent reductions.)</p> <p>(NOTE: See 40 CFR 60.1265 for details on converting the 1-h arithmetic averages into the appropriate averaging times and units.)</p> <p>Verify that the facility installs, calibrates, maintains, and operates a continuous opacity monitoring system according to 40 CFR 60.13.</p> <p>Verify that an initial evaluation of the continuous opacity monitoring system is completed according to Performance Specification 1 in Appendix B of 40 CFR 60 within 60 days after the municipal waste combustion unit reaches the maximum load level at which it will operate, but no more than 180 days after its initial startup.</p> <p>Verify that each annual evaluation of the continuous opacity monitoring system is completed no more than 13 mo after the previous evaluation.</p> <p>(NOTE: Use tests conducted according to USEPA Reference Method 9 in 40 CFR 60, Appendix A to determine compliance with the opacity limit. The data obtained from the continuous opacity monitoring system are not used to determine compliance with the opacity limit.)</p>

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<p><b>AE.36.25.US.</b> New small waste combustors are required to meet certain stack testing requirements (40 CFR 60.1010, 60.1015, 60.1285 through 60.1310) [Added April 2001].</p>	<p>Verify that, for the continuous emission monitoring systems and continuous opacity monitoring system, the facility uses the required span values and applicable performance specifications in Table 4 of Appendix 1-8b.</p> <p>(NOTE: Table 4 of Appendix 1-8b also details alternate methods for collecting data when systems malfunction or when repairs, calibration checks, or zero and span checks keep the facility from collecting the minimum amount of data.)</p> <p>(NOTE: If 40 CFR 60, Subpart AAAA [40 CFR 60.1000 through 60.1465, see checklist items AE.36.17.US through AE.36.28.US] applies to the municipal waste combustion unit, then 40 CFR 60, Subpart E (40 CFR 60.50 through 60.54, see checklist item AE.25.1.US) does not apply to the municipal waste combustion unit (40 CFR 60.1025).)</p> <p>(NOTE: This checklist item applies if the municipal waste combustion unit is a new municipal waste combustion unit and the unit has the capacity to combust at least 35 tons per day but no more than 250 tons per day of municipal solid waste or refuse-derived fuel. A new municipal waste combustion unit is one that either started construction after 31 August 1999 or started reconstruction or modification after 6 June 2001.)</p> <p>(NOTE: This checklist item does not apply to municipal waste combustion unit if physical or operational changes are made to an existing municipal waste combustion unit primarily to comply with the emission guidelines in 40 CFR 60, Subpart BBBB [40 CFR 60.1500 through 60.1940, see text of regulation]. Such changes do not qualify as reconstruction or modification.)</p> <p>Verify that the facility conducts initial and annual stack tests to measure the emission levels of dioxins/furans, cadmium, lead, mercury, particulate matter, opacity, hydrogen chloride, and fugitive ash.</p> <p>(NOTE: The results of stack tests for dioxins/furans, cadmium, lead, mercury, particulate matter, opacity, hydrogen chloride, and fugitive ash to demonstrate compliance with the applicable emission limits.)</p> <p>Verify that initial stack tests are conducted for dioxins/furans, cadmium, lead, mercury, particulate matter, opacity, hydrogen chloride, and fugitive ash within 60 days after your municipal waste combustion unit reaches the maximum load level at which it will operate, but no later than 180 days after its initial startup.</p> <p>Verify that annual stack tests are conducted for the same pollutants after the initial stack test but no later than 13 mo after the previous stack test.</p> <p>(NOTE: See the text for 40 CFR 60.1300 for the details on test methods to use when conducting the stack test.)</p>

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<p><b>AE.36.26.US.</b> New small waste combustors are required to meet certain</p>	<p>(NOTE: Stack testing may be done less often if the facility owns or operates a Class II municipal waste combustion unit and if all stack tests for a given pollutant over 3 consecutive years show compliance with the emission limit. In that case, the facility is not required to conduct a stack test for that pollutant for the next 2 yr. However, the facility must conduct another stack test within 36 mo of the anniversary date of the third consecutive stack test that shows compliance with the emission limit. After that, the facility must perform stack tests every 3rd year but no later than 36 mo following the previous stack tests. If a stack test shows noncompliance with an emission limit, the facility must resume annual stack tests for that pollutant until all stack tests over 3 consecutive years show compliance with the emission limit for that pollutant. The provision applies to: dioxins/furans, cadmium, lead, mercury, particulate matter, opacity, hydrogen chloride, and fugitive ash.)</p> <p>(NOTE: The facility can test less often for dioxins/furans emissions if it owns or operates a municipal waste combustion plant that meets two conditions:</p> <ul style="list-style-type: none"> <li>– there are multiple municipal waste combustion units onsite that are subject to these requirements</li> <li>– all those municipal waste combustion units have demonstrated levels of dioxins/furans emissions less than or equal to 7 nanograms per dscm (total mass) for 2 consecutive years.</li> </ul> <p>If the above circumstances exist, the facility may choose to conduct annual stack tests on only one municipal waste combustion unit per year. In that case, stack tests are conducted no more than 13 mo following a stack test on any municipal waste combustion unit subject to these requirements at the plant. Each year, test a different municipal waste combustion unit subject to these requirements and test all municipal waste combustion units in a sequence that the facility determines. Once a testing sequence is determined, it must not be changed without approval by the Administrator. If each annual stack test shows levels of dioxins/furans emissions less than or equal to 7 nanograms per dscm (total mass), the facility may continue stack tests on only one municipal waste combustion unit per year. If any annual stack test indicates levels of dioxins/furans emissions greater than 7 nanograms per dscm (total mass), subsequent annual stack tests must be conducted on all municipal waste combustion units subject to these requirements at the facility. The facility may return to testing one municipal waste combustion unit per year if it can demonstrate dioxins/furans emission levels less than or equal to 7 nanograms per dscm (total mass) for all municipal waste combustion units at the facility plant subject to these requirements for 2 consecutive years.)</p> <p>Verify that the facility does not deviate from the 13-mo testing schedules unless it applies apply to the Administrator for an alternative schedule, and the Administrator approves the request for alternate scheduling prior to the date on which the facility would otherwise have been required to conduct the next stack test.</p> <p>(NOTE: This checklist item applies if the municipal waste combustion unit is a new municipal waste combustion unit and the unit has the capacity to combust at least 35 tons per day but no more than 250 tons per day of municipal solid waste or refuse-</p>

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<p>monitoring requirements other than continuous emissions monitoring (40 CFR 60.1010, 60.1015, 60.1315 through 60.1335) [Added April 2001].</p>	<p>derived fuel. A new municipal waste combustion unit is one that either started construction after 31 August 1999 or started reconstruction or modification after 6 June 2001.)</p> <p>(NOTE: This checklist item does not apply to municipal waste combustion unit if physical or operational changes are made to an existing municipal waste combustion unit primarily to comply with the emission guidelines in 40 CFR 60, Subpart BBBB [40 CFR 60.1500 through 60.1940, see text of regulation]. Such changes do not qualify as reconstruction or modification.)</p> <p>Verify that if the municipal waste combustion unit generates steam, a steam flowmeter or a feed water flowmeter is installed, calibrated, maintained, and operated in addition to meeting the following:</p> <ul style="list-style-type: none"> <li>– continuously measure and record the measurements of steam (or feed water) in kilograms (or pounds) per hour</li> <li>– calculate the steam (or feed water) flow in 4-h block averages</li> <li>– calculate the steam (or feed water) flow rate using the method in “American Society of Mechanical Engineers Power Test Codes: Test Code for Steam Generating Units, Power Test Code 4.1—1964 (R1991),” section 4</li> <li>– design, construct, install, calibrate, and use nozzles or orifices for flow rate measurements, using the recommendations in “American Society of Mechanical Engineers Interim Supplement 19.5 on Instruments and Apparatus: Application, Part II of Fluid Meters,” 6th Edition (1971), chapter 4</li> <li>– before each dioxins/furans stack test, or at least once a year, calibrate all signal conversion elements associated with steam (or feed water) flow measurements according to the manufacturer instructions.</li> </ul> <p>Verify that if the municipal waste combustion unit does not generate steam, or, if the municipal waste combustion units have shared steam systems and steam load cannot be estimated per unit, the facility:</p> <ul style="list-style-type: none"> <li>– determines, to the satisfaction of the Administrator, one or more operating parameters that can be used to continuously estimate load level (for example, the feed rate of municipal solid waste or refuse-derived fuel)</li> <li>– continuously monitors the selected parameters.</li> </ul> <p>Verify that a device is installed, calibrated, maintained, and operated to continuously measure the temperature of the flue gas stream at the inlet of each particulate matter control device.</p> <p>Verify that if the municipal waste combustion unit uses activated carbon to control dioxins/furans or mercury emissions, the following requirements are met:</p> <ul style="list-style-type: none"> <li>– a carbon injection system operating parameter is selected that can be used to calculate carbon feed rate (for example, screw feeder speed)</li> </ul>

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<p><b>AE.36.27.US.</b> New small waste combustors are required to meet certain recordkeeping requirements (40 CFR 60.1010, 60.1015, 60.1340 through 60.1370) [Added April 2001].</p>	<ul style="list-style-type: none"> <li>– during each dioxins/furans and mercury stack test:               <ul style="list-style-type: none"> <li>– determine the average carbon feed rate in kilograms (or pounds) per hour</li> <li>– determine the average operating parameter level that correlates to the carbon feed rate</li> <li>– establish a relationship between the operating parameter and the carbon feed rate in order to calculate the carbon feed rate based on the operating parameter level</li> </ul> </li> <li>– continuously monitor the selected operating parameter during all periods when the municipal waste combustion unit is operating and combusting waste, and calculate the 8-h block average carbon feed rate in kilograms (or pounds) per hour, based on the selected operating parameter.</li> </ul> <p>(NOTE: When calculating the 8-h block average:</p> <ul style="list-style-type: none"> <li>– exclude hours when the municipal waste combustion unit is not operating</li> <li>– include hours when the municipal waste combustion unit is operating but the carbon feed system is not working correctly.)</li> </ul> <p>Verify that where continuous parameter monitoring systems are used, 1-hour arithmetic averages are obtained for the following parameters:</p> <ul style="list-style-type: none"> <li>– load level of the municipal waste combustion unit</li> <li>– temperature of the flue gases at the inlet of the particulate matter control device</li> <li>– carbon feed rate if activated carbon is used to control dioxins/furans or mercury emissions.</li> </ul> <p>Verify that the facility obtains at least two data points per hour in order to calculate a valid 1-h arithmetic average.</p> <p>Verify that the facility obtains valid 1-h averages for at least 75 percent of the operating hours per day for 90 percent of the operating days per calendar quarter.</p> <p>(NOTE: An operating day is any day the unit combusts any municipal solid waste or refuse-derived fuel.)</p> <p>(NOTE: If 40 CFR 60, Subpart AAAA [40 CFR 60.1000 through 60.1465, see checklist items AE.36.17.US through AE.36.28.US] applies to the municipal waste combustion unit, then 40 CFR 60, Subpart E (40 CFR 60.50 through 60.54, see checklist item AE.25.1.US) does not apply to the municipal waste combustion unit (40 CFR 60.1025).)</p> <p>(NOTE: This checklist item applies if the municipal waste combustion unit is a new municipal waste combustion unit and the unit has the capacity to combust at least 35 tons per day but no more than 250 tons per day of municipal solid waste or refuse-derived fuel. A new municipal waste combustion unit is one that either started</p>

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	<p>construction after 31 August 1999 or started reconstruction or modification after 6 June 2001.)</p> <p>(NOTE: This checklist item does not apply to municipal waste combustion unit if physical or operational changes are made to an existing municipal waste combustion unit primarily to comply with the emission guidelines in 40 CFR 60, Subpart BBBB [40 CFR 60.1500 through 60.1940, see text of regulation]. Such changes do not qualify as reconstruction or modification.)</p> <p>Verify that all records are kept onsite in paper copy or electronic format unless the Administrator approves another format.</p> <p>Verify that all records are kept on each municipal waste combustion unit for at least 5 yr.</p> <p>Verify that all records are made available for submittal to the Administrator or for onsite review by an inspector.</p> <p>Verify that the following records are kept for the materials separation plan and siting analysis:</p> <ul style="list-style-type: none"> <li>– the date of each record</li> <li>– the final materials separation plan</li> <li>– the siting analysis</li> <li>– a record of the location and date of the public meetings</li> <li>– responses to the public comments received during the public comment periods.</li> </ul> <p>Verify that the following records are kept for operator training and certification:</p> <ul style="list-style-type: none"> <li>– records of provisional certifications, including: <ul style="list-style-type: none"> <li>– for the municipal waste combustion plant, names of the chief facility operator, shift supervisors, and control room operators who are provisionally certified by the American Society of Mechanical Engineers or an equivalent State-approved certification program</li> <li>– dates of the initial provisional certifications</li> <li>– documentation showing current provisional certifications</li> </ul> </li> <li>– records of full certifications, including: <ul style="list-style-type: none"> <li>– for the municipal waste combustion plant, names of the chief facility operator, shift supervisors, and control room operators who are fully certified by the American Society of Mechanical Engineers or an equivalent State-approved certification program</li> <li>– dates of initial and renewal full certifications</li> <li>– documentation showing current full certifications</li> </ul> </li> <li>– records showing completion of the operator training course, including: <ul style="list-style-type: none"> <li>– for the municipal waste combustion plant, names of the chief facility operator, shift supervisors, and control room operators who have</li> </ul> </li> </ul>

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	<p>completed the USEPA or State municipal waste combustion operator training course</p> <ul style="list-style-type: none"> <li>– dates of completion of the operator training course</li> <li>– documentation showing completion of the operator training course</li> </ul> <p>– records of reviews for plant-specific operating manuals, including:</p> <ul style="list-style-type: none"> <li>– names of persons who have reviewed the operating manual</li> <li>– date of the initial review</li> <li>– dates of subsequent annual reviews</li> </ul> <p>– records of when a certified operator is temporarily offsite, including:</p> <ul style="list-style-type: none"> <li>– if the certified chief facility operator and certified shift supervisor are offsite for more than 12 h, but for 2 weeks or less, and no other certified operator is onsite, records of the dates that the certified chief facility operator and certified shift supervisor were offsite</li> <li>– when the certified chief facility operator and certified shift supervisor are offsite for more than 2 weeks and no other certified operator is onsite, the following records: <ul style="list-style-type: none"> <li>– notice that all certified persons are offsite</li> <li>– the conditions that cause those people to be offsite</li> <li>– the corrective actions to be taken to ensure a certified chief facility operator or certified shift supervisor is onsite</li> </ul> </li> <li>– copies of the written reports submitted every 4 weeks that summarize the actions taken to ensure that a certified chief facility operator or certified shift supervisor will be onsite</li> </ul> <p>– records of calendar dates, including the calendar date on each record.</p> <p>Verify that for required stack tests the following records are kept:</p> <ul style="list-style-type: none"> <li>– the results of the stack tests for the following eight pollutants or parameters recorded in the appropriate units of measure specified in Table 1 of Appendix 1-8b: dioxins/furans, cadmium, lead, mercury, opacity, particulate matter, hydrogen chloride, and fugitive ash</li> <li>– test reports including supporting calculations that document the results of all stack tests</li> <li>– the maximum demonstrated load of the municipal waste combustion units and maximum temperature at the inlet of the particulate matter control device during all stack tests for dioxins/furans emissions</li> <li>– the calendar date of each record.</li> </ul> <p>Verify that the following records are kept for continuously monitored pollutants or parameters:</p> <ul style="list-style-type: none"> <li>– records of the following monitoring data measured using continuous monitoring systems: <ul style="list-style-type: none"> <li>– all 6-min average levels of opacity</li> <li>– all 1-h average concentrations of SO<sub>2</sub> emissions</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– for Class I municipal waste combustion units only, all 1-h average concentrations of NO<sub>x</sub> emissions</li> <li>– all 1-h average concentrations of CO emissions</li> <li>– all 1-h average load levels of your municipal waste combustion unit</li> <li>– all 1-h average flue gas temperatures at the inlet of the particulate matter control device</li> <li>– records of average concentrations and percent reductions, including: <ul style="list-style-type: none"> <li>– all 24-h daily block geometric average concentrations of SO<sub>2</sub> emissions or average percent reductions of SO<sub>2</sub> emissions</li> <li>– for Class I municipal waste combustion units only, all 24-h daily arithmetic average concentrations of NO<sub>x</sub> emissions</li> <li>– all 4-h block or 24-h daily block arithmetic average concentrations of CO emissions</li> <li>– all 4-h block arithmetic average load levels of the municipal waste combustion unit</li> <li>– all 4-h block arithmetic average flue gas temperatures at the inlet of the particulate matter control device</li> </ul> </li> <li>– records of exceedances, including: <ul style="list-style-type: none"> <li>– calendar dates whenever any of the five pollutant or parameter levels or the opacity level did not meet the required emission limits or operating levels</li> <li>– reasons for exceeding the applicable emission limits or operating levels</li> <li>– corrective actions taken, or in progress, to meet the emission limits or operating levels</li> </ul> </li> <li>– records of minimum data, including: <ul style="list-style-type: none"> <li>– calendar dates for which the minimum amount of required data was not collected and record the dates for the following types of pollutants and parameters: SO<sub>2</sub> emissions; for Class I municipal waste combustion units only, NO<sub>x</sub> emissions; CO emissions; load levels of the municipal waste combustion unit; temperatures of the flue gases at the inlet of the particulate matter control device</li> <li>– reasons for not collecting the minimum data</li> <li>– corrective actions taken, or in progress, to obtain the required amount of data</li> </ul> </li> <li>– documentation of each time the facility excludes data from the calculation of averages for any of the following five pollutants or parameters and the reasons the data were excluded: SO<sub>2</sub> emissions; for Class I municipal waste combustion units only, NO<sub>x</sub> emissions; CO emissions; load levels of the municipal waste combustion unit; temperatures of the flue gases at the inlet of the particulate matter control device</li> <li>– documentation of the results of daily drift tests and quarterly accuracy determinations according to Procedure 1 of Appendix F of 40 CFR 60 for the SO<sub>2</sub>, NO<sub>x</sub> (Class I municipal waste combustion units only), and CO CEMS</li> <li>– records of the relationship between oxygen and CO<sub>2</sub></li> <li>– records of calendar dates, including the calendar date on each record.</li> </ul>

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	<p>(NOTE: If the facility chooses to monitor CO<sub>2</sub> instead of oxygen as a diluent gas, the relationship between oxygen and carbon dioxide will be documented as specified in 40 CFR 60.1255.)</p> <p>Verify that municipal waste combustion units that use activated carbon to control dioxins/furans or mercury emissions keep the following records:</p> <ul style="list-style-type: none"> <li>– records of average carbon feed rate, including: <ul style="list-style-type: none"> <li>– average carbon feed rate in kilograms (or pounds) per hour during all stack tests for dioxins/furans and mercury emissions, including supporting calculations in the records</li> <li>– for the operating parameter chosen to monitor carbon feed rate, average operating level during all stack tests for dioxins/furans and mercury emissions, including supporting data that document the relationship between the operating parameter and the carbon feed rate</li> <li>– all 8-h block average carbon feed rates in kilograms (or pounds) per hour calculated from the monitored operating parameter</li> <li>– total carbon purchased and delivered to the municipal waste combustion plant for each calendar quarter (NOTE: If the facility chooses to evaluate total carbon purchased and delivered on a municipal waste combustion unit basis, the facility is required to record the total carbon purchased and delivered for each individual municipal waste combustion unit at the plant, including supporting documentation)</li> <li>– required quarterly usage of carbon for the municipal waste combustion plant, calculated using equation 4 or 5 in 40 CFR 60.1460(f) (NOTE: If the facility chooses to evaluate required quarterly usage for carbon on a municipal waste combustion unit basis, the facility is required to record the required quarterly usage for each municipal waste combustion unit at the plant, including supporting calculations)</li> </ul> </li> <li>– records of low carbon feed rates, including: <ul style="list-style-type: none"> <li>– the calendar dates when the average carbon feed rate over an 8-h block was less than the average carbon feed rates determined during the most recent stack test for dioxins/furans or mercury emissions (whichever has a higher feed rate)</li> <li>– reasons for the low carbon feed rates</li> <li>– corrective actions taken or in process to meet the 8-hour average carbon feed rate requirement</li> </ul> </li> <li>– records of minimum carbon feed rate data, including: <ul style="list-style-type: none"> <li>– calendar dates for which the minimum amount of carbon feed rate data required under 40 CFR 60.1335 was not collected</li> <li>– reasons the minimum data was not collected</li> <li>– corrective actions taken or in process to get the required amount of data</li> </ul> </li> <li>– documentation of each time data has been excluded from the calculation of average carbon feed rates and the reasons the data were excluded</li> </ul>

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<p><b>AE.36.28.US.</b> New small waste combustors are required to meet certain reporting requirements (40 CFR 60.1010, 60.1015, 60.1375 through 60.1430) [Added April 2001].</p>	<p>– records of calendar dates, including the calendar date on each record.</p> <p>(NOTE: If 40 CFR 60, Subpart AAAA [40 CFR 60.1000 through 60.1465, see checklist items AE.36.17.US through AE.36.28.US] applies to the municipal waste combustion unit, then 40 CFR 60, Subpart E (40 CFR 60.50 through 60.54, see checklist item AE.25.1.US) does not apply to the municipal waste combustion unit (40 CFR 60.1025).)</p> <p>(NOTE: This checklist item applies if the municipal waste combustion unit is a new municipal waste combustion unit and the unit has the capacity to combust at least 35 tons per day but no more than 250 tons per day of municipal solid waste or refuse-derived fuel. A new municipal waste combustion unit is one that either started construction after 31 August 1999 or started reconstruction or modification after 6 June 2001.)</p> <p>(NOTE: This checklist item does not apply to municipal waste combustion unit if physical or operational changes are made to an existing municipal waste combustion unit primarily to comply with the emission guidelines in 40 CFR 60, Subpart BBBB [40 CFR 60.1500 through 60.1940, see text of regulation]. Such changes do not qualify as reconstruction or modification.)</p> <p>Verify that, if the facility is required to submit an application for a construction permit, it submits the following by the date the application is submitted:</p> <ul style="list-style-type: none"> <li>– draft materials separation plan</li> <li>– revised materials separation plan</li> <li>– notice of the initial public meeting for the draft materials separation plan</li> <li>– a transcript of the initial public meeting</li> <li>– the document that summarizes the facilities responses to the public comments received during the initial public comment period.</li> </ul> <p>Verify that, if the facility is not required to submit an application for a construction permit, they submit the following items with the notice of construction:</p> <ul style="list-style-type: none"> <li>– draft materials separation plan</li> <li>– revised materials separation plan</li> <li>– notice of the initial public meeting for the draft materials separation plan</li> <li>– a transcript of the initial public meeting</li> <li>– the document that summarizes the facilities responses to the public comments received during the initial public comment period.</li> </ul> <p>Verify that the notice of construction includes:</p> <ul style="list-style-type: none"> <li>– a statement of intent to construct the municipal waste combustion unit</li> <li>– the planned initial startup date of the municipal waste combustion unit</li> </ul>

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	<ul style="list-style-type: none"> <li>– the types of fuels that are planned to be combusted in the municipal waste combustion unit</li> <li>– the capacity of the municipal waste combustion unit including</li> <li>– supporting capacity calculations</li> <li>– siting analysis</li> <li>– final materials separation plan</li> <li>– notice of the second public meeting (siting analysis meeting)</li> <li>– a transcript of the second public meeting</li> <li>– a copy of the document that summarizes responses to the public comments received during the second public comment period</li> <li>– final siting analysis.</li> </ul> <p>Verify that the notice of construction is submitted no later than 30 days after the facility commences construction, reconstruction, or modification of the municipal waste combustion unit.</p> <p>Verify that the following reports are submitted after submitting the notice of construction:</p> <ul style="list-style-type: none"> <li>– submit an initial report and annual reports, plus semiannual reports for any emission or parameter level that does not meet the required limits</li> <li>– submit all reports on paper, postmarked on or before the</li> <li>– required submittal dates (NOTE: If the Administrator agrees, the facility may submit electronic reports</li> <li>– keep a copy of all reports required by 40 CFR 60.1400, 60.1410, and 60.1425 onsite for 5 yr.</li> </ul> <p>(NOTE: See Tables 1 and 2 of Appendix 1-8b for appropriate units of measurement for reporting data.</p> <p>Verify that the initial report is submitted within 60 days after the municipal waste combustion unit reaches the maximum load level at which it will operate, but no later than 180 days after its initial startup.</p> <p>Verify that the initial report includes the following information:</p> <ul style="list-style-type: none"> <li>– the emission levels measured on the date of the initial evaluation of the continuous emission monitoring systems for all of the following five pollutants or parameters: <ul style="list-style-type: none"> <li>– the 24-h daily geometric average concentration of SO<sub>2</sub> emissions or the 24-h daily geometric percent reduction of SO<sub>2</sub> emissions</li> <li>– for Class I municipal waste combustion units only, the 24-h daily arithmetic average concentration of NO<sub>x</sub> emissions</li> <li>– the 4-h block or 24-h daily arithmetic average concentration of CO emissions</li> <li>– the 4-h block arithmetic average load level of the municipal waste combustion unit</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– the 4-h block arithmetic average flue gas temperature at the inlet of the particulate matter control device</li> <li>– the results of the initial stack tests for eight pollutants or parameters: <ul style="list-style-type: none"> <li>– dioxins/furans</li> <li>– cadmium</li> <li>– lead</li> <li>– mercury</li> <li>– opacity</li> <li>– particulate matter</li> <li>– hydrogen chloride</li> <li>– fugitive ash</li> </ul> </li> <li>– the test report that documents the initial stack tests including supporting calculations</li> <li>– the initial performance evaluation of the continuous emissions monitoring systems</li> <li>– the maximum demonstrated load of the municipal waste combustion unit and the maximum demonstrated temperature of the flue gases at the inlet of the particulate matter control device (NOTE: Use values established during the initial stack test for dioxins/furans emissions and include supporting calculations.)</li> <li>– if the municipal waste combustion unit uses activated carbon to control dioxins/furans or mercury emissions, the average carbon feed rates that were recorded during the initial stack tests for dioxins/furans and mercury emissions, including supporting calculations</li> <li>– if the facility chooses to monitor CO<sub>2</sub> instead of oxygen as a diluent gas, documentation of the relationship between oxygen and CO<sub>2</sub>.</li> </ul> <p>Verify that the annual report is submitted no later than February 1 of each year that follows the calendar year in which the data was collected.</p> <p>(NOTE: If the facility has an operating permit for any unit under title V of the Clean Air Act (CAA), the permit may require submission of semiannual reports.)</p> <p>Verify that the annual report includes summaries data collected for all regulated pollutants and parameters as follows:</p> <ul style="list-style-type: none"> <li>– the results of the annual stack test, using appropriate units, for: dioxins/furans, cadmium, lead, mercury, particulate matter, opacity, hydrogen chloride, and fugitive ash</li> <li>– a list of the highest average levels recorded, in the appropriate units for the following: <ul style="list-style-type: none"> <li>– SO<sub>2</sub> emissions</li> <li>– for Class I municipal waste combustion units only, NO<sub>x</sub> emissions</li> <li>– CO emissions</li> <li>– load level of the municipal waste combustion unit</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– temperature of the flue gases at the inlet of the particulate matter air pollution control device (4-h block average)</li> <li>– the highest 6-min opacity level measured based on all 6-min average opacity levels recorded by the continuous opacity monitoring system</li> <li>– for waste combustion units that use activated carbon for controlling dioxins/furans or mercury emissions, include the following records: <ul style="list-style-type: none"> <li>– the average carbon feed rates recorded during the most recent dioxins/furans and mercury stack tests</li> <li>– the lowest 8-h block average carbon feed rate recorded during the year</li> <li>– the total carbon purchased and delivered to the municipal waste combustion plant for each calendar quarter (NOTE: If the facility chooses to evaluate total carbon purchased and delivered on a municipal waste combustion unit basis, record the total carbon purchased and delivered for each individual municipal waste combustion unit at the plant.)</li> <li>– the required quarterly carbon usage of the municipal waste combustion plant calculated using equation 4 or 5 in 40 CFR 60.1460(f) (NOTE: If the facility chooses to evaluate required quarterly usage for carbon on a municipal waste combustion unit basis, record the required quarterly usage for each municipal waste combustion unit at the plant.)</li> </ul> </li> <li>– the total number of days the facility did not obtain the minimum number of hours of data for the following pollutants or parameters and the reasons for not obtaining the data and corrective actions that taken to obtain the data in the future: <ul style="list-style-type: none"> <li>– SO<sub>2</sub> emissions</li> <li>– for Class I municipal waste combustion units only, NO<sub>x</sub> emissions</li> <li>– CO emissions</li> <li>– load level of the municipal waste combustion unit</li> <li>– temperature of the flue gases at the inlet of the particulate matter air pollution control device</li> <li>– carbon feed rate</li> </ul> </li> <li>– the number of hours for which data for the following pollutants has been excluded from the calculation of average levels (include the reasons for excluding it): <ul style="list-style-type: none"> <li>– SO<sub>2</sub> emissions</li> <li>– for Class I municipal waste combustion units only, NO<sub>x</sub> emissions</li> <li>– CO emissions</li> <li>– load level of the municipal waste combustion unit</li> <li>– temperature of the flue gases at the inlet of the particulate matter air pollution control device</li> <li>– carbon feed rate</li> </ul> </li> <li>– a notice of intent to begin a reduced stack testing schedule for dioxins/furans emissions during the following calendar year, if the facility is eligible for alternative scheduling</li> </ul>

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	<ul style="list-style-type: none"> <li>– a notice of intent to begin a reduced stack testing schedule for other pollutants during the following calendar year if the facility is eligible for alternative scheduling</li> <li>– a summary of any emission or parameter level that did not meet the limits specified in this regulation</li> <li>– a summary of the data in the first 4 items in this content list from the year preceding the reporting year which gives the Administrator a summary of the performance of the municipal waste combustion unit over a 2-yr period</li> <li>– if the facility chooses to monitor CO<sub>2</sub> instead of oxygen as a diluent gas, documentation of the relationship between oxygen and CO<sub>2</sub></li> <li>– documentation of periods when all certified chief facility operators and certified shift supervisors are offsite for more than 12 h</li> </ul> <p>Verify that the facility submits a semiannual report on any recorded emission or parameter level that does not meet the regulatory requirements.</p> <p>Verify that, if a semiannual report is required:</p> <ul style="list-style-type: none"> <li>– for data collected during the first half of a calendar year, submit the semiannual report by August 1 of that year</li> <li>– for data collected during the second half of the calendar year, submit the semiannual report by February 1 of the following year.</li> </ul> <p>Verify that the semiannual report includes the following:</p> <ul style="list-style-type: none"> <li>– for any of the following pollutants or parameters that exceeded the required limits, including the calendar date they exceeded the limits, the averaged and recorded data for that date, the reasons for exceeding the limits, and the corrective actions: <ul style="list-style-type: none"> <li>– concentration or percent reduction of SO<sub>2</sub> emissions</li> <li>– for Class I municipal waste combustion units only, concentration of NO<sub>x</sub> emissions</li> <li>– concentration of CO emissions</li> <li>– load level of the municipal waste combustion unit</li> <li>– temperature of the flue gases at the inlet of the particulate matter air pollution control device</li> <li>– average 6-min opacity level</li> </ul> </li> <li>– if the results of annual stack tests show emissions above the limits specified in Table 1 of Appendix 1-8b for dioxins/furans, cadmium, lead, mercury, particulate matter, opacity, hydrogen chloride, and fugitive ash, include a copy of the test report that documents the emission levels and corrective actions</li> <li>– for municipal waste combustion units that apply activated carbon to control dioxins/furans or mercury emissions, include: <ul style="list-style-type: none"> <li>– documentation of all dates when the 8-hour block average carbon feed rate (calculated from the carbon injection system operating parameter) is less than the highest carbon feed rate established during the most recent</li> </ul> </li> </ul>

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	<p>mercury and dioxins/furans stack test, including: 8-hour average carbon feed rate, reasons for occurrences of low carbon feed rates, the corrective actions taken to meet the carbon feed rate requirement, and the calendar date</p> <p>– documentation of each quarter when total carbon purchased and delivered to the municipal waste combustion plant is less than the total required quarterly usage of carbon (NOTE: If the facility chooses to evaluate total carbon purchased and delivered on a municipal waste combustion unit basis, record the total carbon purchased and delivered for each individual municipal waste combustion unit at the plant, including: amount of carbon purchased and delivered to the plant, required quarterly usage of carbon, reasons for not meeting the required quarterly usage of carbon, the corrective actions taken to meet the required quarterly usage of carbon, and the calendar date.</p> <p>(NOTE: If the Administrator agrees, the facility may change the semiannual or annual reporting dates.)</p>





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<p><b>AE.45.4.US.</b> Sewage sludge incinerators are required to meet specific management standards (40 CFR 503.40(c) and 503.45) [Revised October 1999].</p>	<p>Verify that the monthly average concentration for total hydrocarbons in the exit gas from a sewage sludge incinerator stack, corrected for zero percent moisture using the correction factor from the first equation and to seven percent oxygen using the correction factor from the second equation does not exceed 100 parts per million on a volumetric basis when measured using the instrument required by 40 CFR 503.45(a) (see checklist item AE.45.4.US.).</p> <p>(NOTE: These requirements concerning the incineration of sewage sludge applies to a person who fires sewage sludge in a sewage sludge incinerator, to a sewage sludge incinerator, and to sewage sludge fired in a sewage sludge incinerator. They also apply to the exit gas from a sewage sludge incinerator stack (40 CFR 503.40(a) and 503.40(b)).)</p> <p>(NOTE: These requirements apply to sewage sludge generated during the treatment of domestic sewage in a treatment works. For exclusions see the definition of the term “exempted sludge”).</p> <p>Verify that an instrument that continuously measures and records the total hydrocarbons concentration in the sewage sludge incinerator stack exit gas is installed, calibrated, operated, and maintained for each sewage sludge incinerator.</p> <p>Verify that the total hydrocarbons instrument employs a flame ionization detector; has a heated sampling line maintained at a temperature of 150 oC or higher at all times; and is calibrated at least once every 24-h operating period using propane.</p> <p>(NOTE: The requirements for total hydrocarbon instrumentation do not apply if the following conditions are met:</p> <ul style="list-style-type: none"> <li>– the exit gas from a sewage sludge incinerator stack is monitored continuously for CO</li> <li>– the monthly average concentration of CO in the exit gas from a sewage sludge incinerator stack, corrected for zero percent moisture and to seven percent oxygen, does not exceed 100 ppm on a volumetric basis</li> <li>– the person who fires sewage sludge in a sewage sludge incinerator retains the following information for 5 yr: <ul style="list-style-type: none"> <li>– the CO concentrations in the exit gas</li> <li>– a calibration and maintenance log for the instrument used to measure the CO concentration</li> </ul> </li> <li>– Class I sludge management facilities, POTWs with a design flow rate equal to or greater than 1 million gal/day, and POTWs that serve a population of 10,000 people or greater submit the monthly average CO concentrations in the exit gas to the permitting authority on 19 February of each year.)</li> </ul>

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<p><b>AE.45.5.US.</b> Checklist item deleted [Deleted October 1999].</p>	<p>Verify that an instrument that continuously measures and records the oxygen concentration in the sewage sludge incinerator stack exit gas is installed, calibrated, operated, and maintained for each sewage sludge incinerator.</p> <p>Verify that an instrument that continuously measures and records information used to determine the moisture content in the sewage sludge incinerator stack exit gas is installed, calibrated, operated, and maintained for each sewage sludge incinerator.</p> <p>Verify that an instrument that continuously measures and records combustion temperatures is installed, calibrated, operated, and maintained for each sewage sludge incinerator.</p> <p>Verify that operation of a sewage sludge incinerator does not cause the operating combustion temperature for the sewage sludge incinerator to exceed the performance test combustion temperature by more than 20 percent.</p> <p>(NOTE: An air pollution control device shall be appropriate for the type of sewage sludge incinerator and the operating parameters for the air pollution control device shall be adequate to indicate proper performance of the air pollution control device. For sewage sludge incinerators subject to the requirements in Subpart O of 40 CFR 60, operation of the air pollution control device shall not violate the requirements for the air pollution control device in subpart O of 40 CFR 60. For all other sewage sludge incinerators, operation of the air pollution control device shall not cause a significant exceedance of the average value for the air pollution control device operating parameters from the performance test.</p> <p>Verify that sewage sludge is not fired in a sewage sludge incinerator if it is likely to adversely affect a threatened or endangered species listed under section 4 of the <i>Endangered Species Act</i> or its designated critical habitat.</p> <p>(NOTE: The requirements concerning the incineration of sewage sludge applies to a person who fires sewage sludge in a sewage sludge incinerator, to a sewage sludge incinerator, and to sewage sludge fired in a sewage sludge incinerator. They also apply to the exit gas from a sewage sludge incinerator stack (40 CFR 503.40(a) and 503.40(b)).)</p> <p>(NOTE: These requirements apply to sewage sludge generated during the treatment of domestic sewage in a treatment works. For exclusions see the definition of the term “exempted sludge”).</p> <p>This checklist item was combined with AE.45.4.US.</p>

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<p><b>AE.45.6.US.</b> Sewage sludge incinerators are required to meet specific monitoring standards (40 CFR 503.40(c) and 503.46) [Revised October 1999].</p>	<p>(NOTE: The frequency of monitoring for beryllium and mercury shall be as required in 40 CFR 61.30 through 61.34 (see checklist item AE.25.3.US.) and 61.50 through 61.56.)</p> <p>Verify that the frequency of monitoring for arsenic, cadmium, chromium, lead, and nickel in sewage sludge fed to a sewage sludge incinerator is as outlined in Appendix 1-11.</p> <p>(NOTE: After the sewage sludge has been monitored for 2 yr at the frequency in Appendix 1-11, the permitting authority may reduce the frequency of monitoring for arsenic, cadmium, chromium, lead, and nickel.)</p> <p>Verify that the total hydrocarbons concentration and oxygen concentration in the exit gas from a sewage sludge incinerator stack, the information used to measure moisture content in the exit gas, and the combustion temperatures for the sewage sludge incinerator are monitored continuously.</p> <p>(NOTE: The requirements for total hydrocarbon monitoring do not apply if the following conditions are met:</p> <ul style="list-style-type: none"> <li>– the exit gas from a sewage sludge incinerator stack is monitored continuously for CO</li> <li>– the monthly average concentration of CO in the exit gas from a sewage sludge incinerator stack, corrected for zero percent moisture and to seven percent oxygen, does not exceed 100 parts per million on a volumetric basis</li> <li>– the person who fires sewage sludge in a sewage sludge incinerator retains the following information for 5 yr: <ul style="list-style-type: none"> <li>– the CO concentrations in the exit gas</li> <li>– a calibration and maintenance log for the instrument used to measure the CO concentration</li> </ul> </li> <li>– Class I sludge management facilities, POTWs with a design flow rate equal to or greater than 1 million gal/day, and POTWs that serve a population of 10,000 people or greater submit the monthly average CO concentrations in the exit gas to the permitting authority on 19 February of each year.)</li> </ul> <p>(NOTE: For sewage sludge incinerators subject to the requirements in subpart O of 40 CFR 60, the frequency of monitoring for the appropriate air pollution control device operating parameters shall be the frequency of monitoring in subpart O of 40 CFR 60. For all other sewage sludge incinerators, the appropriate air pollution control device operating parameters shall be at least daily.)</p> <p>(NOTE: The requirements concerning the incineration of sewage sludge applies to a person who fires sewage sludge in a sewage sludge incinerator, to a sewage sludge incinerator, and to sewage sludge fired in a sewage sludge incinerator. They also apply to the exit gas from a sewage sludge incinerator stack (40 CFR 503.40(a) and 503.40(b)).)</p>

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<p><b>AE.45.7.US.</b> Sewage sludge incinerators are required to meet specific recordkeeping standards (40 CFR 503.40(c) and 503.47) [Revised October 1999].</p>	<p>(NOTE: These requirements apply to sewage sludge generated during the treatment of domestic sewage in a treatment works. For exclusions see the definition of the term “exempted sludge”.)</p> <p>Verify that the person who fires sewage sludge in a sewage sludge incinerator shall develop the following information and retain that information for 5 yr:</p> <ul style="list-style-type: none"> <li>– the concentration of lead, arsenic, cadmium, chromium, and nickel in the sewage sludge fed to the sewage sludge incinerator</li> <li>– the total hydrocarbons concentrations in the exit gas from the sewage sludge incinerator stack</li> <li>– information that indicates the requirements in the National Emission Standard for beryllium in 40 CFR 61.30 through 61.34 (see checklist item AE.25.3.US.) are met</li> <li>– information that indicates the requirements in the National Emission Standard for mercury in 40 CFR 61.50 through 61.56 are met</li> <li>– the operating combustion temperatures for the sewage sludge incinerator</li> <li>– values for the air pollution control device operating parameters</li> <li>– the oxygen concentration and information used to measure moisture content in the exit gas from the sewage sludge incinerator stack</li> <li>– the sewage sludge feed rate</li> <li>– the stack height for the sewage sludge incinerator</li> <li>– the dispersion factor for the site where the sewage sludge incinerator is located</li> <li>– the control efficiency for lead, arsenic, cadmium, chromium, and nickel for each sewage sludge incinerator</li> <li>– the risk-specific concentration for chromium calculated using the required equation, if applicable</li> <li>– a calibration and maintenance log for the instruments used to measure the total hydrocarbons concentration and oxygen concentration in the exit gas from the sewage sludge incinerator stack, the information needed to determine moisture content in the exit gas, and the combustion temperatures.</li> </ul> <p>(NOTE: The requirements for total hydrocarbon recordkeeping do not apply if the following conditions are met:</p> <ul style="list-style-type: none"> <li>– the exit gas from a sewage sludge incinerator stack is monitored continuously for CO</li> <li>– the monthly average concentration of CO in the exit gas from a sewage sludge incinerator stack, corrected for zero percent moisture and to seven percent oxygen, does not exceed 100 parts per million on a volumetric basis</li> <li>– the person who fires sewage sludge in a sewage sludge incinerator retains the following information for 5 yr: <ul style="list-style-type: none"> <li>– the CO concentrations in the exit gas</li> <li>– a calibration and maintenance log for the instrument used to measure the CO concentration</li> </ul> </li> </ul>

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<p><b>AE.45.8.US.</b> Class I sludge management facilities, POTWs with a design flow rate equal to or greater than 1 million gal/day, and POTWs that serve 10,000 people or more are required to submit specific information to the permitting authority on 19 February of each year (40 CFR 503.48) [Revised October 1999].</p>	<p>– Class I sludge management facilities, POTWs with a design flow rate equal to or greater than 1 million gal/day, and POTWs that serve a population of 10,000 people or greater submit the monthly average CO concentrations in the exit gas to the permitting authority on 19 February of each year.)</p> <p>(NOTE: These requirements concerning the incineration of sewage sludge applies to a person who fires sewage sludge in a sewage sludge incinerator, to a sewage sludge incinerator, and to sewage sludge fired in a sewage sludge incinerator. They also apply to the exit gas from a sewage sludge incinerator stack (40 CFR 503.40(a) and 503.40(b)).)</p> <p>(NOTE: These requirements apply to sewage sludge generated during the treatment of domestic sewage in a treatment works. For exclusions see the definition of the term “exempted sludge”).</p> <p>Verify that Class I sludge management facilities, POTWs with a design flow rate equal to or greater than 1 million gal/day, and POTWs that serve a population of 10,000 people or greater submit the following information to the permitting authority on 19 February of each year:</p> <ul style="list-style-type: none"> <li>– the concentration of lead, arsenic, cadmium, chromium, and nickel in the sewage sludge fed to the sewage sludge incinerator</li> <li>– the total hydrocarbons concentrations in the exit gas from the sewage sludge incinerator stack</li> <li>– information that indicates the requirements in the National Emission Standard for beryllium in 40 CFR 61.30 through 61.34 (see checklist item AE.25.3.US.) are met</li> <li>– information that indicates the requirements in the National Emission Standard for mercury in 40 CFR 61.50 through 61.56 are met</li> <li>– the combustion temperatures, including the maximum combustion temperature, for the sewage sludge incinerator</li> <li>– values for the air pollution control device operating parameters</li> <li>– the oxygen concentration and information used to measure moisture content in the exit gas from the sewage sludge incinerator stack.</li> </ul> <p>(NOTE: The requirements concerning the incineration of sewage sludge applies to a person who fires sewage sludge in a sewage sludge incinerator, to a sewage sludge incinerator, and to sewage sludge fired in a sewage sludge incinerator. They also apply to the exit gas from a sewage sludge incinerator stack (40 CFR 503.40(a) and 503.40(b)).)</p> <p>(NOTE: These requirements apply to sewage sludge generated during the treatment of domestic sewage in a treatment works. For exclusions see the definition of the term “exempted sludge”).</p>

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<b>AE.45.9.US.</b> New sewage sludge incineration (SSI) units must conduct a preconstruction siting analysis (40 CFR 60.4765, 60.4770, 60.4775, 60.4780, 60.4800, 60.4805) [Added April 2011].	<p>(NOTE: This checklist item is effective 21 September 2011. This checklist item applies if:</p> <ul style="list-style-type: none"> <li>– the SSI started construction after 14 October 2010 or for which modification commenced after 21 September 2011</li> <li>– the SSI meets the following definition: “an incineration unit combusting sewage sludge for the purpose of reducing the volume of the sewage sludge by removing combustible matter. Sewage sludge incineration unit designs include fluidized bed and multiple hearth. A SSI unit also includes, but is not limited to, the sewage sludge feed system, auxiliary fuel feed system, grate system, flue gas system, waste heat recovery equipment, if any, and bottom ash system. The SSI unit includes all ash handling systems connected to the bottom ash handling system. The combustion unit bottom ash system ends at the truck loading station or similar equipment that transfers the ash to final disposal. The SSI unit does not include air pollution control equipment or the stack.”)</li> </ul> <p>(NOTE: This checklist item is not applicable to combustion units that incinerate sewage sludge and are not located at a wastewater treatment facility designed to treat domestic sewage sludge. These units may be subject to other regulations.)</p> <p>Verify that if the SSI is exempt from the requirements of this checklist item, the owner or operator notifies the Administrator of an exemption claim under this regulation.</p> <p>(NOTE: A new sewage sludge unit meets either of the following criteria:</p> <ul style="list-style-type: none"> <li>– the SSI commenced construction after 14 October 2010</li> <li>– the SSI commenced modification after 21 September 2011.)</li> </ul> <p>(NOTE: Physical or operational changes made to the SSI unit to comply with the emission guidelines in 40 CFR 60, Subpart M (Emission Guidelines and Compliance Times for Existing Sewage Sludge Incineration Units) do not qualify as a modification.)</p> <p>Verify that a siting analysis is prepared if construction of a SSI unit will start after 14 October 2010.</p> <p>Verify that a siting analysis is prepared if the facility is required to submit an initial application for a construction permit under 40 CFR 51, Subpart I, or 40 CFR 52, as applicable, for the modification of a SSI unit.</p> <p>Verify that the siting analysis considers air pollution control alternatives that minimize, on a site-specific basis, to the maximum extent practicable, potential risks to public health or the environment, including impacts of the affected SSI unit on ambient air quality, visibility, soils, and vegetation.</p>

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<b>AE.45.10.US.</b> New sewage sludge incineration units must have qualified operators available (40 CFR 60.4810, 60.4820, 60.4825, 60.4830, 60.4835, and 60.4840) [Added April 2011].	<p>(NOTE: The analysis may consider costs, energy impacts, nonair environmental impacts, or any other factors related to the practicability of the alternatives.)</p> <p>(NOTE: Analyses of the SSI unit's impacts that are prepared to comply with state, local, or other Federal regulatory requirements may be used to satisfy the requirements of this section, provided they include the consideration of necessary air pollution control alternatives.</p> <p>Verify that the siting requirements are complete and submitted to the Administrator prior to commencing construction.</p> <p>(NOTE: See checklist item AE.45.9.US for the applicability and exemptions related to the requirements in this checklist item.)</p> <p>Verify that the SSI unit is not operated unless a fully trained and qualified SSI unit operator is accessible, either at the facility or can be at the facility within 1 hour.</p> <p>(NOTE: The trained and qualified SSI unit operator may operate the SSI unit directly or be the direct supervisor of one or more other plant personnel who operate the unit.)</p> <p>Verify that operator training and qualification are obtained through a state-approved program or by completing an incinerator operator training course that includes, at a minimum, the following:</p> <ul style="list-style-type: none"> <li>– training on the following subjects:             <ul style="list-style-type: none"> <li>– environmental concerns, including types of emissions</li> <li>– basic combustion principles, including products of combustion</li> <li>– operation of the specific type of incinerator to be used by the operator, including proper startup, sewage sludge feeding, and shutdown procedures</li> <li>– combustion controls and monitoring</li> <li>– operation of air pollution control equipment and factors affecting performance (if applicable)</li> <li>– inspection and maintenance of the incinerator and air pollution control devices</li> <li>– actions to prevent malfunctions or to prevent conditions that may lead to malfunctions</li> <li>– bottom and fly ash characteristics and handling procedures</li> <li>– applicable Federal, State, and local regulations, including Occupational Safety and Health Administration workplace standards</li> <li>– pollution prevention</li> </ul> </li> <li>– an examination designed and administered by the state-approved program</li> <li>– written material covering the training course topics that may serve as reference material following completion of the course.</li> </ul>

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	<p>Verify that the operator training course is completed by the later of the following two dates:</p> <ul style="list-style-type: none"> <li>– 6 mo after SSI unit startup</li> <li>– the date before an employee assumes responsibility for operating the SSI unit or assumes responsibility for supervising the operation of the SSI unit.</li> </ul> <p>(NOTE: Operator qualification is obtained by completing a training course satisfying the criteria listed in this checklist item. Qualification is valid from the date on which the training course is completed and the operator successfully passes the required examination .</p> <p>Verify that, to maintain qualification, operators complete an annual review or refresher course covering, at a minimum, the following topics:</p> <ul style="list-style-type: none"> <li>– update of regulations</li> <li>– incinerator operation, including startup and shutdown procedures, sewage sludge feeding, and ash handling</li> <li>– inspection and maintenance</li> <li>– prevention of malfunctions or conditions that may lead to malfunction</li> <li>– discussion of operating problems encountered by attendees.</li> </ul> <p>Verify that a lapsed operator qualification is renewed before the operator begins operation of a SSI unit by one of the following methods:</p> <ul style="list-style-type: none"> <li>– for a lapse of less than 3 yr, complete a standard annual refresher course</li> <li>– for a lapse of 3 yr or more, repeat the initial qualification requirements.</li> </ul> <p>Verify that, if a qualified operator is not at the facility and cannot be at the facility within 1 hour, either of the following criteria are met depending on the length of time that a qualified operator is not accessible:</p> <p>(NOTE: When a qualified operator is not accessible for more than 8 h, the SSI unit may be operated for less than 2 weeks by other plant personnel who are familiar with the operation of the SSI unit and who have completed a review of the required site specific documentation within the past 12 mo. However, the facility must record the period when a qualified operator was not accessible and include this deviation in the annual report.)</p> <p>Verify that, when a qualified operator is not accessible for 2 weeks or more, the facility implements the following actions:</p> <ul style="list-style-type: none"> <li>– notify the Administrator of this deviation in writing within 10 days state what caused this deviation, what is being done to ensure that a qualified operator is accessible, and when it is anticipated that a qualified operator will be accessible</li> </ul>

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<p><b>AE.45.11.US.</b> New sewage sludge incineration units must meet certain emissions limitations and operating standards (40 CFR 60.4845, 60.4850(a) through 60.4850(e), 60.4850(g), 60.4850(h), 60.4855, and 60.4860) [Added April 2011].</p>	<p>– submit a status report to the Administrator every 4 weeks outlining what is being done to ensure that a qualified operator is accessible, stating when it is anticipated that a qualified operator will be accessible, and requesting approval from the Administrator to continue operation of the SSI unit.</p> <p>Verify that the first status report is submitted 4 weeks after notifying the Administrator of the deviation.</p> <p>(NOTE: If the Administrator notifies the facility that their request to continue operation of the SSI unit is disapproved, the SSI unit may continue operation for 30 days, and then must cease operation. Operation of the unit may resume if a qualified operator is accessible.)</p> <p>Verify that the facility notifies the Administrator within 5 days of having resumed operations and of having a qualified operator accessible.</p> <p>Verify that documentation of the operator training procedures are readily accessible to all SSI unit operators.</p> <p>Verify that there is a program for reviewing the documentation of operator training procedures with each qualified incinerator operator and other plant personnel who may operate the unit, according to the following schedule:</p> <ul style="list-style-type: none"> <li>– the initial review is done within 6 mo after 21 September 2011 or prior to an employee's assumption of responsibilities for operation of the SSI unit, whichever date is later</li> <li>– annual reviews are conducted no later than 12 mo following the previous review.</li> </ul> <p>(NOTE: See checklist item AE.45.9.US for the applicability and exemptions related to the requirements in this checklist item.)</p> <p>Verify that the new SSI meets the emission limits and standards specified in Table 1 or 2 in Appendix 1-41 within 60 days after the SSI unit reaches the feed rate at which it will operate or within 180 days after its initial startup, whichever comes first.</p> <p>(NOTE: The emission limits and standards apply at all times the unit is operating, and during periods of malfunction. The emission limits and standards apply to emissions from a bypass stack or vent while sewage sludge is in the combustion chamber (i.e., until the sewage sludge feed to the combustor has been cut off for a period of time not less than the sewage sludge incineration residence time).</p>

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	<p>(NOTE: See the text of 40 CFR 60.4885 for details on how to demonstrate continuous compliance with emissions limitation and the text of 40 CFR 60.4890 for details on operating limitations.)</p> <p>Verify that the facility meets the established site-specific operating limit for minimum operating temperature of the combustion chamber (or afterburner combustion chamber).</p> <p>(NOTE: The operating limit for minimum operating temperature of the combustion chamber or afterburner combustion chamber is calculated using the methodology outlined in 40 CFR 60.4890(a)(2)(i) [see text].)</p> <p>Verify that, if the facility uses a wet scrubber, electrostatic precipitator, or activated carbon injection to comply with an emission limit, it meets the site-specific operating limits for each operating parameter associated with each air pollution control device.</p> <p>(NOTE: See 40 CFR 60.4870 [see text] for the methodology used to establish site specific operating limits if the facility uses a wet scrubber, electrostatic precipitator, or activated carbon injection to comply with an emission limit.)</p> <p>Verify that, if the facility uses a fabric filter to comply with the emission limits, a bag leak detection system is installed and operated such that the alarm does not sound more than 5 percent of the operating time during a 6-mo period.</p> <p>(NOTE: See 40 CFR 60.4870 for information on how to calculate the alarm time.)</p> <p>Verify that the facility meets the operating requirements in their site-specific fugitive emission monitoring plan to ensure that the ash handling system will meet the emission standard for fugitive emissions from ash handling.</p> <p>Verify that the operating limits and requirements specified above in this checklist item are met 60 days after the SSI unit reaches the feed rate at which it will operate, or within 180 days after its initial startup, whichever comes first.</p> <p>Verify that, if the facility uses an air pollution control device other than a wet scrubber, fabric filter, electrostatic precipitator, or activated carbon injection to comply with the emission limits in Table 1 or 2 in Appendix 1-41 the facility meets any site-specific operating limits or requirements that are established as detailed in 40 CFR 60.4855.</p> <p>(NOTE: The operating parameters for which the facility will establish operating limits for a wet scrubber, fabric filter, electrostatic precipitator, or activated carbon injection are listed in Table 3 to 40 CFR 60, Subpart LLLL [see text].)</p> <p>(NOTE: The operating limits apply at all times that sewage sludge is in the combustion chamber (i.e., until the sewage sludge feed to the combustor has been</p>

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<p><b>AE.45.12.US.</b> New sewage sludge incineration units must have a site-specific monitoring plan (40 CFR 60.4880) [Added April 2011].</p>	<p>cut off for a period of time not less than the sewage sludge incineration residence time).</p> <p>Verify that, if the facility uses an air pollution control device other than a wet scrubber, fabric filter, electrostatic precipitator, or activated carbon injection, or limit emissions in some other manner (e.g., materials balance) to comply with the emission limits the facility, the following requirements are met:</p> <ul style="list-style-type: none"> <li>– meets the applicable operating limits and requirements in 40 CFR 60.4850, and establishes applicable operating limits according to 40 CFR 60.4870</li> <li>– petition the Administrator for specific operating parameters, operating limits, and averaging periods to be established during the initial performance test and to be monitored continuously thereafter.</li> </ul> <p>(NOTE: The emission limits and standards apply at all times and during periods of malfunction. The operating limits apply at all times that sewage sludge is in the combustion chamber (i.e., until the sewage sludge feed to the combustor has been cut off for a period of time not less than the sewage sludge incineration residence time).</p> <p>(NOTE: See 40 CFR 60.4865 for details and methodology to demonstrate initial compliance with emissions limitations and operating limits.)</p> <p>(NOTE: See checklist item AE.45.9.US for the applicability and exemptions related to the requirements in this checklist item.)</p> <p>Verify that the facility develops and submits to the Administrator for approval a site-specific monitoring plan for each required continuous monitoring system.</p> <p>(NOTE: The requirement for a site-specific monitoring plan also applies if the facility petitions the Administrator for alternative monitoring parameters.)</p> <p>(NOTE: If the facility uses a continuous automated sampling system to comply with the mercury or dioxin/furan (total mass basis or toxic equivalency basis) emission limit, the monitoring plan must be developed according to 40 CFR 60.58b(q) instead of the layout specified in this checklist item.)</p> <p>Verify that a site-specific monitoring plan is submitted for the facility's ash handling system</p> <p>Verify that, for each continuous monitoring system, the monitoring plan addresses the following elements:</p> <ul style="list-style-type: none"> <li>– installation of the continuous monitoring system sampling probe or other interface at a measurement location relative to each affected process unit such</li> </ul>

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	<p>that the measurement is representative of control of the exhaust emissions (e.g., on or downstream of the last control device)</p> <ul style="list-style-type: none"> <li>– performance and equipment specifications for the sample interface, the pollutant concentration or parametric signal analyzer and the data collection and reduction systems</li> <li>– performance evaluation procedures and acceptance criteria (e.g., calibrations) for: <ul style="list-style-type: none"> <li>– for continuous emissions monitoring systems</li> <li>– for continuous parameter monitoring system.</li> </ul> </li> </ul> <p>Verify that monitoring plans are submitted at least 60 days before the facility's initial performance evaluation of their continuous monitoring system(s).</p> <p>Verify that the monitoring plan for the ash handling system is submitted at least 60 days before the initial compliance test date.</p> <p>Verify that the facility updates and resubmits their monitoring plan if there are any changes or potential changes in their monitoring procedures or if there is a process change.</p> <p>Verify that, for continuous emissions monitoring systems, performance evaluation and acceptance criteria include, but is not limited to, the following:</p> <ul style="list-style-type: none"> <li>– the applicable requirements for continuous emissions monitoring systems specified in 40 CFR 60.13</li> <li>– the applicable performance specifications (e.g., relative accuracy tests) in 40 CFR 60, Appendix B</li> <li>– the applicable procedures (e.g., quarterly accuracy determinations and daily calibration drift tests) in 40 CFR 60, Appendix F</li> <li>– a discussion of how the occurrence and duration of out-of-control periods will affect the suitability of CEMS data</li> </ul> <p>Verify that, for continuous parameter monitoring systems with an operating limit that requires the use of a flow monitoring system, performance evaluation and acceptance criteria include, but is not limited to the following:</p> <ul style="list-style-type: none"> <li>– install the flow sensor and other necessary equipment in a position that provides a representative flow</li> <li>– use a flow sensor with a measurement sensitivity of no greater than 2 percent of the expected process flow rate</li> <li>– minimize the effects of swirling flow or abnormal velocity distributions due to upstream and downstream disturbances</li> <li>– conduct a flow monitoring system performance evaluation in accordance with the monitoring plan at the time of each performance test but no less frequently than annually.</li> </ul>

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	<p>Verify that, for continuous parameter monitoring systems with an operating limit that requires the use of a pressure monitoring system, performance evaluation and acceptance criteria include, but is not limited to the following:</p> <ul style="list-style-type: none"> <li>– install the pressure sensor in a position that provides a representative measurement of the pressure (e.g., particulate matter scrubber pressure drop)</li> <li>– minimize or eliminate pulsating pressure, vibration, and internal and external corrosion</li> <li>– use a pressure sensor with a minimum tolerance of 1.27 cm of water or a minimum tolerance of 1 percent of the pressure monitoring system operating range, whichever is less</li> <li>– perform checks at least once each process operating day to ensure pressure measurements are not obstructed (e.g., check for pressure tap pluggage daily)</li> <li>– conduct a performance evaluation of the pressure monitoring system in accordance with your monitoring plan at the time of each performance test but no less frequently than annually</li> <li>– if at any time the measured pressure exceeds the manufacturer's specified maximum operating pressure range, conduct a performance evaluation of the pressure monitoring system in accordance with your monitoring plan and confirm that the pressure monitoring system continues to meet the performance requirements in the monitoring plan (NOTE: Alternatively, install and verify the operation of a new pressure sensor).</li> </ul> <p>Verify that, for continuous parameter monitoring systems with an operating limit that requires pH monitoring, performance evaluation and acceptance criteria include, but is not limited to the following:</p> <ul style="list-style-type: none"> <li>– install the pH sensor in a position that provides a representative measurement of scrubber effluent pH</li> <li>– ensure the sample is properly mixed and representative of the fluid to be measured</li> <li>– conduct a performance evaluation of the pH monitoring system in accordance with the monitoring plan at least once each process operating day</li> <li>– conduct a performance evaluation (including a two-point calibration with one of the two buffer solutions having a pH within 1 of the pH of the operating limit) of the pH monitoring system in accordance with the monitoring plan at the time of each performance test but no less frequently than quarterly.</li> </ul> <p>Verify that, for continuous parameter monitoring systems with an operating limit that requires the use of a temperature measurement device, performance evaluation and acceptance criteria include, but is not limited to the following:</p> <ul style="list-style-type: none"> <li>– install the temperature sensor and other necessary equipment in a position that provides a representative temperature</li> </ul>

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	<ul style="list-style-type: none"> <li>– use a temperature sensor with a minimum tolerance of 2.8 degrees C (5 degrees F), or 1.0 percent of the temperature value, whichever is larger, for a noncryogenic temperature range</li> <li>– use a temperature sensor with a minimum tolerance of 2.8 degrees C (5 degrees F), or 2.5 percent of the temperature value, whichever is larger, for a cryogenic temperature range</li> <li>– conduct a temperature measurement device performance evaluation at the time of each performance test but no less frequently than annually.</li> </ul> <p>Verify that, for continuous parameter monitoring systems with an operating limit that requires a secondary electric power monitoring system for an electrostatic precipitator, performance evaluation and acceptance criteria include, but is not limited to the following:</p> <ul style="list-style-type: none"> <li>– install sensors to measure (secondary) voltage and current to the electrostatic precipitator collection plates</li> <li>– conduct a performance evaluation of the electric power monitoring system in accordance with the monitoring plan at the time of each performance test but no less frequently than annually.</li> </ul> <p>Verify that, for continuous parameter monitoring systems with an operating limit that requires the use of a monitoring system to measure sorbent injection rate (e.g., weigh belt, weigh hopper, or hopper flow measurement device), performance evaluation and acceptance criteria include, but is not limited to the following:</p> <ul style="list-style-type: none"> <li>– install the system in a position(s) that provides a representative measurement of the total sorbent injection rate</li> <li>– conduct a performance evaluation of the sorbent injection rate monitoring system in accordance with your monitoring plan at the time of each performance test but no less frequently than annually</li> <li>– ongoing operation and maintenance procedures in accordance with the general requirements of 40 CFR 60.11(d)</li> <li>– ongoing data quality assurance procedures in accordance with the general requirements of 40 CFR 60.13</li> <li>– ongoing recordkeeping and reporting procedures in accordance with the general requirements of 40 CFR 60.7(b), (c), (c)(1), (c)(4), (d), (e), (f) and (g)</li> <li>– provisions for periods when the continuous monitoring system is out of control, as follows: <ul style="list-style-type: none"> <li>– a continuous monitoring system is out of control if the following conditions are met: <ul style="list-style-type: none"> <li>– the zero (low-level), mid-level (if applicable), or high-level calibration drift exceeds two times the applicable calibration drift specification in the applicable performance specification or in the relevant standard</li> </ul> </li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– the continuous monitoring system fails a performance test audit (e.g., cylinder gas audit), relative accuracy audit, relative accuracy test audit, or linearity test audit</li> <li>– schedule for conducting initial and periodic performance evaluations.</li> </ul> <p>Verify that, when the continuous monitoring system is out of control the facility takes the necessary corrective action and repeats all necessary tests that indicate that the system is out of control.</p> <p>Verify that the facility takes corrective action and conducts retesting until the performance requirements are below the applicable limits.</p> <p>(NOTE: The beginning of the out-of-control period is the hour the facility conducts a performance check (e.g., calibration drift) that indicates an exceedance of the performance requirements. The end of the out-of-control period is the hour following the completion of corrective action and successful demonstration that the system is within the allowable limits.)</p> <p>Verify that, if a bag leak detection system is used, the monitoring plan includes a description of the following items:</p> <ul style="list-style-type: none"> <li>– installation of the bag leak detection system as follows: <ul style="list-style-type: none"> <li>– install the bag leak detection sensor(s) in a position(s) that is representative of the relative or absolute particulate matter loadings for each exhaust stack, roof vent, or compartment (e.g., for a positive pressure fabric filter) of the fabric filter</li> <li>– use a bag leak detection system certified by the manufacturer to be capable of detecting particulate matter emissions at concentrations of 10 milligrams per actual cubic meter or less</li> </ul> </li> <li>– initial and periodic adjustment of the bag leak detection system, including how the alarm set-point will be established: <ul style="list-style-type: none"> <li>– use a bag leak detection system equipped with a system that will sound an alarm when the system detects an increase in relative particulate matter emissions over a preset level</li> <li>– locate the alarm where it is observed readily and any alert is detected and recognized easily by plant operating personnel</li> </ul> </li> <li>– evaluations of the performance of the bag leak detection system, performed in accordance with your monitoring plan and consistent with the guidance provided in Fabric Filter Bag Leak Detection Guidance, EPA-454/R-98-015, September 1997 (incorporated by reference, see 40 CFR 60.17)</li> <li>– operation of the bag leak detection system, including quality assurance procedures</li> <li>– maintenance of the bag leak detection system, including a routine maintenance schedule and spare parts inventory list</li> </ul>

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<p><b>AE.45.13.US.</b> New sewage sludge incineration units must perform monitoring and inspections (40 CFR 60.4850(f), 60.4880(c), 60.4880(e), 60.4895, and 60.4900(b)) <b>[Added April 2011]</b>.</p>	<p>– recordkeeping (including record retention) of the bag leak detection system data by using a bag leak detection system equipped with a device to continuously record the output signal from the sensor.</p> <p>Verify that the facility submits a monitoring plan specifying the ash handling system operating procedures that they will follow to ensure that the facility meets the fugitive emissions limit specified in Table 1 or 2 (see Appendix 1-41)</p> <p>(NOTE: See checklist item AE.45.9.US for the applicability and exemptions related to the requirements in this checklist item.)</p> <p>Verify that the facility conducts an initial performance evaluation of each continuous monitoring system and bag leak detection system, as applicable, in accordance with the facility monitoring plan and 40 CFR 60.13(c).</p> <p>(NOTE: The provisions of 40 CFR 60.13(c) also apply to the bag leak detection system.)</p> <p>Verify that the initial performance evaluation of each continuous monitoring system is done within 60 days of installation of the monitoring system.</p> <p>Verify that the facility monitors the feed rate and moisture content of the sewage sludge fed to the sewage sludge incinerator, as follows:</p> <ul style="list-style-type: none"> <li>– continuously monitor the sewage sludge feed rate and calculate a daily average for all hours of operation during each 24-hour period</li> <li>– take at least one grab sample per day of the sewage sludge fed to the sewage sludge incinerator; if taking more than one grab sample in a day, calculate the daily average for the grab samples.</li> </ul> <p>(NOTE: The facility may submit an application to the Administrator for approval of alternate monitoring requirements to demonstrate compliance with the standards.)</p> <p>Verify that the facility conducts an annual inspection of each air pollution control device used to comply with the applicable emission limits no later than 12 mo following the previous annual air pollution control device inspection.</p> <p>Verify that, within 10 operating days following an air pollution control device inspection, all necessary repairs are completed unless the facility obtains written approval from the Administrator establishing a date by when all necessary repairs of the affected SSI unit must be completed.</p>

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<p><b>AE.45.14.US.</b> New sewage sludge incineration units must meet certain recordkeeping requirements (40 CFR 60.4910) [Added April 2011].</p>	<p>Verify that, if the facility elects to use a continuous emissions monitoring system instead of conducting annual performance testing, the facility meet the following parameters as well as the methodology outlined in 40 CFR 60.4900 (see text):</p> <ul style="list-style-type: none"> <li>– the Administrator is notified 1 mo before starting use of the continuous monitoring system</li> <li>– the Administrator is notified one month before stopping use of the continuous monitoring system, and a performance test is conducted prior to ceasing operation of the system</li> <li>– the facility installs, operates, calibrates, and maintains an instrument for continuously measuring and recording the emissions as outlined in the text of 40 CFR 60.4900(b)(3)</li> <li>– during each relative accuracy test run of the continuous emissions monitoring system emission data for each regulated pollutant and oxygen is collected concurrently (or within a 30- to 60-min period) by both the continuous emissions monitoring systems and applicable test methods</li> <li>– relative accuracy testing is done at representative operating conditions while the SSI unit is charging sewage sludge.</li> </ul> <p>(NOTE: See the text of 40 CFR 60.4905 for details on monitoring and calibration requirements for compliance within the facility's operating limits.)</p> <p>(NOTE: See checklist item AE.45.9.US for the applicability and exemptions related to the requirements in this checklist item.)</p> <p>Verify that all records are available onsite in either paper copy or computer-readable format that can be printed upon request, unless an alternative format is approved by the Administrator.</p> <p>Verify that the following records are maintained:</p> <ul style="list-style-type: none"> <li>– calendar date of each record</li> <li>– all documentation produced as a result of the siting requirements</li> <li>– documentation of the operator training procedures and the following records: <ul style="list-style-type: none"> <li>– summary of the applicable standards under 40 CFR 60, Subpart LLLL</li> <li>– procedures for receiving, handling, and feeding sewage sludge</li> <li>– incinerator startup, shutdown, and malfunction preventative and corrective procedures</li> <li>– procedures for maintaining proper combustion air supply levels</li> <li>– procedures for operating the incinerator and associated air pollution control systems within the standards established under 40 CFR 60, Subpart LLLL</li> <li>– monitoring procedures for demonstrating compliance with the incinerator operating limits</li> <li>– reporting and recordkeeping procedures</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– procedures for handling ash</li> <li>– a list of the materials burned during the performance test, if in addition to sewage sludge</li> <li>– for each qualified operator and other plant personnel who may operate the unit, the phone and/or pager number at which they can be reached during operating hours</li> <li>– records showing the names of SSI unit operators and other plant personnel who may operate the unit according to the provisions of 40 CFR 60.4835(a) (see checklist item AE.45.9.US), as follows: <ul style="list-style-type: none"> <li>– records showing the names of SSI unit operators and other plant personnel who have completed review of the above information, including the date of the initial review and all subsequent annual reviews</li> <li>– records showing the names of the SSI operators who have completed the operator training requirements, met the criteria for qualification, and maintained or renewed their qualification; including documentation of training, including the dates of their initial qualification and all subsequent renewals of such qualifications.</li> </ul> </li> <li>– records showing the periods when no qualified operators were accessible for more than 8 hours, but less than 2 weeks</li> <li>– records showing the periods when no qualified operators were accessible for 2 weeks or more along with copies of submitted reports</li> <li>– records of the results of initial and annual air pollution control device inspections, including any required maintenance and any repairs not completed within 10 days of an inspection or the timeframe established by the Administrator</li> <li>– the results of the initial, annual, and any subsequent performance tests conducted to determine compliance with the emission limits and standards and/or to establish operating limits, as applicable</li> <li>– a copy of the complete performance test report, including calculations</li> <li>– a record of the hourly dry sludge feed rate measured during performance test runs</li> <li>– any necessary records to demonstrate that the performance test was conducted under conditions representative of normal operations, including a record of the moisture content measured for each grab sample taken of the sewage sludge burned during the performance test</li> <li>– for continuous emissions monitoring systems, all 1-hour average concentrations of particulate matter, hydrogen chloride, carbon monoxide, dioxins/furans total mass basis, mercury, nitrogen oxides, sulfur dioxide, cadmium, and lead emissions</li> <li>– for continuous automated sampling systems, all average concentrations measured for mercury and dioxins/furans total mass basis at the frequencies specified in the facility monitoring plan</li> <li>– for continuous parameter monitoring systems, all 1-hour average values recorded for the following operating parameters, as applicable:</li> </ul>

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	<ul style="list-style-type: none"> <li>– combustion chamber operating temperature (or afterburner temperature)</li> <li>– if a wet scrubber is used to comply with the rule, pressure drop across each wet scrubber system, liquid flow rate to each wet scrubber used to comply with the emission limit in Table 1 or 2 (see Appendix 1-41) for particulate matter, cadmium, or lead, and scrubber liquid flow rate and scrubber liquid pH for each wet scrubber used to comply with an emission limit in Table 1 or 2 (see Appendix 1-41) for sulfur dioxide or hydrogen chloride</li> <li>– if an electrostatic precipitator is used to comply, secondary voltage and secondary amperage of the electrostatic precipitator collection plates, and effluent water flow rate at the outlet of the wet electrostatic precipitator</li> <li>– if activated carbon injection is used to comply with the rule, sorbent flow rate and carrier gas flow rate or pressure drop, as applicable</li> <li>– for continuous parameter monitoring systems, all daily average values recorded for the feed rate and moisture content of the sewage sludge fed to the sewage sludge incinerator</li> <li>– for continuous parameter monitoring systems, if a fabric filter is used to comply with the rule, the date, time, and duration of each alarm and the time corrective action was initiated and completed, and a brief description of the cause of the alarm and the corrective action taken</li> <li>– for continuous parameter monitoring systems, if a fabric filter is used to comply with the rule, the percent of operating time during each 6-month period that the alarm sounds</li> <li>– for continuous parameter monitoring systems, with other control devices for which the facility must establish operating limits, data collected for all operating parameters used to determine compliance with the operating limits, at the frequencies specified in the monitoring plan</li> <li>– for continuous monitoring systems, records of any notifications to the Administrator of starting or stopping use of a continuous monitoring system for determining compliance with any emissions limit</li> <li>– for continuous monitoring systems, records of any requests that compliance with the emission limits be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen</li> <li>– for continuous monitoring systems, if activated carbon injection is used to comply with the rule, the type of sorbent used and any changes in the type of sorbent used</li> <li>– records of any deviation reports</li> <li>– equipment specifications and related operation and maintenance requirements received from vendors for the incinerator, emission controls, and monitoring equipment</li> <li>– records of inspections, calibrations, and validations checks of any monitoring devices</li> <li>– monitoring plan and performance evaluations for continuous monitoring systems</li> </ul>

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<b>AE.45.15.US.</b> New sewage sludge incineration units must meet certain reporting requirements (40 CFR 60.4915) [Added April 2011].	<ul style="list-style-type: none"> <li>– records indicating use of the bypass stack, including dates, times, and durations</li> <li>– if a malfunction occurs, a record of the information submitted in the annual report.</li> </ul> <p>Verify that, if the facility elects to conduct performance tests less frequently than annually, the facility keeps annual records that document emissions in the 2 previous consecutive years were at or below 75 percent of the applicable emission limit in Table 1 or 2 (see Appendix 1-41), and document that there were no changes in source operations or air pollution control equipment that would cause emissions of the relevant pollutant to increase within the past 2 years.</p> <p>(NOTE: See checklist item AE.45.9.US for the applicability and exemptions related to the requirements in this checklist item.)</p> <p>Verify that the facility submitted a notification prior to commencing construction that includes the following items:</p> <ul style="list-style-type: none"> <li>– a statement of intent to construct</li> <li>– the anticipated date of commencement of construction</li> <li>– all documentation produced as a result of the siting requirements</li> <li>– anticipated date of initial startup.</li> </ul> <p>Verify that the following information is submitted prior to initial startup:</p> <ul style="list-style-type: none"> <li>– the maximum design dry sludge burning capacity</li> <li>– the anticipated and permitted maximum dry sludge feed rate</li> <li>– if applicable, the petition for site-specific operating limits</li> <li>– the anticipated date of initial startup</li> <li>– the site-specific monitoring plan at least 60 days before the initial performance evaluation of the continuous monitoring system</li> <li>– the site-specific monitoring plan for the ash handling system at least 60 days before the initial performance test to demonstrate compliance with the fugitive ash emission limit.</li> </ul> <p>Verify that the following information is submitted no later than 60 days following the initial performance test:</p> <ul style="list-style-type: none"> <li>– company name, physical address, and mailing address</li> <li>– statement by a responsible official, with that official's name, title, and signature, certifying the accuracy of the content of the report</li> <li>– date of report</li> <li>– the complete test report for the initial performance test results obtained by using the test methods specified in Table 1 or 2 (see Appendix 1-41)</li> <li>– if an initial performance evaluation of a continuous monitoring system was conducted, the results of that initial performance evaluation</li> </ul>

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	<ul style="list-style-type: none"> <li>– the values for the site-specific operating limits and the calculations and methods, as applicable, used to establish each operating limit</li> <li>– if the facility is using a fabric filter to comply with the emission limits, documentation that a bag leak detection system has been installed and is being operated, calibrated, and maintained</li> <li>– the results of the initial air pollution control device inspection including a description of repairs.</li> </ul> <p>Verify that the facility submits an annual compliance report that includes the following items:</p> <ul style="list-style-type: none"> <li>– company name, physical address, and mailing address</li> <li>– statement by a responsible official, with that official's name, title, and signature, certifying the accuracy of the content of the report</li> <li>– date of report and beginning and ending dates of the reporting period</li> <li>– if a performance test was conducted during the reporting period, the results of that performance test, including: <ul style="list-style-type: none"> <li>– if operating limits were established during the performance test, include the value for each operating limit and, as applicable, the method used to establish each operating limit, including calculations</li> <li>– if activated carbon is used during the performance test, include the type of activated carbon used</li> </ul> </li> <li>– for each pollutant and operating parameter recorded using a continuous monitoring system, the highest average value and lowest average value recorded during the reporting period, as follows: <ul style="list-style-type: none"> <li>– for continuous emission monitoring systems and continuous automated sampling systems, report the highest and lowest 24-hour average emission value</li> <li>– for continuous parameter monitoring systems, report the following values: <ul style="list-style-type: none"> <li>– for all operating parameters except scrubber liquid pH, the highest and lowest 12-hour average values</li> <li>– for scrubber liquid pH, the highest and lowest 3-hour average values</li> </ul> </li> </ul> </li> <li>– if there are no deviations during the reporting period from any emission limit, emission standard, or operating limit that applies to the facility, a statement that there were no deviations from the emission limits, emission standard, or operating limits</li> <li>– information for bag leak detection systems recorded under 40 CFR 60.4910(f)(3)(iii) (concerns alarms)</li> <li>– if a performance evaluation of a continuous monitoring system was conducted, the results of that performance evaluation</li> <li>– if new operating limits are established during the performance evaluation of a continuous monitoring system, include the calculations for establishing those operating limits</li> </ul>

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	<ul style="list-style-type: none"> <li>– if the facility elects to conduct performance tests less frequently and did not conduct a performance test during the reporting period, include the dates of the last two performance tests, a comparison of the emission level achieved in the last two performance tests to the 75 percent emission limit threshold, and a statement as to whether there have been any process changes and whether the process change resulted in an increase in emissions</li> <li>– documentation of periods when all qualified SSI unit operators were unavailable for more than 8 h, but less than 2 weeks</li> <li>– results of annual air pollution control device inspections for the reporting period, including a description of repairs</li> <li>– if there were no periods during the reporting period when the continuous monitoring systems had a malfunction, a statement that there were no periods during which the continuous monitoring systems had a malfunction</li> <li>– if there were no periods during the reporting period when a continuous monitoring system was out of control, a statement that there were no periods during which the continuous monitoring system was out of control</li> <li>– if there were no operator training deviations, a statement that there were no such deviations during the reporting period</li> <li>– if the facility did not make revisions to the site-specific monitoring plan during the reporting period, a statement that the facility did not make any revisions to the site-specific monitoring plan during the reporting period</li> <li>– if the facility made revisions to the site-specific monitoring plan during the reporting period, a copy of the revised plan</li> <li>– if the facility had a malfunction during the reporting period, the number, duration, and a brief description for each type of malfunction that occurred during the reporting period and that caused or may have caused any applicable emission limitation to be exceeded</li> <li>– if the facility had a malfunction during the reporting period, the report must also include a description of actions taken by an owner or operator during a malfunction of an affected source to minimize emissions, including actions taken to correct a malfunction.</li> </ul> <p>Verify that the first annual compliance report is submitted no later than 12 mo following the submission of the initial compliance report.</p> <p>Verify that subsequent annual compliance reports are submitted no more than 12 mo following the previous annual compliance report.</p> <p>(NOTE: The facility may be required to submit annual compliance reports (or additional compliance information) more frequently by the title V operating permit.)</p> <p>Verify that the facility submits a deviation report if:</p>

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	<ul style="list-style-type: none"> <li>– any recorded operating parameter level, based on the averaging time specified in Table 3 of 40 CFR 60, Subpart LLLL, is above the maximum operating limit or below the minimum operating limit</li> <li>– the bag leak detection system alarm sounds for more than 5 percent of the operating time for the 6-month reporting period</li> <li>– any recorded 24-hour block average emissions level is above the emission limit, if a continuous monitoring system is used to comply with an emission limit</li> <li>– there are visible emissions of combustion ash from an ash conveying system for more than 5 percent of the hourly observation period</li> <li>– a performance test was conducted that deviated from any emission limit in Table 1 or 2 (see Appendix 1-41)</li> <li>– a continuous monitoring system was out of control</li> <li>– the facility had a malfunction (e.g., continuous monitoring system malfunction) that caused or may have caused any applicable emission limit to be exceeded.</li> </ul> <p>Verify that the deviation report is submitted by August 1 of that year for data collected during the first half of the calendar year (January 1 to June 30), and by February 1 of the following year for data collected during the second half of the calendar year (July 1 to December 31).</p> <p>Verify that, for each deviation where the facility is using a continuous monitoring system to comply with an associated emission limit or operating limit, the following items are reported:</p> <ul style="list-style-type: none"> <li>– company name, physical address, and mailing address</li> <li>– statement by a responsible official, with that official's name, title, and signature, certifying the accuracy of the content of the report</li> <li>– the calendar dates and times your unit deviated from the emission limits, emission standards, or operating limits requirements</li> <li>– the averaged and recorded data for those dates</li> <li>– duration and cause of each deviation from the following: <ul style="list-style-type: none"> <li>– emission limits, emission standards, operating limits, and corrective actions</li> <li>– bypass events and corrective actions</li> </ul> </li> <li>– dates, times, and causes for monitor downtime incidents</li> <li>– a copy of the operating parameter monitoring data during each deviation and any test report that documents the emission levels</li> <li>– if there were periods during which the continuous monitoring system malfunctioned or was out of control, include the following information for each deviation from an emission limit or operating limit: <ul style="list-style-type: none"> <li>– the date and time that each malfunction started and stopped</li> <li>– the date, time, and duration that each continuous monitoring system was inoperative, except for zero (low-level) and high-level checks</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– the date, time, and duration that each continuous monitoring system was out of control, including start and end dates and hours and descriptions of corrective actions taken</li> <li>– the date and time that each deviation started and stopped, and whether each deviation occurred during a period of malfunction, during a period when the system as out of control, or during another period</li> <li>– a summary of the total duration of the deviation during the reporting period, and the total duration as a percent of the total source operating time during that reporting period</li> <li>– A breakdown of the total duration of the deviations during the reporting period into those that are due to control equipment problems, process problems, other known causes, and other unknown causes</li> <li>– a summary of the total duration of continuous monitoring system downtime during the reporting period, and the total duration of continuous monitoring system downtime as a percent of the total operating time of the SSI unit at which the continuous monitoring system downtime occurred during that reporting period</li> <li>– an identification of each parameter and pollutant that was monitored at the SSI unit</li> <li>– a brief description of the SSI unit</li> <li>– a brief description of the continuous monitoring system</li> <li>– the date of the latest continuous monitoring system certification or audit</li> <li>– a description of any changes in continuous monitoring system, processes, or controls since the last reporting period.</li> </ul> <p>Verify that, for each deviation where the facility is not using a continuous monitoring system to comply with the associated emission limit or operating limit, the following items are reported:</p> <ul style="list-style-type: none"> <li>– company name, physical address, and mailing address</li> <li>– statement by a responsible official with that official's name, title, and signature, certifying the accuracy of the content of the report</li> <li>– the total operating time of each affected SSI during the reporting period</li> <li>– the calendar dates and times your unit deviated from the emission limits, emission standards, or operating limits requirements</li> <li>– the averaged and recorded data for those dates</li> <li>– duration and cause of each deviation from the following: <ul style="list-style-type: none"> <li>– emission limits, emission standard, and operating limits, and corrective actions</li> <li>– bypass events and corrective actions</li> </ul> </li> <li>– a copy of any performance test report that showed a deviation from the emission limits or standard</li> <li>– a brief description of any reported malfunction, including a description of actions taken during the malfunction to minimize emissions and to correct the malfunction.</li> </ul>

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	<p>Verify that, if all qualified operators are not accessible for 2 weeks or more, the facility must take the following actions:</p> <ul style="list-style-type: none"> <li>– submit a notification of the deviation within 10 days that includes: <ul style="list-style-type: none"> <li>– a statement of what caused the deviation</li> <li>– a description of actions taken to ensure that a qualified operator is accessible</li> <li>– the date when you anticipate that a qualified operator will be available</li> </ul> </li> <li>– submit a status report to the Administrator every 4 weeks that includes the following: <ul style="list-style-type: none"> <li>– a description of actions taken to ensure that a qualified operator is accessible</li> <li>– the date when the facility anticipates that a qualified operator will be accessible</li> <li>– request for approval from the Administrator to continue operation of the SSI unit.</li> </ul> </li> </ul> <p>Verify that, if the SSI unit was shut down by the Administrator due to a failure to provide an accessible qualified operator, the facility notifies the Administrator within 5 days that they are resuming operation.</p> <p>Verify that, if a force majeure is about to occur, occurs, or has occurred for which the facility intends to assert a claim of force majeure, the following are implemented:</p> <ul style="list-style-type: none"> <li>– notify the Administrator, in writing as soon as practicable following the date the facility first knew, or through due diligence should have known that the event may cause or caused a delay in conducting a performance test beyond the regulatory deadline, but the notification must occur before the performance test deadline unless the initial force majeure or a subsequent force majeure event delays the notice, and in such cases, the notification must occur as soon as practicable</li> <li>– provide to the Administrator a written description of the force majeure event and a rationale for attributing the delay in conducting the performance test beyond the regulatory deadline to the force majeure; describe the measures taken or to be taken to minimize the delay; and identify a date by which the facility proposes to conduct the performance test.</li> </ul> <p>Verify that the facility notifies the Administrator 1 mo before starting or stopping use of a continuous monitoring system for determining compliance with any emission limit.</p> <p>Verify that the facility notifies the Administrator at least 30 days prior to any performance test conducted to comply with the provisions of 40 CFR 60, Subpart LLLL, to afford the Administrator the opportunity to have an observer present.</p>

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	<p>Verify that the facility notifies the Administrator at least 7 days prior to the date of a rescheduled performance test for which notification was previously made.</p> <p>Verify that initial, annual, and deviation reports are submitted electronically or in paper format, postmarked on or before the submittal due dates.</p> <p>Verify that, as of 1 January 2012 and within 60 days after the date of completing each required performance test conducted to demonstrate compliance with 40 CFR 60, Subpart LLLL, the facility submits relative accuracy test audit (i.e., reference method) data and performance test (i.e., compliance test) data, except opacity data, electronically to EPA's Central Data Exchange (CDX) by using the Electronic Reporting Tool (ERT) (see <a href="http://www.epa.gov/ttn/chief/ert/ert_tool.html/">http://www.epa.gov/ttn/chief/ert/ert_tool.html/</a>) or other compatible electronic spreadsheet.</p> <p>(NOTE: Only data collected using test methods compatible with ERT are subject to this requirement to be submitted electronically into EPA's WebFIRE database.)</p> <p>(NOTE: If the Administrator agrees, the facility may change the semi-annual or annual reporting dates.)</p>



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<p><b>AE.50</b></p> <p><b>THERMAL PROCESSING FACILITIES</b></p> <p><b>AE.50.1.US.</b> Thermal processing facilities designed to process or that are processing 50 tons or more per day of municipal solid wastes are required to operate in a manner that protects air quality (40 CFR 240.100(a) and 240.205- 1).</p> <p><b>AE.50.2.US.</b> Thermal processing facilities designed to process or that are processing 50 tons or more per day of municipal solid wastes should operate in a manner that protects air quality (MP).</p>	<p>(NOTE: This does not apply to hazardous, agricultural, or mining wastes.)</p> <p>Verify that emissions do not exceed applicable existing emission standards.</p> <p>Verify that all emissions, including dust from vents, are controlled.</p> <p>Verify that, when monitoring instrumentation indicates excessive emissions, appropriate adjustments are made to lower the emission to acceptable levels.</p> <p>(NOTE: This MP is based on recommendations found in 40 CFR 240.205-2 and 205-3.)</p>



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<p><b>AE.55</b></p> <p><b>GASOLINE/FUELS</b></p> <p><b>AE.55.1.US.</b> When gasoline is sold, offered for sale, supplied, offered for supply, dispensed, transported, or introduced into commerce, certain parameters for lead content must be met (40 CFR 80.22(b) [<b>Revised February 1996</b>]).</p> <p><b>AE.55.2.US.</b> Checklist item deleted [<b>Deleted May 1996</b>].</p> <p><b>AE.55.3.US.</b> Fuel pumps dispensing oxygenated gasoline or diesel fuel are required to meet specific labeling requirements (40 CFR 80.35) [<b>Revised May 1997; Revised July 2010; Revised January 2011</b>].</p> <p><b>AE.55.4.US.</b> During 1992 and later, high ozone seasons, and regulatory control periods gasoline shall not be sold, offered for sale, imported, dispensed, supplied, or</p>	<p>Determine what grades of gasoline are used, where they are dispensed, and what controls are in place to ensure proper fueling of vehicles by interviewing personnel.</p> <p>Verify that after 31 December 1995 no gasoline is sold, offered for sale, supplied, offered for supply, dispensed, transported, or introduced into commerce unless it contains lead additives of less than 0.05 g/gal.</p> <p>(NOTE: This checklist item has been removed due to the USEPA deletion of 40 CFR 80.22(d) and 80.22(e).)</p> <p>Determine if the dispensing facility is located in an area with an oxygenated gasoline program with a minimum oxygen content per 1 gal or minimum oxygen content requirements in conjunction with a credit program.</p> <p>Verify that, if located in such an area, each gasoline pump dispensing oxygenated gasoline at a retail outlet has a label attached during the control period that states: The gasoline dispensed from this pump is oxygenated and will reduce CO pollution from motor vehicles.</p> <p>Verify that the labels for each gasoline pump dispensing oxygenated gasoline at a retail outlet are:</p> <ul style="list-style-type: none"> <li>– in block letters of no less than 20-point bold type</li> <li>– in a color contrasting with the intended background</li> <li>– placed on the vertical surface of the pump on each side with gallonage and price meters and is on the upper two-thirds of the pump, clearly visible to the public.</li> </ul> <p>(NOTE: Consult with state and local authorities concerning control areas and control periods.)</p> <p>Verify that the following monitoring parameters are met:</p> <ul style="list-style-type: none"> <li>– retailers and wholesale purchaser-consumers: during the high ozone season (1 June to 15 September of any year)</li> </ul>

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<p>transported that exceeds specific Reid vapor pressure standards (40 CFR 80.27(a)(2) and 80.27(d)) [Citation Revised July 2003].</p> <p><b>AE.55.5.US.</b> No diesel fuel for use in motor vehicles may be sold, supplied, or dispensed unless it meets specific criteria (40 CFR 80.500, 80.501(a), 80.510(a) through 80.510(f), 80.520(a), and 80.520(b)) [Revised May 1997; Revised July 2003; Revised July 2006; Revised October 2006; Revised July 2010; Revised October 2011; Revised April 2012; Revised October 2012].</p>	<p>– importers, distributors, resellers, or carriers: during the regulatory control period (1 May to 15 September of any year).</p> <p>Verify that a standard of 9.0 psi is not exceeded for all designated volatility attainment areas.</p> <p>Verify that the standards outlined in Appendix 1-1 are met for any designated volatility nonattainment areas (see 40 CFR 81).</p> <p>(NOTE: Gasoline that contains denatured, anhydrous ethanol of at least 9 percent and no more than 10 percent may exceed the Reid vapor pressure standards outlined in Appendix 1-1 by 1.0 psi).</p> <p>(NOTE: This checklist item applies to the following fuels and additives:</p> <ul style="list-style-type: none"> <li>– motor vehicle diesel fuel</li> <li>– nonroad, locomotive, or marine (NRLM) diesel fuel</li> <li>– diesel fuel additives</li> <li>– heating oil</li> <li>– ECA marine fuel</li> <li>– other distillate fuels</li> <li>– motor oil that is used as or intended for use as fuel in diesel motor vehicles or nonroad diesel engines or is blended with diesel fuel for use in diesel motor vehicles or nonroad diesel engines, including locomotive and marine diesel engines, at any downstream location.)</li> </ul> <p>(NOTE: This checklist item does not apply to distillate fuel that is designated for export outside the United States, identified for export by a transfer document, and that is exported.)</p> <p>Verify that all motor vehicle diesel fuel meets the following per-gallon standards:</p> <ul style="list-style-type: none"> <li>– sulfur content of 15 ppm maximum</li> <li>– cetane index and aromatic content: <ul style="list-style-type: none"> <li>– a minimum cetane index of 40</li> <li>– a maximum aromatic content of 35 volume percent.</li> </ul> </li> </ul> <p>(NOTE: Under certain conditions and parameters a refiner or importer may produce or import motor vehicle diesel fuel with a sulfur content of 500 ppm sulfur content. Those conditions and parameters are detailed in 40 CFR 80.530 through 80.532, 80.552(a), 80.560 through 80.561, and 80.620.)</p> <p>Verify that all motor vehicle diesel fuel is free of visible evidence of dye solvent red 164 (which has a characteristic red color in diesel fuel), except for motor vehicle diesel fuel that is used in a manner that is tax exempt under section 4082 of the Internal Revenue Code.</p>

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<p><b>AE.55.6.US.</b> All retailers and wholesale purchaser-consumers (see definitions) of gasoline or methanol are</p>	<p>Verify that all motor vehicle diesel fuels are free of yellow solvent 124.</p> <p>Verify that, as of 1 June 2012 all NRLM diesel fuel is subject to the following per-gallon standards:</p> <ul style="list-style-type: none"> <li>– sulfur content, 15 ppm maximum</li> <li>– cetane index or aromatic content, as follows: <ul style="list-style-type: none"> <li>– a minimum cetane index of 40</li> <li>– a maximum aromatic content of 35 volume percent.</li> </ul> </li> </ul> <p>Verify that, from 1 June 2012 through 31 May 2014, NRLM fuels are marked as follows:</p> <ul style="list-style-type: none"> <li>– prior to distribution from a truck loading terminal, all heating oil contains six milligrams per liter of marker solvent yellow 124</li> <li>– any heating oil that is required to contain marker solvent yellow 124 also contains visible evidence of dye solvent red 164.</li> </ul> <p>Verify that, from 1 June 2012 through 31 May 2014, the following are free of marker solvent yellow 124:</p> <ul style="list-style-type: none"> <li>– all motor vehicle and NR diesel fuel</li> <li>– all LM diesel fuel beginning 1 December 2012.</li> </ul> <p>(NOTE: From 1 June 2012 through 30 November 2012, any diesel fuel that contains greater than or equal to 0.10 milligrams per liter of marker solvent yellow 124 is deemed to be either heating oil or 500 ppm sulfur LM diesel fuel and is prohibited from use in any motor vehicle or nonroad diesel engine (excluding locomotive, or marine diesel engines).)</p> <p>(NOTE: From 1 December 2012 through 30 November 2014, any diesel fuel that contains greater than or equal to 0.10 milligrams per liter of marker solvent yellow 124 is deemed to be heating oil and is prohibited from use in any motor vehicle or nonroad diesel engine (including locomotive, or marine diesel engines).)</p> <p>(NOTE: From 1 June 2012 through 30 November 2014, any diesel fuel, other than jet fuel or kerosene that is downstream of a truck loading terminal, that contains less than 0.10 milligrams per liter of marker solvent yellow 124 is considered motor vehicle diesel fuel or NRLM diesel fuel, as appropriate.)</p> <p>(NOTE: Beginning 1 December 2014 there are no requirements or restrictions on the use of marker solvent yellow 124 under this regulation.)</p> <p>Verify that each pump from which gasoline or methanol is introduced into motor vehicles is equipped with a nozzle that dispenses fuel at a flow rate not exceeding 10 gal/min.</p>

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<p>required to provide specific equipment on dispensing pumps (40 CFR 80.22(j)) [Revised September 1996; Revised October 2011; Revised April 2012].</p> <p><b>AE.55.7.US.</b> Retailers and wholesale purchaser-consumers of diesel fuel must meet specific labeling requirements (40 CFR 80.570 through 80.574) [Added October 2006; Revised July 2010; Revised October 2011; Revised April 2012; Revised January 2013; Revised April 2016].</p>	<p>(NOTE: This requirement does not apply to pumps that are shown to be dedicated to heavy-duty vehicles, boats, or airplanes.)</p> <p>(NOTE: Based on the definition of a “Wholesale Purchaser-Consumer,” this checklist item does not apply unless the product is in a storage tank of at least 550 gal capacity.)</p> <p>Verify that the required labels are placed on the vertical surface of each pump housing and on each side that has gallon and price meters.</p> <p>Verify that the labels are on the upper two-thirds of the pump, in a location where they are clearly visible.</p> <p>Verify that labels are legible, in block letters of no less than 24-point bold type, printed in a color contrasting with the background, and prominently and conspicuously displayed in the immediate area of each pump stand.</p> <p>(NOTE: Alternative labels may be used as approved by EPA.)</p> <p>Verify that any retailer or wholesale purchaser-consumer who sells, dispenses, or offers for sale or dispensing nonroad, locomotive or marine (NRLM) diesel fuel (including nonroad (NR) and locomotive or marine (LM)), or heating oil, displays the following label on pumps dispensing non-motor vehicle diesel fuel for use other than in nonroad, locomotive or marine engines (NRLM), such as for use as heating oil:</p> <p style="text-align: center;"> <b>HEATING OIL (May Exceed 500 ppm Sulfur)</b>  <b>WARNING</b>  Federal law prohibits use in highway vehicles or engines, or in nonroad, locomotive, or marine diesel engines.  Its use may damage these diesel engines. </p> <p>Verify that any retailer or wholesale purchaser-consumer who sells, dispenses, or offers for sale or dispensing nonroad, locomotive or marine (NRLM) diesel fuel (including nonroad (NR) and locomotive or marine (LM)), or heating oil, displays the following labels on pump stands from which non-highway diesel fuel is offered for sale or dispensing:</p> <p style="text-align: center;"> – until 30 September 2014, for pumps dispensing NRLM diesel fuel subject to the 500 ppm sulfur standard of 40 CFR 80.510(a) [see checklist item AE.55.5.US]: </p> <p style="text-align: center;"> <b>LOW SULFUR NON-HIGHWAY DIESEL FUEL</b>  (500 ppm Sulfur Maximum)  <b>WARNING</b> </p>

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<p><b>AE.55.8.US.</b> GDF with a monthly throughput of less than 10,000 gal of gasoline must meet specific emissions limitations and management practice requirements (40 CFR 63.11111(a), 63.11111(b), 63.11111(f), 63.11111(g), 63.11112, 63.11113, and 63.11116) [Added April 2008; Revised July 2008].</p>	<p>Federal law prohibits use in all model year 2011 and newer nonroad engines. May damage model year 2011 and newer nonroad engines. Federal law prohibits use in highway vehicles or engines.</p> <p>– until 30 September 2012 and from 25 February 2013 and thereafter, for pumps dispensing LM diesel fuel subject to the 500 ppm sulfur standard of 40 CFR 80.510(a) [see checklist item AE.55.5.US]:</p> <p><b>LOW SULFUR LOCOMOTIVE AND MARINE DIESEL FUEL</b> (500 ppm Sulfur Maximum) <b>WARNING</b> Federal law prohibits use in nonroad engines or in highway vehicles or engines.</p> <p>Verify that, as of 1 June 2014, any retailer or wholesale purchaser-consumer who sells, dispenses, or offers for sale or dispensing ECA marine fuel displays in the immediate area of each pump stand from which ECA marine fuel subject to the 1000 ppm standards of 40 CFR 80.510(k) is offered for sale or dispensing, the following label:</p> <p><b>1,000 ppm SULFUR ECA MARINE FUEL (1,000 ppm Sulfur Maximum)</b> For use in Category 3 (C3) marine vessels only. <b>WARNING</b> Federal law prohibits use in any engine that is not installed on a C3 marine vessel; use of fuel oil with a sulfur content greater than 1,000 ppm in an ECA is prohibited except as allowed by 40 CFR 1043.</p> <p>Determine if the GDF has a monthly throughput of less than 10,000 gallons of gasoline.</p> <p>(NOTE: This checklist item applies to each gasoline cargo tank during the delivery of product to a GDF and also includes each storage tank. This checklist item does not apply to the loading of aviation gasoline storage tanks at airports and the aviation gasoline is not included in the gasoline throughput amounts.)</p> <p>(NOTE: Owners or operators of sources to which this checklist item applies are not required to obtain a permit under 40 CFR 70 or 40 CFR 71 because they are required to meet these requirements. However, the owner/operator must still apply for and obtain a permit under 40 CFR 70 or 40 CFR 71 if the facility meets one or more of the applicability criteria in 40 CFR 70.3(a), 70.3(b), or 71.3(a) and 71.3(b).)</p> <p>Verify that gasoline is not handled in a manner that would result in vapor releases to the atmosphere for extended periods of time.</p>

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	<p>Verify that the following measure are taken, but are not limited to, the following:</p> <ul style="list-style-type: none"> <li>– minimize gasoline spills</li> <li>– clean up spills as expeditiously as practicable</li> <li>– cover all open gasoline containers and all gasoline storage tank fill-pipes with a gasketed seal when not in use</li> <li>– minimize gasoline sent to open waste collection systems that collect and transport gasoline to reclamation and recycling devices, such as oil/water separators.</li> </ul> <p>(NOTE: This checklist item applies to gasoline storage tanks and associated equipment components in vapor or liquid gasoline service at new, reconstructed, or existing GDF. Pressure/Vacuum vents on gasoline tanks and the equipment necessary to unload product from cargo tanks into the storage tanks at GDF are covered emission sources. The equipment used for the refueling of motor vehicles is not covered by this checklist item.)</p> <p>(NOTE: A GDF is a new affected source if construction on the GDF started after 9 November 2006 and all other applicability criteria are met at the time operation commenced. An affected source is reconstructed if it meets the criteria for reconstruction as defined in 40 CFR 63.2. An affected source is an existing affected source if it is not new or reconstructed.)</p> <p>(NOTE: According to 40 CFR 63.2, Reconstruction, means the replacement of components of an affected or a previously nonaffected source to such an extent that:</p> <ul style="list-style-type: none"> <li>– the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable new source; and</li> <li>– it is technologically and economically feasible for the reconstructed source to meet the relevant standard(s) established by the Administrator (or a State) pursuant to section 112 of the Act.</li> </ul> <p>Upon reconstruction, an affected source, or a stationary source that becomes an affected source, is subject to relevant standards for new sources, including compliance dates, irrespective of any change in emissions of HAPS from that source.)</p> <p>(NOTE: Owners or operators of these GDFs are not required to submit notifications or reports, but they must have records available within 24 h of a request by the Administrator to document gasoline throughput.)</p> <p>Verify that, if this facility is a new or reconstructed affected source, compliance is achieved:</p> <ul style="list-style-type: none"> <li>– no later than 10 January 2008 if the facility is started up before 10 January 2008</li> <li>– upon startup if the facility is started up after 10 January 2008.</li> </ul>

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<p><b>AE.55.9.US.</b> GDF with a monthly throughput of 10,000 gal or more of gasoline must meet specific emissions limitations and management practice requirements (40 CFR 63.11111(a), 63.11111(c), 63.11111(f), 63.11111(g), 63.11112, 63.11113, 63.11117, and 63.11124(a)) [Added April 2008; Revised July 2008].</p>	<p>Verify that, if this facility is an existing source, compliance is achieved no later than 10 January 2011.</p> <p>(NOTE: If an existing facility becomes subject to the control requirements because of an increase in the average monthly throughput, compliance must be achieved no later than 3 years after the affected source becomes subject to the control requirements.)</p> <p>Verify that, if the facility is a new or reconstructed affected source and is complying with Table 1 in Appendix 1-10a, the following are met:</p> <ul style="list-style-type: none"> <li>– if the affected source started up from 9 November 2006 to 23 September 2008, compliance must be achieved no later than 23 September 2008</li> <li>– if the affected source started up after 23 September 2008, compliance must be achieved upon startup of the affected source.</li> </ul> <p>Determine if the GDF has a monthly throughput of 10,000 gal of gasoline or more.</p> <p>(NOTE: This checklist item applies to each gasoline cargo tank during the delivery of product to a GDF and also includes each storage tank. This checklist item does not apply to the loading of aviation gasoline storage tanks at airports and the aviation gasoline is not included in the gasoline throughput amounts.)</p> <p>(NOTE: Owners or operators of sources to which this checklist item applies are not required to obtain a permit under 40 CFR 70 or 40 CFR 71 because they are required to meet these requirements. However, the owner/operator must still apply for and obtain a permit under 40 CFR 70 or 40 CFR 71 if the facility meets one or more of the applicability criteria in 40 CFR 70.3(a), 70.3(b), or 71.3(a) and 71.3(b).)</p> <p>Verify that gasoline is not handled in a manner that would result in vapor releases to the atmosphere for extended periods of time.</p> <p>Verify that the following measure are taken, but are not limited to, the following:</p> <ul style="list-style-type: none"> <li>– minimize gasoline spills</li> <li>– clean up spills as expeditiously as practicable</li> <li>– cover all open gasoline containers and all gasoline storage tank fill-pipes with a gasketed seal when not in use</li> <li>– minimize gasoline sent to open waste collection systems that collect and transport gasoline to reclamation and recycling devices, such as oil/water separators.</li> </ul> <p>Verify that gasoline is loaded into storage tanks only by utilizing submerged filling as follows:</p>

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	<ul style="list-style-type: none"> <li>– submerged fill pipes installed on or before 9 November 2006, are no more than 12 in from the bottom of the storage tank</li> <li>– submerged fill pipes installed after 9 November 2006, are no more than 6 in from the bottom of the storage tank.</li> </ul> <p>(NOTE: Gasoline storage tanks with a capacity of less than 250 gal are not required to comply with the submerged fill requirements but must comply only with all of the requirements in 40 CFR 63.11116 [see checklist item AE.55.8.US].)</p> <p>Verify that the facility has records available within 24 h of a request by the Administrator to document gasoline throughput.</p> <p>Verify that the facility submits an Initial Notification that they are subject to these requirements by 9 May 2008, or at the time they become subject to these control requirements.</p> <p>Verify that the Initial Notification contains the following information and is submitted to the applicable EPA Regional Office and delegated State authority:</p> <ul style="list-style-type: none"> <li>– the name and address of the owner and the operator</li> <li>– the address (i.e., physical location) of the GDF</li> <li>– a statement that the notification is being submitted in response to 40 CFR 63, Subpart CCCCCC and identifying the requirements 63.11117 (see checklist item AE.55.9.US) that apply.</li> </ul> <p>Verify that the Notification of Compliance Status is submitted to the applicable EPA Regional Office and the delegated State authority by the specified compliance date.</p> <p>Verify that the Notification of Compliance Status is signed by a responsible official who certifies its accuracy and indicates whether the source has complied with the requirements of 40 CFR 63, Subpart CCCCCC.</p> <p>(NOTE: If the facility is in compliance with the requirements 40 CFR 63, Subpart CCCCCC at the time the required Initial Notification required under paragraph is due, the Notification of Compliance Status may be submitted in lieu of the Initial Notification provided it contains required information.)</p> <p>(NOTE: If, prior to 10 January 2008, the facility is operating in compliance with an enforceable State, local, or tribal rule or permit that requires submerged fill, the facility is not required to submit an Initial Notification or a Notification of Compliance Status.)</p> <p>(NOTE: This checklist item applies to gasoline storage tanks and associated equipment components in vapor or liquid gasoline service at new, reconstructed, or existing GDF. Pressure/Vacuum vents on gasoline tanks and the equipment necessary to unload product from cargo tanks into the storage tanks at GDF are</p>

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<b>AE.55.10.US.</b> GDF with a monthly throughput of	<p>covered emission sources. The equipment used for the refueling of motor vehicles is not covered by this checklist item.)</p> <p>(NOTE: A GDF is a new affected source if construction on the GDF started after 9 November 2006 and all other applicability criteria are met at the time operation commenced. An affected source is reconstructed if it meets the criteria for reconstruction as defined in 40 CFR 63.2. An affected source is an existing affected source if it is not new or reconstructed.)</p> <p>(NOTE: According to 40 CFR 63.2, Reconstruction, means the replacement of components of an affected or a previously nonaffected source to such an extent that:</p> <ul style="list-style-type: none"> <li>– the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable new source</li> <li>– it is technologically and economically feasible for the reconstructed source to meet the relevant standard(s) established by the Administrator (or a State) pursuant to section 112 of the Act.</li> </ul> <p>Upon reconstruction, an affected source, or a stationary source that becomes an affected source, is subject to relevant standards for new sources, including compliance dates, irrespective of any change in emissions of HAPS from that source.)</p> <p>Verify that, if this facility is a new or reconstructed affected source, compliance is achieved:</p> <ul style="list-style-type: none"> <li>– no later than 10 January 2008 if the facility is started up before 10 January 2008</li> <li>– upon startup if the facility is started up after 10 January 2008.</li> </ul> <p>Verify that, if this facility is an existing source, compliance is achieved no later than 10 January 2011.</p> <p>(NOTE: If an existing facility becomes subject to the control requirements because of an increase in the average monthly throughput, compliance must be achieved no later than 3 yr after the affected source becomes subject to the control requirements.)</p> <p>Verify that, if the facility is a new or reconstructed affected source and is complying with Table 1 in Appendix 1-10a, the following are met:</p> <ul style="list-style-type: none"> <li>– if the affected source started up from 9 November 2006 to 23 September 2008, compliance must be achieved no later than 23 September 2008</li> <li>– if the affected source started up after 23 September 2008, compliance must be achieved upon startup of the affected source.</li> </ul> <p>Determine if the GDF has a monthly throughput of 100,000 gal of gasoline or more.</p>

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<p>100,000 gal or more of gasoline must meet specific emissions limitations and management practice requirements (40 CFR 63.11111(a), 63.11111(d), 63.11111(f), 63.11111(g), 63.11112, 63.11113, 63.11118(a) through 63.11118(d), and 63.11124(b)) [Added April 2008; Revised July 2008].</p>	<p>(NOTE: This checklist item applies to each gasoline cargo tank during the delivery of product to a GDF and also includes each storage tank. This checklist item does not apply to the loading of aviation gasoline storage tanks at airports and the aviation gasoline is not included in the gasoline throughput amounts.)</p> <p>(NOTE: Owners or operators of sources to which this checklist item applies are not required to obtain a permit under 40 CFR 70 or 40 CFR 71 because they are required to meet these requirements. However, the owner/operator must still apply for and obtain a permit under 40 CFR 70 or 40 CFR 71 if the facility meets one or more of the applicability criteria in 40 CFR 70.3(a), 70.3(b), or 71.3(a) and 71.3(b).)</p> <p>Verify that gasoline is not handled in a manner that would result in vapor releases to the atmosphere for extended periods of time.</p> <p>Verify that the following measure are taken, but are not limited to, the following:</p> <ul style="list-style-type: none"> <li>– minimize gasoline spills</li> <li>– clean up spills as expeditiously as practicable</li> <li>– cover all open gasoline containers and all gasoline storage tank fill-pipes with a gasketed seal when not in use</li> <li>– minimize gasoline sent to open waste collection systems that collect and transport gasoline to reclamation and recycling devices, such as oil/water separators.</li> </ul> <p>Verify that gasoline is loaded into storage tanks only by utilizing submerged filling as follows:</p> <ul style="list-style-type: none"> <li>– submerged fill pipes, installed on or before 9 November 2006, are no more than 12 in from the bottom of the storage tank</li> <li>– submerged fill pipes, installed after 9 November 2006, are no more than 6 in from the bottom of the storage tank.</li> </ul> <p>Verify that the management practices in Appendix 1-10a (Table 1) are met.</p> <p>(NOTE: If, prior to 10 January 2008, the facility satisfies both of the following requirements, the facility is deemed to be in compliance:</p> <ul style="list-style-type: none"> <li>– a vapor balance system is operated at the GDF that meets one of the following requirements <ul style="list-style-type: none"> <li>– achieves emissions reduction of at least 90 percent</li> <li>– operates using management practices at least as stringent as those in Table 1 Appendix 1-10a</li> </ul> </li> <li>– the gasoline dispensing facility is in compliance with an enforceable State, local, or tribal rule or permit that contains appropriate vapor balance requirements.)</li> </ul> <p>(NOTE: The following emission sources are not required to comply with the control requirements concerning management practices in Table 1 of Appendix 1-10a; vapor balance systems, or submerged filling:</p>

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	<ul style="list-style-type: none"> <li>– gasoline storage tanks with a capacity of less than 250 gal that are constructed after 10 January 2008</li> <li>– gasoline storage tanks with a capacity of less than 2,000 gal that were constructed before 10 January 2008</li> <li>– gasoline storage tanks equipped with floating roofs, or the equivalent.</li> </ul> <p>These tanks must meet the requirements in 40 CFR 63.11117 [see checklist item AE.55.9.US].)</p> <p>Verify that cargo tanks unloading at GDF comply with the management practices in Table 2 of Appendix 1-10a.</p> <p>(NOTE: This checklist item applies to gasoline storage tanks and associated equipment components in vapor or liquid gasoline service at new, reconstructed, or existing GDF. Pressure/Vacuum vents on gasoline tanks and the equipment necessary to unload product from cargo tanks into the storage tanks at GDF are covered emission sources. The equipment used for the refueling of motor vehicles is not covered by this checklist item.)</p> <p>(NOTE: A GDF is a new affected source if construction on the GDF started after 9 November 2006 and all other applicability criteria are met at the time operation commenced. An affected source is reconstructed if it meets the criteria for reconstruction as defined in 40 CFR 63.2. An affected source is an existing affected source if it is not new or reconstructed.)</p> <p>(NOTE: According to 40 CFR 63.2, Reconstruction, means the replacement of components of an affected or a previously nonaffected source to such an extent that:</p> <ul style="list-style-type: none"> <li>– the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable new source; and</li> <li>– it is technologically and economically feasible for the reconstructed source to meet the relevant standard(s) established by the Administrator (or a State) pursuant to section 112 of the Act.</li> </ul> <p>Upon reconstruction, an affected source, or a stationary source that becomes an affected source, is subject to relevant standards for new sources, including compliance dates, irrespective of any change in emissions of HAPS from that source.)</p> <p>Verify that, if this facility is a new or reconstructed affected source, compliance is achieved:</p> <ul style="list-style-type: none"> <li>– no later than 10 January 2008 if the facility is started up before 10 January 2008</li> <li>– upon startup if the facility is started up after 10 January 2008.</li> </ul> <p>Verify that, if this facility is an existing source, compliance is achieved no later than 10 January 2011.</p>

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<p><b>AE.55.11.US.</b> GDF with a monthly throughput of 100,000 gal or more of gasoline must meet specific testing, notification, recordkeeping, and reporting requirements (40 CFR, 63.11118(e), 63.11118(f), 63.11118(g), 63.11120, 63.11124(b), 63.11125, and 63.11126) [Added April 2008].</p>	<p>(NOTE: If an existing facility becomes subject to the control requirements because of an increase in the average monthly throughput, compliance must be achieved no later than 3 yr after the affected source becomes subject to the control requirements.)</p> <p>Verify that, if the facility is a new or reconstructed affected source and is complying with Table 1 in Appendix 1-10a, the following are met:</p> <ul style="list-style-type: none"> <li>– if the affected source started up from 9 November 2006 to 23 September 2008, compliance must be achieved no later than 23 September 2008</li> <li>– if the affected source started up after 23 September 2008, compliance must be achieved upon startup of the affected source.</li> </ul> <p>(NOTE: See checklist item AE.55.9.US for applicability and compliance date information.)</p> <p>Verify that, as applicable, each owner or operator of a required vapor balance system complies with the following requirement at initial installation and every 3 years thereafter:</p> <ul style="list-style-type: none"> <li>– demonstrate compliance with the leak rate and cracking pressure requirements for pressure-vacuum vent valves installed on the gasoline storage tanks using the following test methods: <ul style="list-style-type: none"> <li>– California Air Resources Board Vapor Recovery Test Procedure TP-201.1E,--Leak Rate and Cracking Pressure of Pressure/Vacuum Vent Valves, adopted October 8, 2003</li> <li>– alternative test methods and procedures in accordance with the alternative test method requirements in 40 CFR 63.7(f)</li> </ul> </li> <li>– demonstrate compliance with the static pressure performance requirement for the vapor balance system by conducting a static pressure test on the gasoline storage tanks using the following test methods: <ul style="list-style-type: none"> <li>– California Air Resources Board Vapor Recovery Test Procedure TP-201.3,--Determination of 2-Inch WC Static Pressure Performance of Vapor Recovery Systems of Dispensing Facilities, adopted April 12, 1996, and amended March 17, 1999</li> <li>– alternative test methods and procedures in accordance with the alternative test method requirements in 40 CFR 63.7(f).</li> </ul> </li> </ul> <p>Verify that each owner or operator choosing to use a vapor balance system other than that described in Table 1 of Appendix 1-10a demonstrates to the Administrator or delegated authority the equivalency of their vapor balance system to that described in Table 1 of Appendix 1-10a using the following procedures:</p> <ul style="list-style-type: none"> <li>– demonstrate initial compliance by conducting an initial performance test on the vapor balance system to demonstrate that the vapor balance system achieves 95 percent reduction using the California Air Resources Board Vapor</li> </ul>

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	<p>Recovery Test Procedure TP-201.1,--Volumetric Efficiency for Phase I Vapor Recovery Systems, adopted 12 April 1996, and amended 1 February 2001, and 8 October 2003</p> <ul style="list-style-type: none"> <li>– during the initial required performance test, determine and document alternative acceptable values for the leak rate and cracking pressure requirements specified in item 1(g) of Table 1 of Appendix 1-10a for the static pressure performance requirement in item 1(h) of Table 1 of Appendix 1-10a</li> <li>– comply with the testing requirements listed at the beginning of this checklist item.</li> </ul> <p>Verify that the owner/operator submits an Initial Notification that the facility is subject to 40 CFR 63, Subpart CCCCCC by 9 May 2008, or at the time the facility become subject to the control requirements in 40 CFR 63.11118 (see checklist item AE.55.10.US).</p> <p>Verify that the Initial Notification contains the following information and is submitted to the applicable EPA Regional Office and the delegated State authority:</p> <ul style="list-style-type: none"> <li>– the name and address of the owner and the operator</li> <li>– the address (i.e., physical location) of the GDF</li> <li>– a statement that the notification is being submitted in response to 40 CFR 63, Subpart CCCCCC identifying the requirements in 40 CFR 63.11118(a) through 63.11118(c) (see checklist item AE.55.10.US) that are applicable.</li> </ul> <p>Verify that a Notification of Compliance Status is submitted to the applicable EPA Regional Office and the delegated State authority, by the compliance date specified in 40 CFR 63.11113 (see checklist item AE.55.10.US).</p> <p>Verify that the Notification of Compliance Status is signed by a responsible official who certifies its accuracy and indicates whether the source has complied with the requirements of 40 CFR 63, Subpart CCCCCC</p> <p>(NOTE: If the facility is in compliance with the applicable requirements at the time the required Initial Notification is due, the Notification of Compliance Status may be submitted in lieu of the Initial Notification provided it contains the required information.)</p> <p>(NOTE: If, before 10 January 2008, the facility satisfies both of the following the requirements, the facility is not required to submit an Initial Notification or a Notification of Compliance Status:</p> <ul style="list-style-type: none"> <li>– the facility operates a vapor balance system at the gasoline dispensing facility that meets one of the following requirements of: <ul style="list-style-type: none"> <li>– achieves emissions reduction of at least 90 percent</li> <li>– operates using management practices at least as stringent as those in Table 1 of Appendix 1-10a</li> </ul> </li> </ul>

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<p><b>AE.55.12.US.</b> ECA marine fuel must have a maximum per-gallon sulfur content of 1,000 ppm (40 CFR 80.510(k)) [Added July 2010].</p> <p><b>AE.55.13.US.</b> Retailers and wholesale purchaser-consumers of gasoline-ethanol blends must meet specific labeling requirements (40 CFR 80.1501) [Added October 2011].</p>	<p>– the gasoline dispensing facility is in compliance with an enforceable State, local, or tribal rule or permit that contains either of the above requirements for the vapor balance system.</p> <p>Verify that a Notification of Performance Test is submitted prior to the start of required testing.</p> <p>Verify that each owner or operator subject to the management practices in 40 CFR 63.11118 (see checklist item AE.55.9.US) keeps records of all tests performed.</p> <p>Verify that required records are kept for a period of 5 years and are made available for inspection by the Administrator's delegated representatives during the course of a site visit.</p> <p>Verify that each owner or operator subject to the management practices in 40 CFR 63.11118(see checklist item AE.55.9.US) reports to the Administrator the results of all volumetric efficiency tests within 180 days of the completion of the performance testing.</p> <p>Verify that beginning 1 June 2014, all ECA marine fuel is subject to a maximum per-gallon sulfur content of 1,000 ppm.</p> <p>Verify that any retailer or wholesale purchaser-consumer who sells, dispenses, or offers for sale or dispensing, gasoline-ethanol blends that contain greater than 10.0 volume percent ethanol and not more than 15.0 volume percent ethanol affix the following conspicuous and legible label to the fuel dispenser:</p> <p>Attention E15  Up to 15% ethanol  Use only in 2001 and newer passenger vehicles  Flex-fuel vehicles  Don't use in other vehicles, boats, or gasoline-powered equipment.  It may cause damage and is prohibited by Federal law.</p> <p>Verify that the gasoline-ethanol blend labels meet the following requirements for appearance and placement:</p> <p>– the label measure 3 and 5/8 inches wide by 3 and 1/8 inches high.  – the label is placed on the upper two-thirds of each fuel dispenser where the consumer will see the label when selecting a fuel to purchase  – for dispensers with one nozzle, the label is placed above the button or other control used for selecting E15, or in any other manner which clearly indicates which control is used to select E15</p>

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<p><b>AE.55.14.US.</b> Certain documentation is required to accompany the transfer of a gasoline-ethanol blend, except for transfers to the ultimate consumer (40 CFR</p>	<ul style="list-style-type: none"> <li>– for dispensers with multiple nozzles, the label is placed in the location that is most likely to be seen by the consumer at the time of selection of E15</li> <li>– the text of the label is justified and the fonts and backgrounds are as follows: <ul style="list-style-type: none"> <li>– the word “Attention” is in 20-point, orange, Helvetica Neue LT 77 Bold Condensed font, and is placed in the top 1.25 inches of the label</li> <li>– the word “E15” is in 42-point, orange, Helvetica Black font, and is placed in the top 1.25 inches of the label</li> <li>– the ethanol content: “Up to 15% ethanol” is in 14-point, center-justified, orange, Helvetica Black font in the top 1.25 inches of the label, below the word E15</li> <li>– the words “Use only in” are in 20-point, left-justified, black, Helvetica Bold font in the top 1.25 inches of the label</li> <li>– the words, and symbols “2001 and newer passenger vehicles Flex-fuel vehicles” are in 14-point, left-justified, black, Helvetica Bold font</li> <li>– the remaining two sentences are in 12-point, left-justified, Helvetica Bold font, except that the word “prohibited” in the second sentence shall be in 12-point, black, Helvetica Black Italics font</li> <li>– the background of the top 1.25 inches of the label is black</li> <li>– the background of the bottom 1.75 inches of the label is orange</li> <li>– the upper left side of the label has a diagonal orange stripe that is .3125 inches tall and is placed as far down and across the label as is necessary so as to create a black triangle of the upper left corner of the label whose vertical side is contiguous to the vertical edge of the label and is .4375 inches long, and whose horizontal side is contiguous to the horizontal edge of the label and is 1.0 inches long</li> <li>– the word “Attention” is centered to the upper edge of the stripe.</li> </ul> </li> </ul> <p>(NOTE: Alternative labels to those specified may be used if approved by EPA in advance. Such labels must contain all of the specified informational elements and must use colors and other design elements similar in substance and appearance to the label required by this section. Such labels may differ in size and shape from the required label only to a small degree, except to the extent a larger label is necessary to accommodate additional information or translation of label information. If using U.S. Mail, send a request for approval of an alternative label to: U.S. EPA, Attn: E15 Alternative Label Request, 6406J, 1200 Pennsylvania Avenue, NW., Washington, DC 20460. If using an overnight or courier service, send a request for approval of an alternative label to: U.S. EPA, Attn: E15 Alternative Label Request, 6406J, 1310 L Street, NW., 6th Floor, Washington, DC 20005. (202) 343-9038.)</p> <p>Verify that, on each occasion after 31 October 2011, when any person transfers custody or title to any gasoline-ethanol blend downstream of an oxygenate blending facility (except for transfers to the ultimate consumer) the transferor provides to the transferee product transfer documents which include the following information:</p> <ul style="list-style-type: none"> <li>– the name and address of the transferor</li> </ul>

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80.1503(b)) [Added October 2011].	<ul style="list-style-type: none"> <li>– the name and address of the transferee</li> <li>– the volume of gasoline being transferred</li> <li>– the location of the gasoline at the time of the transfer</li> <li>– the date of the transfer</li> <li>– one of the following statements which accurately describes the gasoline-ethanol blend. <ul style="list-style-type: none"> <li>– for gasoline containing no ethanol (E0), the following statement; “E0: Contains no ethanol. The RVP does not exceed [fill in appropriate value] psi.”</li> <li>– for gasoline containing less than 9.0 volume percent ethanol, the following statement: “EX--Contains up to X% ethanol. The RVP does not exceed [fill in appropriate value] psi.” The term X refers to the maximum volume percent ethanol present in the gasoline.</li> <li>– for gasoline containing between 9.0 and 10.0 volume percent ethanol (E10), the following statement: “E10: Contains between 9 and 10 vol % ethanol. The RVP does not exceed [fill in appropriate value] psi. The 1.0 psi RVP waiver applies to this gasoline. Do not mix with gasoline containing anything other than between 9 and 10 vol % ethanol”</li> <li>– for gasoline containing greater than 10.0 volume percent and not more than 15.0 volume percent ethanol (E15), the following statement: “E15: Contains up to 15 vol % ethanol. The RVP does not exceed [fill in appropriate value] psi”</li> <li>– for all other gasoline that contains ethanol, the following statement: “EXX--Contains no more than XX% ethanol,” where XX equals the volume % ethanol.</li> </ul> </li> </ul> <p>(NOTE: The information regarding the ethanol content of the fuel is required year-round. The information regarding the RVP of the fuel is only required for gasoline during the regulatory control periods.)</p> <p>(NOTE: Except for transfers to truck carriers, retailers, or wholesale purchaser-consumers, product codes may be used to convey the required information if the codes are clearly understood by each transferee.)</p> <p>Verify that the required records are kept by the transferor and transferee for 5 yr from the date they were created or received by each party in the distribution system.</p> <p>(NOTE: On request by EPA, the required records required must be made available to the Administrator or the Administrator's authorized representative. For records that are electronically generated or maintained, the equipment or software necessary to read the records will made available, or, if requested by EPA, electronic records will converted to paper documents.)</p>

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<p><b>AE.57</b></p> <p><b>ORGANIC LIQUIDS DISTRIBUTION (NON-GASOLINE)</b></p> <p><b>AE.57.1.US.</b> Storage tanks at organic liquids distribution (OLD) operation affected sources must meet specific emissions limitations (40 CFR 63.2334, 63.2338, 63.2346(a) [Added April 2004; Revised January 2007].</p>	<p>(NOTE: This checklist item applies if the facility owns or operates an OLD operation that is located at, or is part of, a major source of HAP emissions. An OLD operation may occupy an entire plant site or be collocated with other industrial (e.g., manufacturing) operations at the same plant site. This checklist item applies to each new, reconstructed, or existing OLD operation affected source. The affected source is the collection of activities and equipment used to distribute organic liquids into, out of, or within a facility that is a major source of HAP. The affected source is composed of:</p> <ul style="list-style-type: none"> <li>– all storage tanks storing organic liquids</li> <li>– all transfer racks at which organic liquids are loaded into or unloaded out of transport vehicles and/or containers</li> <li>– all equipment leak components in organic liquids service that are associated with: <ul style="list-style-type: none"> <li>– storage tanks storing organic liquids</li> <li>– transfer racks loading or unloading organic liquids</li> <li>– pipelines that transfer organic liquids directly between two storage tanks that are subject 40 CFR Subpart EEEE</li> <li>– pipelines that transfer organic liquids directly between a storage tank subject to this subpart and a transfer rack subject to 40 CFR 63, Subpart EEEE</li> <li>– pipelines that transfer organic liquids directly between two transfer racks that are subject to 40 CFR 63, Subpart EEEE</li> </ul> </li> <li>– all transport vehicles while they are loading or unloading organic liquids at transfer racks subject to 40 CFR 63, Subpart EEEE</li> <li>– All containers while they are loading or unloading organic liquids at transfer racks subject to 40 CFR 63, Subpart EEEE.)</li> </ul> <p>(NOTE: This checklist item does not apply to:</p> <ul style="list-style-type: none"> <li>– organic liquid distribution operations located at research and development facilities, consistent with section 112(c)(7) of the CAA</li> <li>– the activities and equipment, including product loading racks, used to process, store, or transfer organic liquids at facilities as follow: <ul style="list-style-type: none"> <li>– oil and natural gas production field facilities, as the term “facility” is defined in 40 CFR 63.761</li> <li>– natural gas transmission and storage facilities, as the term “facility” is defined in 40 CFR 63.1271</li> </ul> </li> <li>– the following equipment used in the identified operations is excluded from the affected source:</li> </ul>

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	<ul style="list-style-type: none"> <li>– storage tanks, transfer racks, transport vehicles, containers, and equipment leak components that are part of an affected source under another 40 CFR 63 national emission standards for hazardous air pollutants (NESHAP)</li> <li>– non-permanent storage tanks, transfer racks, transport vehicles, containers, and equipment leak components when used in special situation distribution loading and unloading operations (such as maintenance or upset liquids management)</li> <li>– storage tanks, transfer racks, transport vehicles, containers, and equipment leak components when used to conduct maintenance activities, such as stormwater management, liquid removal from tanks for inspections and maintenance, or changeovers to a different liquid stored in a storage tank.)</li> </ul> <p>(NOTE: Under 40 CFR 63.761 “Facility” means any grouping of equipment where hydrocarbon liquids are processed, upgraded [i.e., remove impurities or other constituents to meet contract specifications], or stored prior to the point of custody transfer; or where natural gas is processed, upgraded, or stored prior to entering the natural gas transmission and storage source category. For the purpose of a major source determination, facility [including a building, structure, or installation] means oil and natural gas production and processing equipment that is located within the boundaries of an individual surface site as defined in this section. Equipment that is part of a facility will typically be located within close proximity to other equipment located at the same facility. Pieces of production equipment or groupings of equipment located on different oil and gas leases, mineral fee tracts, lease tracts, subsurface or surface unit areas, surface fee tracts, surface lease tracts, or separate surface sites, whether or not connected by a road, waterway, powerline or pipeline, shall not be considered part of the same facility. Examples of facilities in the oil and natural gas production source category include, but are not limited to, well sites, satellite tank batteries, central tank batteries, a compressor station that transports natural gas to a natural gas processing plant, and natural gas processing plants.)</p> <p>(NOTE: Under 40 CFR 63.1271 “Facility” for the purpose of a major source determination, means natural gas transmission and storage equipment that is located inside the boundaries of an individual surface site [as defined in this section] and is connected by ancillary equipment, such as gas flow lines or power lines. Equipment that is part of a facility will typically be located within close proximity to other equipment located at the same facility. Natural gas transmission and storage equipment or groupings of equipment located on different gas leases, mineral fee tracts, lease tracts, subsurface unit areas, surface fee tracts, or surface lease tracts shall not be considered part of the same facility.)</p> <p>(NOTE: An affected source is a new affected source if construction of the affected source started after 2 April 2002, and criteria were met at the time operation commenced. An affected source exists if it is not new or reconstructed.)</p>

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	<p>Verify that, for each storage tank storing organic liquids that meets the tank capacity and liquid vapor pressure criteria for control in Appendix 1-11b, the facility complies with one of the following:</p> <ul style="list-style-type: none"> <li>– meet the emission limits specified in Appendix 1-11b and comply with the applicable requirements specified in 40 CFR 63, subpart SS (40 CFR 63.980 through 63.999), for meeting emission limits, except substitute the term “storage tank” at each occurrence of the term “storage vessel” in Subpart SS</li> <li>– route emissions to fuel gas systems or back into the process as specified in 40 CFR 63, Subpart SS (40 CFR 63.980 through 63.999)</li> <li>– comply with 40 CFR 63, Subpart WW (control level 2) (40 CFR 63.1060 through 63.1067)</li> <li>– use a vapor balancing system that complies with the following requirements and with the recordkeeping requirements specified in 40 CFR 63.2390(e): <ul style="list-style-type: none"> <li>– the vapor balancing system is designed and operated to route organic HAP vapors displaced from loading of the storage tank to the transport vehicle from which the storage tank is filled</li> <li>– transport vehicles have a current certification in accordance with the United States Department of Transportation (U.S. DOT) pressure test requirements of 49 CFR part 180 for cargo tanks and 49 CFR 173.31 for tank cars</li> <li>– organic liquids are only unloaded from cargo tanks or tank cars when vapor collection systems are connected to the storage tank's vapor collection system</li> <li>– no pressure relief device on the storage tank, or on the cargo tank or tank car, opens during loading or as a result of diurnal temperature changes (breathing losses)</li> <li>– pressure relief devices are set to no less than 2.5 psig at all times to prevent breathing losses.</li> </ul> </li> </ul> <p>(NOTE: Pressure relief devices may be set at values less than 2.5 psig if the owner or operator provides rationale in the notification of compliance status report explaining why the alternative value is sufficient to prevent breathing losses at all times.)</p> <p>Verify that each pressure relief valve meets the following:</p> <ul style="list-style-type: none"> <li>– the pressure relief valve is monitored quarterly using the method described in 40 CFR 63.180(b)</li> <li>– an instrument reading of 500 ppmv or greater defines a leak</li> <li>– when a leak is detected, it is repaired as soon as practicable, but no later than 5 days after it is detected, and the owner or operator complies with the recordkeeping requirements of 40 CFR 63.181(d)(1) through (4).</li> </ul>

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<p><b>AE.57.2.US.</b> Transfer racks at OLD operation affected sources must meet specific emissions limitations (40 CFR 63.2346(b) and 63.2346(e) through 63.2346(j)) [Added April 2004; Revised January 2007; Revised July 2008].</p>	<p>Verify that cargo tanks and tank cars that deliver organic liquids to a storage tank are reloaded or cleaned at a facility that utilizes one of the following control techniques:</p> <ul style="list-style-type: none"> <li>– the cargo tank or tank car is connected to a closed-vent system with a control device that reduces inlet emissions of total organic HAP by 95 percent by weight or greater or to an exhaust concentration less than or equal to 20 ppmv, on a dry basis corrected to 3 percent oxygen for combustion devices using supplemental combustion air</li> <li>– a vapor balancing system designed and operated to collect organic HAP vapor displaced from the cargo tank or tank car during reloading is used to route the collected vapor to the storage tank from which the liquid being transferred originated or to another storage tank connected to a common header.</li> </ul> <p>Verify that the owner or operator of the facility where the cargo tank or tank car is reloaded or cleaned submits a written certification that the reloading or cleaning meets the requirements for a closed vent system and control device as specified in 40 CFR 63, subpart EEEE (see the checklist items in AE.57) is submitted to the owner or operator of the storage tank and to the Administrator.</p> <p>Verify that the notification of compliance status report identifies which subpart of 40 CFR 63 the owner or operator of the offsite reloading or cleaning facility is complying with.</p> <p>(NOTE: The certifying entity may revoke the written certification by sending a written statement to the owner or operator of the storage tank giving at least 90 days notice that the certifying entity is rescinding acceptance of responsibility for compliance.)</p> <p>(NOTE: See AE.57.1.US for the statements of applicability for this regulation.)</p> <p>Verify that for each transfer rack that is part of the collection of transfer racks that meets the total actual annual facility-level organic liquid loading volume criterion for control in Table 2, items 7 through 10 9 see Appendix 1-11b), the following are met for each arm in the transfer rack loading an organic liquid whose organic HAP content meets the organic HAP criterion for control:</p> <ul style="list-style-type: none"> <li>– meet the emission limits specified in Appendix 1-11b and comply with the applicable requirements for transfer racks specified in 40 CFR 63, Subpart SS (40 CFR 63.980 through 63.999), for meeting emission limits</li> <li>– route emissions to fuel gas systems or back into a process as specified in 40 CFR part 63, subpart SS</li> <li>– use a vapor balancing system that routes organic HAP vapors displaced from the loading of organic liquids into transport vehicles to the storage tank from which the liquid being loaded originated or to another storage tank connected to a common header</li> </ul>

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	<ul style="list-style-type: none"> <li>– use a vapor balancing system that routes the organic HAP vapors displaced from the loading of organic liquids into containers directly (e.g., no intervening tank or containment area such as a room) to the storage tank from which the liquid being loaded originated or to another storage tank connected to a common header.</li> </ul> <p>Verify that existing affected sources comply with the following during the loading of organic liquids into transport vehicles:</p> <ul style="list-style-type: none"> <li>– meet the emission limits specified in Appendix 1-11b and comply with the applicable requirements for transfer racks specified in 40 CFR 63, Subpart SS (40 CFR 63.980 through 63.999), for meeting emission limits</li> <li>– route emissions to fuel gas systems or back into a process as specified in 40 CFR part 63, subpart SS</li> <li>– use a vapor balancing system that routes organic HAP vapors displaced from the loading of organic liquids into transport vehicles to the storage tank from which the liquid being loaded originated or to another storage tank connected to a common header</li> </ul> <p>Verify that for new affected sources comply with the following during the loading of organic liquids into transport vehicles and containers:</p> <ul style="list-style-type: none"> <li>– meet the emission limits specified in Appendix 1-11b and comply with the applicable requirements for transfer racks specified in 40 CFR 63, Subpart SS (40 CFR 63.980 through 63.999), for meeting emission limits</li> <li>– route emissions to fuel gas systems or back into a process as specified in 40 CFR part 63, subpart SS</li> <li>– use a vapor balancing system that routes organic HAP vapors displaced from the loading of organic liquids into transport vehicles to the storage tank from which the liquid being loaded originated or to another storage tank connected to a common header</li> <li>– use a vapor balancing system that routes the organic HAP vapors displaced from the loading of organic liquids into containers directly (e.g., no intervening tank or containment area such as a room) to the storage tank from which the liquid being loaded originated or to another storage tank connected to a common header.</li> </ul> <p>(NOTE: If the total actual annual facility-level organic liquid loading volume at any affected source is equal to or greater than the loading volume criteria for control in Table 2 [see Appendix 1-11b], but at a later date is less than the loading volume criteria for control, compliance with the following is no longer required:</p> <ul style="list-style-type: none"> <li>– meet the emission limits specified in Appendix 1-11b and comply with the applicable requirements for transfer racks specified in 40 CFR 63, Subpart SS (40 CFR 63.980 through 63.999), for meeting emission limits</li> <li>– route emissions to fuel gas systems or back into a process as specified in 40 CFR part 63, subpart SS</li> </ul>

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	<p>– use a vapor balancing system that routes organic HAP vapors displaced from the loading of organic liquids into transport vehicles to the storage tank from which the liquid being loaded originated or to another storage tank connected to a common header.)</p> <p>Verify that, for new sources and reconstructed sources, if at a later date, the total actual annual facility-level organic liquid loading volume again becomes equal to or greater than the loading volume criteria for control in Table 2 )see Appendix 1-11b) , the owner or operator complies with the following immediately:</p> <ul style="list-style-type: none"> <li>– meet the emission limits specified in Appendix 1-11b and comply with the applicable requirements for transfer racks specified in 40 CFR 63, Subpart SS (40 CFR 63.980 through 63.999), for meeting emission limits</li> <li>– route emissions to fuel gas systems or back into a process as specified in 40 CFR part 63, subpart SS</li> <li>– use a vapor balancing system that routes organic HAP vapors displaced from the loading of organic liquids into transport vehicles to the storage tank from which the liquid being loaded originated or to another storage tank connected to a common header</li> <li>– use a vapor balancing system that routes the organic HAP vapors displaced from the loading of organic liquids into containers directly (e.g., no intervening tank or containment area such as a room) to the storage tank from which the liquid being loaded originated or to another storage tank connected to a common header.</li> </ul> <p>(NOTE: For existing sources, if at a later date, the total actual annual facility-level organic liquid loading volume again becomes equal to or greater than the loading volume criteria for control in Table 2 (see Appendix 1-11b), the owner or operator meets the required compliance schedule unless an alternative compliance schedule has been approved.)</p> <p>Verify that, for each high throughput transfer rack, the facility meets each operating limit in Appendix 1-11c for each control device used to comply whenever emissions from organic liquids are routed to the control device.</p> <p>Verify that, for each storage tank and low throughput transfer rack, the facility must comply with the requirements for monitored parameters as specified in 40 CFR 63, subpart SS (40 CFR 63.980 through 63.999) for storage vessels and low throughput transfer racks, respectively.</p> <p>(NOTE: Alternatively, the facility may comply with the operating limits in Appendix 1-11c.)</p> <p>Verify that, for non-combustion devices, if the facility elects to demonstrate compliance with a percent reduction requirement in Appendix 1-11b using total organic compounds (TOC) rather than organic HAP, the facility first demonstrates, subject to approval of the Administrator, that TOC is an appropriate surrogate for</p>

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<p><b>AE.57.3.US.</b> Pumps, valves, and sampling connections at OLD operation affected sources must meet specific emissions limitations (40 CFR 63.2346(c) and 63.2346(f)</p>	<p>organic HAP in this case; that is, for the storage tank(s) and/or transfer rack(s), the percent destruction of organic HAP is equal to or higher than the percent destruction of TOC.</p> <p>Verify that a demonstration of compliance with percent reduction is conducted prior to or during the initial compliance test.</p> <p>(NOTE: The facility may request approval from the Administrator to use an alternative to the emission limitations, operating limits, and work practice standards. When applying for such permission, the facility must follow the procedures in 40 CFR 63.177(b) through 40 CFR 63.177(e). If the facility applies for permission to use an alternative to the emission limitations, operating limits, and work practice standards, the facility must submit the information described in 40 CFR 63.6(g)(2).)</p> <p>(NOTE: Emission sources that are part of the affected source, but which are not subject to the provisions for storage tanks, transfer racks, equipment leak components, or transport vehicles are subject only to the requirements specified in 40 CFR 63.2386(d) about subsequent compliance reports [see checklist item AE.57.11.US].)</p> <p>(NOTE: Opening of a safety device is allowed at any time that it is required to avoid unsafe operating conditions.)</p> <p>Verify that, if the facility elects to comply by combining emissions from different emission sources in a single control device, the facility must comply with one of the provisions specified in 40 CFR 63.982(f) as follows:</p> <ul style="list-style-type: none"> <li>– comply with the applicable requirements for each kind of emissions in the stream</li> <li>– comply with the first set of the following requirements which apply to any individual emission stream that is included in the combined stream: <ul style="list-style-type: none"> <li>– the requirements of 40 CFR 63.982(a)(2) for process vents, including applicable monitoring, recordkeeping, and reporting</li> <li>– the requirements of 40 CFR 63.982(a)(3)(ii) for high throughput transfer racks, including applicable monitoring, recordkeeping, and reporting</li> <li>– the requirements of 40 CFR 63.982(a)(1) or 40 CFR 63.982(a)(3)(i) for control of emissions from storage vessels or low throughput transfer racks, including applicable monitoring, recordkeeping, and reporting.</li> </ul> </li> </ul> <p>(NOTE: See AE.57.1.US for the statements of applicability for this regulation.)</p> <p>Verify that, for each pump, valve, and sampling connection that operates in organic liquids service for at least 300 h/yr, the facility complies with the applicable requirements under 40 CFR 63, Subpart TT (control level 1) (40 CFR 63.1000</p>

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<p>through 63.2346(j)) [Added April 2004].</p>	<p>through 63.1018), Subpart UU (control level 2) (40 CFR 63.1019 through 63.1039), or Subpart H.</p> <p>(NOTE: Pumps, valves, and sampling connectors that are insulated to provide protection against persistent subfreezing temperatures are subject to the “difficult to monitor” provisions in the applicable subpart selected by the owner or operator. This applies only if the affected source has at least one storage tank or transfer rack that meets the applicability criteria for control in Appendix 1-11b.)</p> <p>Verify that, if the facility elects to demonstrate compliance with a percent reduction requirement in Appendix 1-11b using TOC rather than organic HAP, the facility first demonstrates, subject to approval of the Administrator, that TOC is an appropriate surrogate for organic HAP in this case; the percent destruction of organic HAP is equal to or higher than the percent destruction of TOC.</p> <p>Verify that a demonstration of compliance with percent reduction is conducted prior to or during the initial compliance test.</p> <p>(NOTE: The facility may request approval from the Administrator to use an alternative to the emission limitations, operating limits, and work practice standards. When applying for such permission, the facility must follow the procedures in 40 CFR 63.177(b) through 40 CFR 63.177(e). If the facility applies for permission to use an alternative to the emission limitations, operating limits, and work practice standards, the facility must submit the information described in 40 CFR 63.6(g)(2).)</p> <p>(NOTE: Emission sources that are part of the affected source, but which are not subject to the provisions for storage tanks, transfer racks, equipment leak components, or transport vehicles are only subject to the requirements specified in 40 CFR 63.2386(d) about subsequent compliance reporting [see checklist item AE.57.11.US].)</p> <p>(NOTE: Opening of a safety device is allowed at any time that it is required to avoid unsafe operating conditions.)</p> <p>Verify that, if the facility elects to comply by combining emissions from different emission sources in a single control device, the facility must comply with one of the provisions specified in 40 CFR 63.982(f) as follows:</p> <ul style="list-style-type: none"> <li>– comply with the applicable requirements for each kind of emissions in the stream</li> <li>– comply with the first set of the following requirements which apply to any individual emission stream that is included in the combined stream: <ul style="list-style-type: none"> <li>– the requirements of 40 CFR 63.982(a)(2) for process vents, including applicable monitoring, recordkeeping, and reporting</li> <li>– the requirements of 40 CFR 63.982(a)(3)(ii) for high throughput transfer racks, including applicable monitoring, recordkeeping, and reporting</li> </ul> </li> </ul>

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<p><b>AE.57.4.US.</b> Transport vehicles at OLD operation affected sources must meet specific emissions limitations (40 CFR 63.2346(d) and 63.2346(f) through 63.2346(j)) [Added April 2004; Revised April 2007].</p>	<ul style="list-style-type: none"> <li>– the requirements of 40 CFR 63.982(a)(1) or 63.982(a)(3)(i) for control of emissions from storage vessels or low throughput transfer racks, including applicable monitoring, recordkeeping, and reporting.</li> </ul> <p>(NOTE: See AE.57.1.US for the statements of applicability for this regulation.)</p> <p>Verify that for each transport vehicle equipped with vapor collection equipment that is loaded at a transfer rack that is subject to control based on the criteria specified in Appendix 1-11b the steps in 40 CFR 60.502(e) are followed to ensure that organic liquids are loaded only into vapor-tight transport vehicles and comply with the provisions in 40 CFR 60.502(f) through (i), except substitute the term "transport vehicle" at each occurrence of the term "tank truck" or "gasoline tank truck" in those paragraphs.</p> <p>(NOTE: 40 CFR 60.502(e) requires that loadings of liquid product into gasoline tank trucks be limited to vapor-tight gasoline tank trucks using the following procedures:</p> <ul style="list-style-type: none"> <li>– the owner or operator obtains the vapor tightness documentation described in 40 CFR 60.505(b) for each gasoline tank truck which is to be loaded at the affected facility</li> <li>– the owner or operator requires the tank identification number to be recorded as each gasoline tank truck is loaded at the affected facility</li> <li>– the owner or operator cross-checks each tank identification number with the file of tank vapor tightness documentation within 2 weeks after the corresponding tank is loaded, unless either of the following conditions is maintained: <ul style="list-style-type: none"> <li>– if less than an average of one gasoline tank truck per month over the last 26 weeks is loaded without vapor tightness documentation, then the documentation cross check is performed each quarter</li> <li>– if less than an average of one gasoline tank truck per month over the last 52 weeks is loaded without vapor tightness documentation, then the documentation cross check is performed semiannually</li> </ul> </li> <li>– if either the quarterly or semiannual cross-check reveals that these conditions were not maintained, the source returns to biweekly monitoring until such time as these conditions are again met</li> <li>– the terminal owner or operator notifies the owner or operator of each non-vapor-tight gasoline tank truck loaded at the affected facility within 1 week of the documentation cross-check</li> <li>– the terminal owner or operator takes steps assuring that the non vapor-tight gasoline tank truck is not reloaded at the affected facility until vapor tightness documentation for that tank is obtained</li> <li>– alternate procedures may be used upon application to, and approval by, the Administrator.)</li> </ul> <p>Verify that, for each transport vehicle without vapor collection equipment that is loaded at a transfer rack that is subject to control based on the criteria specified in</p>

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	<p>Appendix 1-11b, organic liquids are loaded only into transport vehicles that have a current certification in accordance with the DOT pressure test requirements in 49 CFR 180 for cargo tanks or 49 CFR 173.31 for tank cars.</p> <p>Verify that, if the facility elects to demonstrate compliance with a percent reduction requirement in Appendix 1-11b using TOC rather than organic HAP, the facility first demonstrates, subject to approval of the Administrator, that TOC is an appropriate surrogate for organic HAP in this case; the percent destruction of organic HAP is equal to or higher than the percent destruction of TOC.</p> <p>Verify that a demonstration of compliance with percent reduction is conducted prior to or during the initial compliance test.</p> <p>(NOTE: The facility may request approval from the Administrator to use an alternative to the emission limitations, operating limits, and work practice standards. When applying for such permission, the facility must follow the procedures in 40 CFR 63.177(b) through 63.177(e). If the facility applies for permission to use an alternative to the emission limitations, operating limits, and work practice standards, the facility must submit the information described in 40 CFR 63.6(g)(2).)</p> <p>(NOTE: Emission sources that are part of the affected source, but which are not subject to the provisions for storage tanks, transfer racks, equipment leak components, or transport vehicles, are subject only to the requirements specified in 40 CFR 63.2386(d) about subsequent compliance reporting [see checklist item AE.57.11.US].)</p> <p>(NOTE: Opening of a safety device is allowed at any time that it is required to avoid unsafe operating conditions.)</p> <p>Verify that, if the facility elects to comply by combining emissions from different emission sources in a single control device, the facility must comply with one of the provisions specified in 40 CFR 63.982(f) as follows:</p> <ul style="list-style-type: none"> <li>– comply with the applicable requirements for each kind of emissions in the stream</li> <li>– comply with the first set of the following requirements which apply to any individual emission stream that is included in the combined stream: <ul style="list-style-type: none"> <li>– the requirements of 40 CFR 63.982(a)(2) for process vents, including applicable monitoring, recordkeeping, and reporting</li> <li>– the requirements of 40 CFR 63.982(a)(3)(ii) for high throughput transfer racks, including applicable monitoring, recordkeeping, and reporting</li> <li>– the requirements of 40 CFR 63.982(a)(1) or 63.982(a)(3)(i) for control of emissions from storage vessels or low throughput transfer racks, including applicable monitoring, recordkeeping, and reporting.</li> </ul> </li> </ul>

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<p><b>AE.57.5.US.</b> OLD operation affected sources must meet general compliance requirements (40 CFR 63.2350) [Added April 2004; Revised July 2006].</p>	<p>(NOTE: See AE.57.1.US for the statements of applicability for this regulation.)</p> <p>Verify that the facility is in compliance with the emission limitations, operating limits, and work practice standards at all times when the following equipment is in OLD operation:</p> <ul style="list-style-type: none"> <li>– all storage tanks storing organic liquids</li> <li>– all transfer racks at which organic liquids are loaded into or unloaded out of transport vehicles and/or containers</li> <li>– all equipment leak components in organic liquids service that are associated with pipelines and with storage tanks and transfer racks storing, loading, or unloading organic liquids</li> <li>– all transport vehicles while they are loading or unloading organic liquids at transfer racks.</li> </ul> <p>Verify that the facility always operates and maintains the affected source, including air pollution control and monitoring equipment, according to the provisions in 40 CFR 63.6(e)(1)(i).</p> <p>Verify that the facility has developed and implemented a written startup, shutdown, and malfunction (SSM) plan in accordance with 40 CFR 63.6(e)(3).</p>
<p><b>AE.57.6.US.</b> OLD operation affected sources must conduct certain performance tests, design evaluations, and performance evaluations (40 CFR 63.2354) [Added April 2004].</p>	<p>(NOTE: See AE.57.1.US for the statements of applicability for this regulation.)</p> <p>Verify that, for each performance test conducted, the procedures specified in 40 CFR 63, Subpart SS (40 CFR 63.980 through 63.999) are used.</p> <p>Verify that, for each design evaluation conducted, the procedures specified in 40 CFR 63, Subpart SS are used.</p> <p>Verify that, for each performance evaluation of each continuous monitoring system (CMS) conducted, the requirements in 40 CFR 63.8(e) are met.</p> <p>Verify that, for nonflare control devices, each performance test is conducted according to the requirements in 40 CFR 63.7(e)(1), and either 40 CFR 63.988(b), 40 CFR 63.990(b), or 40 CFR 63.995(b), using the procedures specified in 40 CFR 63.997(e).</p> <p>Verify that three separate test runs are conducted for each performance test on a nonflare control device as specified in 40 CFR 63.7(e)(3) and in 63.997(e)(1)(v) as follows.</p> <ul style="list-style-type: none"> <li>– each performance test consists of three separate runs using the applicable test method</li> <li>– each run is conducted for at least 1 h and under the conditions specified</li> </ul>

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	<ul style="list-style-type: none"> <li>– for the purpose of determining compliance with an applicable standard, the arithmetic means of results of the three runs applies</li> <li>– in the event that a sample is accidentally lost or conditions occur in which one of the three runs must be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances, beyond the owner or operator's control, compliance may, upon the Administrator's approval, be determined using the arithmetic mean of the results of the two other runs.</li> </ul> <p>Verify that each test run lasts at least 1 h, except as provided in 40 CFR 63.997(e)(1)(v)(A) and (B) as follows:</p> <ul style="list-style-type: none"> <li>– for control devices used to control emissions from transfer racks (except low throughput transfer racks that are capable of continuous vapor processing but do not handle continuous emissions or multiple loading arms of a transfer rack that load simultaneously), each run shall represent at least one complete tank truck or tank car loading period, during which regulated materials are loaded, and samples are collected using integrated sampling or grab samples taken at least four times per hour at approximately equal intervals of time, such as 15-min intervals</li> <li>– for intermittent vapor processing systems used for controlling transfer rack emissions (except low throughput transfer racks that do not handle continuous emissions or multiple loading arms of a transfer rack that load simultaneously), each run represents at least one complete control device cycle, and samples are collected using integrated sampling or grab samples taken at least four times per hour at approximately equal intervals of time, such as 15-min intervals.</li> </ul> <p>(NOTE: In addition to EPA Method 25 or 25A of 40 CFR 60, appendix A, to determine compliance with the organic HAP or TOC emission limit, EPA Method 18 of 40 CFR 60, appendix A may be used.)</p> <p>Verify that, if EPA Method 18 is used to measure compliance with the percentage efficiency limit:</p> <ul style="list-style-type: none"> <li>– first determine which organic HAP are present in the inlet gas stream (i.e., uncontrolled emissions) using knowledge of the organic liquids or the screening procedure described in EPA Method 18</li> <li>– in conducting the performance test, the facility analyzes samples collected as specified in EPA Method 18, simultaneously at the inlet and outlet of the control device</li> <li>– quantify the emissions for the same organic HAP identified as present in the inlet gas stream for both the inlet and outlet gas streams of the control device.</li> </ul> <p>Verify that, if the facility uses EPA Method 18 of 40 CFR 60, appendix A, to measure compliance with the emission concentration limit:</p>

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<p><b>AE.57.7.US.</b> OLD operation affected sources must conduct certain performance tests and initial compliance demonstrations by certain dates (40 CFR 63.2358) [Added April 2004; Revised July 2008].</p>	<ul style="list-style-type: none"> <li>– first determine which organic HAP are present in the inlet gas stream using knowledge of the organic liquids or the screening procedure described in EPA Method 18</li> <li>– in conducting the performance test, analyze samples collected as specified in EPA Method 18 at the outlet of the control device</li> <li>– quantify the control device outlet emission concentration for the same organic HAP identified as present in the inlet or uncontrolled gas stream.</li> </ul> <p>(NOTE: If a principal component of the uncontrolled or inlet gas stream to the control device is formaldehyde, the facility may use EPA Method 316 of 40 CFR 63, appendix A instead of EPA Method 18 of 40 CFR 60, appendix A, for measuring the formaldehyde. If formaldehyde is the predominant organic HAP in the inlet gas stream, the facility may use EPA Method 316 alone to measure formaldehyde either at the inlet and outlet of the control device using the formaldehyde control efficiency as a surrogate for total organic HAP or TOC efficiency, or at the outlet of a combustion device for determining compliance with the emission concentration limit.)</p> <p>Verify that the facility does not conduct performance tests during periods of SSM, as specified in 40 CFR 63.7(e)(1).</p> <p>(NOTE: To determine the HAP content of the organic liquid, the facility may use EPA Method 311 of 40 CFR 63, appendix A, or other method approved by the Administrator. In addition, the facility may use other means, such as voluntary consensus standards, MSDS, or certified product data sheets, to determine the HAP content of the organic liquid. If the method selected to determine the HAP content provides HAP content ranges, use the upper end of each HAP content range in determining the total HAP content of the organic liquid. The EPA may require the facility to test the HAP content of an organic liquid using EPA Method 311 or other method approved by the Administrator. If the results of the EPA Method 311 [or any other approved method] are different from the HAP content determined by another means, the EPA Method 311 [or approved method] results will govern.)</p> <p>(NOTE: See AE.57.1.US for the statements of applicability for this regulation.)</p> <p>Verify that initial performance tests and design evaluations are conducted according to the schedule in 40 CFR 63.7(a)(2), or by the compliance date specified in any applicable State or Federal new source review construction permit to which the affected source is already subject, whichever is earlier.</p> <p>Verify that, for storage tanks and transfer racks at existing affected sources complying with the emission limitations listed in Appendix 1-11b initial compliance with the emission limitations is demonstrated within 180 days after 5 February 2007 except as follows:</p>

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<p><b>AE.57.8.US.</b> OLD operation affected sources must conduct follow-up performance tests (40 CFR 63.2362) [<b>Added April 2004</b>].</p>	<ul style="list-style-type: none"> <li>– for storage tanks with existing internal or external floating roof complying with item 1.a.ii in Appendix 1-11b and item 1.a in Appendix 1-11d, the initial compliance demonstration is done the next time the storage tank is emptied and gassed, but not later than 3 February 2014</li> <li>– for storage tanks complying with item 1.a.ii or 6.a.ii in Appendix 1-11b and item 1.b, 1.c, or 2 in Appendix 1-11d compliance must be done within 180 days after 25 April 2011.</li> </ul> <p>Verify that, for storage tanks and transfer racks at reconstructed or new affected sources complying with the emission limitations listed in Appendix 1-11b, the initial compliance demonstration with the emission limitations is conducted within 180 days after the initial startup date for the affected source or 3 February 2004, whichever is later.</p> <p>Verify that, for storage tanks at existing affected sources complying with the work practice standard in Appendix 1-11d, the initial compliance demonstration as follows:</p> <ul style="list-style-type: none"> <li>– for storage tanks with an existing internal or external floating roof complying with item 1.a of Appendix 1-11d, conduct the initial compliance demonstration the next time the storage tank is emptied and degassed, but not later than 3 February 2014</li> <li>– for tanks not specified above, comply within 180 days after 25 April 2011.</li> </ul> <p>Verify that, for transfer racks and equipment leak components at existing affected sources complying with the work practice standards in Appendix 1-11d, the initial compliance demonstration is conducted within 180 days after 5 February 2007.</p> <p>Verify that, for storage tanks, transfer racks, and equipment leak components at reconstructed or new affected sources complying with the work practice standards in Appendix 1-11d, the initial compliance demonstration is conducted within 180 days after the initial startup date for the affected source.</p> <p>(NOTE: See AE.57.1.US for the statements of applicability for this regulation.)</p> <p>Verify that, for nonflare control devices, subsequent performance testing is conducted as required in Appendix 1-11e, item 1, at any time the EPA requests the facility to, in accordance with section 114 of the CAA.</p> <p>Verify that for each transport vehicle that the facility owns that is equipped with vapor collection equipment and loads organic liquids at an affected transfer rack, the facility performs the vapor tightness testing required in Appendix 1-11e, item 2, on that transport vehicle at least once per year.</p> <p>Verify that, for facility-owned transport vehicles that do not have vapor collection equipment, current certification is maintained in accordance with the U.S. DOT</p>

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<p><b>AE.57.9.US.</b> OLD operation affected sources must meet monitoring, operation, and maintenance requirements (40 CFR 63.2362) [Added April 2004].</p>	<p>pressure test requirements in 49 CFR 180 for cargo tanks or 49 CFR 173.31 for tank cars.</p> <p>(NOTE: See AE.57.1.US for the statements of applicability for this regulation.)</p> <p>Verify that the facility installs, operates, and maintains a CMS on each control device required in order to achieve compliance.</p> <p>Verify that, if you use a continuous parameter monitoring system (CPMS), the facility complies with the applicable requirements for CPMS in 40 CFR 63, Subpart SS (40 CFR 63.980 through 63.999) for the control device being used.</p> <p>Verify that, if a continuous emissions monitoring system (CEMS) is used, the facility complies with the requirements in 40 CFR 63.8.</p> <p>Verify that, for nonflare control devices controlling storage tanks and low throughput transfer racks, a monitoring plan is submitted according to the requirements in 40 CFR 63, Subpart SS for monitoring plans.</p>
<p><b>AE.57.10.US.</b> OLD operation affected sources must demonstrate initial compliance with emissions limits, operating limits, and work practice standards (40 CFR 63.2370) [Added April 2004].</p>	<p>(NOTE: See AE.57.1.US for the statements of applicability for this regulation.)</p> <p>Verify that the facility demonstrates initial compliance with each emission limitation and work practice standard that applies as specified in Appendices 1-11f and 1-11g subpart.</p> <p>Verify that the facility demonstrates initial compliance with the operating limits requirements specified in 40 CFR 63.2346(e) (see checklist items AE.57.1.US and AE.57.2.US) by establishing the operating limits during the initial performance test or design evaluation.</p> <p>Verify that the facility submits the results of the initial compliance demonstration in the Notification of Compliance Status according to the requirements in 40 CFR 63.2382(b) (see checklist item AE.57.10.US).</p>
<p><b>AE.57.11.US.</b> OLD operation affected sources must demonstrate initial compliance with monitoring requirements (40 CFR 63.2374) [Added April 2004].</p>	<p>(NOTE: See AE.57.1.US for the statements of applicability for this regulation.)</p> <p>Verify that monitoring and the collection of data is done according to 40 CFR 63, Subpart SS (40 CFR 63.980 through 63.999).</p> <p>Verify that, when using a control device to comply, the facility monitors continuously or collects data at all required intervals at all times that the emission source and control device are in OLD operation, except for CMS malfunctions (including any malfunction preventing the CMS from operating properly),</p>

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<b>AE.57.12.US.</b> OLD operation affected sources must demonstrate continuous compliance (40 CFR 63.2378) [Added April 2004; Revised July 2006].	<p>associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments).</p> <p>Verify that data recorded during CMS malfunctions, associated repairs, required quality assurance or control activities, or periods when emissions from organic liquids are not routed to the control device in data averages and calculations used to report emission or operating levels.</p> <p>Verify that data recorded during CMS malfunctions, associated repairs, required quality assurance or control activities, or periods when emissions from organic liquids are not routed to the control device is not used in fulfilling a minimum data availability requirement, if applicable.</p> <p>(NOTE: Data collected during all other periods, including periods of SSM, is used in assessing the operation of the control device.)</p> <p>(NOTE: See AE.57.1.US for the statements of applicability for this regulation.)</p> <p>Verify that continuous compliance is demonstrated with each emission limitation, operating limit, and work practice standard in Appendices 1-11b through 1-11d that applies according to the methods specified in 40 CFR 63, Subpart SS (40 CFR 63.980 through 63.999) and in Appendices 1-11h through 1-11j.</p> <p>Verify that the requirements in 40 CFR 63.6(e)(1) and 63.6(e)(3) are met during periods of startup, shutdown, malfunction, or nonoperation of the affected source or any part thereof.</p> <p>Verify that the emission limitations apply at all times except during periods of nonoperation of the affected source (or specific portion thereof) resulting in cessation of the emissions.</p> <p>Verify that the owner or operator does not shut down control devices or monitoring systems that are required or utilized for achieving compliance during periods of SSM while emissions are being routed to such items of equipment if the shutdown would contravene requirements applicable to such items of equipment.</p> <p>(NOTE: This does not apply if the item of equipment is malfunctioning. This also does not apply if the owner or operator shuts down the compliance equipment (other than monitoring systems) to avoid damage due to a contemporaneous SSM of the affected source or portion thereof.</p> <p>Verify that if the owner or operator has reason to believe that monitoring equipment would be damaged due to a contemporaneous SSM of the affected source or a portion of the affected source, the owner or operator must provide documentation supporting such a claim in the next Compliance report.</p>

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<p><b>AE.57.13.US.</b> OLD operation affected sources must submit certain notifications (40 CFR 63.2382) [Added April 2004].</p>	<p>Verify that, once approved by the Administrator, the provision for ceasing to collect, during an SSM, monitoring data that would otherwise be required is incorporated into the SSM plan.</p> <p>Verify that, during SSM, the facility implements, to the extent reasonably available, measures to prevent or minimize excess emissions.</p> <p>(NOTE: The term “excess emissions” means emissions greater than those allowed by the emission limits that apply during normal operational periods. The measures to be taken must be identified in the SSM plan, and may include, but are not limited to, air pollution control technologies, recovery technologies, work practices, pollution prevention, monitoring, and/or changes in the manner of operation of the affected source. Back-up control devices are not required, but may be used if available.)</p> <p>(NOTE: The emission limitations apply during periods of SSM, except as provided above. If an SSM, or period of nonoperation of one portion of the affected source does not affect the ability of a particular emission source to comply with the emission limitations to which it is subject, then that emission source is still required to comply with the applicable emission limitations of this subpart during the startup, shutdown, malfunction, or period of nonoperation.)</p> <p>Verify that periods of planned routine maintenance of a control device used to control storage tanks or transfer racks, during which the control device does not meet the emission limits in Appendix 1-11b, does not exceed 240 h per year.</p> <p>Verify that, if the facility elects to route emissions from storage tanks or transfer racks to a fuel gas system or to a process, as allowed by 40 CFR 63.982(d), to comply with the emission limits in Appendix 1-11b, the total aggregate amount of time during which the emissions bypass the fuel gas system or process during the calendar year without being routed to a control device, for all reasons (except SSM or product changeovers of flexible operation units and periods when a storage tank has been emptied and degassed), does not exceed 240 h.</p> <p>(NOTE: See AE.57.1.US for the statements of applicability for this regulation.)</p> <p>Verify that each notification in 40 CFR 63, Subpart SS (40 CFR 63.980 through 63.999), Appendix 1-11L is submitted according to schedule.</p> <p>Verify that, if the affected source is started before 3 February 2004, the Initial Notification is submitted no later than 120 calendar days after 3 February 2004.</p> <p>Verify that, if a new or reconstructed affected source is started on or after 3 February 2004, the Initial Notification is submitted no later than 120 days after initial startup.</p>

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<p><b>AE.57.14.US.</b> OLD operation affected sources must submit certain reports (40 CFR 63.2386) [Added April 2004].</p>	<p>Verify that, if the facility is required to conduct a performance test, the Notification of Intent to conduct the test is submitted at least 60 calendar days before it is initially scheduled to begin.</p> <p>Verify that, if the facility is required to conduct a performance test, design evaluation, or other initial compliance demonstration as specified in Appendices 1-11e through 1-11g, a Notification of Compliance Status is submitted.</p> <p>Verify that the Notification of Compliance Status includes the information required in 40 CFR 63.999(b) and the following information:</p> <ul style="list-style-type: none"> <li>– the results of any applicability determinations, emission calculations, or analyses used to identify and quantify organic HAP emissions from the affected source</li> <li>– the results of emissions profiles, performance tests, engineering analyses, design evaluations, flare compliance assessments, inspections and repairs, and calculations used to demonstrate initial compliance according to Appendices 1-11f and 1-11g</li> <li>– for performance tests, include descriptions of sampling and analysis procedures and quality assurance procedures</li> <li>– descriptions of monitoring devices, monitoring frequencies, and the operating limits established during the initial compliance demonstrations, including data and calculations to support the established levels</li> <li>– listing of all operating scenarios</li> <li>– descriptions of worst-case operating and/or testing conditions for the control device(s)</li> <li>– identification of emission sources subject to overlapping requirements described in 40 CFR 63.2396 and the authority under which compliance is achieved</li> <li>– the applicable information specified in 40 CFR 63.1039(a)(1) through (3) for all pumps and valves subject to the work practice standards for equipment leak components in Appendix 1-11d, item 3.</li> <li>– if the facility is complying with the vapor balancing work practice standard for transfer racks according to Appendix 1-11d, item 2.a, include a statement to that effect, and a statement that the pressure vent settings on the affected storage tanks are greater than or equal to 2.5 psig.</li> </ul> <p>(NOTE: See AE.57.1.US for the statements of applicability for this regulation.)</p> <p>Verify that each report in 40 CFR 63, Subpart SS (40 CFR 63.980 through 63.999), Appendix 1-11k, Appendix 1-11L is submitted as applicable.</p> <p>Verify that, unless the Administrator has approved a different schedule for submission of reports, each report is submitted according to Appendix 1-11k and</p>

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	<p>by the dates shown in 40 CFR 63, Subpart SS, or by the dates shown in Appendix 1-11L, whichever are applicable:</p> <p>Verify that the first Compliance report covers the period beginning on the compliance date that is specified for a affected source in 40 CFR 63.2342 and ending on 30 June or 31 December, whichever date is the first date following the end of the first calendar half after the compliance date that is specified for the affected source in 40 CFR 63.2342.</p> <p>Verify that the first Compliance report is postmarked no later than 31 July or 31 January, whichever date follows the end of the first calendar half after the compliance date that is specified for the affected source in 40 CFR 63.2342.</p> <p>Verify that each subsequent Compliance report covers the semiannual reporting period from 1 January through 30 June or the semiannual reporting period from 1 July through 31 December.</p> <p>Verify that each subsequent Compliance report is postmarked no later than 31 July or 31 January, whichever date is the first date following the end of the semiannual reporting period.</p> <p>(NOTE: Each affected source that is subject to permitting regulations under 40 CFR 70 or 40 CFR 71, if the permitting authority has established dates for submitting semiannual reports may submit the first and subsequent compliance reports according to the dates the permitting authority has established.)</p> <p>Verify that the first compliance report contains the following information:</p> <ul style="list-style-type: none"> <li>– company name and address</li> <li>– statement by a responsible official, including the official's name, title, and signature, certifying that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete</li> <li>– date of report and beginning and ending dates of the reporting period</li> <li>– any changes to the information listed in 40 CFR 63.2382(d)(1) (see checklist item AE.57.10.US) that have occurred since the submittal of the Notification of Compliance Status</li> <li>– if the facility had an SSM during the reporting period and took actions consistent with the SSM plan, the Compliance report must include the information described in 40 CFR 63.10(d)(5)(i)</li> <li>– if there are no deviations from any emission limitation or operating limit that applies to the facility and there are no deviations from the requirements for work practice standards, a statement that there were no deviations from the emission limitations, operating limits, or work practice standards during the reporting period</li> </ul>

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	<ul style="list-style-type: none"> <li>– if there were no periods during which the CMS was out of control, a statement that there were no periods during which the CMS was out of control during the reporting period</li> <li>– for closed vent systems and control devices used to control emissions, the following information for those planned routine maintenance activities that would require the control device to not meet the applicable emission limit               <ul style="list-style-type: none"> <li>– a description of the planned routine maintenance that is anticipated to be performed for the control device during the next 6 mo, including, the type of maintenance necessary, planned frequency of maintenance, and lengths of maintenance periods</li> <li>– a description of the planned routine maintenance that was performed for the control device during the previous 6 mo, including the type of maintenance performed and the total number of hours during those 6 mo that the control device did not meet the applicable emission limit due to planned routine maintenance</li> </ul> </li> <li>– a listing of all emission sources that are part of the affected source but are not subject to any of the emission limitations, operating limits, or work practice standards</li> <li>– a listing of all transport vehicles into which organic liquids were loaded at affected transfer racks during the previous 6 mo for which vapor tightness documentation as required in 40 CFR 63.2390(d) (see checklist item AE.57.12.US) was not on file at the facility.</li> </ul> <p>Verify that subsequent Compliance reports contain the same information as the first Compliance report and the following items as applicable:</p> <ul style="list-style-type: none"> <li>– for each deviation from an emission limitation occurring at an affected source where a CMS is used to comply with an emission limitation, the Compliance report includes the following applicable information, including periods of SSM:               <ul style="list-style-type: none"> <li>– the date and time that each malfunction started and stopped</li> <li>– the dates and times that each CMS was inoperative, except for zero (low-level) and high-level checks</li> <li>– for each CMS that was out of control, the information in 40 CFR 63.8(c)(8)</li> <li>– the date and time that each deviation started and stopped, and whether each deviation occurred during a period of SSM, or during another period</li> <li>– a summary of the total duration of the deviations during the reporting period, and the total duration as a percentage of the total emission source operating time during that reporting period</li> <li>– a breakdown of the total duration of the deviations during the reporting period into those that are due to startup, shutdown, control equipment problems, process problems, other known causes, and other unknown causes</li> </ul> </li> </ul>

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<p><b>AE.57.15.US.</b> OLD operation affected sources requiring control must keep certain records (40 CFR 63.2390(b) and 63.2394) [Added April 2004; Revised January 2007].</p>	<ul style="list-style-type: none"> <li>– a summary of the total duration of CMS downtime during the reporting period, and the total duration of CMS downtime as a percentage of the total emission source operating time during that reporting period</li> <li>– an identification of each organic HAP that was potentially emitted during each deviation based on the known organic HAP contained in the liquid(s)</li> <li>– a brief description of the emission source(s) at which the CMS deviation(s) occurred</li> <li>– a brief description of each CMS that was out of control during the period</li> <li>– the date of the latest certification or audit for each CMS</li> <li>– a brief description of any changes in CMS, processes, or controls since the last reporting period</li> <li>– for each storage tank and transfer rack subject to control requirements, the periods of planned routine maintenance during which the control device did not comply with the applicable emission limits in Appendix 1-11b</li> <li>– for each storage tank controlled with a floating roof, a copy of the inspection record (required in 40 CFR 63.1065(b)) when inspection failures occur</li> <li>– an extension for a floating roof inspection including the required documentation</li> <li>– each new operating scenario which has occurred since the time period covered by the last Compliance report including providing verification that the established operating conditions for any associated control device have not been exceeded and that any required calculations and engineering analyses have been performed.</li> </ul> <p>Verify that each affected source that has obtained a Title V operating permit pursuant to 40 CFR 70 or 40 CFR 71 reports all deviations as defined in the semiannual monitoring report.</p> <p>(NOTE: If an affected source submits a compliance report pursuant to Appendix 1-11k along with, or as part of, the semiannual monitoring report and the Compliance report includes all required information concerning deviations from any emission limitation in this subpart, the State will consider submission of the Compliance report as satisfying any obligation to report the same deviations in the semiannual monitoring report. However, submission of a Compliance report will not otherwise affect any obligation the affected source may have to report deviations from permit requirements to the applicable Title V permitting authority.)</p> <p>(NOTE: See AE.57.1.US for the statements of applicability for this regulation.)</p> <p>Verify that the facility keeps all records identified in 40 CFR 63, Subpart SS (40 CFR 63.980 through 63.999) and in Appendix 1-11L that are applicable, including records related to notifications and reports, SSM, performance tests, CMS, and performance evaluation plans.</p>

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	<p>Verify that the records required to show continuous compliance are kept as required in 40 CFR 63, Subpart SS and in Appendix 1-11h through Appendix 1-11j, with each emission limitation, operating limit, and work practice standard that applies.</p> <p>Verify that, for each transport vehicle into which organic liquids are loaded at a transfer rack that is subject to control based on the criteria specified in Appendix 1-11b, items 7 through 10, the following records are kept:</p> <ul style="list-style-type: none"> <li>– for transport vehicles equipped with vapor collection equipment, the documentation described in 40 CFR 60.505(b), except that the test title is: Transport Vehicle Pressure Test-EPA Reference Method 27</li> <li>– for transport vehicles without vapor collection equipment, current certification in accordance with the U.S. DOT pressure test requirements in 49 CFR 180 for cargo tanks or 49 CFR 173.31 for tank cars.</li> </ul> <p>(NOTE: Instead of keeping the above records for each transport vehicle into which organic liquids are loaded at an affected transfer rack, the owner or operator may record that the verification of U.S. DOT tank certification or Method 27 of 40 CFR 60, appendix A, required in 40 CFR 63, Subpart EEEE, Table 5, item 2, has been performed. Various methods for the record of verification can be used, such as: a check-off on a log sheet, a list of U.S. DOT serial numbers or Method 27 data, or a position description for gate security showing that the security guard will not allow any trucks on site that do not have the appropriate documentation.)</p> <p>Verify that records of the total actual annual facility-level organic liquid loading volume through transfer racks to document the applicability of the emission limitations in Appendix 1-11b, items 7 through 10.</p> <p>Verify that an owner or operator who elects to comply with the requirements for vapor balancing systems (see 40 CFR 63.2346(a)(4), checksit item AE.57.1.US) keeps the following records:</p> <ul style="list-style-type: none"> <li>– a record of the U.S. DOT certification</li> <li>– a record of the pressure relief vent setting.</li> </ul> <p>Verify that an owner or operator who elects to comply with 40 CFR 63.2348(a)(4)(vi)(B), keep the following records:</p> <ul style="list-style-type: none"> <li>– a record of the equipment to be used and the procedures to be followed when reloading the cargo tank or tank car and displacing vapors to the storage tank from which the liquid originates</li> <li>– a record of each time the vapor balancing system is used to comply with 40 CFR 63.2348(a)(4)(vi)(B).</li> </ul>

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<b>AE.57.16.US.</b> Storage tanks at organics liquid distribution (OLDS) operation affected sources which are otherwise exempted, must meet notification, recordkeeping, and reporting (40 CFR 63.2338 and 63.2343) [Added January 2007; Revised July 2008].	<p>Verify that records are in a form suitable and readily available for expeditious inspection and review, including records stored in electronic form at a separate location.</p> <p>Verify that files of all information (including all reports and notifications) are kept for at least 5 yr following the date of each occurrence, measurement, maintenance, corrective action, report, or record.</p> <p>Verify that each record is kept onsite for at least 2 yr after the date of each occurrence, measurement, maintenance, corrective action, report, or record.</p> <p>(NOTE: The facility may keep the records offsite for the remaining 3 yr.)</p> <p>Verify that, for each storage tank having a capacity of less than 18.9 m<sup>3</sup> (5,000 gal) and for each transfer rack that only unloads organic liquids (i.e., no organic liquids are loaded at any of the transfer racks), documentation is kept that verifies that each storage tank and transfer rack is not required to be controlled.</p> <p>Verify that the documentation is kept up-to-date (i.e., all such emission sources at a facility are identified in the documentation regardless of when the documentation was last compiled) and must be in a form suitable and readily available for expeditious inspection and review according to 40 CFR 63.10(b)(1), including records stored in electronic form in a separate location.</p> <p>(NOTE: The documentation may consist of identification of the tanks and transfer racks on a plant site plan or process and instrumentation diagram (P&amp;ID).)</p> <p>Verify that, for each storage tank having a capacity of 18.9 m<sup>3</sup> (5,000 gal) or more that is not subject to control based on the criteria in Appendix 1-11b, items 1 – 6, the following information is submitted in either the Notification of Compliance Status or the first Compliance report, whichever is due first:</p> <ul style="list-style-type: none"> <li>– 40 CFR 63.2386(c)(1) (see checklist item AE.57.14.US)</li> <li>– 40 CFR 63.2386(c)(2) (see checklist item AE.57.14.US)</li> <li>– 40 CFR 63.2386(c)(3) (see checklist item AE.57.14.US)</li> <li>– 40 CFR 63.2386(c)(10)(i) (see checklist item AE.57.14.US).</li> </ul> <p>(NOTE: If the facility submits their first Compliance report before their Notification of Compliance Status, the Notification of Compliance Status must contain the information specified in 40 CFR 63.2386(d)(3) and 63.2386(d)(4) [see checklist item AE.57.14.US] if any of the following changes have occurred since the filing of the first Compliance report:</p> <ul style="list-style-type: none"> <li>– any storage tank or transfer rack became subject to control under 40 CFR 63, Subpart EEEE</li> </ul>

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	<ul style="list-style-type: none"> <li>– any storage tank equal to or greater than 18.9 m<sup>3</sup> (5,000 gal) became part of the affected source but is not subject to any of the emission limitations, operating limits, or work practice standards of 40 CFR 63, Subpart EEEE</li> <li>– any transfer rack (except those racks at which only unloading of organic liquids occurs) became part of the affected source</li> <li>– any of the following information required in the first Compliance Report has change:               <ul style="list-style-type: none"> <li>– company name and address</li> <li>– statement by a responsible official, including the official's name, title, and signature, certifying that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete</li> <li>– date of report and beginning and ending dates of the reporting period.</li> </ul> </li> </ul> <p>If none of the above changes have occurred since the filing of the first Compliance report, the facility does not need to report a listing of all transfer racks (except those racks at which only unloading of organic liquids occurs) and of tanks greater than or equal to 18.9 m<sup>3</sup> (5,000 gal) that are part of the affected source but are not subject to any of the emission limitations, operating limits, or work practice standards of 40 CFR 63, Subpart EEEE when submitting their Notification of Compliance Status.)</p> <p>Verify that, if the facility submits their Notification of Compliance Status before their first Compliance report, the first Compliance report contains the information specified in 40 CFR 63.2386(d)(3) and 63.2386(d)(4) [see checklist item AE.57.14.US] if any of the following changes have occurred since the filing of the Notification of Compliance Status:</p> <ul style="list-style-type: none"> <li>– any storage tank or transfer rack became subject to control under 40 CFR 63, Subpart EEEE</li> <li>– any storage tank equal to or greater than 18.9 m<sup>3</sup> (5,000 gal) became part of the affected source but is not subject to any of the emission limitations, operating limits, or work practice standards of 40 CFR 63, Subpart EEEE</li> <li>– any transfer rack (except those racks at which only unloading of organic liquids occurs) became part of the affected source</li> <li>– any of the following information required in the first Compliance Report has change:               <ul style="list-style-type: none"> <li>– company name and address</li> <li>– statement by a responsible official, including the official's name, title, and signature, certifying that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete</li> <li>– date of report and beginning and ending dates of the reporting period.</li> </ul> </li> </ul> <p>(NOTE: If the facility is already submitting a Notification of Compliance Status or a first Compliance report under 40 CFR 63.2386(c) [see checklist item AE.57.14.US], the facility does not need to submit a separate Notification of</p>

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	<p>Compliance Status or first Compliance report for each storage tank (i.e., a single Notification of Compliance Status or first Compliance report should be submitted).)</p> <p>Verify that a subsequent Compliance report is submitted according to the schedule in 40 CFR 63.2386(b) (see checklist item AE.57.14.US) whenever any of the following events occur, as applicable:</p> <ul style="list-style-type: none"> <li>– any storage tank or transfer rack became subject to control under 40 CFR 63, Subpart EEEE</li> <li>– any storage tank equal to or greater than 18.9 m<sup>3</sup> (5,000 gal) became part of the affected source but is not subject to any of the emission limitations, operating limits, or work practice standards of 40 CFR 63, Subpart EEEE</li> <li>– any transfer rack (except those racks at which only unloading of organic liquids occurs) became part of the affected source</li> <li>– any of the following information required in the first Compliance Report has change: <ul style="list-style-type: none"> <li>– company name and address</li> <li>– statement by a responsible official, including the official's name, title, and signature, certifying that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete</li> <li>– date of report and beginning and ending dates of the reporting period.</li> </ul> </li> </ul> <p>Verify that subsequent Compliance reports contain the information in 40 CFR 63.2386(c)(1), (2), (3) and, as applicable, in 40 CFR 63.2386(d)(3) and 40 CFR 63.2386(d)(4) (see checklist item AE.57.14.US).</p> <p>(NOTE: If the facility is already submitting a subsequent Compliance report under 40 CFR 63.2386(d), the facility need not submit a separate subsequent Compliance report for each otherwise exempted storage tank.)</p> <p>Verify that, for each storage tank that meets the conditions of this checklist item, the facility keeps documentation, including a record of the annual average true vapor pressure of the total Table 1 organic HAP (see Appendix 1-11a) in the stored organic liquid that verifies the storage tank is not required to be controlled under this subpart.</p> <p>Verify that the documentation is kept up-to-date and is in a form suitable and readily available for expeditious inspection and review, including records stored in electronic form in a separate location.</p> <p>Verify that, for each transfer rack subject to this subpart that loads organic liquids but is not subject to control based on the criteria specified in Table 2 to this subpart, items 7 through 10 (see Appendix 1-11b), the facility submits the information in 40 CFR 63.2386(c)(1), (2), (3), and (10)(i) (see checklist item AE.57.14.US) in either</p>

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	<p>the Notification of Compliance Status, or a first Compliance report, whichever occurs first.</p> <p>Verify that, if the facility submits their first Compliance report before their Notification of Compliance Status, the Notification of Compliance Status contains the information specified in 40 CFR 63.2386(d)(3) and (4) (see checklist item AE.57.14.US) if any of the following changes have occurred since the filing of the first Compliance report:</p> <ul style="list-style-type: none"> <li>– any storage tank or transfer rack became subject to control under 40 CFR 63 Subpart EEEE</li> <li>– any storage tank equal to or greater than 18.9 m3 (5,000 gal) became part of the affected source but is not subject to any of the emission limitations, operating limits, or work practice standards of 40 CFR 63 Subpart EEEE</li> <li>– any transfer rack (except those racks at which only unloading of organic liquids occurs) became part of the affected source</li> <li>– any of the information required in 40 CFR 63.2386(c)(1), 63.2386(c)(2), or 63.2386(c)(3) (see checklist item AE.57.14.US) has changed.</li> </ul> <p>(NOTE: if none of the above changes have occurred since the filing of the first Compliance report, the facility does not need to report the information specified in 40 CFR 63.2386(c)(10)(i) (see checklist item AE.57.14.US) when submitting their Notification of Compliance Status.)</p> <p>Verify that, if the facility submits their Notification of Compliance Status before their first Compliance report, the first Compliance report contains the information specified in 40 CFR 63.2386(d)(3) and (4) (see checklist item AE.57.14.US) if any of the changes specified above have occurred since the filing of the Notification of Compliance Status.</p> <p>(NOTE: If the facility is already submitting a Notification of Compliance Status or a first Compliance report, the facility does not need to submit a separate Notification of Compliance Status or first Compliance report for each transfer rack that meets the conditions requiring a single Notification of Compliance Status or first Compliance report be submitted).</p> <p>Verify that a subsequent Compliance report is submitted according to the schedule in 40 CFR 63.2386(b) (see checklist item AE.57.14.US) whenever any of the following events in occur, as applicable:</p> <ul style="list-style-type: none"> <li>– any storage tank or transfer rack became subject to control under 40 CFR 63 Subpart EEEE</li> <li>– any storage tank equal to or greater than 18.9 m3 (5,000 gal) became part of the affected source but is not subject to any of the emission limitations, operating limits, or work practice standards of 40 CFR 63 Subpart EEEE</li> <li>– any transfer rack (except those racks at which only unloading of organic liquids occurs) became part of the affected source</li> </ul>

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	<p>– any of the information required in 40 CFR 63.2386(c)(1), 63.2386(c)(2), or 63.2386(c)(3) (see checklist item AE.57.14.US) has changed.</p> <p>Verify that the subsequent Compliance reports contain the information in 40 CFR 63.2386(c)(1), (2), (3) and, as applicable, in 40 CFR 63.2386(d)(3) and (4) (see checklist item AE.57.14.US).</p> <p>(NOTE: If the facility is already submitting a subsequent Compliance report under 40 CFR 63.2386(d) (see checklist item AE.57.14.US), the facility does not need to submit a separate subsequent Compliance report for each transfer rack that meets the conditions for submitting a single subsequent Compliance report should be submitted.)</p> <p>Verify that, for each transfer rack meeting the conditions for submitting a single subsequent Compliance report, documentation, including the records of the total actual annual facility-level organic liquid loading volume, that verifies the transfer rack is not required to be controlled under 40 CFR 63, Subpart EEEE is kept.</p> <p>Verify that the documentation is kept up-to-date and is in a form suitable and readily available for expeditious inspection and review, including records stored in electronic form in a separate location.</p> <p>(NOTE: This checklist item applies to each new, reconstructed, or existing OLD operation affected source. The affected source is the collection of activities and equipment used to distribute organic liquids into, out of, or within a facility that is a major source of HAP. The affected source is composed of:</p> <ul style="list-style-type: none"> <li>– all storage tanks storing organic liquids</li> <li>– all transfer racks at which organic liquids are loaded into or unloaded out of transport vehicles and/or containers</li> <li>– all equipment leak components in organic liquids service that are associated with: <ul style="list-style-type: none"> <li>– storage tanks storing organic liquids</li> <li>– transfer racks loading or unloading organic liquids</li> <li>– pipelines that transfer organic liquids directly between two storage tanks that are subject 40 CFR Subpart EEEE</li> <li>– pipelines that transfer organic liquids directly between a storage tank subject to this subpart and a transfer rack subject to 40 CFR 63, Subpart EEEE</li> </ul> </li> <li>– pipelines that transfer organic liquids directly between two transfer racks that are subject to 40 CFR 63, Subpart EEEE</li> <li>– all transport vehicles while they are loading or unloading organic liquids at transfer racks subject to 40 CFR 63, Subpart EEEE</li> <li>– all containers while they are loading or unloading organic liquids at transfer racks subject to 40 CFR 63, Subpart EEEE.)</li> </ul> <p>(NOTE: The following equipment used in the identified operations is excluded from the affected source:</p>

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	<ul style="list-style-type: none"> <li>– storage tanks, transfer racks, transport vehicles, containers, and equipment leak components that are part of an affected source under another 40 CFR 63 national emission standards for hazardous air pollutants (NESHAP)</li> <li>– non-permanent storage tanks, transfer racks, transport vehicles, containers, and equipment leak components when used in special situation distribution loading and unloading operations (such as maintenance or upset liquids management)</li> <li>– storage tanks, transfer racks, transport vehicles, containers, and equipment leak components when used to conduct maintenance activities, such as stormwater management, liquid removal from tanks for inspections and maintenance, or changeovers to a different liquid stored in a storage tank.)</li> </ul>

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<b>AE.60</b>  <b>PRINTING PRESSES AND GRAPHIC ARTS</b>  <b>AE.60.1.US.</b> Publication rotogravure printing presses, except for proof presses, that started construction, modification, or reconstruction after 28 October 1980 are required to meet specific standards concerning VOC emissions (40 CFR 60.430 through 60.435).	<p>Determine if there are any publication rotogravure printing presses.</p> <p>Verify that gases are not being discharged containing VOC equal to more than 16 percent of the total mass of VOC solvent and water used at that press during any one performance averaging period.</p> <p>(NOTE: Each performance averaging period is 30 consecutive calendar days.)</p> <p>Verify that presses using waterborne ink systems or solventborne ink systems with solvent recovery systems record the amount of solvent and water used, solvent recovered, and estimated emission percentage for each calendar month.</p> <p>Verify that these records have been maintained for 2 yr.</p>



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<b>AE.65</b>  <b>FUGITIVE EMISSIONS</b>  <b>AE.65.1.US.</b> The emission of VHAPs, which includes vinyl chlorides and benzene, from pumps, compressors, pressure relief devices, sampling connection systems, flanges and other connectors, and product accumulator vessels operating in VHAP service, are required to be managed according to specific requirements (40 CFR 61.240 through 61.242-1, 61.242-10, 61.246, and 61.247).  <b>AE.65.2.US.</b> The emission of VHAPs, which includes vinyl chlorides and benzene, from pumps in VHAP service are required to be monitored and controlled (40 CFR 61.240 through 61.242-2).	<p>Determine where there are sources in VHAP service in operation.</p> <p>Verify that, when a leak is detected:</p> <ul style="list-style-type: none"> <li>– a weatherproof and readily visible identification marked with the equipment identification number is attached to the leaking equipment</li> <li>– the identification is removed only after no leak has been detected for 2 mo or the leak is repaired</li> <li>– leaks detected for pumps, compressors, pressure-relief devices in liquid service, and flanges are recorded in a log and maintained for 2 yr at a readily accessible location.</li> </ul> <p>Verify that the following records are maintained:</p> <ul style="list-style-type: none"> <li>– a list of identification numbers of all equipment to which a standard applies</li> <li>– a list of equipment designated for no detectable emissions</li> <li>– dates of compliance tests</li> <li>– a list of identification numbers for equipment in vacuum service</li> <li>– information and data used to demonstrate that a piece of equipment is not in VHAP service.</li> </ul> <p>Verify that a semiannual report listing the number of leaks identified, items not repaired, explanation of repair delays or infeasibility of a shutdown, dates of shut downs, and revisions to previous reports is submitted to the USEPA administrator.</p> <p>Determine where there are pumps in VHAP service.</p> <p>Verify that pumps meet the following standards:</p> <ul style="list-style-type: none"> <li>– they are visually inspected weekly for leaks</li> <li>– they are monitored monthly using standard test methods for leaks</li> <li>– leaks are repaired within 15 calendar days.</li> </ul> <p>(NOTE: Exemptions include:</p> <ul style="list-style-type: none"> <li>– pumps equipped with properly operating dual mechanical seal systems are exempt from the monitoring requirements</li> <li>– pumps designated for no detectable emissions, as indicated by a reading of less than 500 ppm above background, only have to comply with the repair requirements if there is no externally actuated shaft penetrating the pump house and it is tested as having no detectable emissions</li> </ul>

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<p><b>AE.65.3.US.</b> The emission of VHAPs, which includes vinyl chlorides and benzene, from compressors in VHAP service are required to be monitored and controlled (40 CFR 61.240 through 61.242-1 and 61.242-3). <b>[Revised February 1995]</b></p>	<ul style="list-style-type: none"> <li>– pumps equipped with a closed-vent system capable of capturing and transporting any leakage from the seal or seals to a control device are exempt from all standards</li> <li>– pumps in unmanned plant sites are exempt from weekly inspection requirements if each pump is visually inspected as often as possible and at least monthly.)</li> </ul> <p>Determine if there are compressors in VHAP service.</p> <p>Verify that compressors meet the following:</p> <ul style="list-style-type: none"> <li>– they are equipped with a seal system that includes a barrier fluid system and prevents leakage of process fluids and one of the following:             <ul style="list-style-type: none"> <li>– operates with the barrier fluid at a pressure greater than the compressor stuffing box pressure</li> <li>– they are equipped with a barrier fluid system that is connected by a closed-vent system to a control device</li> <li>– they are equipped with a system that purges the barrier fluid into a process stream with zero VHAP emissions</li> </ul> </li> <li>– the barrier fluid is not in VHAP service</li> <li>– barrier fluid systems are equipped with a sensor to detect the failure of the seal system, barrier fluid system, or both, and sensors are checked daily or have an audible alarm, unless the compressor is located within the boundary of an unmanned plant site</li> <li>– leaks are repaired within 15 calendar days with the first attempt occurring within 5 calendar days.</li> </ul> <p>(NOTE: Exemptions include:</p> <ul style="list-style-type: none"> <li>– compressors equipped with closed-vent systems for capturing and transporting leakage into a control device are exempt from seal system requirements</li> <li>– compressors designated for no detectable emissions are exempt from all requirements if they are demonstrated to be operating with an instrument reading of less than 500 ppm above background and are tested for compliance annually.)</li> </ul> <p>Determine where there are sources in VHAP service.</p> <p>Verify that the pressure relief devices in gas/vapor service meet the following, except during pressure releases:</p> <ul style="list-style-type: none"> <li>– they are operated with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background</li> <li>– after a pressure release the device is returned to a state of no detectable emissions within 5 calendar days.</li> </ul>
<p><b>AE.65.4.US.</b> The emission of VHAPs, which includes vinyl chlorides and benzene, from pressure relief devices, sampling connection systems, flanges and other connectors, and product accumulator vessels operating in VHAP service, are required to be monitored and controlled (40 CFR 61.240 through 242-1, 61.242-4, 61.242- 5, 61.242-8,</p>	

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<p>and 61.242- 9). [Revised February 1995]</p> <p><b>AE.65.5.US.</b> The emission of VHAPs, which includes vinyl chlorides and benzene, from pumps, compressors, pressure relief devices, sampling connection systems, flanges and other connectors, and product accumulator vessels operating in VHAP service, are required to be managed according to specific requirements (40 CFR 61.240 through 61.242-1, 61.242-10, 61.246, and 61.247). [Revised June 1995]</p>	<p>(NOTE: Pressure relief devices equipped with a closed-vent system capable of capturing and transporting leakage to a control device are exempted from the listed requirements.)</p> <p>Verify that sampling connectors are equipped with a closed-purge system or closed-vent system that does one of the following:</p> <ul style="list-style-type: none"> <li>– returns the purged process fluid directly to the process line</li> <li>– collects and recycles the purged process fluid</li> <li>– is designed and operated to capture and transport all purged process fluid to a control device.</li> </ul> <p>(NOTE: <i>In situ</i> sampling systems are exempt from the requirements for sampling connectors.)</p> <p>Verify that pressure relief devices in liquid service and flanges and other connectors are monitored within 5 calendar days if evidence of a potential leak is found by visual, audible, olfactory, or any other detection method, and that repair is done within 15 calendar days with the first attempt occurring within 5 calendar days.</p> <p>Verify that product accumulator vessels are equipped with a closed-vent system capable of capturing and transporting any leakage from the vessel to a control device.</p> <p>Verify that, when a leak is detected:</p> <ul style="list-style-type: none"> <li>– a weatherproof and readily visible identification tag marked with the equipment identification number is attached to the leaking equipment</li> <li>– the identification tag is removed only after no leak has been detected for 2 successive months, or the leak is repaired</li> <li>– leaks detected for pumps, compressors, pressure-relief devices in liquid service, and flanges are recorded in a log and maintained for 2 yr at a readily accessible location.</li> </ul> <p>Verify that the following records are maintained:</p> <ul style="list-style-type: none"> <li>– a list of identification numbers of all equipment to which a standard applies</li> <li>– a list of equipment designated for no detectable emissions</li> <li>– dates of compliance tests</li> <li>– a list of identification numbers for equipment in vacuum service</li> <li>– information and data used to demonstrate that a piece of equipment is not in VHAP service.</li> </ul> <p>Verify that a semiannual report listing the number of leaks identified, items that were not repaired, explanation of repair delays or infeasibility of a shutdown, dates</p>

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<b>AE.65.6.US.</b> Valves and lines in VHAP service, which includes vinyl chlorides and benzene, are required to be properly operating and monitored (40 CFR 61.242-6, 61.242-7, 61.243-1, 61.246, and 61.247). <b>[Revised February 1995]</b>	<p>of shutdowns, and revisions to previous reports submitted to the USEPA administrator.</p> <p>Determine what valves and lines are in VHAP service.</p> <p>Verify that open-ended valves or lines are equipped with a cap, blind flange, or second valve to seal the open end at all times, except during operations requiring process fluid flow through the valve or line.</p> <p>Verify that open-ended valves or lines with a second valve are operated so the valve on the process fluid end is closed before the second valve is closed.</p> <p>Verify that valves are properly operated and monitored:</p> <ul style="list-style-type: none"> <li>– valves are monitored monthly, except that valves for which a leak has not been detected for 2 successive months may be monitored quarterly until a leak is detected</li> <li>– after notifying the USEPA administrator the following practices may be used: <ul style="list-style-type: none"> <li>– after two consecutive quarterly leak detection periods when the percentage of valves leaking is equal to or less than 2.0, the operator may begin to skip one of the quarterly leak detection periods</li> <li>– after five consecutive quarterly leak detection periods when the percentage of the valves leaking is equal to or less than 2.0, the operator may begin to skip three quarterly leak detection periods</li> </ul> </li> <li>– repair is done within 15 calendar days of leak detection with the first attempt occurring within 5 calendar days.</li> </ul> <p>(NOTE: The following valves are exempted from the identified requirements:</p> <ul style="list-style-type: none"> <li>– valves designated for no detectable emissions are exempt from the monthly monitoring requirements if there is no external actuating mechanism in contact with the process fluid and the valve is tested for compliance annually</li> <li>– valves designated as unsafe-to-monitor are exempt from the monthly monitoring requirements if it is demonstrated that the valve is unsafe to monitor and there is a written plan requiring monitoring of the valve during safe-to-monitor times</li> <li>– valves designated as difficult to monitor are exempt from the monthly monitoring requirements if it is demonstrated that the valve cannot be monitored without elevating the monitoring personnel more than 2 m [approx. 7 ft] above a support surface and a written plan is followed that requires monitoring of the valve at least once a year.)</li> </ul> <p>(NOTE: Repair may be delayed if the repair is technically infeasible or if the equipment is isolated.)</p> <p>Verify that, when a leak is detected:</p>

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<p><b>AE.65.7.US.</b> Systems and devices used to control VHAP emissions, including benzene and vinyl chloride emissions, shall be properly operated (40 CFR 61.242-11, 61.246, and 61.247). <b>[Revised February 1995]</b></p>	<ul style="list-style-type: none"> <li>– a weatherproof and readily visible identification tag marked with the equipment identification number is attached to the leaking equipment</li> <li>– the identification tag is removed only after no leak has been detected for 2 successive months or the leak is repaired</li> <li>– leaks detected for valves shall be recorded in a log and maintained for 2 yr at a readily accessible location.</li> </ul> <p>Verify that the following records are maintained:</p> <ul style="list-style-type: none"> <li>– a list of identification numbers of all equipment to which a standard applies</li> <li>– a list of equipment designated for no detectable emissions</li> <li>– dates of compliance tests</li> <li>– a list of identification numbers for equipment in vacuum service</li> <li>– information and data used to demonstrate that a piece of equipment is not VHAP service.</li> </ul> <p>Verify that a semiannual report listing the number of leaks identified, items which were not repaired, explanation of repair delays or infeasibility of a shutdown, dates of shutdowns, and revisions to previous reports is submitted to the USEPA administrator.</p> <p>Verify that closed-vent systems and control devices, used to control VHAP emissions, meet the following:</p> <ul style="list-style-type: none"> <li>– vapor recovery systems are designed and operated to recover the organic vapors vented to them with 95 percent efficiency or greater</li> <li>– enclosed combustion devices are designed and operated to reduce the VHAP and benzene emissions vented to them with an efficiency of 95 percent or greater or provide a minimum residence time of 0.50 s at a minimum temperature of 760 °C [1400 °F]</li> <li>– closed-vent systems have no detectable emissions and are monitored annually, and that leaks are repaired within 15 calendar days with the first attempt at repair within 5 calendar days</li> <li>– these systems are operated at all time when emissions may be vented to them.</li> </ul> <p>Verify that, for closed-vent system and control devices, the following records are kept in a readily accessible location:</p> <ul style="list-style-type: none"> <li>– detailed schematics</li> <li>– dates and descriptions of any changes to the system</li> <li>– periods when they are not operating</li> <li>– dates of startups and shutdowns.</li> </ul>



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<b>DRY CLEANING OPERATIONS</b>  <b>AE.70</b> <b>Petroleum Solvent Dry Cleaning</b>  <b>AE.70.1.US.</b> Petroleum solvent dry cleaning dryers, washers, filters, stills, and settling tanks at petroleum dry cleaning plants are required to meet specific standards of operation (40 CFR 60.620 through 60.625).	<p>(NOTE: These requirements apply to petroleum dry cleaning plants with a total manufacturers' rated dryer capacity equal to or greater than 38 kg (84 lb) that started construction or modification after 14 December 1982, except for dryers installed between 14 December 1982 and 21 September 1984 in a plant with an annual solvent consumption level less than 4700 gal.)</p> <p>Verify that dryers are solvent recovery dryers.</p> <p>Verify that the petroleum solvent filters are cartridge filters that are drained in their sealed housing for at least 8 h before their removal.</p> <p>Determine if the petroleum solvent dry cleaner has been granted approval from the USEPA to use alternate equipment or procedures to reduce VOC emissions.</p>



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<p><b>DRY CLEANING OPERATIONS</b></p> <p><b>AE.75</b>  <b>Perchloroethylene Dry Cleaning</b></p> <p><b>AE.75.1.US.</b> Existing dry cleaning systems and new transfer machine systems that use perchloroethylene are required to use specific emissions control devices (40 CFR 63.322(a), 63.322(b)(1), 63.322(e), 63.322(f), 63.322(h), 63.323(a), and 63.323(b)) [Revised October 1996; Revised October 2006; Revised April 2008].</p>	<p>(NOTE: See Appendix 1-12 for a table outlining which dry cleaning facilities are required to comply with these standards.)</p> <p>Verify that, when a refrigerated condenser is used to comply with the requirements in 40 CFR 63.322(a)(1) or 63.322(b)(1):</p> <ul style="list-style-type: none"> <li>– the owner or operator monitors on a weekly basis one of the following parameters: <ul style="list-style-type: none"> <li>– the refrigeration system high pressure and low pressure during the drying phase to determine if they are in the range specified in the manufacturer’s operating instructions</li> <li>– the temperature of the air-perchloroethylene gas-vapor stream on the outlet side of the refrigerated condenser on a dry-to-dry machine, dryer, or reclaiming with a temperature sensor to determine if it is equal to or less than 7.2 [deg]C (45 [deg]F) before the end of the cool-down or drying cycle while the gas-vapor stream is flowing through the condenser</li> <li>– each temperature sensor is used according to the manufacturer’s instructions, and designed to measure at least a temperature range from 0 °C (32 °F) to 48.9 °C (120 °F) to an accuracy of +/- 1.1 °C (+/- 2 °F).</li> </ul> </li> <li>– the owner or operator calculates the difference between the temperature of the air-perchloroethylene gas-vapor stream entering the refrigerated condenser on a washer and the temperature of the air perchloroethylene gas-vapor stream exiting the refrigerated condenser on the washer weekly to determine that the difference is greater than or equal to 11.1 °C (20 °F) using the following parameters: <ul style="list-style-type: none"> <li>– measurements of the inlet and outlet streams are made with a temperature sensor</li> <li>– the temperature sensor is used according to the manufacturer’s instructions and shall be designed to measure a temperature of 7.2 °C (45 °F) to an accuracy of 1.1 °C (2 °F)</li> <li>– the difference between the inlet and outlet temperatures are calculated weekly from the measured values.</li> </ul> </li> </ul> <p>(NOTE: 40 CFR 63.322(a)(1) addresses owners/operators of existing dry cleaning system and new transfer machine system and its ancillary equipment installed between 9 December 1991 and 22 September 1993 which route the air-perchloroethylene gas-vapor stream contained within each dry cleaning machine through a refrigerated condenser or an equivalent control device. 40 CFR</p>

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	<p>63.322(b)(1) addresses to owner or operators of new dry-to-dry machine and its ancillary equipment and new transfer machine system and its ancillary equipment installed after 22 September 1993 which route the air perchloroethylene gas-vapor stream contained within each dry cleaning machine through a refrigerated condenser or an equivalent control device.)</p> <p>Verify that, when a carbon adsorber is used to comply with 40 CFR 63.322(a)(2) or exhaust is passed through a carbon adsorber immediately upon machine door opening, the owner or operator measures the concentration of PCE in the exhaust of the carbon adsorber weekly with a colorimetric detector tube or PCE gas analyzer, and:</p> <ul style="list-style-type: none"> <li>– the measurement shall be taken while the dry cleaning machine is venting to that carbon adsorber at the end of the last dry cleaning cycle prior to desorption of that carbon adsorber or removal of the activated carbon to determine that the PCE concentration in the exhaust is equal to or less than 100 parts per million by volume</li> <li>– uses the colorimetric detector tube or PCE gas analyzer according to the manufacturer's instruction</li> <li>– provides a sampling port for monitoring within the exhaust outlet of the carbon adsorber that is easily accessible and located at least 8 stack or duct diameters downstream from any flow disturbance such as a bend, expansion, contraction, or outlet; downstream from no other inlet; and 2 stack or duct diameters upstream from any flow disturbance such as a bend, expansion, contraction, inlet, or outlet.</li> </ul> <p>(NOTE: 40 CFR 63.322(a)(2) addresses the owner or operator of each existing dry cleaning system and of each new transfer machine system and its ancillary equipment installed between 9 December 1991 and 22 September 1993 that route the air-perchloroethylene gas-vapor stream contained within each dry cleaning machine through a carbon adsorber installed on the dry cleaning machine prior to 22 September 1993.)</p> <p>Verify that each refrigerated condenser used to achieve compliance and installed on a dry-to-dry machine, dryer, or reclaimer:</p> <ul style="list-style-type: none"> <li>– is operated to not vent or release the air-perchloroethylene gas vapor stream contained within the dry cleaning machine to the atmosphere while the dry cleaning machine drum is rotating</li> <li>– is monitored weekly</li> <li>– prevents air drawn into the dry cleaning machine when the door of the machine is open from passing through the refrigerated condenser.</li> </ul> <p>Verify that each refrigerated condenser used to achieve compliance and installed on a washer:</p> <ul style="list-style-type: none"> <li>– is operated to not vent the air-perchloroethylene gas-vapor contained within the washer to the atmosphere until the washer door is opened</li> </ul>

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<p><b>AE.75.2.US.</b> Each new dry-to-dry machine and its ancillary equipment and each new transfer machine system and its ancillary equipment installed after 22 September 1993 that use perchloroethylene are required to use specific emission control devices (40 CFR 63.322(b)(3) and 63.323(c)) [Revised October 1996; Revised October 2006; Revised April 2008].</p>	<p>– is properly monitored.</p> <p>Verify that the refrigerated condenser coil used for the washer is not the same coil used by a dry-to-dry machine, dryer, or reclaimer.</p> <p>Verify that each room enclosure used to achieve compliance:</p> <ul style="list-style-type: none"> <li>– is operated to vent all air from the room enclosure through a carbon adsorber or an equivalent control device</li> <li>– is equipped with a separate carbon adsorber.</li> </ul> <p>(NOTE: See Appendix 1-12 for a table outlining which dry cleaning facilities are required to comply with these standards.)</p> <p>Verify that, if the air-PCE gas vapor stream is passed through a carbon adsorber prior to machine door opening to comply with 40 CFR 63.322(b)(3), the owner or operator of an affected facility measures the concentration of PCE in the dry cleaning machine drum at the end of the dry cleaning cycle weekly with a colorimetric detector tube or PCE gas analyzer to determine that the PCE concentration is equal to or less than 300 parts per million by volume.</p> <p>Verify that the owner or operator:</p> <ul style="list-style-type: none"> <li>– uses a colorimetric detector tube or PCE gas analyzer designed to measure a concentration of 300 parts per million by volume of PCE in air to an accuracy of +/- 75 parts per million by volume; and</li> <li>– uses the colorimetric detector tube or PCE gas analyzer according to the manufacturer's instructions</li> <li>– conducts the weekly monitoring by inserting the colorimetric detector or PCE gas analyzer tube into the open space above the articles at the rear of the dry cleaning machine drum immediately upon opening the dry cleaning machine door.</li> </ul> <p>(NOTE: 40 CFR 63.322(b)(3) addresses the owners or operators of each new dry-to-dry machine and its ancillary equipment and of each new transfer machine system and its ancillary equipment installed after 22 September 1993 that passes the air perchloroethylene gas-vapor stream from inside the dry cleaning machine drum through a carbon adsorber or equivalent control device immediately before or as the door of the dry cleaning machine is opened if the dry cleaning machine is located at a major source.)</p>
<p><b>AE.75.3.US.</b> Operate perchloroethylene dry cleaning systems according to</p>	<p>(NOTE: Please see Appendix 1-12 for a table outlining which dry cleaning facilities are required to comply with these standards.)</p>

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<p>specific standards (40 CFR 63.322(c) and 63.322(d)).</p> <p><b>AE.75.4.US.</b> Carbon adsorbers that are used as a method of emissions control at perchloroethylene drycleaners are required to meet specific parameters (40 CFR 63.322(g), 63.323(b), and 663.323(c)).</p> <p><b>AE.75.5.US.</b> Perchloroethylene drycleaners are required to drain all cartridge filters and handle the waste according to specific procedures (40 CFR 63.322(i) and 63.322(j)) <b>[Revised October 2006]</b>.</p> <p><b>AE.75.6.US.</b> Inspect perchloroethylene dry cleaning systems for perceptible leaks (40 CFR 63.322(k), 63.322(l), and 63.323(o)(1)) <b>[Revised October 2006]</b>.</p>	<p>Verify that the door of each dry cleaning machine is closed immediately after transferring articles to or from the machine and the door is kept closed at all times.</p> <p>Verify that the dry cleaning systems are operated and maintained according to manufacturer's specifications and recommendations.</p> <p>(NOTE: Please see Appendix 1-12 for a table outlining which dry cleaning facilities are required to comply with these standards.)</p> <p>Verify that carbon adsorbers are not bypassed to vent or release any air-perchloroethylene gas-vapor stream to the atmosphere at any time.</p> <p>Verify that the carbon adsorber is monitored weekly to determine that the perchloroethylene concentration in the exhaust is equal to or less than 100 ppmv.</p> <p>(NOTE: Please see Appendix 1-12 for a table outlining which dry cleaning facilities are required to comply with these standards.)</p> <p>Verify that all cartridge filters are drained in their housing, or other sealed container, for a minimum of 24 h or treated in an equivalent manner before removal from the dry cleaning facility.</p> <p>Verify that all PCE and wastes that contain PCE are stored in solvent tanks or solvent containers with no perceptible leaks.</p> <p>(NOTE: The exception to the storage requirement is that containers for separator water may be uncovered, as necessary, for proper operation of the machine and still.)</p> <p>(NOTE: Please see Appendix 1-12 for a table outlining which dry cleaning facilities are required to comply with these standards.)</p> <p>Verify that the owner or operator of a dry cleaning system inspects the following components weekly for perceptible leaks and monthly for vapor leaks while the dry cleaning system is operating:</p> <ul style="list-style-type: none"> <li>– hose and pipe connections, fittings, couplings, and valves</li> <li>– door gaskets and seatings</li> <li>– filter gaskets and seatings</li> <li>– pumps</li> <li>– solvent tanks and containers</li> <li>– water separators</li> <li>– muck cookers</li> <li>– stills</li> </ul>

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<p><b>AE.75.7.US.</b> All perceptible leaks and temperature violations are required to be repaired within 24 h unless parts must be ordered (40 CFR 63.322(m) and 63.322(n)) [Revised October 2006].</p>	<ul style="list-style-type: none"> <li>– exhaust dampers</li> <li>– diverter valves</li> <li>– all filter housings.</li> </ul> <p>(NOTE: Inspection with a halogenated hydrocarbon detector or PCE gas analyzer also fulfills the requirement for inspection for perceptible leaks.)</p> <p>Verify that, for vapor leak inspections:</p> <ul style="list-style-type: none"> <li>– area sources conduct the inspections using a halogenated hydrocarbon detector or PCE gas analyzer that is operated according to the manufacturer's instructions and the operator places the probe inlet at the surface of each component interface where leakage could occur and moves it slowly along the interface periphery</li> <li>– major sources conduct the inspections using a PCE gas analyzer operated according to EPA Method 21.</li> </ul> <p>(NOTE: Any vapor leak inspection conducted according to the above satisfies the requirements to conduct an inspection for perceptible leaks.)</p> <p>(NOTE: When total dry cleaning facility consumption is less than the following, inspections can be done biweekly:</p> <ul style="list-style-type: none"> <li>– a total perchloroethylene consumption of the dry cleaning facility is less than 530 L/yr (140 gal/yr) for existing dry-to-dry machines and ancillary equipment located in a dry cleaning facility that includes only dry-to-dry machines and each existing transfer machine system and its ancillary equipment, as well as each existing dry-to-dry machine and its ancillary equipment, located in a dry cleaning facility that includes both transfer machine systems and dry-to-dry machines</li> <li>– a perchloroethylene consumption of the dry cleaning facility of less than 760 L/yr (200 gal/yr) for each existing transfer machine system and its ancillary equipment located in a dry cleaning facility that includes only transfer machine systems.)</li> </ul> <p>(NOTE: Please see Appendix 1-12 for a table outlining which dry cleaning facilities are required to comply with these standards.)</p> <p>Verify that all leaks detected under 63.322(k) (see checklist item AE.75.6.US.) or 63.322(o)(1) are repaired within 24 h.</p> <p>Verify that, if the parameter values monitored under 63.322(e), 63.322(f), or 63.322(g) (see AE.75.1.US, AE.75.2.US, and AE.75.3.US) do not meet the values specified in 40 CFR 63.323(a), 63.323(b), or 63.323(c) (see AE.75.1.US, AE.75.2.US, and AE.75.4.US), adjustments or repairs are made to the dry cleaning system or control device to meet those values.</p>

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<p><b>AE.75.8.US.</b> Keep receipts of perchloroethylene purchases and a log of detailing volume calculations and monitoring results at perchloroethylene dry cleaning facilities for 5 yr (40 CFR 63.324(d)) <b>[Revised October 2006; Revised April 2008]</b>.</p>	<p>Verify that, if repair parts must be ordered for leak repair or parameter value adjustment, either a written or verbal order for those parts is initiated within 2 working days of detecting a leak.</p> <p>Verify that ordered repair parts are installed within 5 working days after receipt.</p> <p>(NOTE: Please see Appendix 1-12 for a table outlining which dry cleaning facilities are required to comply with these standards.)</p> <p>Verify that receipts for the purchase of perchloroethylene are kept.</p> <p>Verify that the log contains the following information:</p> <ul style="list-style-type: none"> <li>– the volume of perchloroethylene purchased per month</li> <li>– the calculation and result of yearly perchloroethylene consumption that is determined on the first of each month</li> <li>– the dates when the dry cleaning system components are inspected for leaks and the name or location of dry cleaning system components where leaks are detected</li> <li>– the dates of repair and records of written or verbal orders for repair parts</li> <li>– the date and temperature sensor monitoring results (temperature sensor or pressure gauge), if a refrigerated condenser is used to comply</li> <li>– the date and monitoring results if a carbon adsorber is used to comply.</li> </ul>
<p><b>AE.75.9.US.</b> A copy of the design specifications and the operating manual is required to be onsite for each perchloroethylene dry cleaning system and each emission control device (40 CFR 63.324(e)).</p>	<p>(NOTE: Please see Appendix 1-12 for a table outlining which dry cleaning facilities are required to comply with these standards.)</p> <p>Verify that there is a copy of the operating manual and design specifications for each dry cleaning system and each emission control device.</p>
<p><b>AE.75.10.US.</b> A notification on the types of machines and the yearly consumption of perchloroethylene and the types of control devices used must have been submitted to the USEPA administrator or delegated state authority by 18 June 1994 (40 CFR 63.324(a)).</p>	<p>(NOTE: Please see Appendix 1-12 for a table outlining which dry cleaning facilities are required to comply with these standards.)</p> <p>Verify that the dry cleaning facility submitted an initial report signed by a responsible official and certified by a public notary that includes the following information:</p> <ul style="list-style-type: none"> <li>– name and address of the owner/operator of the dry cleaning facility</li> <li>– the address of the dry cleaning facility</li> <li>– a brief description of each type of machine at the dry cleaning facility</li> </ul>

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<p><b>AE.75.11.US.</b> Specific types of perchloroethylene facilities are required to submit a statement of perchloroethylene consumption and compliance to the USEPA administrator or delegated state authority (40 CFR 63.324(b)).</p>	<ul style="list-style-type: none"> <li>– documentation of the yearly perchloroethylene consumption at the dry cleaning facility for the previous year, or an estimate of the perchloroethylene consumption</li> <li>– a description of the types of emission control devices and whether the control device is currently in use or will be purchased</li> <li>– documentation that room enclosures are in compliance.</li> </ul> <p>(NOTE: Please see Appendix 1-12 for a table outlining which dry cleaning facilities are required to comply with these standards.)</p> <p>Verify that dry cleaning systems which started construction or reconstruction on or after 9 December 1991, except for systems complying with Section 112(i)(2) of the CAAA90 submit this statement by 22 October 1993 to the USEPA administrator or delegated state authority.</p> <p>Verify that dry cleaning systems that started construction or reconstruction before 9 December 1991 submit this statement by 20 January 1994 to the USEPA Administrator or delegated state authority</p> <p>(NOTE: Dry cleaning facilities that do not fall into either of these two categories are required to submit notification by 18 June 1994.)</p> <p>Verify that the statement is signed by a responsible individual and certified by a notary public and contains the following:</p> <ul style="list-style-type: none"> <li>– the yearly perchloroethylene solvent consumption limit based on the yearly solvent consumption</li> <li>– whether or not they are in compliance with 40 CFR 63.322.</li> </ul> <p>(NOTE: When these certified solvent consumption limits are exceeded, a new statement must be submitted.)</p>
<p><b>AE.75.12.US.</b> Perchloroethylene dry cleaning facilities that exceed their reported solvent consumption are required to submit a statement compliance status to the USEPA administrator or delegated state authority (40 CFR 63.324(c)).</p>	<p>(NOTE: Please see Appendix 1-12 for a table outlining which dry cleaning facilities are required to comply with these standards.)</p> <p>Verify that the statement is submitted by 23 September 1996 for the following:</p> <ul style="list-style-type: none"> <li>– each existing dry-to-dry machine and its ancillary equipment located in a dry cleaning facility that includes only dry-to-dry machines</li> <li>– each existing transfer machine and its ancillary equipment, as well as each existing dry-to-dry machine and its ancillary equipment, located in a dry cleaning facility that includes both transfer machine systems and dry-to-dry machines</li> <li>– each existing transfer machine and its ancillary equipment located in a dry cleaning facility that includes only transfer machine systems.</li> </ul>

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<p><b>AE.75.13.US.</b> Owners or operators of dry cleaning systems installed after 21 December 2005 must route the air-PCE gas-vapor stream according to specific practices (40 CFR 63.322(o)(2)) <b>[Added October 2006].</b></p>	<p>Verify that the owner or operator of each dry cleaning system installed after 21 December 2005 at an area source routes the air-PCE gas-vapor stream contained within each dry cleaning machine through a refrigerated condenser and pass the air-PCE gas-vapor stream from inside the dry cleaning machine drum through a non-vented carbon adsorber or equivalent control device immediately before the door of the dry cleaning machine is opened.</p> <p>Verify that the carbon adsorber is desorbed in accordance with manufacturer's instructions.</p>
<p><b>AE.75.14.US.</b> Elimination of PCE emissions must be done according to a schedule (40 CFR 63.322(o)(3) through 63.322(o)(5)(i)) <b>[Added October 2006].</b></p>	<p>Verify that the owner or operator of any dry cleaning system eliminates any emission of PCE during the transfer of articles between the washer and the dryer(s) or reclaimer(s).</p> <p>Verify that the owner or operator eliminates any emission of PCE from any dry cleaning system that is installed (including relocation of a used machine) after 21 December 2005, and that is located in a building with a residence.</p> <p>Verify that, after 21 December 2020, the owner or operator eliminates any emission of PCE from any dry cleaning system that is located in a building with a residence.</p> <p>Verify that each dry cleaning system that starts construction or reconstruction on or after 21 December 2005 but before 13 July 2006 and is located in a residence do the following:</p> <ul style="list-style-type: none"> <li>– operate the dry cleaning system inside a vapor barrier enclosure</li> <li>– the exhaust system for the enclosure is operated at all times that the dry cleaning system is in operation and during maintenance</li> <li>– the entry door to the enclosure is open only when a person is entering or exiting the enclosure</li> <li>– the air-perchloroethylene gas-vapor stream contained within each dry cleaning machine is routed through a refrigerated condenser and pass the air-perchloroethylene gas-vapor stream from inside the dry cleaning drum through a carbon adsorber or equivalent control device immediately before the door of the dry cleaning machine is opened</li> <li>– the carbon adsorber is desorbed in accordance with manufacturer's instructions.</li> </ul>
<p><b>AE.75.15.US.</b> On or before 28 July 2008 each owner or operator of a dry cleaning facility must submit to the Administrator or delegated</p>	<p>Verify that each owner or operator of a dry cleaning facility submits to the Administrator or delegated State authority by registered mail on or before 28 July 2008 a notification of compliance status</p>

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<p>State authority by a notification of compliance status (40 CFR 63.324(f)) [Added October 2006].</p>	<p>Verify that the notice provides the following information and is signed by a responsible official who shall certify its accuracy:</p> <ul style="list-style-type: none"> <li>– the name and address of the owner or operator</li> <li>– the address (that is, physical location) of the dry cleaning facility</li> <li>– if they are located in a building with a residence(s), even if the residence is vacant at the time of this notification</li> <li>– if they are located in a building with no other tenants, leased space, or owner occupants</li> <li>– whether they are a major or area source</li> <li>– the yearly PCE solvent consumption based upon the yearly solvent consumption</li> <li>– whether or not they are in compliance with each applicable requirement of 40 CFR 63.322</li> <li>– all information contained in the statement is accurate and true.</li> </ul>



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<b>AE.80</b>  <b>ACID PRODUCTION UNITS</b>  <b>AE.80.1.US.</b> Nitric acid production units that started construction or modification after 17 August 1971 are required to meet specific standards (40 CFR 60.70 through 60.74).  <b>AE.80.2.US.</b> Sulfuric acid production units that started construction or modification after 17 August 1971 are required to meet specific standards (40 CFR 60.80 through 60.85).	<p>Verify that gases are not discharged which contain NO<sub>x</sub> in excess of 1.5 kg per metric ton of acid produced (3 lb/ton) when the production is expressed as 100 percent nitric acid.</p> <p>Verify that gases are not emitted that exhibit 10 percent opacity or greater.</p> <p>Determine if a continuous monitoring system for the measurement of NO<sub>x</sub> is in place, monitored, and calibrated.</p> <p>Verify that these units do not emit gases which contain SO<sub>2</sub> in excess of 2 kg per metric ton of acid produced (4 lb/ton) when the production is expressed as 100 percent H<sub>2</sub>SO<sub>4</sub>.</p> <p>Verify that the gases emitted do not exhibit 10 percent opacity or greater, and they do not contain sulfuric acid mist, expressed as H<sub>2</sub>SO<sub>4</sub>, in excess of 0.075 kg per metric ton of acid produced (0.15 lb/ton) when the production is expressed as 100 percent H<sub>2</sub>SO<sub>4</sub>.</p> <p>Determine if a continuous monitoring system is in place for the measurement of SO<sub>2</sub> that is monitored and calibrated.</p>

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<p><b>CFCs AND HALONS</b></p> <p><b>AE.85</b>  <b>Purchasing/ Procurement</b></p> <p><b>AE.85.1.US.</b> When selling Class I or Class II substances suitable for use as a refrigerant in containers of less than 20 lb specific signs are required to be displayed (40 CFR 82.42(c)).</p> <p><b>AE.85.2.US.</b> Certain restrictions concerning the use of CFC and halon substitutes are required to be met (40 CFR 82.174(b) through 82.174(d)).</p> <p><b>AE.85.3.US.</b> Checklist item deleted [<del>Deleted January 2015</del>].</p> <p><b>AE.85.4.US.</b> No Class I or Class II substances suitable for use in motor vehicles as a refrigerant (see Appendix 1-13) can be sold or distributed in any container that is less than 20 lb to any person unless that person is trained and certified (40 CFR 82.34(b) and 82.42(b)(3)).</p>	<p>Verify that a sign is displayed stating the following:</p> <ul style="list-style-type: none"> <li>– It is a violation of federal laws to sell containers of Class I and Class II refrigerant of less than 20 lb of such refrigerant to anyone who is not properly trained and certified to operate approved refrigerant recycling equipment.</li> </ul> <p>(NOTE: See Appendix 1-13 for a list of Class I and Class II substances.)</p> <p>(NOTE: In the 4 December 1996 Federal Register, page 64424, portable fire extinguishing equipment containing HCFCs for nonresidential applications was exempted from the ban on sales and distribution.)</p> <p>Verify that no personnel uses a substitute which they know, or have reason to know, was manufactured, processed, or imported in violation of Federal regulations.</p> <p>Verify that, when a substitute is used, it is an acceptable substitute and is used according to the use restriction outlined in Appendix 1-14.</p> <p>Verify that unacceptable substitutes are not used (see Appendix 1-15).</p> <p>(NOTE: In the 4 December 1996 Federal Register, page 64424, portable fire extinguishing equipment containing HCFCs for nonresidential applications was exempted from the ban on sales and distribution.)</p> <p>(NOTE: The contents of this checklist item have been incorporated into AE.85.6.US.)</p> <p>Determine if any of the Class I or Class II substances listed in Appendix 1-13 are sold or distributed in any container that is less than 20 lb.</p> <p>Verify that these substances are only sold or distributed to certified individual by reviewing records of sales and distribution.</p> <p>Verify that distribution and sales records for these substances are kept for 3 yr.</p> <p>(NOTE: Sales of these substances can be made to an uncertified individual if the purchaser is purchasing small containers for resale only and the purchaser certifies it as such.)</p>

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<p><b>AE.85.5.US.</b> No person may sell or distribute, or offer for sale or distribution any substance that consists in whole or in part of a class I or class II substance, or any non-exempt substitute for use as a refrigerant unless certain parameters are met (40 CFR 82.150(b), 82.154(a)(1), 82.154(c), and 82.154(d)) [Added February 1997; Revised October 2003; Revised April 2004; Revised January 2017; Revised January 2018].</p>	<p>(NOTE: This checklist item applies to any person maintaining, servicing, or repairing appliances containing class I, class II, or non-exempt substitute refrigerants. This checklist item also applies to persons disposing of appliances, [including small appliances and motor vehicle air conditioners (MVAC)], refrigerant reclaimers, technician certifying programs, appliance owners and operators, manufacturers of appliances, manufacturers of recovery and/or recycling equipment, approved recovery and/or recycling equipment testing organizations, persons buying, selling, or offering to sell class I, class II, or non-exempt substitute refrigerants.)</p> <p>Verify that no person sells or distributes, or offers for sale or distribution, any substance that consists in whole or in part of a class I or class II substance or, starting on 1 January 2018, any non-exempt substitute for use as a refrigerant unless:</p> <ul style="list-style-type: none"> <li>– the buyer has been certified as a Type I, Type II, Type III, or Universal technician under 40 CFR 82.161 (see checklist item AE.90.17.US)</li> <li>– the buyer employs at least one technician who is certified as a Type I, Type II, Type III, or Universal technician under 40 CFR 82.161 (see checklist item AE.90.17.US) and provides proof of such to the seller</li> <li>– the buyer has been certified in accordance with 40 CFR 82.30 through 82.42 (see checklist items AE.85.1.US, AE.85.4.US, AE.90.1.US, AE.90.2.US, and AE.90.20.US) and the refrigerant is acceptable for use in MVACs under 40 CFR 82, subpart G</li> <li>– the buyer employs at least one person who is certified under 40 CFR 82.30 through 82.42 (see checklist items AE.85.1.US, AE.85.4.US, AE.90.1.US, AE.90.2.US, and AE.90.20.US), and provides proof of such to the seller and the refrigerant is acceptable for use in MVACs under 40 CFR 82, subpart G</li> <li>– the refrigerant is sold only for eventual resale to persons certified under 40 CFR 82.161 (see checklist item AE.90.17.US) or 40 CFR 82.30 through 82.42 (see checklist items AE.85.1.US, AE.85.4.US, AE.90.1.US, AE.90.2.US, and AE.90.20.US) or to appliance manufacturers (e.g., sold by a manufacturer to a wholesaler, sold by a technician to a reclaimer)</li> <li>– the refrigerant is sold to an appliance manufacturer</li> <li>– the refrigerant is contained in an appliance with a fully assembled refrigerant circuit or an appliance component</li> <li>– the refrigerant is charged into an appliance by a certified technician or an apprentice during maintenance, service, or repair of the appliance</li> <li>– the non-exempt substitute refrigerant is intended for use in an MVAC and is sold in a container designed to hold 2 lbs or less of refrigerant, has a unique fitting, and if manufactured or imported on or after 1 January 2018, has a compliant self-sealing valve.</li> </ul> <p>(NOTE: Nothing in this checklist item circumvents the requirements from 40 CFR 82.34(b) or 40 CFR 82.42(b) pertaining to the sale of Class I or Class II substances suitable for use in motor vehicles as a refrigerant, see checklist item AE.85.4.US.)</p>

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	<p>Verify that, starting 1 January 2018, all containers holding 2 lbs or less of non-exempt substitute refrigerant for use in an MVAC that are manufactured or imported on or after 1 January 2018 meet the following:</p> <ul style="list-style-type: none"> <li>– each container holding two pounds or less of non-exempt substitute refrigerant for use in an MVAC is equipped with a single self-sealing valve that automatically closes and seals when not dispensing refrigerant</li> <li>– the leakage rate from each container does not exceed 3.00 grams per year when the self-sealing valve is closed (NOTE: This leakage rate applies to new, full containers as well as containers that may be partially full.)</li> <li>– the leakage rate is determined using the standards described in appendix E of 40 CFR 82</li> <li>– all testing to demonstrate compliance is conducted by an independent test laboratory in the United States.</li> </ul> <p>(NOTE: An independent test laboratory is one that is not owned, operated, or affiliated with the applicant certifying equipment and/or products.)</p> <p>Verify that no person sells or distributes, or offers for sale or distribution, for use as a refrigerant any class I or class II substance or non-exempt substitute consisting wholly or in part of used refrigerant unless the refrigerant:</p> <ul style="list-style-type: none"> <li>– has been reclaimed by a person who has been certified as a reclaimer</li> <li>– was used only in an MVAC or MVAC-like appliance and is to be used only in an MVAC or MVAC-like appliance and recycled in accordance with 40 CFR 82.30 through 82.42 (see checklist items AE.85.1.US, AE.85.4.US, AE.90.1.US, AE.90.2.US, and AE.90.20.US)</li> <li>– is contained in an appliance that is sold or offered for sale together with a fully assembled refrigerant circuit</li> <li>– is being transferred between or among a parent company and one or more of its subsidiaries, or between or among subsidiaries having the same parent company</li> <li>– is being transferred between or among a Federal agency or department and a facility or facilities owned by the same Federal agency or department.</li> </ul> <p>Verify that persons who sell or distribute, or offer to sell or distribute, any class I or class II refrigerant, or, starting on 1 January 2018, any non-exempt substitute refrigerant keep invoices that indicate the name of the purchaser, the date of sale, and the quantity of refrigerant purchased.</p> <p>(NOTE: Invoices are not required to be kept if the person is selling exempt substitutes or compliant small cans of MVAC refrigerant holding 2bs or less.)</p> <p>Verify that, if the buyer employs a person certified under 40 CFR 82.161 (see checklist item AE.90.17.US) or 40 CFR 82.30 through 82.42 (see checklist items AE.85.1.US, AE.85.4.US, AE.90.1.US, AE.90.2.US, and AE.90.20.US), the seller keeps the documentation provided by the buyer to demonstrate such employment.</p>

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<p><b>AE.85.6.US.</b> The import or use of Class II controlled substances must meet specific parameters (40 CFR 82.15(b), 82.15(f), and 82.15(g)) [Added April 2003; Revised October 2006; Revised January 2015].</p>	<p>(NOTE: Electronic or paper copies of all records described in appendix E must be maintained by manufacturers of containers holding two pounds or less of non-exempt substitute refrigerant for use in an MVAC to verify self-sealing valves meet the requirements.)</p> <p>Verify that all records are kept for 3 yr after each purchase.</p> <p>(NOTE: The following are exempt substitutes:</p> <ul style="list-style-type: none"> <li>– carbon dioxide in any application</li> <li>– nitrogen in any application</li> <li>– water in any application</li> <li>– ammonia in commercial or industrial process refrigeration or in absorption units</li> <li>– chlorine in industrial process refrigeration (processing of chlorine and chlorine compounds)</li> <li>– hydrocarbons in industrial process refrigeration (processing of hydrocarbons)</li> <li>– ethane (R-170) in very low temperature refrigeration equipment and equipment for non-mechanical heat transfer</li> <li>– propane (R-290) in retail food refrigerators and freezers (stand-alone units only); household refrigerators, freezers, and combination refrigerators and freezers; self-contained room air conditioners for residential and light commercial air-conditioning; heat pumps; and vending machines</li> <li>– isobutane (R-600a) in retail food refrigerators and freezers (stand-alone units only); household refrigerators, freezers, and combination refrigerators and freezers; and vending machines;</li> <li>– R-441A in retail food refrigerators and freezers (stand-alone units only); household refrigerators, freezers, and combination refrigerators and freezers; self-contained room air conditioners for residential and light commercial air-conditioning; heat pumps; and vending machines.)</li> </ul> <p>(NOTE: See Appendix 1-13 for a list of class II substances.)</p> <p>Verify that, as of 21 January 2003, no person imported class II controlled substances (other than transshipments, heels, or used class II controlled substances) for which EPA has apportioned baseline production and consumption allowances, in excess of the quantity of unexpended consumption allowances, or conferred unexpended HCFC-141b exemption allowances held by that person in that control period, unless the substances are for use in a process resulting in their transformation or their destruction, or unless they are produced using an exemption</p> <p>(NOTE: Every kilogram of excess import constitutes a separate violation.)</p> <p>Verify that, as of 21 January 2003, no person imported, at any time in any control period, a used class II controlled substance for which EPA has apportioned baseline production and consumption allowances, without having submitted a petition to the</p>

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	<p>Administrator and receiving a non-objection notice in accordance with 40 CFR 82.24(c)(3) and 82.24(c)(4).</p> <p>Verify that a person issued a non-objection notice for the import of an individual shipment of used class II controlled substances does not transfer or confer the right to import, and does not import any more than the exact quantity (in kilograms) of the used class II controlled substance stated in the non-objection notice.</p> <p>Verify that, effective 1 January 2010, no person introduces into interstate commerce or uses HCFC–141b (unless used, recovered, and recycled) for any purpose except for one of the following:</p> <ul style="list-style-type: none"> <li>– for use in a process resulting in its transformation or its destruction</li> <li>– for export to Article 5 Parties</li> <li>– as a transshipment or heel</li> <li>– for permitted exemptions detailed in 40 CFR 82.15(f) (i.e., medical devices).</li> </ul> <p>Verify that, effective 1 January 2010, no person introduces into interstate commerce or uses HCFC–22 or HCFC-142b (unless used, recovered, and recycled) for any purpose except for one of the following:</p> <ul style="list-style-type: none"> <li>– for use in a process resulting in its transformation or its destruction</li> <li>– for use as a refrigerant in equipment manufactured before 1 January 2010</li> <li>– for export to Article 5 Parties</li> <li>– as a transshipment or heel</li> <li>– for permitted exemptions detailed in 40 CFR 82.15(f) (i.e., medical devices).</li> </ul> <p>(NOTE: Introduction into interstate commerce and use of HCFC–22 is not subject to the above prohibitions if the HCFC–22 is for use in one of the following ways:</p> <ul style="list-style-type: none"> <li>– in medical equipment prior to 1 January 2015</li> <li>– in thermostatic expansion valves prior to 1 January 2015</li> <li>– as a refrigerant in appliances manufactured before 1 January 2012, provided that the components are manufactured prior to 1 January 2010, and are specified in a building permit or a contract dated before 1 January 2010</li> <li>– on a particular project.)</li> </ul> <p>Verify that, effective 1 January 2015, no person introduces into interstate commerce or uses HCFC–141b (unless used, recovered, and recycled) for any purpose except for one of the following:</p> <ul style="list-style-type: none"> <li>– for use in a process resulting in its transformation or its destruction</li> <li>– for export to Article 5 Parties</li> <li>– as a transshipment or heel</li> <li>– for permitted exemptions detailed in 40 CFR 82.15(f) (i.e., medical devices).</li> </ul> <p>Verify that, effective 1 January 2015, no person introduces into interstate commerce or uses any class II controlled substance not governed by paragraphs 40 CFR</p>

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<p><b>AE.85.7.US.</b> Containers in which class I or Class II substances are stored or transported and all products containing a class I substance must meet specific labeling requirements (40 CFR 82.102</p>	<p>82.15(g)(1) through (3) (unless used, recovered and recycled) for any purpose other than one of the following:</p> <ul style="list-style-type: none"> <li>– for use in a process resulting in its transformation or its destruction</li> <li>– for use as a refrigerant in equipment manufactured before 1 January 2020</li> <li>– for use as a fire suppression streaming agent listed as acceptable for use or acceptable subject to narrowed use limits for nonresidential applications in accordance with the regulations 40 CFR subpart G</li> <li>– for export to Article 5 Parties</li> <li>– as a transshipment or heel</li> <li>– for permitted exemptions detailed in 40 CFR 82.15(f) (i.e., medical devices)</li> <li>– for the following permitted use exemptions <ul style="list-style-type: none"> <li>– effective 1 January 2015, use of HCFC-225ca or HCFC-225cb as a solvent (excluding use in manufacturing a product containing HCFC-225ca or HCFC-225cb) is not subject to the use prohibition if the person using the HCFC-225ca or HCFC-225cb placed the controlled substance into inventory before 1 January 2015</li> <li>– effective 1 January 2015, use of HCFC-124 as a sterilant for the manufacture and testing of biological indicators if the person using the HCFC-124 placed the controlled substance into inventory before 1 January 2015.</li> </ul> </li> </ul> <p>Verify that, effective 1 January 2030, no person introduces into interstate commerce or uses any class II controlled substance (unless used, recovered, and recycled) for any purpose other than one of the following:</p> <ul style="list-style-type: none"> <li>– for use in a process resulting in its transformation or its destruction</li> <li>– for export to Article 5 Parties</li> <li>– as a transshipment or heel</li> <li>– for permitted exemptions detailed in 40 CFR 82.15(f) (i.e., medical devices).</li> </ul> <p>Verify that, effective 1 January 2040, no person introduces into interstate commerce or uses any class II controlled substance (unless used, recovered, and recycled) for any purpose other than one of the following:</p> <ul style="list-style-type: none"> <li>– for use in a process resulting in its transformation or its destruction</li> <li>– as a transshipment or heel</li> <li>– for permitted exemptions detailed in 40 CFR 82.15(f) (i.e., medical devices).</li> </ul> <p>(NOTE: The labeling requirements apply to:</p> <ul style="list-style-type: none"> <li>– all containers in which a class I or class II substance is stored or transported</li> <li>– all products containing a class I substance</li> <li>– all products directly manufactured with a process that uses a class I substance, unless otherwise exempted by this subpart or, unless the Administrator determines for a particular product that there are no substitute products or manufacturing processes for such product that do not rely on the use of a class</li> </ul>

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82.106, 82.108, 82.110, 82.112) [Added July 2004].	<p>I substance, that reduce overall risk to human health and the environment, and that are currently or potentially available.)</p> <p>(NOTE: If the Administrator makes a determination for a particular product that there are no substitute products or manufacturing processes for such product that do not rely on the use of a class I substance, then the requirements of this subpart are effective for such product no later than 1 January 2015.)</p> <p>(NOTE: As of 1 January 2015, or one year after any determination between 15 May 1993 and 1 January 2015, by the Administrator for a particular product that there are substitute products or manufacturing processes for such product that do not rely on the use of a class I or class II substance, that reduce the overall risk to human health and the environment, and that are currently or potentially available, the labeling requirements apply to the following:</p> <ul style="list-style-type: none"> <li>– all products containing a class II substance</li> <li>– all products manufactured with a process that uses a class II substance.)</li> </ul> <p>(NOTE: The requirements in this checklist item do not apply to products manufactured prior to 15 May 1993, provided that the manufacturer submits documentation to EPA upon request showing that the product was manufactured prior to that date.)</p> <p>Verify that each container bears the following warning statement:</p> <ul style="list-style-type: none"> <li>– WARNING: Contains [or Manufactured with, if applicable]</li> <li>– [insert name of substance], a substance which harms public health</li> <li>– and environment by destroying ozone in the upper atmosphere.</li> </ul> <p>(NOTE: The following products need not bear a warning label:</p> <ul style="list-style-type: none"> <li>– products containing trace quantities of a controlled substance remaining as a residue or impurity due to a chemical reaction, and where the controlled substance serves no useful purpose in or for the product itself (NOTE: If the product was manufactured using the controlled substance, the product is required to be labeled as a ‘product manufactured with’ the controlled substance, unless otherwise exempted)</li> <li>– containers containing a controlled substance in which trace quantities of that controlled substance remain as a residue or impurity</li> <li>– waste containing controlled substances or blends of controlled substances bound for discard</li> <li>– products manufactured using methyl chloroform or CFC-113 by persons who can demonstrate and certify a 95% reduction in overall usage from their 1990 calendar year usage of methyl chloroform or CFC-113 as solvents during a 12 mo period ending within 60 days of such certification or during the most recently completed calendar year.</li> <li>– products that are otherwise not subject to the requirements of this subpart that are being repaired, using a process that uses a controlled substance</li> </ul>

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	<p>– products, processes, or substitute chemicals undergoing research and development, by which a controlled substance is used.)</p> <p>(NOTE: Products intended only for export outside of the United States shall not be considered “products introduced into interstate commerce” provided such products are clearly designated as intended for export only.)</p> <p>(NOTE: Products, processes, or substitute chemicals undergoing research and development, by which a controlled substance is used must be labeled when they are introduced into interstate commerce.)</p> <p>Verify that the warning statement does not interfere with, detract from, or mar any labeling information required on the labeling by federal or state law.</p> <p>Verify that the warning statement is placed so it is clearly legible and conspicuous so that it is likely to be read and understood by consumers under normal conditions of purchase.</p> <p>(NOTE: Such placement includes, but is not limited to, the following:</p> <ul style="list-style-type: none"> <li>– for any affected product or container that has a display panel that is normally viewed by the purchaser at the time of the purchase, the warning statement may appear on any such display panel of the affected product or container such that it is “clearly legible and conspicuous” at the time of the purchase. If the warning statement appears on the principal display panel or outer packaging of any such affected product or container, the warning statement shall qualify as “clearly legible and conspicuous,” as long as the label also fulfills all other requirements and is not obscured by any outer packaging. The warning statement need not appear on such display panel if either: <ul style="list-style-type: none"> <li>– the warning statement appears on the outer packaging of the product or container and is clearly legible and conspicuous</li> <li>– the warning statement is placed in a manner consistent alternative placement requirements</li> </ul> </li> <li>– if the product or container is normally packaged, wrapped, or otherwise covered when viewed by the purchaser at the time of the purchase the warning statement shall appear on any outer packaging, wrapping or other covering used in the retail display of the product or container, such that the warning statement is clearly legible and conspicuous at the time of the purchase. If the outer packaging has a display panel that is normally viewed by the purchaser at the time of the purchase, the warning statement shall appear on such display panel. If the warning statement so appears on such product's or container's outer packaging, it need not appear on the surface of the product or container, as long as the statement also fulfills all other requirements of this subpart. The warning statement need not appear on such outer packaging if either: <ul style="list-style-type: none"> <li>– the warning statement appears on the surface of the product or container and is clearly legible and conspicuous through any outer packaging, wrapping or other covering used in display;</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– the warning statement is placed in a manner consistent alternative placement requirements.</li> <li>– where the purchaser of a product cannot view a product, its packaging or alternative labeling such that the warning statement is clearly legible and conspicuous at the time of purchase the warning statement may be placed in the following manner: <ul style="list-style-type: none"> <li>– where promotional printed material is prepared for display or distribution, the warning statement may be placed on such promotional printed material such that it is clearly legible and conspicuous at the time of purchase</li> <li>– the warning statement may be placed on the product, on its outer packaging, or on alternative labeling such that the warning statement is clearly legible and conspicuous at the time of product delivery, if the product may be returned by the purchaser at or after the time of delivery or if the purchase is not complete until the time of delivery (e.g., products delivered C.O.D.).</li> </ul> </li> </ul> <p>(NOTE: Alternatively, the warning statement may be placed on a hang tag, tape, card, sticker, invoice, bill of lading, supplemental printed material, or similar overlabeling that is securely attached to the container, product, outer packaging or display case, or accompanies the product containing or manufactured with a controlled substance or a container containing class I or class II substances through its sale to the consumer or ultimate consumer. For prescription medical products that have been found to be essential for patient health by the Food and Drug Administration, the warning statement may be placed in supplemental printed material intended to be read by the prescribing physician, as long as the following statement is placed on the product, its packaging, or supplemental printed material intended to be read by the patient: "This product contains [insert name of substance], a substance which harms the environment by depleting ozone in the upper atmosphere." In any case, the warning statement must be clearly legible and conspicuous at the time of the purchase.)</p> <p>Verify that the warning statement appears in conspicuous and legible type by typography, layout, and color with other printed matter on the label.</p> <p>Verify that the warning statement appears in sharp contrast to any background upon which it appears.</p> <p>(NOTE: Examples of combinations of colors which may not satisfy the proposed requirement for sharp contrast are: black letters on a dark blue or dark green background, dark red letters on a light red background, light red letters on a reflective silver background, and white letters on a light gray or tan background.)</p> <p>Verify that the name of the class I or class II substance to be inserted into the warning statement is the standard chemical name of the substance as listed in 40 CFR 82, appendix A to Subpart A, except that:</p>

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<p><b>AE.85.8.US.</b> Procurement of ozone depleting substances and high global warming potential hydrofluorocarbons by federal facilities must meet specific parameters (48 CFR</p>	<ul style="list-style-type: none"> <li>– the acronym “CFC” may be substituted for “chlorofluorocarbon”</li> <li>– the acronym “HCFC” may be substituted for “hydrochlorofluorocarbon”</li> <li>– the term “1,1,1-trichloroethane” may be substituted for “methyl chloroform.”</li> </ul> <p>(NOTE: If a container containing or a product contains or is manufactured with, more than one class I or class II substance, the warning statement may include the names of all of the substances in a single warning statement, provided that the combined statement clearly distinguishes which substances the container or product contains and which were used in the manufacturing process.</p> <p>Verify that the warning statement is blocked within a square or rectangular area, with or without a border and the warning statement appears in lines that are parallel to the surrounding text on the product's PDP, display panel, supplemental printed material or promotional printed material.</p> <p>Verify that the ratio of the height of a capital letter to its width is such that the height of the letter is no more than 3 times its width; the signal word “WARNING” appears in all capital letters.</p> <p>Verify that the warning statement appears at least as large as the type sizes prescribed.</p> <p>(NOTE: The type size refers to the height of the capital letters. A larger type size materially enhances the legibility of the statement and is desirable. See the text of 40 CFR 82.110(f) for explicit details on type size.)</p> <p>(NOTE: Manufacturers, distributors, wholesalers, and retailers that purchase spare parts manufactured with a class I substance from another manufacturer or supplier, and sell such spare parts for the sole purpose of repair, are not required to pass through an applicable warning label if such products are removed from the original packaging provided by the manufacturer from whom the products are purchased. Manufacturers of the spare parts manufactured with controlled substances must still label their products; furthermore, manufacturers, importers, and distributors of such products must pass through the labeling information as long as products remain assembled and packaged in the manner assembled and packaged by the original manufacturer. This exemption shall not apply if a spare part is later used for manufacture and/or for purposes other than repair.)</p> <p>Verify that preference is given to the procurement of acceptable alternative chemicals, products, and manufacturing processes that reduce overall risks to human health and the environment by minimizing:</p> <ul style="list-style-type: none"> <li>– the depletion of ozone in the upper atmosphere</li> <li>– the potential use, release, or emission of high global warming potential hydrofluorocarbons.</li> </ul>

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23.802, through 23.804) [Added July 2016].	<p>(NOTE: It is the policy of the Federal Government that Federal agencies implement cost-effective programs to minimize the procurement of materials and substances that contribute to the depletion of stratospheric ozone and/or result in the use, release or emission of high global warming potential hydrofluorocarbons.)</p> <p>Verify that specifications and purchase descriptions, and the acquisition of products and services:</p> <ul style="list-style-type: none"> <li>– comply with the requirements of title VI of the Clean Air Act, section 706 of division D, title VII of Public Law 111-8, Executive Order 13693, and 40 CFR 82.84(a)(2), (3), (4), and (5)</li> <li>– substitute acceptable alternatives to ozone-depleting substances, as identified under 42 U.S.C. 7671k, to the maximum extent practicable, as provided in 40 CFR 82.84(a)(1), except in the case of Class I substances being used for specified essential uses, as identified under 40 CFR 82.4(n)</li> <li>– unless a particular contract requires otherwise, specify that, when feasible, contractors use another acceptable alternative in lieu of a high global warming potential hydrofluorocarbon in products and services in a particular end use for which EPA's Significant New Alternatives Policy (SNAP) program has identified other acceptable alternatives that have lower global warming potential</li> <li>– refer to EPA's SNAP program for the list of alternatives, found at 40 CFR part 82, subpart G, as well as supplemental tables of alternatives (available at <a href="http://www.epa.gov/snap">http://www.epa.gov/snap</a>).</li> </ul> <p>Verify that contracts include the following clauses:</p> <ul style="list-style-type: none"> <li>– 52.223-11, Ozone-Depleting Substances and High Global Warming Potential Hydrofluorocarbons, in solicitations and contracts for: <ul style="list-style-type: none"> <li>– refrigeration equipment (in product or service code (PSC) 4110)</li> <li>– air conditioning equipment (PSC 4120)</li> <li>– clean agent fire suppression systems/equipment (e.g., installed room flooding systems, portable fire extinguishers, aircraft/tactical vehicle fire/explosion suppression systems) (in PSC 4210)</li> <li>– bulk refrigerants and fire suppressants (in PSC 6830);</li> <li>– solvents, dusters, freezing compounds, mold release agents, and any other miscellaneous chemical specialty that may contain ozone-depleting substances or high global warming potential hydrofluorocarbons (in PSC 6850)</li> <li>– corrosion prevention compounds, foam sealants, aerosol mold release agents, and any other preservative or sealing compound that may contain ozone-depleting substances or high global warming potential hydrofluorocarbons (in PSC 8030)</li> <li>– fluorocarbon lubricants (primarily aerosols) (in PSC 9150); and</li> <li>– any other manufactured end products that may contain or be manufactured with ozone-depleting substances</li> </ul> </li> </ul>

<p style="text-align: center;"><b>COMPLIANCE CATEGORY</b>  <b>AIR EMISSIONS MANAGEMENT</b>  <b>U.S. TEAM Guide</b></p>	
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<p><b>AE.85.9.US.</b> When selling, distributing, or offering for sale or distribution appliances certain parameters related to refrigerants must be met (40 CFR 82.150(b). 82.154(a)(1), and 82.154(e)) <b>[Added January 2017]</b>.</p>	<ul style="list-style-type: none"> <li>– 52.223-12, Maintenance, Service, Repair, or Disposal of Refrigeration Equipment and Air Conditioners, in solicitations and contracts that include the maintenance, service, repair, or disposal of: <ul style="list-style-type: none"> <li>– refrigeration equipment, such as refrigerators, chillers, or freezers</li> <li>– air conditioners, including air conditioning systems in motor vehicles</li> </ul> </li> <li>– 52.223-20, Aerosols, in solicitations and contracts: <ul style="list-style-type: none"> <li>– for products that may contain high global warming potential hydrofluorocarbons as a propellant, or as a solvent</li> <li>– that involve maintenance or repair of electronic or mechanical devices.</li> </ul> </li> <li>– 52.223-21, Foams, in solicitations and contracts for: <ul style="list-style-type: none"> <li>– products that may contain high global warming potential hydrofluorocarbons or refrigerant blends containing hydrofluorocarbons as a foam blowing agent, such as building foam insulation or appliance foam insulation</li> <li>– construction of buildings or facilities.</li> </ul> </li> </ul> <p>(NOTE: This checklist item applies to any person maintaining, servicing, or repairing appliances containing class I, class II, or non-exempt substitute refrigerants. This checklist item also applies to persons disposing of appliances, [including small appliances and motor vehicle air conditioners (MVAC)], refrigerant reclaimers, technician certifying programs, appliance owners and operators, manufacturers of appliances, manufacturers of recovery and/or recycling equipment, approved recovery and/or recycling equipment testing organizations, persons buying, selling, or offering to sell class I, class II, or non-exempt substitute refrigerants.)</p> <p>Verify that no person sells or distributes, or offers for sale or distribution, any appliance (except small appliances and appliances containing only refrigerants that have been exempted) unless it is equipped with a servicing aperture to facilitate the removal of refrigerant at servicing and disposal.</p> <p>Verify that no person sells or distributes, or offers for sale or distribution, any small appliance (except appliances containing only refrigerants that have been exempted) unless it is equipped with a process stub to facilitate the removal of refrigerant at servicing and disposal.</p> <p>(NOTE: The following are exempt substitutes:</p> <ul style="list-style-type: none"> <li>– carbon dioxide in any application</li> <li>– nitrogen in any application</li> <li>– water in any application</li> <li>– ammonia in commercial or industrial process refrigeration or in absorption units</li> <li>– chlorine in industrial process refrigeration (processing of chlorine and chlorine compounds)</li> <li>– hydrocarbons in industrial process refrigeration (processing of hydrocarbons)</li> </ul>

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	<ul style="list-style-type: none"> <li>– ethane (R-170) in very low temperature refrigeration equipment and equipment for non-mechanical heat transfer</li> <li>– propane (R-290) in retail food refrigerators and freezers (stand-alone units only); household refrigerators, freezers, and combination refrigerators and freezers; self-contained room air conditioners for residential and light commercial air-conditioning and heat pumps; vending machines effective 3 January 2017, self-contained commercial ice machines, very low temperature refrigeration equipment, and water coolers</li> <li>– isobutane (R-600a) in retail food refrigerators and freezers (stand-alone units only); household refrigerators, freezers, and combination refrigerators and freezers; and vending machines;</li> <li>– R-441A in retail food refrigerators and freezers (stand-alone units only); household refrigerators, freezers, and combination refrigerators and freezers; self-contained room air conditioners for residential and light commercial air-conditioning; heat pumps; and vending machines.)</li> </ul>



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<b>CFCs AND HALONS</b>  <b>AE.90</b> <b>Repair/Recycling</b>  <b>AE.90.1.US.</b> When servicing, maintaining, or repairing MVAC or MVAC-like appliances personnel are required to be trained and certified in the use of CFCs and Halons (40 CFR 82.34(a), 82.42(a), 82.42(b)(1), 82.42(b)(2), and 82.42(b)(4)) [Revised December 1997; Revised April 2004; Revised January 2017].  <b>AE.90.2.US.</b> Recovery and/or recycling equipment used during the maintenance, service, repair, or disposal of appliances containing any class I or class II refrigerant or any non-exempt substitute refrigerant is required to be certified by an approved equipment testing	<p>(NOTE: This checklist item applies to any person servicing, maintaining, or repairing MVAC or MVAC-like appliances. For the requirements pertaining to the training of personnel servicing, maintaining, or servicing appliances in general, see 40 CFR 82.161(a) [see checklist item AE.90.17.US].)</p> <p>Determine if personnel are servicing/repairing MVAC or MVAC-like appliances for consideration.</p> <p>Verify that the individual who does the repair and/or servicing is certified and that the equipment being used is approved by the USEPA.</p> <p>Verify that the USEPA administration has been notified that there is an individual onsite who has been trained and certified and is performing MVAC repair.</p> <p>Verify that records are kept of where the refrigerant is sent and personnel certification for 3 yr.</p> <p>(NOTE: Certifications are not transferable.)</p> <p>(NOTE: The term “for payment” is not clearly defined. For Federal facilities, the interpretation will be that, if the personnel repairing or servicing MVACs are paid employees of the Federal facility, they must be trained and certified.)</p> <p>(NOTE: An “MVAC-like Appliance” is defined as a mechanical vapor compression, open-drive compressor appliance with a full charge of 20 lbs or less of refrigerant used to cool the driver's or passenger's compartment of off-road vehicles or equipment. This includes, but is not limited to, the air-conditioning equipment found on agricultural or construction vehicles. This definition is not intended to cover appliances using R-22 refrigerant.)</p> <p>(NOTE: This checklist item applies to any person maintaining, servicing, or repairing appliances containing class I, class II, or non-exempt substitute refrigerants. This checklist item also applies to persons disposing of appliances, [including small appliances and motor vehicle air conditioners (MVAC)], refrigerant reclaimers, technician certifying programs, appliance owners and operators, manufacturers of appliances, manufacturers of recovery and/or recycling equipment, approved recovery and/or recycling equipment testing organizations, persons buying, selling, or offering to sell class I, class II, or non-exempt substitute refrigerants.)</p>

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<p>organization (40 CFR 82.150(b) and 82.158(a) through 82.158(h)) [Revised June 1996; Revised July 2003; Revised October 2003; Revised April 2004; Revised July 2008; Revised April 2012; Revised January 2017].</p>	<p>Verify that recovery and/or recycling equipment for use during the maintenance, service, repair, or disposal of appliances containing any class I or class II refrigerant or any non-exempt substitute refrigerant is certified by an approved equipment testing organization.</p> <p>(NOTE: An “appliance is defined as any device which contains and uses a class I or class II substance or substitute as a refrigerant and which is used for household or commercial purposes, including any air conditioner, motor vehicle air conditioner, refrigerator, chiller, or freezer. For a system with multiple circuits, each independent circuit is considered a separate appliance (40 CFR 82.152).)</p> <p>Verify that certified refrigerant recovery and/or recycling equipment is not altered in a way that would affect the equipment's ability to meet the certification standards without resubmitting the altered design for certification testing.</p> <p>(NOTE: See the text of 40 CFR 82.158(c) through 82.158(f) for details on the evacuation levels which have to be met for certification for equipment used with appliances, small appliances, MVACs, and MVAC-like appliances.)</p> <p>(NOTE: Recovery and/or recycling equipment manufactured or imported before 15 November 1993, intended for use during the maintenance, service, repair, or disposal of appliances (except small appliances, MVACs, and MVAC-like appliances) will be considered certified if it is capable of achieving the level of evacuation specified in Table 2 of 40 CFR 82.158 (see text) when tested using a properly calibrated pressure gauge.)</p> <p>Verify that certified equipment has the following label:</p> <p style="text-align: center;">THIS EQUIPMENT HAS BEEN CERTIFIED BY [APPROVED EQUIPMENT TESTING ORGANIZATION] TO MEET EPA'S MINIMUM REQUIREMENTS FOR RECYCLING OR RECOVERY EQUIPMENT INTENDED FOR USE WITH [APPROPRIATE CATEGORY OF APPLIANCE].</p> <p>Verify that the label also shows the date of manufacture and the serial number (if applicable) of the equipment.</p> <p>Verify that the label is affixed in a readily visible or accessible location, is made of a material expected to last the lifetime of the equipment, presents required information in a manner so that it is likely to remain legible for the lifetime of the equipment, and is affixed in such a manner that it cannot be removed from the equipment without damage to the label.</p> <p>Verify that retests or inspections are conducted at least once every 3 yr after the equipment is first certified.</p>

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<b>AE.90.3.US.</b> No person maintaining, servicing, repairing, or disposing of appliances may knowingly vent or otherwise release into the environment any refrigerant from such appliances (40 CFR 82.150(b) and 82.154(a)) [ <b>Revised April 2004; Revised July 2014; Revised July 2015; Revised January 2017</b> ].	<p>(NOTE: This checklist item applies to any person maintaining, servicing, or repairing appliances containing class I, class II, or non-exempt substitute refrigerants. This checklist item also applies to persons disposing of appliances, [including small appliances and motor vehicle air conditioners (MVAC)], refrigerant reclaimers, technician certifying programs, appliance owners and operators, manufacturers of appliances, manufacturers of recovery and/or recycling equipment, approved recovery and/or recycling equipment testing organizations, persons buying, selling, or offering to sell class I, class II, or non-exempt substitute refrigerants.)</p> <p>Verify that no person maintaining, servicing, repairing, or disposing of an appliance or industrial process refrigeration knowingly vents or otherwise releases into the environment any refrigerant from such appliances.</p> <p>(NOTE: The following substitutes in the following end-uses are exempt from the venting prohibition and from the requirements of 40 CFR 82, Subpart F [40 CFR 82.150 through 82.169]:</p> <ul style="list-style-type: none"> <li>– carbon dioxide in any application</li> <li>– nitrogen in any application</li> <li>– water in any application</li> <li>– ammonia in commercial or industrial process refrigeration or in absorption units</li> <li>– chlorine in industrial process refrigeration (processing of chlorine and chlorine compounds)</li> <li>– hydrocarbons in industrial process refrigeration (processing of hydrocarbons)</li> <li>– ethane (R-170) in very low temperature refrigeration equipment and equipment for non-mechanical heat transfer</li> <li>– propane (R-290) in retail food refrigerators and freezers (stand-alone units only); household refrigerators, freezers, and combination refrigerators and freezers; self-contained room air conditioners for residential and light commercial air-conditioning; heat pumps; and vending machines</li> <li>– isobutane (R-600a) in retail food refrigerators and freezers (stand-alone units only); household refrigerators, freezers, and combination refrigerators and freezers; and vending machines;</li> <li>– R-441A in retail food refrigerators and freezers (stand-alone units only); household refrigerators, freezers, and combination refrigerators and freezers; self-contained room air conditioners for residential and light commercial air-conditioning; heat pumps; and vending machines.)</li> </ul> <p>(NOTE: The knowing release of refrigerant subsequent to its recovery from an appliance shall be considered a violation of this prohibition.)</p> <p>(NOTE: De minimis releases associated with good faith attempts to recycle or recover refrigerants are not subject to this prohibition. Releases shall be considered de minimis only if they occur when one of the following is true:</p> <ul style="list-style-type: none"> <li>– the required practices set forth in 40 CFR 82.155 (see checklist item AE.90.24.US), 40 CFR 82.156 (see checklist items AE.90.7.US through</li> </ul>

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<p><b>AE.90.4.US.</b> No person can maintain, service, repair, or dispose of an appliance containing class I or class II refrigerant or a non-exempt substitute unless specific requirements are met (40 CFR 82.150(b) and 82.154(b)) [Revised April 2004; Revised January 2017].</p>	<p>AE.90.9.US, AE.90.14.US through AE.90.16.US, AE.90.18.US, and AE.90.19.US), and 40 CFR 82.157 (see checklist items AE.90.25.US, AE.95.26.US, and AE.95.4.US) are observed, the recovery or recycling machines that meet the requirements set forth in 40 CFR 82.158 (see checklist item AE.90.2.US) are used, and the technician certification provisions set forth in 40 CFR 82.161 (see checklist item AE.90.17.US) observed, and the reclamation requirements in 40 CFR 82.164 (see text) are observed</p> <p>– the requirements set forth in 40 CFR 82, Subpart B: <i>Servicing of Motor Vehicle Air Conditioners</i> are observed.)</p> <p>Verify that no person maintains, services, repairs, or disposes of an appliance containing a class I or class II refrigerant or a non-exempt substitute refrigerant without observing the applicable practices in:</p> <ul style="list-style-type: none"> <li>– 40 CFR 82.155 (see checklist item AE.90.24.US)</li> <li>– 40 CFR 82.156 (see checklist items AE.90.7.US through AE.90.9.US, AE.90.14.US through AE.90.16.US, AE.90.18.US, and AE.90.19.US)</li> <li>– 40 CFR 82.157 (see checklist items (see checklist items AE.90.25.US, AE.95.26.US, and AE.95.4.US).</li> </ul> <p>Verify that no person maintains, services, repairs, or disposes of an appliance containing a class I or class II refrigerant or a non-exempt substitute refrigerant without using recovery and/or recycling equipment that is certified for that type of refrigerant and appliance under 40 CFR 82.158 (see checklist item AE.90.2.US).</p> <p>(NOTE: This checklist item applies to any person maintaining, servicing, or repairing appliances containing class I, class II, or non-exempt substitute refrigerants. This checklist item also applies to persons disposing of appliances, [including small appliances and motor vehicle air conditioners (MVAC)], refrigerant reclaimers, technician certifying programs, appliance owners and operators, manufacturers of appliances, manufacturers of recovery and/or recycling equipment, approved recovery and/or recycling equipment testing organizations, persons buying, selling, or offering to sell class I, class II, or non-exempt substitute refrigerants.)</p>
<p><b>AE.90.5.US.</b> Checklist item deleted [Revised April 2004; Revised January 2010; Revised April 2012; Deleted January 2017].</p>	<p>(NOTE: Checklist item based on 40 CFR 82.162 deleted with removal of 82.162 with the November 2016 revision to 40 CFR 82.)</p>
<p><b>AE.90.6.US.</b> Checklist item deleted [Revised April 2004; Revised April 2012; Deleted January 2017].</p>	<p>(NOTE: Checklist item based on 40 CFR 82.162 deleted with removal of 82.162 with the November 2016 revision to 40 CFR 82.)</p>

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<p><b>AE.90.7.US.</b> Checklist item deleted [Revised January 1995; Revised April 2004; Revised April 2012; Deleted January 2017].</p> <p><b>AE.90.8.US.</b> System-dependent equipment must not be used with appliances normally containing more than 15 lb of refrigerant unless certain parameters are met (40 CFR 82.150(b) and 82.156(e)) [Revised April 2004; Revised January 2017].</p> <p><b>AE.90.9.US.</b> Appliances (including small appliances, MVACs, and MVAC-like appliances) being opened for service, maintenance, repair, or disposal must be evacuated according to specific parameters (40 CFR 82.150(b) and 82.156(a) through 82.156(d), 82.156(f) through 82.156(h)) [Revised January 1995; Revised October 2003; Revised April 2004; Revised January 2017].</p>	<p>(NOTE: This checklist item was incorporated into AE.90.2.US with the November 2016 revision to 40 CFR 82.)</p> <p>Verify that system-dependent equipment is not used with appliances with a full charge of more than 15 lb of refrigerant unless the system-dependent equipment is permanently attached to the appliance as a pump-out unit.</p> <p>(NOTE: System-Dependent Recovery Equipment is defined as refrigerant recovery equipment that requires the assistance of components contained in an appliance to remove the refrigerant from the appliance (40 CFR 82.152).)</p> <p>(NOTE: This checklist item applies to any person maintaining, servicing, or repairing appliances containing class I, class II, or non-exempt substitute refrigerants. This checklist item also applies to persons disposing of appliances, [including small appliances and motor vehicle air conditioners (MVAC)], refrigerant reclaimers, technician certifying programs, appliance owners and operators, manufacturers of appliances, manufacturers of recovery and/or recycling equipment, approved recovery and/or recycling equipment testing organizations, persons buying, selling, or offering to sell class I, class II, or non-exempt substitute refrigerants.)</p> <p>(NOTE: Until 1 January 2018, this checklist item applies only to evacuation of refrigerant from appliances containing class I or class II refrigerants. Starting on 1 January 2018, this checklist item applies to evacuation of refrigerant from appliances containing any class I or class II refrigerant or any non-exempt substitute refrigerant.)</p> <p>Verify that, before opening appliances (except small appliances, MVACs, and MVAC-like appliances [see below in this checklist item for requirements related to small appliances, MVACs, and MVAC-like appliances]) or disposing of such appliances, technicians evacuate the refrigerant, including all the liquid refrigerant, to the levels in Appendix 1-16 using a certified recovery and/or recycling machine (see 40 CFR 82.158, checklist item AE.90.2.US) unless the following situations apply:</p> <ul style="list-style-type: none"> <li>– if evacuation of the appliance to the atmosphere is not to be performed after completion of the maintenance, service, or repair, and if the maintenance, service, or repair is not major, the appliance must: <ul style="list-style-type: none"> <li>– be evacuated to a pressure no higher than 0 psig before it is opened if it is a medium-, high- or very high-pressure appliance</li> <li>– be pressurized to a pressure no higher than 0 psig before it is opened if it is a low-pressure appliance, and</li> <li>– cover openings when isolation is not possible</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– when pressurizing low-pressure appliances that use refrigerants with boiling points at or below 85 F at 29.9 inches of mercury (standard atmospheric pressure), methods such as nitrogen that require subsequent purging are not used</li> <li>– when pressurizing low-pressure appliances that use refrigerants with boiling points above 85 F at 29.9 inches of mercury, heat is used to raise the internal pressure of the appliance as much as possible, but nitrogen may be used to raise the internal pressure of the appliance from the level attainable through use of heat to atmospheric pressure</li> <li>– for the purposes of oil changes, be evacuated or pressurized to a pressure no higher than 5 psig, before it is opened; or drain the oil into a system receiver to be evacuated or pressurized to a pressure no higher than 5 psig</li> <li>– if leaks in the appliance make evacuation to the levels in Appendix 1-16 unattainable or would substantially contaminate the refrigerant being recovered, persons opening or disposing of the appliance must: <ul style="list-style-type: none"> <li>– isolate leaking from non-leaking components wherever possible;</li> <li>– evacuate non-leaking components to be opened or disposed of to the levels specified in Table 1; and</li> <li>– evacuate leaking components to be opened or disposed of to the lowest level that can be attained without substantially contaminating the refrigerant (NOTE: This level may not exceed 0 psig).</li> </ul> </li> </ul> <p>(NOTE: Technicians may evacuate either the entire appliance or the part to be serviced, if the refrigerant in the part can be isolated to a system receiver.)</p> <p>Verify that, as of 1 January 2018, technicians evacuating refrigerant from appliances with a full charge of more than 5 and less than 50 pounds of refrigerant for purposes of disposal of that appliance keep records documenting the following for 3 yr:</p> <ul style="list-style-type: none"> <li>– the company name, location of the appliance, date of recovery, and type of refrigerant recovered for each appliance</li> <li>– the total quantity of refrigerant, by type, recovered from all disposed appliances in each calendar month</li> <li>– the quantity of refrigerant, by type, transferred for reclamation and/or destruction, the person to whom it was transferred, and the date of transfer.</li> </ul> <p>Verify that before opening a small appliance or when disposing of a small appliance, the refrigerant is recovered using a certified recovery and/or recycling machine according to the following conditions:</p> <ul style="list-style-type: none"> <li>– recover 80 percent of the refrigerant in the small appliance when using recycling and recovery equipment manufactured before 15 November 1993</li> </ul>

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<p><b>AE.90.10.US.</b> Checklist item moved [<b>Moved April 2004</b>].</p>	<ul style="list-style-type: none"> <li>– recover 90 percent of the refrigerant in the appliance when the compressor in the appliance is operating, or 80 percent of the refrigerant in the appliance when the compressor in the appliance is not operating when using recycling or recovery equipment manufactured on or after 15 November 1993</li> <li>– evacuate the small appliance to 4-in of mercury vacuum.</li> </ul> <p>Verify that persons opening MVAC-like appliances for maintenance, service, or repair do so only while properly using recycling and/or recovery equipment certified pursuant to 40 CFR 82.158(f) or 82.36 (see checklist item AE.90.2.US), as applicable.</p> <p>Verify that all persons recovering refrigerant from MVAC-like appliances for purposes of disposal of these appliances evacuate the appliance in accordance with 40 CFR 82.30 through 82.42 (see checklist items AE.85.1.US, AE.85.4.US, AE.90.1.US, AE.90.2.US, and AE.90.20.US) or reduce the system pressure to or below 102 mm of mercury vacuum.</p> <p>Verify that all persons recovering refrigerant from MVACs for purposes of disposal of these appliances evacuate the appliance in accordance with 40 CFR 82.30 through 82.42 (see checklist items AE.85.1.US, AE.85.4.US, AE.90.1.US, AE.90.2.US, and AE.90.20.US) or reduce the system pressure to or below 102 mm of mercury vacuum.</p> <p>(NOTE: Persons who maintain, service, repair, or dispose of only appliances that they own and that contain pump-out units are exempt from the requirement to use certified, self-contained recovery and/or recycling equipment.)</p> <p>(NOTE: Refrigerant may be returned to the appliance from which it is recovered or to another appliance owned by the same person without being recycled or reclaimed, unless the appliance is an MVAC or MVAC-like appliance.)</p> <p>(NOTE: This checklist item applies to any person maintaining, servicing, or repairing appliances containing class I, class II, or non-exempt substitute refrigerants. This checklist item also applies to persons disposing of appliances, [including small appliances and motor vehicle air conditioners (MVAC)], refrigerant reclaimers, technician certifying programs, appliance owners and operators, manufacturers of appliances, manufacturers of recovery and/or recycling equipment, approved recovery and/or recycling equipment testing organizations, persons buying, selling, or offering to sell class I, class II, or non-exempt substitute refrigerants.)</p> <p>(NOTE: The requirements in this checklist item have been combined into AE.90.9.US.)</p>

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<b>AE.90.11.US.</b> Checklist item moved <b>[Revised October 1995; Moved April 2004]</b> .	(NOTE: The requirements in this checklist item have been combined into AE.90.9.US.)
<b>AE.90.12.US.</b> Checklist item moved <b>[Moved April 2004]</b> .	(NOTE: The requirements in this checklist item have been combined into AE.90.9.US.)
<b>AE.90.13.US.</b> Checklist item moved <b>[Moved April 2004]</b> .	(NOTE: The requirements in this checklist item have been combined into AE.90.9.US.)
<b>AE.90.14.US.</b> Checklist item deleted <b>[Revised April 2004; Deleted January 2017]</b> .	(NOTE: This checklist item is deleted with the November 2016 revision to 40 CFR 82.)
<b>AE.90.15.US.</b> Checklist item deleted <b>[Revised April 2004; Moved January 2017]</b> .	(NOTE: This checklist item was incorporated into AE.90.9.US with the November 2016 revision to 40 CFR 82.)
<b>AE.90.16.US.</b> Leaking commercial refrigeration equipment must be repaired when specific limits are exceeded (40 CFR 82.150(b), 82.156(i)(1), 82.156(i)(3), 82.156(i)(6), 82.156(i)(8) through 82.156(i)(10)) <b>[Revised October 1995; Revised April 2005; Revised January 2017]</b> .	<p>(NOTE: This checklist item applies to any person maintaining, servicing, or repairing appliances containing class I, class II, or non-exempt substitute refrigerants. This checklist item also applies to persons disposing of appliances, [including small appliances and motor vehicle air conditioners (MVAC)], refrigerant reclaimers, technician certifying programs, appliance owners and operators, manufacturers of appliances, manufacturers of recovery and/or recycling equipment, approved recovery and/or recycling equipment testing organizations, persons buying, selling, or offering to sell class I, class II, or non-exempt substitute refrigerants.)</p> <p>(NOTE: This checklist item applies to appliances containing class I or class II refrigerants until 1 January 2019. Starting 1 January 2019, the provisions in 40 CFR 82.157 (see checklist items AE.90.25.US, AE.95.26.US, and AE.95.4.US) apply instead.)</p> <p>(NOTE: See Appendix 1-16a for the definitions which apply to this checklist item only.)</p> <p>Verify that, if the facility owns commercial refrigeration equipment normally containing more than 50 lb of refrigerant, all leaks are repaired if the equipment is leaking at a rate such that the loss of refrigerant will exceed 35 percent of the total charge during a 12-mo period.</p> <p>Verify that leaks have been repaired within 30 days of discovery or within 30 days of when the leak should have been discovered, if the facility intentionally shielded themselves from information that would have revealed a leak.</p> <p>(NOTE: The following are exemptions to the leak repair requirements:</p>

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	<ul style="list-style-type: none"> <li>– a 1-yr retrofit or retirement plan for the leaking equipment with the following information is developed no later than 30 days after the decision to retire or retrofit the appliance and the plan is kept at the site of the equipment               <ul style="list-style-type: none"> <li>– if retrofitting the appliance, what refrigerant or substitute with a lower or equivalent ozone-depleting potential than the previous refrigerant will be used</li> <li>– if retiring and replacing the appliance, how will they replace appliance with an appliance that uses a refrigerant or substitute with a lower or equivalent ozone-depleting potential and must include such a change in the retirement plan</li> </ul> </li> <li>– a Federally owned commercial or comfort cooling appliance can have up to 1 yr to complete repairs if the following criteria are met:               <ul style="list-style-type: none"> <li>– there is an appropriations/procurements problem</li> <li>– the USEPA is notified and explanation provided of the reason for delay</li> <li>– records are kept to document that these criteria are met</li> <li>– the appliance is mothballed.)</li> </ul> </li> </ul> <p>Verify that, if the owners or operators of a Federally owned commercial refrigerant appliance determines the leaks cannot be repaired within the required time limit and an extension is needed, the following actions have been done:</p> <ul style="list-style-type: none"> <li>– all repair efforts and notification efforts are documented</li> <li>– the reason for inability to comply is submitted to the USEPA within 30 days of discovering the leaks.</li> </ul> <p>(NOTE: Owner or operators of Federally owned commercial refrigeration equipment may have more than 30 days to repair leaks if the appliance is located in an area subject to radiological contamination or where the shutting down of the appliance would directly lead to radiological contamination.)</p> <p>Verify that, if the facility has received a time extension for the repairs, the repair efforts performed are those that sound professional judgment indicates will be sufficient to bring the leak rates below the applicable allowable annual rate.</p> <p>Verify that, when an industrial process shutdown has occurred or when repairs have been made while an appliance is mothballed, the owners or operators conduct an initial verification test at the conclusion of the repairs and a follow-up verification test within 30 days of completing the repairs or within 30 days of bringing the appliance back on-line, if taken off-line, but no sooner than when the appliance has achieved normal operating characteristics and conditions.</p> <p>Verify that, when repairs have been conducted without an industrial process shutdown or system mothballing, an initial verification test is conducted at the conclusion of the repairs, and a follow-up verification test is conducted within 30 days of the initial verification test.</p>

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<p><b>AE.90.17.US.</b> Technicians are required to be certified through an approved technician certification program (40 CFR 82.150(b) and 82.161(a)) [Added January 1995; Revised October 2003; Revised April 2004; Revised January 2017].</p>	<p>Verify that, in all cases, the follow-up verification test is conducted at normal operating characteristics and conditions, unless sound professional judgment indicates that tests performed at normal operating characteristics and conditions will produce less reliable results, in which case the follow-up verification test is conducted at or near the normal operating pressure where practicable, and at or near the normal operating temperature where practicable.</p> <p>Verify that, if the owners or operators of federally-owned commercial refrigeration or of federally-owned comfort cooling appliances who are granted additional time take the appliance off-line, they do not bring the appliance back on-line until an initial verification test indicates that the repairs have been successfully completed, demonstrating the leak or leaks are repaired.</p> <p>(NOTE: The owners or operators of the industrial process refrigeration equipment, federally-owned commercial refrigeration appliances, or federally-owned comfort cooling appliances are exempted from the initial verification test requirement only where the owners or operators will retrofit or retire the industrial process refrigeration equipment, federally-owned commercial refrigeration appliance, or federally-owned comfort cooling appliance.</p> <p>Verify that, if the follow-up verification test indicates that the repairs to industrial process refrigeration equipment, federally-owned commercial refrigeration equipment, or federally-owned comfort cooling appliances have not been successful, the owner or operator retrofits or retires the equipment.</p> <p>(NOTE: See also 40 CFR 82.156(i)(8) [see checklist item AE.90.19.US.] for additional requirements if an extension has been granted.)</p> <p>(NOTE: Until 1 January 2018, this checklist item applies only to technicians that maintain, service, or repair appliances containing class I or class II refrigerants. Starting on 1 January 2018, this checklist item applies to technicians and organizations certifying technicians that maintain, service, or repair appliances containing any class I or class II refrigerant or any non-exempt substitute refrigerant.)</p> <p>(NOTE: This checklist item applies to any person maintaining, servicing, or repairing appliances containing class I, class II, or non-exempt substitute refrigerants. This checklist item also applies to persons disposing of appliances, [including small appliances and motor vehicle air conditioners (MVAC)], refrigerant reclaimers, technician certifying programs, appliance owners and operators, manufacturers of appliances, manufacturers of recovery and/or recycling equipment, approved recovery and/or recycling equipment testing organizations, persons buying, selling, or offering to sell class I, class II, or non-exempt substitute refrigerants.)</p> <p>Verify that any person who could be reasonably expected to violate the integrity of the refrigerant circuit during the maintenance, service, repair, or disposal of</p>

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<b>AE.90.18.US.</b> Leaking industrial process refrigeration	<p>appliances containing a class I or class II refrigerant or a non-exempt substitute refrigerant passes a certification exam offered by an approved technician certification program.</p> <p>(NOTE: Apprentices are exempt from this certification requirement if the apprentice is closely and continually supervised by a certified technician while performing any maintenance, service, repair, or disposal that could reasonably be expected to release refrigerant from appliances into the environment, except those substitute refrigerants which are exempted.)</p> <p>(NOTE: The type of certification needed depends on the equipment being maintained, serviced, or repaired:</p> <ul style="list-style-type: none"> <li>– persons who maintain, service, or repair small appliances need to be certified as Type I technicians</li> <li>– persons who maintain, service, repair, or dispose of medium-, high-, or very high-pressure appliances (except small appliances, MVACs, and MVAC-like appliances) need to be certified as Type II technicians</li> <li>– persons who maintain, service, repair, or dispose of low-pressure appliances need to be certified as Type III technicians</li> <li>– persons who maintain, service, repair, or dispose of all of the following need to be certified as Universal technicians:               <ul style="list-style-type: none"> <li>– small appliances</li> <li>– medium-, high-, or very high-pressure appliances (except small appliances, MVACs, and MVAC-like appliances)</li> <li>– low-pressure appliances</li> </ul> </li> <li>– persons who maintain, service, or repair MVAC-like appliances need to be certified as Type II technicians or complete the training and certification test offered by an approved training and certification program (see 40 CFR 82, Subpart B (40 CFR 82.30 through 82.42, see checklist items AE.85.1.US, AE.85.4.US, AE.90.1.US, AE.90.2.US, and AE.90.20.US).</li> </ul> <p>(NOTE: Persons who dispose of small appliances, MVACs, and MVAC-like appliances are not required to be certified.)</p> <p>Verify that certified technicians keep a copy of their certificate at their place of business.</p> <p>(NOTE: Technicians must maintain a copy of their certificate until 3 yr after no longer operating as a technician.)</p> <p>(NOTE: Although this certification does not typically have an expiration date associated with it, the EPA Regional Administrator can specify a re-certification cycle at a future time.)</p> <p>(NOTE: This checklist item applies to any person maintaining, servicing, or repairing appliances containing class I, class II, or non-exempt substitute</p>

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<p>equipment must be repaired when specific limits are exceeded (40 CFR 82.150(b), 82.156(i)(2), 82.156(i)(6), through 82.156(i)(10)) [Added October 1995; Revised April 2005; Revised January 2017].</p>	<p>refrigerants. This checklist item also applies to persons disposing of appliances, [including small appliances and motor vehicle air conditioners (MVAC)], refrigerant reclaimers, technician certifying programs, appliance owners and operators, manufacturers of appliances, manufacturers of recovery and/or recycling equipment, approved recovery and/or recycling equipment testing organizations, persons buying, selling, or offering to sell class I, class II, or non-exempt substitute refrigerants.)</p> <p>(NOTE: This checklist item applies to appliances containing class I or class II refrigerants until 1 January 2019. Starting 1 January 2019, the provisions in 40 CFR 82.157 (see checklist items AE.90.25.US, AE.95.26.US, and AE.95.4.US) apply instead.)</p> <p>(NOTE: See Appendix 1-16a for the definitions which apply to this checklist item only.)</p> <p>Verify that, if there is any industrial process refrigeration equipment onsite normally containing more than 50 lb of refrigerant, all leaks are repaired if the equipment is leaking at a rate such that the loss of refrigerant will exceed 35 percent of the total charge during a 12-mo period.</p> <p>Verify that leaks have been repaired within 30 days of discovery or within 30 days of when the leak should have been discovered, if the facility intentionally shielded themselves from information that would have revealed a leak.</p> <p>(NOTE: The following are exemptions to the leak repair requirements:</p> <ul style="list-style-type: none"> <li>– a 1-yr retrofit or retirement plan containing the following information is developed for the leaking equipment no later than 30 days after the decision to retire or retrofit the appliance and the plan is kept at the site of the equipment: <ul style="list-style-type: none"> <li>– if retrofitting the appliance, what refrigerant or substitute with a lower or equivalent ozone-depleting potential than the previous refrigerant will be used</li> <li>– if retiring and replacing the appliance, how will they replace appliance with an appliance that uses a refrigerant or substitute with a lower or equivalent ozone-depleting potential and must include such a change in the retirement plan</li> </ul> </li> <li>– delays caused by meeting the requirements of other Federal, state, or local laws</li> <li>– unavailability of a suitable replacement</li> <li>– the equipment is custom built</li> <li>– the supplier of the appliance has quoted a delivery time of more than 30 weeks from when the order is placed</li> <li>– an industrial process shutdown is needed to repair the leak</li> <li>– the appliance is mothballed.)</li> </ul>

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<p><b>AE.90.19.US.</b> Owners of Federally owned commercial or comfort cooling appliances are allowed an additional year to complete a retrofit or retirement of an appliance if specific requirements are met (40 CFR 82.150(b) and 82.156(i)(8)) [Added October 1995; Revised April 2004; Revised January 2017].</p>	<p>Verify that the USEPA is notified when compliance is not possible.</p> <p>Verify that records are kept documenting the reasons for missing deadlines.</p> <p>Verify that, if an industrial process shutdown has occurred or repairs have been made while an appliance is mothballed, an initial verification was performed within 30 days of completing repairs or within 30 days of bringing the appliance back online, if taken offline, but no sooner than when the system has achieved normal operating characteristics and conditions.</p> <p>Verify that an initial verification test is done at the conclusion of the repair effort without an industrial process shutdown or system mothballing and a follow-up verification test within 30 days after the initial test.</p> <p>(NOTE: See also 40 CFR 82.156(i)(8) (see checklist item AE.90.19.US.) for additional requirements if an extension has been granted.)</p> <p>Verify that, if the activity has been allowed a 1-yr extension beyond the initial 1-yr retrofit period, the following criteria are met:</p> <ul style="list-style-type: none"> <li>– a delivery time of more than 30 wk from the beginning of the official procurement process is quoted due to an appropriations/procurements problem</li> <li>– the USEPA is notified within 6 mo of the expiration of the 30-day period with an explanation of why more than 1 yr is needed</li> <li>– records are kept to document that these criteria are met.</li> </ul> <p>(NOTE: This checklist item applies to any person maintaining, servicing, or repairing appliances containing class I, class II, or non-exempt substitute refrigerants. This checklist item also applies to persons disposing of appliances, [including small appliances and motor vehicle air conditioners (MVAC)], refrigerant reclaimers, technician certifying programs, appliance owners and operators, manufacturers of appliances, manufacturers of recovery and/or recycling equipment, approved recovery and/or recycling equipment testing organizations, persons buying, selling, or offering to sell class I, class II, or non-exempt substitute refrigerants.)</p> <p>(NOTE: This checklist item applies to appliances containing class I or class II refrigerants until 1 January 2019. Starting 1 January 2019, the provisions in 40 CFR 82.157 (see checklist items AE.90.25.US, AE.95.26.US, and AE.95.4.US) apply instead.)</p> <p>(NOTE: See Appendix 1-16a for the definitions which apply to this checklist item only.)</p>
<p><b>AE.90.20.US.</b> Motor vehicle disposal facilities may not use</p>	<p>Verify that refrigerant extracted from an MVAC or an MVAC-like appliance which is bound for disposal and located at a motor vehicle disposal facility is not used to</p>

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<p>refrigerant extracted from a MVAC or MVAC-like appliance bound for disposal to charge or recharge a MVAC or MVAC-like appliance unless the refrigerant is properly treated (40 CFR 82.34(d)) <b>[Added December 1997]</b>.</p> <p><b>AE.90.21.US.</b> Personnel testing, maintaining, servicing, repairing, or disposing of halon-containing equipment or using such equipment for technician training may not knowingly vent or otherwise release into the environment any halons used in such equipment (40 CFR 82.270(b) and 82.270(f)) <b>[Added March 1998]</b>.</p>	<p>charge or recharge an MVAC or MVAC-like appliance, unless, prior to such charging or recharging, the refrigerant is either:</p> <ul style="list-style-type: none"> <li>– recovered and reclaimed</li> <li>– recovered either by a certified technician or by an employee, owner, or operator of, or contractor to, the disposal facility; and subsequently recycled by the facility that charges or recharges the refrigerant into an MVAC or MVAC-like appliance.</li> </ul> <p>(NOTE: Any refrigerant extracted from an MVAC or an MVAC-like appliance bound for disposal and located at a motor vehicle disposal facility but not subsequently reclaimed may, prior to its subsequent re-use, be sold only to a certified technician. Any certified technician who obtains such a refrigerant may re-use such refrigerant only in an MVAC or MVAC-like appliance, and only if it has been reclaimed or properly recycled.)</p> <p>Verify that personnel testing, maintaining, servicing, repairing, or disposing of halon-containing equipment or using such equipment for technician training do not knowingly vent or otherwise release into the environment any halons used in such equipment.</p> <p>(NOTE: De minimis releases associated with good faith attempts to recycle or recover halon are not subject to this prohibition. Release of residual halon contained in fully discharged total flooding fire extinguishing systems would be considered a de minimis release associated with good faith attempts to recycle or recover halon. Release of halons during testing of fire extinguishing systems is not subject to this prohibition if the following conditions are met:</p> <ul style="list-style-type: none"> <li>– systems or equipment with suitable alternative fire extinguishing agents are not available</li> <li>– system or equipment testing requiring release of extinguishing agent is essential to demonstrate system or equipment functionality</li> <li>– failure of the system or equipment would pose great risk to human safety or the environment</li> <li>– a simulant agent cannot be used in place of the halon during system or equipment testing for technical reasons.)</li> </ul> <p>(NOTE: This requirement also does not apply to:</p> <ul style="list-style-type: none"> <li>– releases of halons associated with research and development of halon alternatives, and releases of halons necessary during analytical determination of halon purity using established laboratory practices</li> <li>– qualification and development testing during the design and development process of halon-containing systems or equipment when such tests are essential to demonstrate system or equipment functionality and when a suitable simulant agent cannot be used in place of the halon for technical reasons</li> </ul>

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<p><b>AE.90.22.US.</b> Technicians who test, maintain, service, repair or dispose of halon-containing equipment are required to meet specific training requirements (40 CFR 82.270(c)) <b>[Added March 1998]</b>.</p> <p><b>AE.90.23.US.</b> Perform the disposal of halon and/or halon-containing equipment according to specific parameters (40 CFR 82.270(d) and 82.270(e)) <b>[Added March 1998]</b>.</p>	<p>– emergency release of halons for the legitimate purpose of fire extinguishing, explosion inertion, or other emergency applications for which the equipment or systems were designed.)</p> <p>Verify that a halon release is not allowed to occur as a result of failure to maintain halon-containing equipment.</p> <p>Verify that technicians who test, maintain, service, repair, or dispose of halon-containing equipment are trained regarding halon emissions reduction.</p> <p>(NOTE: Organizations that employ technicians who test, maintain, service, repair or dispose of halon-containing equipment shall take appropriate steps to ensure that technicians hired on or before 6 April 1998 are trained regarding halon emissions reduction by 1 September 1998. Technicians hired after 6 April 1998 shall be trained regarding halon emissions reduction within 30 days of hiring, or by 1 September 1998, whichever is later.)</p> <p>Verify that halon-containing equipment is only disposed of by sending it for halon recovery to one of the following:</p> <ul style="list-style-type: none"> <li>– a manufacturer operating in accordance with NFPA 10 and NFPA 12A standards</li> <li>– a fire equipment dealer operating in accordance with NFPA 10 and NFPA 12A standards</li> <li>– a recycler operating in accordance with NFPA 10 and NFPA 12A standards.</li> </ul> <p>(NOTE: This requirement does not apply to ancillary system devices such as electrical detection control components which are not necessary to the safe and secure containment of the halon within the equipment, to fully discharged total flooding systems, or to equipment containing only de minimis quantities of halons.)</p> <p>Verify that halon is only disposed of by sending it for recycling to a recycler operating in accordance with NFPA 10 and NFPA 12A standards, or by arranging for its destruction using one of the following controlled processes:</p> <ul style="list-style-type: none"> <li>– liquid injection incineration</li> <li>– reactor cracking</li> <li>– gaseous/fume oxidation</li> <li>– rotary kiln incineration</li> <li>– cement kiln</li> <li>– radio frequency plasma destruction</li> <li>– a USEPA-approved destruction technology that achieves a destruction efficiency of 98 percent or greater.</li> </ul>

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<p><b>AE.90.24.US.</b> The disposal of appliances must meet certain requirements in relationship to refrigerants (40 CFR 82.150(b) and 82.155) [Added January 2017].</p>	<p>(NOTE: This checklist item applies to any person maintaining, servicing, or repairing appliances containing class I, class II, or non-exempt substitute refrigerants. This checklist item also applies to persons disposing of appliances, [including small appliances and motor vehicle air conditioners (MVAC)], refrigerant reclaimers, technician certifying programs, appliance owners and operators, manufacturers of appliances, manufacturers of recovery and/or recycling equipment, approved recovery and/or recycling equipment testing organizations, persons buying, selling, or offering to sell class I, class II, or non-exempt substitute refrigerants.)</p> <p>(NOTE: Until 1 January 2018, this checklist item applies only to disposal of appliances containing class I and class II refrigerants. Starting on 1 January 2018, this checklist item applies to disposal of appliances containing any class I or class II refrigerant or any non-exempt substitute refrigerant.)</p> <p>Verify that persons recovering refrigerant from a small appliance, MVAC, or MVAC-like appliance for purposes of disposal of these appliances evacuate refrigerant to the levels in 40 CFR 82.156(b) through (d) (see text of regulation in <a href="http://www.ecfr.gov">www.ecfr.gov</a>) using certified recovery equipment.</p> <p>Verify that the final processor does one of the following:</p> <ul style="list-style-type: none"> <li>– recover any remaining refrigerant from the appliance in accordance regulatory requirements</li> <li>– verify, using a signed statement or a contract, that all refrigerant that had not leaked previously has been recovered from the appliance or shipment of appliances.</li> </ul> <p>(NOTE: The final processor (i.e., persons who take the final step in the disposal process) includes but is not limited to scrap recyclers and landfill operators.)</p> <p>Verify that, if using a signed statement, it includes the name and address of the person who recovered the refrigerant and the date the refrigerant was recovered.</p> <p>Verify that, if using a signed contract between the supplier and the final processor, it either states that the supplier will recover any remaining refrigerant from the appliance or shipment of appliances prior to delivery or verify that the refrigerant had been properly recovered prior to receipt by the supplier.</p> <p>(NOTE: The final processor must notify suppliers of appliances that refrigerant must be properly recovered before delivery of the items to the facility. The form of this notification may be signs, letters to suppliers, or other equivalent means.)</p> <p>Verify that, if all the refrigerant has leaked out of the appliance, the final processor obtains a signed statement that all the refrigerant in the appliance had leaked out prior to delivery to the final processor and recovery is not possible.</p>

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<b>AE.90.25.US.</b> Specific operations and maintenance procedures must be implemented for appliances with a full charge of 50 lbs or more of any class I or class II refrigerant or any non-exempt substitute refrigerant (40 CFR 82.157(a) through 83.157(g)) [Added January 2017].	<p>(NOTE: “Leaked out” in this context means those situations in which the refrigerant has escaped because of system failures, accidents, or other unavoidable occurrences not caused by a person's negligence or deliberate acts such as cutting refrigerant lines.)</p> <p>Verify that the final processor of a small appliance, MVAC, or MVAC-like appliance keeps a copy of all the signed statements or contracts onsite, in hard copy or in electronic format, for 3 yr.</p> <p>(NOTE: This checklist item applies as of 1 January 2019 to appliances with a full charge of 50 or more pounds of any class I or class II refrigerant or any non-exempt substitute refrigerant.)</p> <p>Verify that persons adding or removing refrigerant from an appliance, upon conclusion of that service, provide the owner or operator with documentation that meets the applicable requirements of 40 CFR 82.157(l)(2) (see checklist item AE.95.4.US)</p> <p>Verify that the owner or operator calculates the leak rate every time refrigerant is added to an appliance unless the addition is made immediately following a retrofit, installation of a new appliance, or qualifies as a seasonal variance.</p> <p>Verify that owners or operators repair appliances with a leak rate over the following applicable leak rate unless the owner or operator elects to retrofit or retire the appliance:</p> <ul style="list-style-type: none"> <li>– 20 percent leak rate for commercial refrigeration equipment;</li> <li>– 30 percent leak rate for industrial process refrigeration equipment; and</li> <li>– 10 percent leak rate for comfort cooling appliances or other appliances with a full charge of 50 or more pounds of refrigerant not covered by the 20 and 30 percent leak rate above.</li> </ul> <p>(NOTE: If the owner or operator elects to repair leaks, but fails to bring the leak rate below the applicable leak rate, the owner or operator must create and implement a retrofit or retirement plan.)</p> <p>Verify that owners or operators identify and repair leaks within 30 days (or 120 days if an industrial process shutdown is required) of when refrigerant is added to an appliance exceeding the applicable leak rate.</p> <p>Verify that a certified technician routinely conducts a leak inspection to identify the location of leaks as follows:</p> <ul style="list-style-type: none"> <li>– for commercial refrigeration and industrial process refrigeration appliances with a full charge of 500 or more pounds, leak inspections are conducted once every 3 mo until the owner or operator can demonstrate through the leak rate</li> </ul>

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	<p>calculations that the appliance has not leaked in excess of the applicable leak rate for four quarters in a row</p> <ul style="list-style-type: none"> <li>– for commercial refrigeration and industrial process refrigeration appliances with a full charge of 50 or more pounds but less than 500 pounds, leak inspections are conducted once per calendar year until the owner or operator can demonstrate through the leak rate calculations that the appliance has not leaked in excess of the applicable leak rate for one year</li> <li>– for comfort cooling appliances and other appliances not covered by the above commercial and industrial refrigeration options, leak inspections are conducted once per calendar year until the owner or operator can demonstrate through the leak rate calculations that the appliance has not leaked in excess of the applicable leak rate for one year.</li> </ul> <p>Verify that, as part of the leak inspection, all visible and accessible components of an appliance are inspected, with the following exceptions:</p> <ul style="list-style-type: none"> <li>– where components are insulated, under ice that forms on the outside of equipment, underground, behind walls, or are otherwise inaccessible</li> <li>– where personnel must be elevated more than two meters above a support surface</li> <li>– where components are unsafe to inspect, as determined by site personnel.</li> </ul> <p>(NOTE: Quarterly or annual leak inspections are not required on appliances, or portions of appliances, continuously monitored by an automatic leak detection system that is audited or calibrated annually.)</p> <p>(NOTE: An automatic leak detection system may directly detect refrigerant in air, monitor its surrounding in a manner other than detecting refrigerant concentrations in air, or monitor conditions of the appliance.)</p> <p>Verify that, for an automatic leak detection system that directly detect the presence of a refrigerant in air, the system must:</p> <ul style="list-style-type: none"> <li>– only be used to monitor components located inside an enclosed building or structure</li> <li>– have sensors or intakes placed so that they will continuously monitor the refrigerant concentrations in air in proximity to the compressor, evaporator, condenser, and other areas with a high potential for a refrigerant leak</li> <li>– accurately detect a concentration level of 10 parts per million of vapor of the specific refrigerant or refrigerants used in the refrigeration appliance(s)</li> <li>– alert the owner or operator when a refrigerant concentration of 100 ppm of vapor of the specific refrigerant or refrigerants used in the refrigeration appliance(s) is reached.</li> </ul> <p>Verify that, for an automatic leak detection system that monitors its surrounding in a manner other than detecting refrigerant concentrations in air or monitor conditions of the appliance, the system automatically alerts the owner or operator when</p>

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	<p>measurements indicate a loss of 50 pounds of refrigerant or 10 percent of the full charge, whichever is less.</p> <p>(NOTE: When automatic leak detection equipment is only being used to monitor portions of an appliance, the remainder of the appliance continues to be subject to any applicable leak inspection requirements.)</p> <p>Verify that leaks are repaired such that the leak rate is brought below the applicable leak rate.</p> <p>(NOTE: Repair must be confirmed by the leak rate calculation performed upon the next refrigerant addition. The leaks will be presumed to be repaired if there is no further refrigerant addition for 12 mo after the repair or if the required leak inspections do not find any leaks in the appliance.)</p> <p>Verify that repair of leaks is documented by both an initial and a follow-up verification test or tests.</p> <p>Verify that the owner or operator conducts both initial and follow-up verification tests on each leak that was repaired.</p> <p>Verify that, unless granted additional time, an initial verification test is performed within 30 days (or 120 days if an industrial process shutdown is required) of an appliance exceeding the applicable leak rate and the initial verification test demonstrates that leaks where a repair attempt was made are repaired.</p> <p>Verify that, for repairs that can be completed without the need to open or evacuate the appliance, the test is performed after the conclusion of the repair work and before any additional refrigerant is added to the appliance.</p> <p>Verify that, for repairs that require the evacuation of the appliance or portion of the appliance, the test is performed before adding any refrigerant to the appliance.</p> <p>(NOTE: If the initial verification test indicates that the repairs have not been successful, the owner or operator may conduct as many additional repairs and initial verification tests as needed within the applicable time period.)</p> <p>Verify that a follow-up verification test is performed within 10 days of the successful initial verification test or 10 days of the appliance reaching normal operating characteristics and conditions (if the appliance or isolated component was evacuated for the repair(s)).</p> <p>(NOTE: Where it is unsafe to be present or otherwise impossible to conduct a follow-up verification test when the system is operating at normal operating characteristics and conditions, the verification test must, where practicable, be conducted prior to the system returning to normal operating characteristics and conditions.)</p>

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<p><b>AE.90.26.US.</b> In specific situations, owners and operators of appliances with a full charge of 50 lbs or more of</p>	<p>Verify that the follow-up verification test demonstrates that leaks where a repair attempt was made are repaired.</p> <p>(NOTE: If the follow-up verification test indicates that the repairs have not been successful, the owner or operator may conduct as many additional repairs and verification tests as needed to bring the appliance below the leak rate within the applicable time period and to verify the repairs.)</p> <p>(NOTE: Owners or operators are permitted more than 30 days (or 120 days if an industrial process shutdown is required) to comply with testing requirements if they meet the one or more of the following criteria or the appliance is mothballed:</p> <ul style="list-style-type: none"> <li>– one or more of the following conditions applies: <ul style="list-style-type: none"> <li>– the appliance is located in an area subject to radiological contamination or shutting down the appliance will directly lead to radiological contamination. Additional time is permitted to the extent needed to conduct and finish repairs in a safe working environment.</li> <li>– requirements of other applicable Federal, state, or local regulations make a repair within 30 days (or 120 days if an industrial process shutdown is required) impossible. Additional time is permitted to the extent needed to comply with the pertinent regulations.</li> <li>– components that must be replaced as part of the repair are not available within 30 days (or 120 days if an industrial process shutdown is required). Additional time is permitted up to 30 days after receiving delivery of the necessary components, not to exceed 180 days (or 270 days if an industrial process shutdown is required) from the date the appliance exceeded the applicable leak rate.</li> </ul> </li> <li>– repairs to leaks that the technician has identified as significantly contributing to the exceedance of the leak rate and that do not require additional time are completed and verified within the initial 30 day repair period (or 120 day repair period if an industrial process shutdown is required)</li> <li>– the owner or operator documents all repair efforts and the reason for the inability to make the repair within the initial 30 day repair period (or 120 day repair period if an industrial process shutdown is required)</li> <li>– the owner or operator requests an extension from EPA within 30 days (or 120 days if an industrial process shutdown is required) of the appliance exceeding the applicable leak rate.</li> </ul> <p>(NOTE: The time frames listed above in this checklist item are temporarily suspended when an appliance is mothballed. The time will resume on the day additional refrigerant is added to the appliance (or component of an appliance if the leaking component was isolated).)</p> <p>(NOTE: This checklist item applies as of 1 January 2019 to appliances with a full charge of 50 or more pounds of any class I or class II refrigerant or any non-exempt substitute refrigerant.)</p>

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<p>any class I or class II refrigerant or any non-exempt substitute refrigerant must develop and implement retrofit or retirement plans (40 CFR 82.157(a), 82.157(h), and 82.157(i)) <b>[Added January 2017]</b>.</p>	<p>Verify that the owner or operator creates a retrofit or retirement plan within 30 days of:</p> <ul style="list-style-type: none"> <li>– an appliance leaking above the applicable leak rate if the owner or operator intends to retrofit or retire rather than repair the leak</li> <li>– an appliance leaking above the applicable leak rate if the owner or operator fails to take any action to identify or repair the leak</li> <li>– an appliance continues to leak above the applicable leak rate after having conducted the required repairs and verification tests.</li> </ul> <p>Verify that the retrofit or retirement plan, at a minimum, contains the following information:</p> <ul style="list-style-type: none"> <li>– identification and location of the appliance</li> <li>– type and full charge of the refrigerant used in the appliance</li> <li>– type and full charge of the refrigerant to which the appliance will be converted, if retrofitted</li> <li>– itemized procedure for converting the appliance to a different refrigerant, including changes required for compatibility with the new substitute, if retrofitted</li> <li>– plan for the disposition of recovered refrigerant</li> <li>– plan for the disposition of the appliance, if retired</li> <li>– a schedule, not to exceed one-year, for completion of the appliance retrofit or retirement.</li> </ul> <p>Verify that the retrofit or retirement plan is signed by an authorized company official, dated, accessible at the site of the appliance in paper copy or electronic format, and available for EPA inspection upon request.</p> <p>Verify that all identified leaks are repaired as part of any retrofit under the plan.</p> <p>Verify that, unless granted additional time, all work performed in accordance with the plan is finished within 1 yr of the plan's date (not to exceed 13 mo from when the plan was required).</p> <p>(NOTE: The owner or operator may request that EPA relieve it of the obligation to retrofit or retire an appliance if the owner or operator can establish within 180 days of the plan's date that the appliance no longer exceeds the applicable leak rate and if the owner or operator agrees in writing to repair all identified leaks within one year of the plan's date.)</p> <p>Verify that, when requesting relief from EPA, the owner or operator submits to EPA the retrofit or retirement plan as well as the following information:</p> <ul style="list-style-type: none"> <li>– the date that the requirement to develop a retrofit or retirement plan was triggered</li> </ul>

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	<ul style="list-style-type: none"> <li>– the leak rate</li> <li>– the method used to determine the leak rate and full charge</li> <li>– the location of the leak(s) identified in the leak inspection</li> <li>– a description of repair work that has been completed</li> <li>– a description of repair work that has not been completed</li> <li>– a description of why the repair was not conducted within the time frames required</li> <li>– a statement signed by an authorized official that all identified leaks will be repaired and an estimate of when those repairs will be completed (not to exceed 1 yr from date of the plan).</li> </ul> <p>(NOTE: The request will be considered approved unless EPA notifies the owners or operators within 60 days of receipt of the request that it is not approved.)</p> <p>(NOTE: Owners or operators may request more than 1 yr to comply with the requirements for retrofit or retirement. The request will be considered approved unless EPA notifies the owners or operators within 60 days of receipt of the request that it is not approved.)</p> <p>Verify that, if the owner or operator is requesting more than 1 yr to comply with the requirements for retrofit or retirement, the request is submitted to EPA within 7 mo of discovering the appliance exceeded the applicable leak rate.</p> <p>Verify that, if the owner or operator is requesting more than 1 yr to comply with the requirements for retrofit or retirement, the request includes the following:</p> <ul style="list-style-type: none"> <li>– the identification of the appliance</li> <li>– name of the owner or operator</li> <li>– the leak rate</li> <li>– the method used to determine the leak rate and full charge</li> <li>– the date the appliance exceeded the applicable leak rate</li> <li>– the location of leaks(s) to the extent determined to date</li> <li>– any repair work that has been finished thus far, including the date that work was finished</li> <li>– a plan to finish the retrofit or retirement of the appliance</li> <li>– the reasons why more than 1 yr is necessary to retrofit or retire the appliance</li> <li>– the date of notification to EPA</li> <li>– an estimate of when retrofit or retirement work will be finished.</li> </ul> <p>Verify that a dated copy of the request is available on-site in either electronic or paper copy.</p> <p>Verify that, if the estimated completion date is to be revised, a new estimated date of completion and documentation of the reason for that change is submitted to EPA within 30 days.</p>

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	<p>(NOTE: The time frames in this checklist item are temporarily suspended when an appliance is mothballed. The time will resume running on the day additional refrigerant is added to the appliance (or component of an appliance if the leaking component was isolated).)</p> <p>(NOTE: Owners or operators of commercial refrigeration, industrial process refrigeration, comfort-cooling, or other equipment are automatically allowed 18 mo to retire an appliance if the replacement appliance uses a substitute refrigerant exempted under 40 CFR 82.154(a) (see checklist item AE.90.3.US).)</p> <p>(NOTE: Owners or operators of industrial process refrigeration equipment may request additional time beyond the one-year period to finish the retrofit or retirement under the following circumstances.</p> <ul style="list-style-type: none"> <li>– requirements of other applicable Federal, state, or local regulations make a retrofit or retirement within one year impossible so additional time is permitted to the extent needed to comply with the pertinent regulations</li> <li>– the new or the retrofitted equipment is custom-built as defined in this subpart and the supplier of the appliance or one of its components has quoted a delivery time of more than 30 weeks from when the order is placed and the appliance or appliance components are installed within 120 days after receiving delivery of the necessary parts</li> <li>– after previously receiving an extension, owners or operators need to request additional time if necessary to finish the retrofit or retirement of equipment.</li> </ul> <p>The request must be submitted to EPA before the end of the ninth month of the initial extension and must include the same information submitted for that extension, with any necessary revisions. A dated copy of the request must be available on-site in either electronic or paper copy. The request will be considered approved unless EPA notifies the owners or operators within 60 days of receipt of the request that it is not approved.)</p> <p>(NOTE: Owners or operators of federally owned commercial or comfort-cooling equipment may request an additional year beyond the 1-yr period to finish the retrofit or retirement under the following circumstances:</p> <ul style="list-style-type: none"> <li>– a delivery time of more than 30 weeks from the beginning of the official procurement process is quoted due to complications presented by the Federal agency appropriations and/or procurement process</li> <li>– the appliance is located in an area subject to radiological contamination and creating a safe working environment will require more than 30 weeks</li> <li>– after receiving a one-year extension, additional time is necessary to finish the retrofit or retirement of equipment.</li> </ul> <p>In these circumstances the request must be submitted to EPA before the end of the ninth month of the one-year extension and must include the same information submitted for that one-year extension, with any necessary revisions. A dated copy of the request must be available on-site in either electronic or paper copy. The request will be considered approved unless EPA notifies the owners or operators within 60 days of receipt of the request that it is not approved.)</p>

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<p style="text-align: center;"><b>REGULATORY REQUIREMENTS:</b></p>	<p style="text-align: center;"><b>REVIEWER CHECKS</b>  <b>December 2018</b></p>
<p><b>CFCs AND HALONS</b></p> <p><b>AE.95</b>  <b>Recordkeeping</b></p> <p><b>AE.95.1.US.</b> Checklist item deleted [Revised April 2004; Deleted January 2017].</p> <p><b>AE.95.2.US.</b> Facilities servicing appliances normally containing 50 lb or more of refrigerant are required to supply the owner of the appliance with documentation as to how much refrigerant was added and the owner of the appliance must retain the servicing records (40 CFR 82.150(b), 82.166(j), 82.166(k), and 82.166(m)) [Revised April 2004; Revised January 2017].</p> <p><b>AE.95.3.US.</b> Keep specific records in relation to leaks for commercial refrigeration or industrial process appliances (40 CFR 82.150(b), 82.166(n) through 82.166(q)) [Added October 1995; Revised April 2004; Revised April 2005; Revised January 2017].</p>	<p>(NOTE: Checklist item deleted with the revision of 40 CFR 82.166 published in the 18 November 2016 Federal Register.)</p> <p>Verify that documentation of servicing and amounts of refrigerant added is provided to the appliance owner and retained for 3 yr.</p> <p>(NOTE: This checklist item applies to any person maintaining, servicing, or repairing appliances containing class I, class II, or non-exempt substitute refrigerants. This checklist item also applies to persons disposing of appliances, [including small appliances and motor vehicle air conditioners (MVAC)], refrigerant reclaimers, technician certifying programs, appliance owners and operators, manufacturers of appliances, manufacturers of recovery and/or recycling equipment, approved recovery and/or recycling equipment testing organizations, persons buying, selling, or offering to sell class I, class II, or non-exempt substitute refrigerants.)</p> <p>(NOTE: Specifically, this checklist item applies to owners and operators of appliances containing 50 or more pounds of class I or class II refrigerants until 1 January 2019. Starting 1 January 2019, the recordkeeping and reporting requirements in the leak repair provisions in 40 CFR 82.157(l) and (m) [see checklist item AE.95.4.US) apply to owners and operators of appliances containing 50 or more pounds of class I or class II refrigerants or non-exempt substitutes.)</p> <p>(NOTE: This checklist item applies to any person maintaining, servicing, or repairing appliances containing class I, class II, or non-exempt substitute refrigerants. This checklist item also applies to persons disposing of appliances, [including small appliances and motor vehicle air conditioners (MVAC)], refrigerant reclaimers, technician certifying programs, appliance owners and operators, manufacturers of appliances, manufacturers of recovery and/or recycling equipment, approved recovery and/or recycling equipment testing organizations, persons buying, selling, or offering to sell class I, class II, or non-exempt substitute refrigerants.)</p> <p>(NOTE: Specifically, this checklist item applies to owners and operators of appliances containing 50 or more pounds of class I or class II refrigerants until 1 January 2019. Starting 1 January 2019, the recordkeeping and reporting requirements in the leak repair provisions in 40 CFR 82.157(l) and (m) [see</p>

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	<p>checklist item AE.95.4.US) apply to owners and operators of appliances containing 50 or more pounds of class I or class II refrigerants or non-exempt substitutes.)</p> <p>Verify that, when leaking appliances are not repaired on time, an initial report is submitted to EPA regarding why more than 30 days are needed to complete repairs including:</p> <ul style="list-style-type: none"> <li>– identification of the facility</li> <li>– the leak rate</li> <li>– the method used to determine the leak rate and full charge</li> <li>– the date a leak rate above the applicable leak rate was discovered</li> <li>– the location of leak(s) to the extent determined to date</li> <li>– any repair work that has been completed thus far and the date that work was completed</li> <li>– the reasons why more than 30 days are needed to complete the work and an estimate of when the work will be completed.</li> </ul> <p>Verify that, if changes from the original estimate of when work will be completed result in extending the completion date from the date submitted to EPA, the reasons for these changes are documented and submitted to EPA within 30 days of discovering the need for such a change.</p> <p>Verify that, if the owners or operators intend to establish that the appliance's leak rate does not exceed the applicable allowable leak rate, the owner or operator submits a plan to fix other outstanding leaks for which repairs are planned but not yet completed to achieve a rate below the applicable allowable leak rate.</p> <p>Verify that a plan to fix other outstanding leaks includes the following information:</p> <ul style="list-style-type: none"> <li>– the identification of the facility</li> <li>– the leak rate</li> <li>– the method used to determine the leak rate and full charge</li> <li>– the date a leak rate above the applicable allowable leak rate was discovered</li> <li>– the location of leak(s) to the extent determined to date</li> <li>– any repair work that has been completed thus far, including the date that work was completed.</li> </ul> <p>Verify that, upon completion of the repair efforts described in the plan, a second report is submitted that includes the date the owner or operator submitted the initial report concerning the need for additional time beyond the 30 days and notification of the owner or operator's determination that the leak rate no longer exceeds the applicable allowable leak rate.</p> <p>Verify that the second report is submitted within 30 days of determining that the leak rate no longer exceeds the applicable allowable leak rate.</p>

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	<p>Verify that owners or operators maintain records of the dates, types, and results of all initial and follow-up verification tests performed and submit this information to EPA within 30 days after conducting each test only when required.</p> <p>Verify that the submitted reports containing the following information are dated, include the name of the owner or operator of the appliance, and are signed by an authorized company official:</p> <ul style="list-style-type: none"> <li>– identification and physical address of the facility</li> <li>– the leak rate</li> <li>– the method used to determine the leak rate and full charge</li> <li>– the date a leak rate above the applicable allowable leak rate was discovered</li> <li>– the location of leak(s) to the extent determined to date</li> <li>– any repair work that has been completed thus far and the date that work was completed.</li> </ul> <p>Verify that the owners or operators of appliances maintain onsite and report to EPA the following information relevant to the affected appliance where such reporting and recordkeeping is required:</p> <ul style="list-style-type: none"> <li>– the identification of the industrial process facility</li> <li>– the leak rate</li> <li>– the method used to determine the leak rate and full charge</li> <li>– the date a leak rate above the applicable allowable rate was discovered</li> <li>– the location of leaks(s) to the extent determined to date</li> <li>– any repair work that has been completed thus far and the date that work was completed</li> <li>– a plan to complete the retrofit or retirement of the system</li> <li>– the reasons why more than one year is necessary to retrofit or retire the system</li> <li>– the date of notification to EPA</li> <li>– an estimate of when retrofit or replacement work will be completed.</li> </ul> <p>Verify that if the estimated date of completion changes from the original estimate and results in moving the date of completion forward, documentation of the reason for these changes is submitted within 30 days of occurring.</p> <p>Verify that, if the estimated date of completion changes from the original estimate and results in moving the date of completion forward, the date of notification to EPA regarding this change and the estimate of when the work will be completed is maintained and submitted.</p> <p>Verify that owners or operators who wish to exclude purged refrigerants that are destroyed from annual leak rate calculations maintain records onsite to support the amount of refrigerant claimed as sent for destruction.</p>

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<p><b>AE.95.4.US.</b> Specific recordkeeping and reporting requirements must be met by any person who imports class II controlled substances (40 CFR 82.24(a), 82.24(c)(1) through 82.24(c)(3), and</p>	<p>Verify that records are based on a monitoring strategy that provides reliable data to demonstrate that the amount of refrigerant claimed to have been destroyed is not greater than the amount of refrigerant actually purged and destroyed and that the 98 percent or greater destruction efficiency is met.</p> <p>Verify that records include flow rate, quantity or concentration of the refrigerant in the vent stream, and periods of purge flow.</p> <p>Verify that owners or operators who wish to exclude purged refrigerants that are destroyed from annual leak rate calculations maintain onsite and make available to EPA upon request the following information after the first time the exclusion is utilized by the facility:</p> <ul style="list-style-type: none"> <li>– the identification of the facility and a contact person, including the address and telephone number</li> <li>– a general description of the refrigerant appliance, focusing on aspects of the appliance relevant to the purging of refrigerant and subsequent destruction</li> <li>– a description of the methods used to determine the quantity of refrigerant sent for destruction and type of records that are being kept by the owners or operators where the appliance is located</li> <li>– the frequency of monitoring and data-recording</li> <li>– a description of the control device, and its destruction efficiency.</li> </ul> <p>Verify that the above information is also included, where applicable, in any reporting requirements required for compliance with the leak repair and retrofit requirements for industrial process refrigeration equipment.</p> <p>Verify that owners or operators choosing to determine the full charge of an affected appliance by using an established range or using that methodology in combination with other methods for determining the full charge defined in the following information:</p> <ul style="list-style-type: none"> <li>– the identification of the owner or operator of the appliance</li> <li>– the location of the appliance</li> <li>– the original range for the full charge of the appliance, its midpoint, and how the range was determined</li> <li>– any and all revisions of the full charge range and how they were determined</li> <li>– the dates such revisions occurred.</li> </ul> <p>Verify that reports are mailed to the Administrator within 30 days of the end of the applicable reporting period, unless otherwise specified.</p> <p>Verify that revisions of required reports are mailed to the Administrator within 180 days of the end of the applicable reporting period, unless otherwise specified.</p>

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82.24(c)(5)) [Added April 2003; Revised October 2006].	<p>Verify that records and copies of reports are retained for 3 yr.</p> <p>Verify that quantities of class II controlled substances are stated in terms of kilograms in required reports.</p> <p>(NOTE: Reports and records may be used for purposes of compliance determinations. These requirements are not intended as a limitation on the use of other evidence admissible under the Federal Rules of Evidence. Failure to provide the reports, petitions and records required by this section and to certify the accuracy of the information in the reports, petitions and records required by this section, will be considered a violation. False statements made in reports, petitions and records will be considered violations of Section 113 of the Clean Air Act and under 18 U.S.C. 1001.)</p> <p>Verify that, for each quarter, an importer of a class II controlled substance (including importers of used class II controlled substances) submits to the Administrator a report containing the following information:</p> <ul style="list-style-type: none"> <li>– summaries of the records required in paragraphs (c)(2)(i) through (xvi) of this section for the previous quarter</li> <li>– the total quantity (in kg) imported of each class II controlled substance for that quarter</li> <li>– the commodity code for the class II controlled substances imported, which must be one of those listed in Appendix K to this subpart</li> <li>– the quantity (in kg) of those class II controlled substances imported that are used class II controlled substances</li> <li>– the quantity (in kg) of class II controlled substances imported for that quarter and totaled by chemical for the control period to date</li> <li>– the importer's total sum of expended and unexpended consumption allowances by chemical as of the end of that quarter for substances for which EPA has apportioned baseline production and consumption allowances</li> <li>– the quantity (in kg) of class II controlled substances imported for use in processes resulting in their transformation or destruction</li> <li>– the quantity (in kg) of class II controlled substances sold or transferred during that quarter to each person for use in processes resulting in their transformation or eventual destruction</li> <li>– transformation verifications showing that the purchaser or recipient of imported class II controlled substances intends to transform those substances or destruction verifications showing that the purchaser or recipient intends to destroy the class II controlled substances</li> <li>– a list of the HCFC 141b-exemption allowance holders from whom orders were received and the quantity (in kg) of HCFC-141b requested and imported.</li> </ul> <p>Verify that importers of a class II controlled substance (including used class II controlled substances) maintains the following records:</p>

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	<ul style="list-style-type: none"> <li>– the quantity (in kg) of each class II controlled substance imported, either alone or in mixtures, including the percentage of each mixture which consists of a class II controlled substance</li> <li>– the quantity (in kg) of those class II controlled substances imported that are used and the information provided with the petition where a petition is needed</li> <li>– the quantity (in kg) of class II controlled substances other than transshipments or used substances imported for use in processes resulting in their transformation or destruction</li> <li>– the quantity (in kg) of class II controlled substances other than transshipments or used substances imported and sold for use in processes that result in their destruction or transformation</li> <li>– the date on which the class II controlled substances were imported</li> <li>– the port of entry through which the class II controlled substances passed</li> <li>– the country from which the imported class II controlled substances were imported</li> <li>– the commodity code for the class II controlled substances shipped, which must be one of those listed in Appendix K to this subpart</li> <li>– the importer number for the shipment</li> <li>– a copy of the bill of lading for the import</li> <li>– the invoice for the import</li> <li>– the quantity (in kilograms) of imports of used class II controlled substances;</li> <li>– the U.S. Customs entry form</li> <li>– dated records documenting the sale or transfer of class II controlled substances for use in processes resulting in their transformation or destruction</li> <li>– copies of transformation verifications or destruction verifications indicating that the class II controlled substances will be transformed or destroyed (as provided in paragraph (e) of this section)</li> <li>– written verifications from a U.S. purchaser that HCFC-141b was imported for the express purpose of meeting HCFC-141b exemption needs in accordance with information submitted under 40 CFR 82.16(h), and that the quantity will not be resold, in cases where HCFC-141b exemption allowances were expended to import the HCFC-141b.</li> </ul> <p>Verify that, for each individual shipment over 5 lbs of a used class II controlled substance for which EPA has apportioned baseline production and consumption allowances, an importer submits directly to the Administrator, at least 40 working days before the shipment is to leave the foreign port of export, the following information in a petition:</p> <ul style="list-style-type: none"> <li>– the name and quantity (in kilograms) of the used class II controlled substance to be imported</li> <li>– the name and address of the importer, the importer ID number, the contact person, and the phone and fax numbers</li> <li>– name, address, contact person, phone number and fax number of all previous source facilities from which the used class II controlled substance was recovered</li> </ul>

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	<ul style="list-style-type: none"> <li>– a detailed description of the previous use of the class II controlled substance at each source facility and a best estimate of when the specific controlled substance was put into the equipment at each source facility, and, when possible, documents indicating the date the material was put into the equipment</li> <li>– a list of the name, make and model number of the equipment from which the material was recovered at each source facility</li> <li>– name, address, contact person, phone number and fax number of the exporter and of all persons to whom the material was transferred or sold after it was recovered from the source facility</li> <li>– the U.S. port of entry for the import, the expected date of shipment and the vessel transporting the chemical</li> <li>– a description of the intended use of the used class II controlled substance, and, when possible, the name, address, contact person, phone number and fax number of the ultimate purchaser in the United States</li> <li>– the name, address, contact person, phone number and fax number of the U.S. reclamation facility, where applicable</li> <li>– if someone at the source facility recovered the class II controlled substance from the equipment, the name and phone and fax numbers of that person</li> <li>– if the imported class II controlled substance was reclaimed in a foreign Party, the name, address, contact person, phone number and fax number of any or all foreign reclamation facility(ies) responsible for reclaiming the cited shipment</li> <li>– an export license from the appropriate government agency in the country of export and, if recovered in another country, the export license from the appropriate government agency in that country</li> <li>– if the imported used class II controlled substance is intended to be sold as a refrigerant in the U.S., the name and address of the U.S. reclaiming who will bring the material to the standard required under 40 CFR 82, Subpart F [40 CFR 82.150 through 82.166, see checklist items AE.85.5.US, AE.90.2.US through AE.90.9.US, AE.90.14.US through AE.90.19.US, and AE.95.1.US through AE.95.3.US], if not already reclaimed to those specifications</li> <li>– a certification of accuracy of the information submitted in the petition.</li> </ul> <p>Verify that any person who transships a class II controlled substance maintains records that indicate:</p> <ul style="list-style-type: none"> <li>– that the class II controlled substance shipment originated in a foreign country</li> <li>– that the class II controlled substance shipment is destined for another foreign country</li> <li>– that the class II controlled substance shipment will not enter interstate commerce within the U.S.</li> </ul> <p>(NOTE: The definition of “export” specifically excludes transport of virgin or used controlled substances from inside the United States or its territories to United States</p>

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<p><b>AE.95.5.US.</b> Specific recordkeeping and reporting requirements must be met by any person who transforms or destroys class II controlled substances (40 CFR 82.24(a) and 82.24(e)) [Added April 2003].</p>	<p>military bases and ships for on-board use. Therefore, the requirements related to exporters are not in this checklist.)</p> <p>Verify that any person who transforms or destroys class II controlled substances produced or imported by another person maintains the following:</p> <ul style="list-style-type: none"> <li>– copies of the invoices or receipts documenting the sale or transfer of the class II controlled substances to the person</li> <li>– records identifying the producer or importer of the class II controlled substances received by the person</li> <li>– dated records of inventories of class II controlled substances at each plant on the first day of each quarter</li> <li>– dated records of the quantity (in kg) of each class II controlled substance transformed or destroyed</li> <li>– in the case where class II controlled substances were purchased or transferred for transformation purposes, a copy of the person's transformation verification</li> <li>– dated records of the names, commercial use, and quantities (in kilograms) of the resulting chemical(s) when the class II controlled substances are transformed</li> <li>– dated records of shipments to purchasers of the resulting chemical(s) when the class II controlled substances are transformed</li> <li>– in the case where class II controlled substances were purchased or transferred for destruction purposes, a copy of the person's destruction verification.</li> </ul> <p>Verify that any person who transforms or destroys class II controlled substances and who has submitted a transformation verification or a destruction verification to the producer or importer of the class II controlled substances, reports the following:</p> <ul style="list-style-type: none"> <li>– the names and quantities (in kg) of the class II controlled substances transformed for each control period within 45 days of the end of such control period</li> <li>– the names and quantities (in kg) of the class II controlled substances destroyed for each control period within 45 days of the end of such control period.</li> </ul> <p>Verify that any person who purchases class II controlled substances for purposes of transformation provides the producer or importer with a transformation verification that the class II controlled substances are to be used in processes that result in their transformation.</p> <p>Verify that the transformation verification includes the following:</p> <ul style="list-style-type: none"> <li>– identity and address of the person intending to transform the class II controlled substances</li> <li>– the quantity (in kg) of class II controlled substances intended for transformation</li> </ul>

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<p><b>AE.95.6.US.</b> Specific recordkeeping and reporting requirements must be met by any person who brings into the US a container with a heel of class II controlled substances (40 CFR 82.24(a) and 82.24(f)) [Added April 2003].</p>	<ul style="list-style-type: none"> <li>– identity of shipments by purchase order number(s), purchaser account number(s), by location(s), or other means of identification</li> <li>– period of time over which the person intends to transform the class II controlled substances</li> <li>– signature of the verifying person.</li> </ul> <p>Verify that any person who destroys class II controlled substances provides USEPA with a one-time report containing the following information:</p> <ul style="list-style-type: none"> <li>– the destruction unit's destruction efficiency</li> <li>– the methods used to record the volume destroyed</li> <li>– the methods used to determine destruction efficiency</li> <li>– the name of other relevant federal or state regulations that may apply to the destruction process</li> <li>– any changes to the information is reflected in a revision submitted to USEPA within 60 days of the change(s).</li> </ul> <p>Verify that, any person who purchases or receives and subsequently destroys class II controlled substances that were originally produced without expending allowances provides the producer or importer from whom it purchased or received the class II controlled substances with a verification that the class II controlled substances will be used in processes that result in their destruction.</p> <p>Verify that the destruction verification includes the following:</p> <ul style="list-style-type: none"> <li>– identity and address of the person intending to destroy class II controlled substances</li> <li>– indication of whether those class II controlled substances will be completely destroyed, or less than completely destroyed, in which case the destruction efficiency at which such substances will be destroyed must be included</li> <li>– period of time over which the person intends to destroy class II controlled substances</li> <li>– signature of the verifying person.</li> </ul> <p>Verify that any person who brings into the U.S. a container with a heel of class II controlled substances indicates on its bill of lading or invoice that the class II controlled substance in the container is a heel.</p> <p>(NOTE: Heel means the amount of a controlled substance that remains in a container after it is discharged or off-loaded (that is no more than ten percent of the volume of the container) and that the person owning or operating the container certifies the residual amount will remain in the container and be included in a future shipment, or be recovered for transformation, destruction or a non-emissive purpose.)</p> <p>Verify that any person who brings into the U.S. a container with a heel of class II</p>

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<p><b>AE.95.7.US.</b> Specific recordkeeping and reporting requirements must be met by any person allocated HCFC-141b exemption allowances (40 CFR 82.24(a) and 82.24(g)) [Added April 2003].</p>	<p>controlled substances reports quarterly the quantity (in kg) brought into the U.S. and certifies:</p> <ul style="list-style-type: none"> <li>– that the residual quantity (in kg) in each shipment is no more than 10 percent of the volume of the container</li> <li>– that the residual quantity (in kg) in each shipment will either: <ul style="list-style-type: none"> <li>– remain in the container and be included in a future shipment</li> <li>– be recovered and transformed</li> <li>– be recovered and destroyed</li> <li>– be recovered for a non-emissive use.</li> </ul> </li> </ul> <p>Verify that any person who brings into the U.S. a container with a heel of class II controlled substances reports on the final disposition of each shipment within 45 days of the end of the control period.</p> <p>Verify that, any person allocated HCFC-141b exemption allowances who confers a quantity of the HCFC-141b exemption allowances to a producer or import and places an order for the production or import of HCFC-141b with a verification that the HCFC-141b will only be used for the exempted purpose and not be resold submits semi-annual reports, due 30 days after the end of the second and fourth respectively, to the Administrator containing the following information:</p> <ul style="list-style-type: none"> <li>– total quantity (in kg) HCFC-141b received during the 6 mo period</li> <li>– the identity of the supplier of HCFC-141b on a shipment-by-shipment basis during the 6 mo period.</li> </ul> <p>Verify that, any person allocated HCFC-141b exemption allowances keeps records of:</p> <ul style="list-style-type: none"> <li>– letters to producers and importers conferring unexpended HCFC-141b exemption allowances for the specified control period in the notice</li> <li>– orders for the production or import of HCFC-141b under those letters</li> <li>– written verifications that the HCFC-141b was produced or imported for the express purpose of meeting HCFC-141b exemption needs and that the quantity will not be resold.</li> </ul>
<p><b>AE.95.8.US.</b> Starting 1 January 2019, owners and operators of appliances containing 50 or more pounds of class I or class II refrigerants or non-exempt substitutes must meet specific recordkeeping requirements (40 CFR 82.150(b), 82.157(k),</p>	<p>(NOTE: This checklist item applies to any person maintaining, servicing, or repairing appliances containing class I, class II, or non-exempt substitute refrigerants. This checklist item also applies to persons disposing of appliances, [including small appliances and motor vehicle air conditioners (MVAC)], refrigerant reclaimers, technician certifying programs, appliance owners and operators, manufacturers of appliances, manufacturers of recovery and/or recycling equipment, approved recovery and/or recycling equipment testing organizations, persons buying, selling, or offering to sell class I, class II, or non-exempt substitute refrigerants. More specifically, this checklist item applies starting 1 January 2019</p>

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<p>and 82.157(1)) [Added January 2017].</p>	<p>to owners and operators of appliances containing 50 or more pounds of class I or class II refrigerants or non-exempt substitutes.)</p> <p>Verify that all records identified in this checklist item are kept for at least 3 yr in electronic or paper format, unless otherwise specified.</p> <p>Verify that owners or operators determine the full charge of all appliances with 50 or more pounds of refrigerant and maintain the following information for each appliance until 3 yr after the appliance is retired:</p> <ul style="list-style-type: none"> <li>– the identification of the owner or operator of the appliance</li> <li>– the address where the appliance is located</li> <li>– the full charge of the appliance and the method for how the full charge was determined</li> <li>– if using method 4 (using an established range) for determining full charge, the range for the full charge of the appliance, its midpoint, and how the range was determined</li> <li>– any revisions of the full charge, how they were determined, and the dates such revisions occurred.</li> </ul> <p>Verify that owners or operators maintain a record including the following information for each time an appliance with a full charge of 50 or more pounds is maintained, serviced, repaired, or disposed of:</p> <ul style="list-style-type: none"> <li>– the identity and location of the appliance</li> <li>– the date of the maintenance, service, repair, or disposal performed</li> <li>– the part(s) of the appliance being maintained, serviced, repaired, or disposed</li> <li>– the type of maintenance, service, repair, or disposal performed for each part</li> <li>– the name of the person performing the maintenance, service, repair, or disposal</li> <li>– the amount and type of refrigerant added to, or in the case of disposal removed from, the appliance</li> <li>– the full charge of the appliance</li> <li>– the leak rate and the method used to determine the leak rate (not applicable when disposing of the appliance, following a retrofit, installing a new appliance, or if the refrigerant addition qualifies as a seasonal variance).</li> </ul> <p>(NOTE: If the maintenance, service, repair, or disposal is done by someone other than the owner or operator, that person must provide a record containing the same information as above, except:</p> <ul style="list-style-type: none"> <li>– the full charge of the appliance</li> <li>– the leak rate and the method used to determine the leak rate.)</li> </ul> <p>Verify that owners or operators keep records of leak inspections that include the date of inspection, the method(s) used to conduct the leak inspection, a list of the</p>

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	<p>location of each leak that was identified, and a certification that all visible and accessible parts of the appliance were inspected.</p> <p>(NOTE: Technicians conducting leak inspections must, upon conclusion of that service, provide the owner or operator of the appliance with documentation that includes the required information.)</p> <p>Verify that, if using an automatic leak detection system, the owner or operator maintains records regarding the installation and the annual audit and calibration of the system, a record of each date the monitoring system identified a leak, and the location of the leak.</p> <p>Verify that owners or operators maintain records of the dates and results of all initial and follow-up verification tests, including:</p> <ul style="list-style-type: none"> <li>– the location of the appliance</li> <li>– the date(s) of the verification tests</li> <li>– the location(s) of all repaired leaks that were tested</li> <li>– the type(s) of verification test(s) used</li> <li>– the results of verification tests.</li> </ul> <p>(NOTE: Technicians conducting initial or follow-up verification tests must, upon conclusion of that service, provide the owner or operator of the appliance with documentation that contains the required information.</p> <p>Verify that owners or operators maintain retrofit or retirement plans developed in accordance 40 CFR 82.157(h) (see checklist item AE.90.26.US.)</p> <p>Verify that, when applicable, owners or operators maintain copies of retrofit and/or extension requests.</p> <p>Verify that owners or operators that suspend the deadlines by mothballing an appliance keep records documenting when the appliance was mothballed and when additional refrigerant was added to the appliance (or isolated component).</p> <p>Verify that owners or operators who exclude purged refrigerants that are destroyed from annual leak rate calculations maintain records to support the amount of refrigerant claimed as sent for destruction.</p> <p>(NOTE: In calculating annual leak rates, purged refrigerant that is destroyed at a verifiable destruction efficiency of 98 percent or greater will not be counted toward the leak rate.)</p> <p>Verify that records are based on a monitoring strategy that provides reliable data to demonstrate that the amount of refrigerant claimed to have been destroyed is not greater than the amount of refrigerant actually purged and destroyed and that the 98 percent or greater destruction efficiency is met.</p>

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<p><b>AE.95.9.US.</b> Starting 1 January 2019, owners and operators of appliances containing 50 or more pounds of class I or class II refrigerants or non-exempt substitutes must meet specific reporting requirements (40 CFR 82.150(b), 82.157(j), 82.157(k), and 82.157(m)) <b>[Added January 2017]</b>.</p>	<p>Verify that records include flow rate, quantity or concentration of the refrigerant in the vent stream, and periods of purge flow.</p> <p>Verify that records include:</p> <ul style="list-style-type: none"> <li>– the identification of the facility and a contact person, including the address and telephone number</li> <li>– a description of the appliance, focusing on aspects relevant to the purging of refrigerant and subsequent destruction</li> <li>– a description of the methods used to determine the quantity of refrigerant sent for destruction and type of records that are being kept by the owners or operators where the appliance is located</li> <li>– the frequency of monitoring and data-recording</li> <li>– a description of the control device, and its destruction efficiency.</li> </ul> <p>Verify that owners or operators that exclude additions of refrigerant due to seasonal variance from their leak rate calculation maintain records stating that they are using the seasonal variance flexibility and documenting the amount added and removed.</p> <p>Verify that owners or operators that submit reports to EPA maintain copies of the submitted reports and any responses from EPA.</p> <p>(NOTE: This checklist item applies to any person maintaining, servicing, or repairing appliances containing class I, class II, or non-exempt substitute refrigerants. This checklist item also applies to persons disposing of appliances, [including small appliances and motor vehicle air conditioners (MVAC)], refrigerant reclaimers, technician certifying programs, appliance owners and operators, manufacturers of appliances, manufacturers of recovery and/or recycling equipment, approved recovery and/or recycling equipment testing organizations, persons buying, selling, or offering to sell class I, class II, or non-exempt substitute refrigerants. More specifically, this checklist item applies starting 1 January 2019 to owners and operators of appliances containing 50 or more pounds of class I or class II refrigerants or non-exempt substitutes.)</p> <p>Verify that owners or operators of appliances containing 50 pounds or more of refrigerant that leak 125 percent or more of the full charge in a calendar year submit the reports outlined in this checklist item by March 1 of the subsequent year and describe efforts to identify leaks and repair the appliance.</p> <p>Verify that all notifications are submitted electronically to 608reports@epa.gov unless the notification contains confidential business information.</p> <p>(NOTE: If the notification contains confidential business information, the information should be submitted to: Section 608 Program Manager; Stratospheric</p>

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	<p>Protection Division; Mail Code: 6205T; U.S. Environmental Protection Agency; 1200 Pennsylvania Avenue NW., Washington, DC 20460.)</p> <p>Verify that owners or operators notify EPA at the above address when seeking an extension of time to complete repairs.</p> <p>Verify that owners or operators notify EPA at the above address when seeking relief from the obligation to retrofit or retire an appliance.</p> <p>Verify that owners or operators notify EPA at the above address when seeking an extension of time to complete the retrofit or retirement of an appliance.</p> <p>Verify that owners or operators notify EPA at the above address for any appliance that leaks 125 percent or more of the full charge in a calendar year.</p> <p>Verify that, when excluding purged refrigerants that are destroyed from annual leak rate calculations, owners or operators notify EPA at the above address within 60 days after the first time the exclusion is used by the facility where the appliance is located.</p> <p>(NOTE: In calculating annual leak rates, purged refrigerant that is destroyed at a verifiable destruction efficiency of 98 percent or greater will not be counted toward the leak rate.)</p> <p>Verify that the report includes flow rate, quantity or concentration of the refrigerant in the vent stream, and periods of purge flow.</p> <p>Verify that the report includes:</p> <ul style="list-style-type: none"> <li>– the identification of the facility and a contact person, including the address and telephone number</li> <li>– a description of the appliance, focusing on aspects relevant to the purging of refrigerant and subsequent destruction</li> <li>– a description of the methods used to determine the quantity of refrigerant sent for destruction and type of records that are being kept by the owners or operators where the appliance is located</li> <li>– the frequency of monitoring and data-recording</li> <li>– a description of the control device, and its destruction efficiency.</li> </ul>

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<b>AE.100</b>  <b>COATING OPERATIONS</b>  <b>AE.100.1.US.</b> Paint stripping operations that are an affected area source must meet general requirements (40 CFR 63.11169, 63.11170, 63.11173(a)) [Added April 2011].	<p>(NOTE: An area source of HAP is a source of HAP that is not a major source of HAP, is not located at a major source, and is not part of a major source of HAP emissions. A major source of HAP emissions is any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit any single HAP at a rate of 9.07 megagrams (Mg) (10 tons) or more per year, or emit any combination of HAP at a rate of 22.68 Mg (25 tons) or more per year.)</p> <p>(NOTE: This checklist item applies to the following area sources of hazardous air pollutants (HAP):</p> <ul style="list-style-type: none"> <li>– paint stripping operations that involve the use of chemical strippers that contain methylene chloride (MeCl), Chemical Abstract Service number 75092, in paint removal processes</li> <li>– autobody refinishing operations that encompass motor vehicle and mobile equipment spray-applied surface coating operations</li> <li>– spray application of coatings containing compounds of chromium (Cr), lead (Pb), manganese (Mn), nickel (Ni), or cadmium (Cd), collectively referred to as the target HAP to any part or product made of metal or plastic, or combinations of metal and plastic that are not motor vehicles or mobile equipment</li> <li>– sources that are a part of a tribal, local, State, or Federal facility which performs one or more of the following activities:             <ul style="list-style-type: none"> <li>– perform paint stripping using MeCl for the removal of dried paint (including, but not limited to, paint, enamel, varnish, shellac, and lacquer) from wood, metal, plastic, and other substrates</li> <li>– perform spray application of coatings to motor vehicles and mobile equipment including operations that are located in stationary structures at fixed locations, and mobile repair and refinishing operations that travel to the customer's location, except spray coating applications that meet the definition of facility maintenance</li> <li>– perform spray application of coatings that contain the target HAP to a plastic and/or metal substrate on a part or product, except spray coating applications that meet the definition of facility maintenance or space vehicle.)</li> </ul> </li> </ul> <p>(NOTE: Owners or operators of a motor vehicle or mobile equipment surface coating operation may petition the Administrator for an exemption from these requirements if they can demonstrate, to the satisfaction of the Administrator, that they spray apply no coatings that contain the target HAP. Petitions must include a description of the coatings that are spray applied and certification that they do not spray apply any coatings containing the target HAP. If circumstances change such that they intend to spray apply coatings containing the target HAP, they must submit</p>

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	<p>the initial notification required by 40 CFR 63.11175 and comply with the applicable requirements.)</p> <p>(NOTE: An individual who spray applies surface coating to more than two motor vehicles or pieces of mobile equipment per year is subject to the requirements in this checklist item that pertain to motor vehicle and mobile equipment surface coating regardless of whether compensation is received.)</p> <p>Verify that each paint stripping operation that is an affected area source implements management practices to minimize the evaporative emissions of MeCl.</p> <p>Verify that, at a minimum, the following management practices are implemented, as applicable, at the operations:</p> <ul style="list-style-type: none"> <li>– evaluate each application to ensure there is a need for paint stripping (e.g., evaluate whether it is possible to re-coat the piece without removing the existing coating)</li> <li>– evaluate each application where a paint stripper containing MeCl is used to ensure that there is no alternative paint stripping technology that can be used</li> <li>– reduce exposure of all paint strippers containing MeCl to the air</li> <li>– optimize application conditions when using paint strippers containing MeCl to reduce MeCl evaporation (e.g., if the stripper must be heated, make sure that the temperature is kept as low as possible to reduce evaporation)</li> <li>– practice proper storage and disposal of paint strippers containing MeCl (e.g., store stripper in closed, airtight containers).</li> </ul> <p>(NOTE: The follow sources are exempt from compliance with this checklist item:</p> <ul style="list-style-type: none"> <li>– surface coating or paint stripping performed on site at installations owned or operated by the Armed Forces of the United States (including the Coast Guard and the National Guard of any such State), the National Aeronautics and Space Administration, or the National Nuclear Security Administration</li> <li>– surface coating or paint stripping of military munitions manufactured by or for the Armed Forces of the United States (including the Coast Guard and the National Guard of any such State) or equipment directly and exclusively used for the purposes of transporting military munitions</li> <li>– surface coating or paint stripping performed by individuals on their personal vehicles, possessions, or property, either as a hobby or for maintenance of their personal vehicles, possessions, or property</li> <li>– surface coating or paint stripping performed by individuals for others without compensation</li> <li>– surface coating or paint stripping that meets the definition of “research and laboratory activities”</li> <li>– surface coating or paint stripping that meets the definition of “quality control activities”</li> <li>– surface coating or paint stripping activities that are covered under another area source NESHAP.)</li> </ul>

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<p><b>AE.100.2.US.</b> Paint stripping operations that are an affected area source must meet documentation requirements (40 CFR 63.11173(b), 63.11173(c), and 63.11173(d)) [Added April 2011].</p>	<p>(NOTE: See checklist item AE.100.1.US for detail on applicability and exemptions.)</p> <p>Verify that each paint stripping operation maintains copies of annual usage of paint strippers containing MeCl on site at all times.</p> <p>Verify that each paint stripping operation that has annual usage of more than one ton of MeCl has developed and implemented a written MeCl minimization plan to minimize the use and emissions of MeCl.</p> <p>Verify that the MeCl minimization plan addresses, at a minimum, the management practices specified in checklist item AE.100.1.US, as applicable, for facility operations.</p> <p>Verify that each paint stripping operation that has annual usage of more than one ton of MeCl posts a placard or sign outlining the MeCl minimization plan in each area where paint stripping operations subject to these requirements occur.</p> <p>(NOTE: Paint stripping operations with annual usage of less than one ton of MeCl, must comply with the requirements in AE.100.1.US, as applicable, but are not required to develop and implement a written MeCl minimization plan.)</p> <p>Verify that each paint stripping operation with annual usage of more than one ton of MeCl must maintain a copy of their current MeCl minimization plan on site at all times.</p>
<p><b>AE.100.3.US.</b> Each motor vehicle and mobile equipment surface coating operation and each miscellaneous surface coating operation that are an affected area source must meet operational requirements (40 CFR 63.11173(e) and 63.11173(g)(3)) [Added April 2011].</p>	<p>(NOTE: See checklist item AE.100.1.US for detail on applicability and exemptions.)</p> <p>Verify that, at each motor vehicle and mobile equipment surface coating operation and each miscellaneous surface coating operation all painters are certified that they have completed training in the proper spray application of surface coatings and the proper setup and maintenance of spray equipment.</p> <p>Verify that all personnel receive refresher training and are recertified every 5 yr.</p> <p>(NOTE: The minimum requirements for training and certification are described in 40 CFR 63.11173(f) [see text]. The spray application of surface coatings is prohibited by persons who are not certified as having completed the required training. The requirement for certification does not apply to the students of an accredited surface coating training program who are under the direct supervision of an instructor who meets the certification requirements.)</p> <p>Verify that, at each motor vehicle and mobile equipment surface coating operation and each miscellaneous surface coating operation all spray-applied coatings are applied in a spray booth, preparation station, or mobile enclosure (except for</p>

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	<p>waterwash spray booths that are operated and maintained according to the manufacturer's specifications) that meets the following requirements:</p> <ul style="list-style-type: none"> <li>– all spray booths, preparation stations, and mobile enclosures are fitted with a type of filter technology that is demonstrated to achieve at least 98-percent capture of paint overspray</li> <li>– the procedure used to demonstrate filter efficiency is consistent with the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) Method 52.1, "Gravimetric and Dust-Spot Procedures for Testing Air-Cleaning Devices Used in General Ventilation for Removing Particulate Matter, June 4, 1992"</li> <li>– the test coating for measuring filter efficiency is a high solids bake enamel delivered at a rate of at least 135 grams per minute from a conventional (non-HVLP) air-atomized spray gun operating at 40 pounds per square inch (psi) air pressure</li> <li>– the air flow rate across the filter is 150 ft/min.</li> </ul> <p>(NOTE: Owners and operators of motor vehicle and mobile equipment surface coating operation and each miscellaneous surface coating operation may use published filter efficiency data provided by filter vendors to demonstrate compliance and are not required to perform this measurement.)</p> <p>Verify that, at each motor vehicle and mobile equipment surface coating operation and each miscellaneous surface coating operation all spray-applied coatings are applied in a spray booth, preparation station, or mobile enclosure that meets one of the following:</p> <ul style="list-style-type: none"> <li>– spray booths and preparation stations used to refinish complete motor vehicles or mobile equipment are fully enclosed with a full roof, and four complete walls or complete side curtains, and are ventilated at negative pressure so that air is drawn into any openings in the booth walls or preparation station curtains</li> <li>– spray booths and preparation stations that are used to coat miscellaneous parts and products or vehicle subassemblies have a full roof, at least three complete walls or complete side curtains, and are ventilated so that air is drawn into the booth</li> <li>– mobile ventilated enclosures that are used to perform spot repairs enclose and, if necessary, seal against the surface around the area being coated such that paint overspray is retained within the enclosure and directed to a filter to capture paint overspray.</li> </ul> <p>(NOTE: If a spray booth is fully enclosed and has seals on all doors and other openings and has an automatic pressure balancing system, it may be operated at up to, but not more than, 0.05 inches water gauge positive pressure.)</p> <p>(NOTE: If a spray booths and preparation stations that are used to coat miscellaneous parts and products or vehicle subassemblies have a full roof, at least three complete walls or complete side curtains, and they are ventilated so that air is</p>

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<p><b>AE.100.4.US.</b> Each miscellaneous surface coating source that are an affected area source must meet training requirements (40 CFR 63.11173(f) and 63.11173(g)(3)) [Added April 2011].</p>	<p>drawn into the booth, the walls and roof of a booth may have openings, if needed, to allow for conveyors and parts to pass through the booth during the coating process.)</p> <p>Verify that all spray-applied coatings are applied with a high volume, low pressure (HVLP) spray gun, electrostatic application, airless spray gun, air-assisted airless spray gun, or an equivalent technology that is demonstrated by the spray gun manufacturer to achieve transfer efficiency comparable to one of the spray gun technologies listed for a comparable operation, and for which written approval has been obtained from the Administrator.</p> <p>(NOTE: The procedure used to demonstrate that spray gun transfer efficiency is equivalent to that of an HVLP spray gun must be equivalent to the California South Coast Air Quality Management District's "Spray Equipment Transfer Efficiency Test Procedure for Equipment User, May 24, 1989" and "Guidelines for Demonstrating Equivalency with District Approved Transfer Efficient Spray Guns, September 26, 2002.")</p> <p>(NOTE: The requirements for spray-applied coatings do not apply to painting performed by students and instructors at paint training centers. The requirements for spray-applied coatings also do not apply to the surface coating of aerospace vehicles that involves the coating of components that normally require the use of an airbrush or an extension on the spray gun to properly reach limited access spaces; to the application of coatings on aerospace vehicles that contain fillers that adversely affect atomization with HVLP spray guns; or to the application of coatings on aerospace vehicles that normally have a dried film thickness of less than 0.0013 cm (0.0005 in.).)</p> <p>Verify that all paint spray gun cleaning is done so that an atomized mist or spray of gun cleaning solvent and paint residue is not created outside of a container that collects used gun cleaning solvent.</p> <p>(NOTE: Spray gun cleaning may be done with, for example, hand cleaning of parts of the disassembled gun in a container of solvent, by flushing solvent through the gun without atomizing the solvent and paint residue, or by using a fully enclosed spray gun washer. A combination of non-atomizing methods may also be used.)</p> <p>(NOTE: See checklist item AE.100.1.US for detail on applicability and exemptions.)</p> <p>Verify that each owner or operator of an affected miscellaneous surface coating source ensures and certifies that all new and existing personnel, including contract personnel, who spray apply surface coatings are trained in the proper application of surface coatings.</p> <p>(NOTE: See checklist item AE.100.3.US for detailed information on certification training. See the text of 40 CFR 63.11173(f)(1) through 63.11173(f)(3) for requirements related to the contents of the training program.)</p>

<p style="text-align: center;"><b>COMPLIANCE CATEGORY</b>  <b>AIR EMISSIONS MANAGEMENT</b>  <b>U.S. TEAM Guide</b></p>	
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<p><b>AE.100.5.US.</b> Paint stripping operations using paint strippers containing MeCl and/or a surface coating operation are required to meet notification requirements (40 CFR 63.11175) [Added April 2011].</p>	<p>Verify that all personnel receive refresher training and are recertified every 5 yr.</p> <p>(NOTE: See checklist item AE.100.1.US for detail on applicability and exemptions.)</p> <p>Verify that the owner or operator of a paint stripping operation using paint strippers containing MeCl and/or a surface coating operation subject these requirements submit the initial notification in a timely manner.</p> <p>(NOTE: See the text of 40 CFR 11175(a)(1) through 63.11175(a)(8) for details on the contents of the initial notification.)</p> <p>(NOTE: Owners and operators of new sources are not required to submit a separate notification of compliance status in addition to the initial notification if the owners and operators were able to certify compliance on the date of the initial notification, as part of the initial notification, and the facility compliance status has not since changed.)</p> <p>Verify that owners or operators of any existing source that did not certify in the initial notification that the source is already in compliance, submit a notification of compliance status.</p> <p>(NOTE: See the text of 40 CFR 11175(b)(1) through 63.11175(b)(4) for details on the contents of the initial notification.)</p>
<p><b>AE.100.6.US.</b> Owners or operators of a paint stripping, motor vehicle or mobile equipment, or miscellaneous surface coating affected source are required to meet reporting requirements (40 CFR 63.11176) [Added April 2011].</p>	<p>(NOTE: See checklist item AE.100.1.US for detail on applicability and exemptions.)</p> <p>Verify that the owner or operator of a paint stripping, motor vehicle or mobile equipment, or miscellaneous surface coating affected source submits a report in each calendar year in which information previously submitted in either the initial Notification, Notification of Compliance, or a previous annual notification of changes report has changed.</p> <p>(NOTE: Deviations from the operational relevant requirements in 40 CFR 63.11173(a) through (d) or 63.11173(e) through (g) on the date of the report will be deemed to be a change. This includes notification when paint stripping affected sources that have not developed and implemented a written MeCl minimization plan or used more than one ton of MeCl in the previous calendar year.)</p> <p>Verify that the annual notification of changes report is submitted prior to March 1 of each calendar year when reportable changes have occurred and includes the following information:</p>

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<b>AE.100.7.US.</b> Owners or operators of a surface coating operation are required to meet recordkeeping requirements (40 CFR 63.11177(a) through 63.11177(d), 63.11177(g), 63.11177(h), and 63.11178) [Added April 2011].	<ul style="list-style-type: none"> <li>– the company’s name and the street address (physical location) of the affected source and the street address where compliance records are maintained, if different</li> <li>– the name, title, address, telephone, e-mail address (if available) and signature of the owner and operator, or other certifying company official, certifying the truth, accuracy, and completeness of the notification and a statement of whether the source has complied with all the relevant standards and other requirements or an explanation of any noncompliance and a description of corrective actions being taken to achieve compliance.</li> </ul> <p>Verify that the owner or operator of a paint stripping affected source that has not developed and implemented a written MeCl minimization plan submits a report for any calendar year in which more than one ton of MeCl is used.</p> <p>Verify that the report of MeCl used is submitted no later than March 1 of the following calendar year and the facility develops and implements a written MeCl plan no later than December 31.</p> <p>(NOTE: See checklist item AE.100.1.US for detail on applicability and exemptions.)</p> <p>Verify that the owner or operator of a surface coating operation keeps records of certification that each painter has completed the required training with the date the initial training and the most recent refresher training was completed.</p> <p>Verify that the owner or operator of a surface coating operation keeps documentation of the filter efficiency of any spray booth exhaust filter material.</p> <p>Verify that the owner or operator of a surface coating operation keeps documentation from the spray gun manufacturer that each spray gun with a cup capacity equal to or greater than 3.0 fluid ounces (89 cc) that does not meet the definition of an HVLP spray gun, electrostatic application, airless spray gun, or air assisted airless spray gun, has been determined by the Administrator to achieve a transfer efficiency equivalent to that of an HVLP spray gun.</p> <p>Verify that the owner or operator of a surface coating operation keeps copies of any Initial or Compliance Status notification submitted.</p> <p>Verify that the owner or operator of a surface coating operation keeps records of any deviation from applicable requirements which include the date and time period of the deviation, and a description of the nature of the deviation and the actions taken to correct the deviation.</p> <p>Verify that the owner or operator of a surface coating operation keeps records of any assessments of source compliance performed in support of the initial notification, notification of compliance status, or annual notification of changes report.</p>

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<b>AE.100.8.US.</b> Owners or operators of a paint stripping sources are required to meet recordkeeping requirements (40 CFR 63.11177(e) through 63.11177(g), 63.11177(h), and 63.11178) <b>[Added April 2011]</b> .	<p>Verify that copies of records are maintained for at least 5 yr after the date of each record.</p> <p>Verify that copies of records are kept on site and in a printed or electronic form that is readily accessible for inspection for at least the first 2 yr after their date.</p> <p>(NOTE: Records may be kept off-site after the 2 yr period.)</p> <p>(NOTE: See checklist item AE.100.1.US for detail on applicability and exemptions.)</p> <p>Verify that records are kept of paint strippers containing MeCl used for paint stripping operations, including the MeCl content of the paint stripper used.</p> <p>Verify that paint stripper documentation is sufficient to verify annual usage of paint strippers containing MeCl (e.g., material safety data sheets or other documentation provided by the manufacturer or supplier of the paint stripper, purchase receipts, records of paint stripper usage, engineering calculations).</p> <p>Verify that if the facility is a paint stripping source that annually uses more than one ton of MeCl, the facility maintains a record of their current MeCl minimization plan on site for the duration of paint stripping operations.</p> <p>Verify that records are also kept of the annual review of, and updates to, the MeCl minimization plan.</p> <p>Verify that the owner or operator of a surface coating operation keeps records of any deviation from applicable requirements which include the date and time period of the deviation, and a description of the nature of the deviation and the actions taken to correct the deviation.</p> <p>Verify that the owner or operator of a surface coating operation keeps records of any assessments of source compliance performed in support of the initial notification, notification of compliance status, or annual notification of changes report.</p> <p>Verify that copies of records are maintained for at least 5 yr after the date of each record.</p> <p>Verify that copies of records are kept on site and in a printed or electronic form that is readily accessible for inspection for at least the first 2 yr after their date.</p> <p>(NOTE: Records may be kept off-site after the 2 yr period.)</p>

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<b>DEGREASING OPERATIONS</b>  <b>AE.115</b> <b>General</b>  <b>AE.115.1.US.</b> Affected solvent cleaning machines must meet certain emissions limitations and demonstration compliance (40 CFR 63.460(i) and 63.471(a), 63.471(b)(2), 63.471(c)) <b>[Added July 2007]</b> .	<p>(NOTE: The compliance date for the requirements in this checklist item depends on the date that construction or reconstruction of the affected facility commences. Each affected facility that was constructed or reconstructed on or before 17 August 2006, shall be in compliance with this checklist item no later than May 3, 2010. Each affected facility that was constructed or reconstructed on or after 17 August 2006, shall be in compliance with the provisions of this checklist item on May 3, 2007 or immediately upon startup, whichever is later.)</p> <p>(NOTE: For purposes of this checklist item, affected facility means all solvent cleaning machines, except solvent cleaning machines used in the manufacture and maintenance of aerospace products, solvent cleaning machines used in the manufacture of narrow tubing, and continuous web cleaning machines, located at a major source that are subject to the facility-wide limits, and for area sources, affected facility means all solvent cleaning machines, except cold batch cleaning machines, located at an area source that are subject to the facility-wide limits.)</p> <p>Verify that each owner or operator of an affected facility ensures that the total emissions of perchloroethylene (PCE), trichloroethylene (TCE) and methylene chloride (MC) used at the affected facility are equal to or less than the following applicable facility-wide 12-mo rolling total emission limit:</p> <ul style="list-style-type: none"> <li>– for general population degreasing machines:             <ul style="list-style-type: none"> <li>– PCE only, 4,800 kg</li> <li>– TCE only, 14,100 kg</li> <li>– MC only, 60,000 kg</li> <li>– multiple solvents, 60,000 kg</li> </ul> </li> <li>– for military depot maintenance facilities:             <ul style="list-style-type: none"> <li>– PCE only, 8,000 kg</li> <li>– TCE only, 23,500 kg</li> <li>– MC only, 100,000 kg</li> <li>– multiple solvents, 100,000 kg.</li> </ul> </li> </ul> <p>(NOTE: The MC-weighted emissions are calculated using equation 1 in 40 CFR 63.471(b)(2). The PCE emission limit is calculated using CalEPA URE.)</p> <p>Verify that, on first operating day of every month, the owner or operator demonstrates compliance with the applicable facility-wide emission limit on a 12-mo rolling total basis using the following procedures:</p>

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<p><b>AE.115.2.US.</b> Affected solvent cleaning machines must meet certain recordkeeping and reporting requirements (40 CFR 63.460(i) and 63.471(a), 63.471(b)(1), 63.471(d) through 63.471(h)) [Added July 2007].</p>	<ul style="list-style-type: none"> <li>– ensure that each solvent cleaning machine system contains only clean liquid solvent, including, but is not limited to, fresh unused solvent, recycled solvent, and used solvent that has been cleaned of soiled materials, and:               <ul style="list-style-type: none"> <li>– a fill line is indicated during the first month the measurements are made</li> <li>– the solvent level within the machine must be returned to the same fill-line each month, immediately prior to calculating monthly emissions (NOTE: The solvent cleaning machine does not have to be emptied and filled with fresh unused solvent prior to the calculations)</li> </ul> </li> <li>– using the records of all solvent additions and deletions for the previous month, determine solvent emissions from each solvent cleaning machine using equation 10 in the text of 40 CFR 63.471(c)(2)</li> <li>– determine SSRi using the method specified in 60 CFR 63.471(c)(3)(i) or (c)(3)(ii):               <ul style="list-style-type: none"> <li>– from tests conducted using EPA reference method 25d</li> <li>– by engineering calculations included in the compliance report</li> </ul> </li> <li>– determine the 12-mo rolling total emissions for the 12-mo period ending with the most recent month using equation 11 in the text of 40 CFR 63.471(c)(4)</li> <li>– determine the 12-mo rolling total emissions for the 12-mo period ending with the most recent month using equation 12 in the text of 40 CFR 63.471(c)(5)</li> </ul> <p>(NOTE: The phrase “each solvent cleaning machine” means each solvent cleaning machine that is part of an affected facility regulated by this checklist item.)</p> <p>(NOTE: The compliance date for the requirements in this checklist item depends on the date that construction or reconstruction of the affected facility commences. Each affected facility that was constructed or reconstructed on or before 17 August 2006, shall be in compliance with this checklist item no later than May 3, 2010. Each affected facility that was constructed or reconstructed on or after 17 August 2006, shall be in compliance with the provisions of this checklist item on May 3, 2007 or immediately upon startup, whichever is later.)</p> <p>(NOTE: For purposes of this checklist item, affected facility means all solvent cleaning machines, except solvent cleaning machines used in the manufacture and maintenance of aerospace products, solvent cleaning machines used in the manufacture of narrow tubing, and continuous web cleaning machines, located at a major source that are subject to the facility-wide limits, and for area sources, affected facility means all solvent cleaning machines, except cold batch cleaning machines, located at an area source that are subject to the facility-wide limits.)</p> <p>Verify that each owner or operator of an affected facility maintains a log of solvent additions and deletions for each solvent cleaning machine.</p> <p>Verify that, if the applicable facility-wide emission limit is not met, the exceedance is reported as required in 40 CFR 63.468(h) (see checklist item AE.118.7.US).</p>

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	<p>Verify that each owner or operator of an affected facility maintains the following records either in electronic or written form for a period of 5 yr:</p> <ul style="list-style-type: none"> <li>– the dates and amounts of solvent that are added to each solvent cleaning machine</li> <li>– the solvent composition of wastes removed from each solvent cleaning machines as determined using the procedure described in paragraph 40 CFR 63.471(c)(3)</li> <li>– calculation sheets showing how monthly emissions and the 12-month rolling total emissions from each solvent cleaning machine were determined, and the results of all calculations.</li> </ul> <p>Verify that each owner or operator of an affected facility submits an initial notification report including the following information to the Administrator no later than 3 May 2010:</p> <ul style="list-style-type: none"> <li>– the name and address of the owner or operator of the affected facility</li> <li>– the address (i.e., physical location) of the solvent cleaning machine(s) that is part of an affected facility regulated by this checklist item</li> <li>– a brief description of each solvent cleaning machine at the affected facility including machine type (batch vapor, batch cold, vapor in-line or cold in-line), solvent/air interface area, and existing controls</li> <li>– the date of installation for each solvent cleaning machine</li> <li>– an estimate of annual halogenated HAP solvent consumption for each solvent cleaning machine.</li> </ul> <p>Verify that each owner or operator of an affected facility submits to the Administrator an initial statement of compliance including the following information on or before 3 May 2010:</p> <ul style="list-style-type: none"> <li>– the name and address of the owner or operator of the affected facility</li> <li>– the address (i.e., physical location) of each solvent cleaning machine that is part of an affected facility regulated by this checklist item</li> <li>– the results of the first 12-mo rolling total emissions calculation.</li> </ul> <p>Verify that each owner or operator of an affected facility submits a solvent emission report containing the following information every year:</p> <ul style="list-style-type: none"> <li>– the average monthly solvent consumption for the affected facility in kg/mo</li> <li>– the 12-mo rolling total solvent emission estimates calculated each month using the method as described in 40 CFR 63.471(c).</li> </ul> <p>(NOTE: The solvent emission report can be combined with the annual report into a single report for each facility.)</p>





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<p><b>AE.116.3.US.</b> Remote-reservoir batch cold solvent-cleaning machines are required to have a tightly fitting cover over the sump that is closed at all times except during the cleaning of parts and be operated according to specific parameters (40 CFR 63.462(b) and 63.462(c)(1) through 63.462(c)(9)) [Revised October 1999]</p>	<p>Verify that, when the cover is open, the cold cleaning machine is not exposed to drafts greater than 40 m/min (132 ft/min) as measured between 1 and 2 m (3.3 and 6.6 ft) upwind and at the same elevation as the tank lip.</p> <p>Verify that sponges, fabric, wood, and paper products are not cleaned except for the cleaning of porous materials that are part of PCB-laden transformers, if those transformers are handled throughout the cleaning process, and disposed of in compliance with an approved PCB disposal permit issued in accordance with TSCA.</p> <p>(NOTE: The requirements in 40 CFR 63.460 through 63.469 [see checklist items AE.116.1.US through AE.118.7.US] apply to each individual batch vapor, in-line vapor, in-line cold, and batch cold solvent-cleaning machine that uses any solvent containing methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, or chloroform or any combination of these halogenated HAP solvents, in total concentration greater than 5 percent by weight, as a cleaning and/or drying agent. Wipe cleaning activities, such as using a rag containing halogenated solvent or a spray cleaner containing halogenated solvent are not included.)</p> <p>(NOTE: The requirements in 40 CFR 63.460 through 63.469 [see checklist items AE.116.1.US through AE.118.7.US] apply to each individual batch vapor, in-line vapor, in-line cold, and batch cold solvent-cleaning machine that uses any solvent containing methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, or chloroform or any combination of these halogenated HAP solvents, in total concentration greater than 5 percent by weight, as a cleaning and/or drying agent. Wipe cleaning activities, such as using a rag containing halogenated solvent or a spray cleaner containing halogenated solvent are not included.)</p> <p>Verify that remote-reservoir batch cold solvent-cleaning machines have a tightly fitting cover over the sump that is closed at all times except during the cleaning of parts.</p> <p>Verify that all waste solvent is collected and stored in closed containers.</p> <p>(NOTE: The closed container may contain a device that allows pressure relief, but does not allow liquid solvent to drain from the container.)</p> <p>Verify that, if a flexible hose or flushing device is used, flushing is performed only within the freeboard area of the solvent-cleaning machine.</p> <p>Verify that solvent cleaned parts are drained for 15 s or until dripping has stopped, whichever is longer.</p>

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	<p>(NOTE: Parts having cavities or blind holes shall be tipped or rotated while draining.)</p> <p>Verify that the solvent level does not exceed the fill line.</p> <p>Verify that spills during solvent transfer are wiped up immediately and the rags stored in a covered container.</p> <p>Verify that, when an air- or pump-agitated solvent bath is used, the agitator is operated to produce a rolling motion of the solvent but not observable splashing.</p> <p>Verify that, when the cover is open, the cold cleaning machine is not exposed to drafts greater than 40 m/min (132 ft/min) as measured between 1 and 2 m (3.3 and 6.6 ft) upwind and at the same elevation as the tank lip.</p> <p>Verify that sponges, fabric, wood, and paper products are not cleaned except for the cleaning of porous materials that are part of PCB-laden transformers, if those transformers are handled throughout the cleaning process, and disposed of in compliance with an approved PCB disposal permit issued in accordance with TSCA.</p>



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<b>DEGREASING OPERATIONS</b> <b>AE.117</b> <b>Vapor Cleaning</b>  <b>AE.117.1.US.</b> Existing or new batch vapor or in-line solvent-cleaning machines are required to be designed to meet specific standards (40 CFR 63.463(a) [Revised January 2000; Revised October 2000].	<p>Verify that each cleaning machine is designed and operated to meet the following equipment or technique requirements:</p> <ul style="list-style-type: none"> <li>– there is an idling and downtime mode cover that can be readily opened or closed that completely covers the cleaning machine opening when in place, and is free of cracks, holes, or other defects</li> <li>– there is a reduced room draft so that when the cover is open, the machine is not exposed to drafts greater than 40 m/min (132 ft/min) as measured between 1 and 2 m (3.3 and 6.6 ft) upwind and at the same elevation as the tank lip.</li> </ul> <p>Verify that the freeboard ratio is 0.75 or greater.</p> <p>Verify that each cleaning machine has an automated parts handling system capable of moving parts or parts baskets at a speed of 3.4 m/min (11 ft/min) or less from the initial leading of parts through removal of cleaned parts.</p> <p>Verify that each vapor-cleaning machine is equipped with a:</p> <ul style="list-style-type: none"> <li>– device that shuts off the sump heat if the sump liquid solvent level drops to the sump heater coils (NOTE: This does not apply to a vapor cleaning machine that uses steam to heat the solvent.)</li> <li>– vapor level control device that shuts off sump heat if the vapor level in the vapor-cleaning machine rises above the height of the primary condenser</li> <li>– primary condenser.</li> </ul> <p>Verify that each cleaning machine that uses a lip exhaust is designed and operated to route all collected solvent vapors through a properly operated and maintained carbon adsorber.</p> <p>(NOTE: Instead of complying with these standards, the owner or operator of a continuous web cleaning machine may comply with the requirements of 40 CFR 63.463(g) or 63.463(h) (see checklist items AE.117.11.US and AE.117.12.US).)</p> <p>(NOTE: These requirements do not apply when alternative standards as detailed in 40 CFR 63.464 (see checklist item AE.117.7.US) are applied.)</p> <p>(NOTE: See the text of 40 CFR 63.465 for details on test methods.)</p> <p>(NOTE: The requirements in 40 CFR 63.460 through 63.469 [see checklist items AE.116.1.US through AE.118.7.US] apply to each individual batch vapor, in-line vapor, in-line cold, and batch cold solvent-cleaning machine that uses any solvent containing methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-</p>

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<p><b>AE.117.2.US.</b> Existing or new batch vapor or in-line solvent-cleaning machines are required to be operated according to specific standards (40 CFR 63.463(d)) [<b>Revised January 2000</b>].</p>	<p>trichloroethane, carbon tetrachloride, or chloroform or any combination of these halogenated HAP solvents, in total concentration greater than 5 percent by weight, as a cleaning and/or drying agent. Wipe cleaning activities, such as using a rag containing halogenated solvent or a spray cleaner containing halogenated solvent are not included.)</p> <p>Verify that air distribution across the cleaning machine opening is controlled by using one of the following:</p> <ul style="list-style-type: none"> <li>– covers are in place during idling mode and during the downtime mode unless either the solvent has been removed from the machine or maintenance or monitoring is being performed that requires the cover to not be in place</li> <li>– there is a reduced room draft so that when the cover is open, the machine is not exposed to drafts greater than 40 m/min (132 ft/min) as measured between 1 and 2 m (3.3 and 6.6 ft) upwind and at the same elevation as the tank lip.</li> </ul> <p>Verify that the parts basket or the parts being cleaned in an open-top batch vapor-cleaning machine do not occupy more than 50 percent of the solvent/air interface area unless that parts basket or the parts are introduced at a speed of 0.9 m/min (3 ft/min) or less.</p> <p>Verify that any spraying operations are done within the vapor zone or within a section of the solvent-cleaning machine that is not directly exposed to the ambient air.</p> <p>Verify that parts are oriented so that solvent drains from them freely.</p> <p>Verify that parts baskets or parts are not removed from any solvent-cleaning machine until dripping has stopped.</p> <p>Verify that, during startup of each vapor-cleaning machine, the primary condenser is turned on before the sump heater.</p> <p>Verify that, during shutdown of a vapor-cleaning machine, the sump heater is turned off and the solvent vapor layer allowed to collapse before the primary condenser is turned off.</p> <p>Verify that, when solvent is added or drained, the solvent is transferred using threaded or other leakproof couplings and the end of the pipe in the solvent sump is located beneath the liquid solvent surface.</p> <p>Verify that solvent-cleaning machines and controls are maintained as recommended by the manufacturer.</p>

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<p><b>AE.117.3.US.</b> Batch vapor-cleaning machines are required to be designed and operated to meet specific emission control standards (40 CFR 63.463(b)) <b>[Revised January 2000]</b>.</p>	<p>(NOTE: The USEPA Administrator may request operators of solvent-cleaning machines to take a test on solvent-cleaning machine procedures. This test is only required at the request of the Administrator.)</p> <p>Verify that waste solvent, still bottoms, and sump bottoms are collected and stored in closed containers.</p> <p>(NOTE: The closed container may contain a device that allows pressure relief but does not allow liquid solvent to drain from the container.)</p> <p>Verify that sponges, fabric, wood, and paper products are not cleaned.</p> <p>(NOTE: Instead of complying with these standards, the owner or operator of a continuous web cleaning machine may comply with the requirements of 40 CFR 63.463(g) or 63.463(h) (see checklist items AE.117.11.US. and AE.117.12.US.).)</p> <p>(NOTE: These requirements do not apply when alternative standards as detailed in 40 CFR 63.464 (see checklist item AE.117.7.US.) are applied.)</p> <p>(NOTE: See the text of 40 CFR 63.465 for details on test methods.)</p> <p>(NOTE: The requirements in 40 CFR 63.460 through 63.469 [see checklist items AE.116.1.US through AE.118.7.US] apply to each individual batch vapor, in-line vapor, in-line cold, and batch cold solvent-cleaning machine that uses any solvent containing methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, or chloroform or any combination of these halogenated HAP solvents, in total concentration greater than 5 percent by weight, as a cleaning and/or drying agent. Wipe cleaning activities, such as using a rag containing halogenated solvent or a spray cleaner containing halogenated solvent are not included.)</p> <p>Verify that batch vapor-cleaning machines with a solvent/air interface area of 1.21 m<sup>2</sup> (13 ft<sup>2</sup>) or less meets one of the following:</p> <ul style="list-style-type: none"> <li>– one of the following control methods is used or equivalent other methods: <ul style="list-style-type: none"> <li>– working mode cover, freeboard ratio of 1.0, superheated vapor</li> <li>– freeboard refrigeration device, superheated vapor</li> <li>– working mode cover, freeboard refrigeration device</li> <li>– reduced room draft, freeboard ratio of 1.0, superheated vapor</li> <li>– freeboard refrigeration device, reduced room draft</li> <li>– freeboard refrigeration device, freeboard ratio of 1.0</li> <li>– freeboard refrigeration device, dwell</li> <li>– reduced room draft, dwell, freeboard ratio of 1.0</li> <li>– freeboard refrigeration device, carbon adsorber</li> <li>– freeboard ratio of 1.0, superheated vapor, carbon adsorber</li> </ul> </li> </ul>

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<p><b>AE.117.4.US.</b> Existing or new in-line cleaning machines are required to be designed and operated to meet specific emission control standards (40 CFR 63.463(c)) [Revised January 2000].</p>	<ul style="list-style-type: none"> <li>– the solvent-cleaning machine can achieve and maintain an idling emission limit of 0.22 kg/h/m<sup>2</sup> (0.045 lb/h/ft<sup>2</sup>) of solvent/air interface area.</li> </ul> <p>Verify that batch vapor-cleaning machines with a solvent/air interface area greater than 1.21 m<sup>2</sup> (13 ft<sup>2</sup>) meets one of the following:</p> <ul style="list-style-type: none"> <li>– one of the following control combinations is used or other equivalent methods: <ul style="list-style-type: none"> <li>– freeboard refrigeration device, freeboard ratio of 1.0, superheated vapor</li> <li>– dwell, freeboard refrigeration device, reduced room draft</li> <li>– working-mode cover, freeboard refrigeration device, superheated vapor</li> <li>– freeboard ratio of 1.0, reduced room draft, superheated vapor</li> <li>– freeboard refrigeration device, reduced room draft, superheated vapor</li> <li>– freeboard refrigeration device, reduced room draft, freeboard ratio of 1.0</li> <li>– freeboard refrigeration device, superheated vapor, carbon adsorber</li> </ul> </li> <li>– the solvent-cleaning machine can achieve and maintain an idling emission limit of 0.22 kg/h/m<sup>2</sup> (0.045 lb/h/ft<sup>2</sup>) of solvent/air interface area.</li> </ul> <p>(NOTE: See the text of 40 CFR 63.465 for details on test methods.)</p> <p>(NOTE: The requirements in 40 CFR 63.460 through 63.469 [see checklist items AE.116.1.US through AE.118.7.US] apply to each individual batch vapor, in-line vapor, in-line cold, and batch cold solvent-cleaning machine that uses any solvent containing methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, or chloroform or any combination of these halogenated HAP solvents, in total concentration greater than 5 percent by weight, as a cleaning and/or drying agent. Wipe cleaning activities, such as using a rag containing halogenated solvent or a spray cleaner containing halogenated solvent are not included.)</p> <p>Verify that existing in-line cleaning machines meet one of the following:</p> <ul style="list-style-type: none"> <li>– one of the following control combinations is used: <ul style="list-style-type: none"> <li>– superheated vapor, freeboard ratio of 1.0</li> <li>– freeboard refrigeration device, freeboard ratio of 1.0</li> <li>– dwell, freeboard refrigeration device</li> <li>– dwell, carbon adsorber</li> </ul> </li> <li>– the in-line cleaning machine can achieve and maintain an idling emission limit of 0.10 kg/h/m<sup>2</sup> (0.021 lb/h/ft<sup>2</sup>) of solvent/air interface area.</li> </ul> <p>Verify that new in-line cleaning machines meet one of the following:</p> <ul style="list-style-type: none"> <li>– one of the following control combinations is used: <ul style="list-style-type: none"> <li>– superheated vapor, freeboard refrigeration device</li> <li>– freeboard refrigeration device, carbon adsorber</li> <li>– superheated vapor, carbon adsorber</li> </ul> </li> </ul>

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<p><b>AE.117.5.US.</b> Depending on the control techniques used to achieve compliance, specific actions are required to be done (40 CFR 63.463(e)(2)) [Revised January 2000; Revised October 2000].</p>	<p>– the in-line cleaning machine can achieve and maintain an idling emission limit of 0.10 kg/h/m<sup>2</sup> (0.021 lb/h/ft<sup>2</sup>) of solvent/air interface area.</p> <p>(NOTE: Instead of complying with these standards, the owner or operator of a continuous web cleaning machine may comply with the requirements of 40 CFR 63.463(g) or 63.463(h) (see checklist items AE.117.11.US. and AE.117.12.US.).)</p> <p>(NOTE: These requirements do not apply when alternative standards as detailed in 40 CFR 63.464 (see checklist item AE.117.7.US) are applied.)</p> <p>(NOTE: See the text of 40 CFR 63.465 for details on test methods.)</p> <p>(NOTE: The requirements in 40 CFR 63.460 through 63.469 [see checklist items AE.116.1.US through AE.118.7.US] apply to each individual batch vapor, in-line vapor, in-line cold, and batch cold solvent-cleaning machine that uses any solvent containing methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, or chloroform or any combination of these halogenated HAP solvents, in total concentration greater than 5 percent by weight, as a cleaning and/or drying agent. Wipe cleaning activities, such as using a rag containing halogenated solvent or a spray cleaner containing halogenated solvent are not included.)</p> <p>(NOTE: These requirements only apply to solvent-cleaning machines as identified in 40 CFR 63.463(b), 63.463(c), or 63.463(g) see checklist items AE.117.3.US, AE.117.4.US, and AE.117.11.US.)</p> <p>Verify that, if freeboard refrigeration devices are used, the chilled air blanket temperature (in oF) measured at the center of the air blanket is no greater than 30 percent of the solvent's boiling point.</p> <p>Verify that, if a reduced room draft is used to achieve compliance, the following are done:</p> <ul style="list-style-type: none"> <li>– it is ensured that the flow or movement of air across the top of the freeboard area of the solvent-cleaning machine enclosure does not exceed 15.2 m/min (50 ft/min) at any time</li> <li>– operating conditions under which the wind speed was demonstrated to be 15.2 m/min (50 ft/min) or less are established and maintained.</li> </ul> <p>Verify that, if a working mode cover is used to achieve compliance, the following are done:</p> <ul style="list-style-type: none"> <li>– the cover open only for part entrance and removal and completely covers the cleaning machine openings when closed</li> <li>– the working mode cover is maintained free of cracks, holes, and other defects.</li> </ul>

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	<p>Verify that, if an idling mode cover is used to achieve compliance, the following are done:</p> <ul style="list-style-type: none"> <li>– the cover is in place whenever parts are not in the solvent-cleaning machine and completely covers the cleaning machine openings when in place</li> <li>– the idling mode cover is maintained free of cracks, holes, and other defects.</li> </ul> <p>Verify that, if dwell is used to achieve compliance, the following are done:</p> <ul style="list-style-type: none"> <li>– the appropriate dwell time is determined for each part or parts basket or the maximum dwell time</li> <li>– after cleaning, each part is held in the freeboard area above the vapor zone for the dwell time necessary.</li> </ul> <p>Verify that, if a superheated vapor system is used to achieve compliance, the following are done:</p> <ul style="list-style-type: none"> <li>– the temperature of the vapor at the center of the superheated vapor is at least 10 °F above the solvents boiling point</li> <li>– the manufacturers specifications for determining the minimum proper dwell time are followed</li> <li>– the parts remain within the superheated vapor for at least the minimum proper dwell time.</li> </ul> <p>Verify that, if a carbon adsorber in conjunction with a lip exhaust or other exhaust internal to the cleaning machine is used to achieve compliance, the following are done:</p> <ul style="list-style-type: none"> <li>– the concentration of the organic solvent in the exhaust does not exceed 100 ppm of any halogenated HAP compound</li> <li>– the carbon adsorber bed is not bypassed during desorption</li> <li>– the lip exhaust is located above the solvent-cleaning machine cover so that the cover closes below the lip exhaust level.</li> </ul> <p>Verify that, if a superheated part system is used to comply with the standards for continuous web cleaning machines, the owner or operator ensures that the temperature of the continuous web part is at least 10 oF above the solvent boiling point while the part is traveling through the cleaning machine.</p> <p>Verify that, if a squeegee system is used to comply with the continuous web cleaning requirements, the owner or operator complies with the following requirements:</p> <ul style="list-style-type: none"> <li>– determines the appropriate maximum product throughput for the squeegees used in the squeegee system</li> <li>– conducts weekly monitoring</li> </ul>

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	<ul style="list-style-type: none"> <li>– records both the results of the visual inspection and the length of continuous web product cleaned during the previous week</li> <li>– calculates the total amount of continuous web product processed since the squeegees were replaced and compare to the maximum product throughput for the squeegees</li> <li>– ensures squeegees are replaced at or before the maximum product throughput is attained</li> <li>– redetermines the maximum product throughput for the squeegees if any solvent film is visible on the continuous web part immediately after it exits the cleaning machine.</li> </ul> <p>Verify that, if an air knife system is used to comply with the continuous web cleaning requirements, the owner or operator complies with the following requirements:</p> <ul style="list-style-type: none"> <li>– determines the air knife parameter and parameter value that demonstrates to the Administrator's satisfaction that the air knife is properly operating</li> <li>– maintains the selected air knife parameter value at the required level</li> <li>– conducts the weekly monitoring</li> <li>– redetermines the proper (air knife parameter) value if any solvent film is visible on the continuous web part immediately after it exits the cleaning machine.</li> </ul> <p>(NOTE: An air knife is properly operating if no visible solvent film remains on the continuous web part after it exits the cleaning machine.)</p> <p>Verify that, if a combination squeegee and air knife system is used to comply with the continuous web cleaning requirements, the owner or operator complies with the following requirements:</p> <ul style="list-style-type: none"> <li>– determines the system parameters and value that demonstrate to the Administrator's satisfaction that the system is properly operating</li> <li>– maintains the selected parameter value at the determined level</li> <li>– conducts weekly monitoring</li> <li>– redetermines the proper parameter value if any solvent film is visible on the continuous web part immediately after it exits the cleaning machine.</li> </ul> <p>(NOTE: See the text of 40 CFR 63.465 for details on test methods.)</p> <p>(NOTE: The requirements in 40 CFR 63.460 through 63.469 [see checklist items AE.116.1.US through AE.118.7.US] apply to each individual batch vapor, in-line vapor, in-line cold, and batch cold solvent-cleaning machine that uses any solvent containing methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, or chloroform or any combination of these halogenated HAP solvents, in total concentration greater than 5 percent by weight, as a cleaning and/or drying agent. Wipe cleaning activities, such as using a rag</p>

<p style="text-align: center;"><b>COMPLIANCE CATEGORY</b>  <b>AIR EMISSIONS MANAGEMENT</b>  <b>U.S. TEAM Guide</b></p>	
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<p><b>AE.117.6.US.</b> Batch vapor or in-line cleaning machines that are meeting the requirements for idling emission limit standards are required to perform specific actions (40 CFR 63.463(f)) <b>[Revised January 2000]</b>.</p>	<p>containing halogenated solvent or a spray cleaner containing halogenated solvent are not included.)</p> <p>(NOTE: This applies to the idling emission limit standards outlined in 40 CFR 63.463(b) and (c), see checklist items AE.117.3.US. and AE.117.4.US.)</p> <p>Verify that an initial performance test was conducted to demonstrate compliance and establish parameters for monitoring.</p> <p>Verify that periodic monitoring is done.</p> <p>Verify that the solvent-cleaning machine is being operated within the parameters identified in the initial performance test.</p> <p>(NOTE: See the text of 40 CFR 63.465 for details on test methods.)</p> <p>(NOTE: The requirements in 40 CFR 63.460 through 63.469 [see checklist items AE.116.1.US through AE.118.7.US] apply to each individual batch vapor, in-line vapor, in-line cold, and batch cold solvent-cleaning machine that uses any solvent containing methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, or chloroform or any combination of these halogenated HAP solvents, in total concentration greater than 5 percent by weight, as a cleaning and/or drying agent. Wipe cleaning activities, such as using a rag containing halogenated solvent or a spray cleaner containing halogenated solvent are not included.)</p>
<p><b>AE.117.7.US.</b> Instead of complying with the standards in 40 CFR 63.463, an operator may elect to comply with the standards outlined in 40 CFR 63.464 (40 CFR 463.464) <b>[Revised January 2000; Revised October 2000]</b>.</p>	<p>(NOTE: The requirements outlined in this checklist item can, at the designation of the operator, replace the requirements in 40 CFR 63.463, see checklist items AE.117.1.US through AE.117.6.US and AE.118.7.US.)</p> <p>Verify that, if the cleaning machine has a solvent/air interface:</p> <ul style="list-style-type: none"> <li>– a log is maintained of solvent additions and deletions for each solvent-cleaning machine</li> <li>– emissions are equal to or less than the following applicable emissions limit: <ul style="list-style-type: none"> <li>– batch vapor solvent-cleaning machine - 150 kg/m<sup>2</sup>/mo</li> <li>– existing in-line solvent-cleaning machines - 153 kg/m<sup>2</sup>/mo</li> <li>– new in-line solvent-cleaning machines - 99 kg/m<sup>2</sup>/mo.</li> </ul> </li> </ul> <p>(NOTE: Measurements are 3-mo rolling average monthly emission limits.)</p> <p>Verify that, if the cleaning machine is a batch vapor-cleaning machine and does not have a solvent/air interface:</p> <ul style="list-style-type: none"> <li>– a log is maintained of solvent additions and deletions for each solvent-cleaning machine</li> </ul>

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<p><b>AE.117.8.US.</b> Depending on the control techniques used to achieve compliance, specific monitoring is required to be done (40 CFR 63.466) [Revised January 2000].</p>	<ul style="list-style-type: none"> <li>– emissions are equal to or less than the following applicable emissions limit:               <ul style="list-style-type: none"> <li>– for cleaning machines with a cleaning capacity that is less than or equal to 2.96 m<sup>3</sup>, the emissions limit is determined by either using the equation or the Table in Appendix 1-17</li> <li>– for cleaning machines with a cleaning capacity that is greater than 2.95 m<sup>3</sup>, the emissions limit is determined by using the equation in Appendix 1-17.</li> </ul> </li> </ul> <p>Verify that compliance with the 3-mo rolling average is demonstrated monthly.</p> <p>(NOTE: As an alternative to meeting the requirements in 40 CFR 63.463, each owner or operator of a continuous web cleaning machine can demonstrate an overall cleaning system control efficiency of 70 percent or greater. This demonstration can be made for either a single cleaning machine or for a solvent cleaning system that contains one or more cleaning machines and ancillary equipment, such as storage tanks and distillation units. If the demonstration is made for a cleaning system, the facility must identify any modifications required to the test procedures and the Administrator must approve them.)</p> <p>(NOTE: See the text of 40 CFR 63.465 for details on test methods.)</p> <p>(NOTE: The requirements in 40 CFR 63.460 through 63.469 [see checklist items AE.116.1.US through AE.118.7.US] apply to each individual batch vapor, in-line vapor, in-line cold, and batch cold solvent-cleaning machine that uses any solvent containing methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, or chloroform or any combination of these halogenated HAP solvents, in total concentration greater than 5 percent by weight, as a cleaning and/or drying agent. Wipe cleaning activities, such as using a rag containing halogenated solvent or a spray cleaner containing halogenated solvent are not included.)</p> <p>(NOTE: These requirements only apply to solvent-cleaning machines as identified in 40 CFR 63.463(b), 63.463(c), and new web cleaning machines, see checklist items AE.117.3.US, AE.117.4.US, and AE.117.11.US.)</p> <p>Verify that monitoring is conducted as follows and the results recorded on a weekly basis:</p> <ul style="list-style-type: none"> <li>– if a freeboard refrigeration device is used to comply with the above standards, the operator uses a thermometer or thermocouple to measure the temperature of the center of the air blanket during the idling mode</li> <li>– if a superheated vapor system is used to comply, the operator uses a thermometer or thermocouple to measure the temperature in the center of the superheated vapor zone while the solvent-cleaning machine is in the idling mode</li> </ul>

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	<ul style="list-style-type: none"> <li>– if a squeegee system or air knife system is used to comply with the requirements for web cleaning machines outlined in 40 CFR 63.463(g) or 63.463(h) (see checklist item AE.117.11.US. and AE.117.12.US.), the owner or operator visually inspects the continuous web part exiting the solvent-cleaning machine to ensure that no solvent film is visible on the part</li> <li>– if a superheated part system is used to comply with the requirements for web cleaning machines outlined in 40 CFR 63.463(g) or 63.463(h) (see checklist item AE.117.11.US. and AE.117.12.US.), the owner or operator use a thermometer, thermocouple, or other temperature measurement device to measure the temperature of the continuous web part while it is in the solvent-cleaning machine.</li> </ul> <p>(NOTE: The temperature measurement for web cleaning machines can also be taken at the exit of the solvent-cleaning machine. As an alternative to complying with the temperature measurement requirements for web cleaning machines, the owner or operator can provide data, sufficient to satisfy the Administrator, that demonstrate that the part temperature remains above the boiling point of the solvent at all times that the part is within the continuous web solvent-cleaning machine. These data could include design and operating conditions such as information supporting any exothermic reaction inherent in the processing.)</p> <p>Verify that monitoring is conducted as follows and the results recorded on a monthly basis:</p> <ul style="list-style-type: none"> <li>– if a cover (working mode, downtime mode, and/or idling mode) is used to comply, there is a visual inspection to identify any cracks, holes, or other defects and that the cover completely covers the machine when closed</li> <li>– if a dwell is used, the actual dwell time is determined by measuring the period of time that parts are held within the freeboard area of the solvent-cleaning machine after cleaning.</li> </ul> <p>Verify that monitoring is conducted as follows when using reduced room draft:</p> <ul style="list-style-type: none"> <li>– if the reduced room draft is maintained by controlling room parameters, there is initial monitoring of the wind speed and of room parameters (quarterly monitoring of wind speed, and weekly monitoring of room parameters)</li> <li>– if an enclosure (full or partial) is used to achieve a reduced room draft, there is an initial monitoring and thereafter monthly monitoring of the wind speed within the enclosure and a monthly visual inspection of the enclosure to determine if it is free of cracks, holes, and other defects.</li> </ul> <p>(NOTE: These requirements for weekly and monthly monitoring and reduced room draft monitoring apply when the operator is complying with the following equipment standards:</p> <ul style="list-style-type: none"> <li>– using one of the approved control combinations for batch vapor solvent-cleaning machines with a solvent/air interface of 1.21 m<sup>2</sup> (13 ft<sup>2</sup>) or less</li> </ul>

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	<ul style="list-style-type: none"> <li>– using one of the approved control combinations for batch vapor solvent-cleaning machines with a solvent/air interface of greater than 1.21 m<sup>2</sup> (13 ft<sup>2</sup>)</li> <li>– using one of the approved control combinations for existing in-line solvent-cleaning machines</li> <li>– using one of the approved control combinations for new in-line solvent-cleaning machines.)</li> </ul> <p>Verify that the operators of batch vapor or in-line solvent-cleaning machines that are complying with the requirements in 40 CFR 63.463 (see checklist items AE.117.1.US. through AE.117.6.US. and AE.118.7.US.) are monitoring the hoist speed as follows:</p> <ul style="list-style-type: none"> <li>– speed is determined by measuring the time it takes to travel a measured distance and dividing the measuring distance by the time</li> <li>– monitoring is done monthly, but, if there are no exceedances the first year, monitoring can be done quarterly</li> <li>– if there is an exceedance, monitoring is done monthly again</li> <li>– if it can be demonstrated to the Administrator in the initial compliance report that the hoist cannot exceed a speed of 3.4 m/min (11 ft/min) the required monitoring frequency is quarterly.</li> </ul> <p>Verify that operators, using a carbon adsorber in order to achieve compliance, measure and record the concentration of halogenated HAP solvent in the exhaust of the carbon adsorber weekly with a colorimetric detector tube and the test is conducted while the machine is in the working mode and venting to the adsorber.</p> <p>Verify that operators, using idling emission limit standards for compliance and controls other than those already addressed in this checklist item, establish a monitoring frequency for each control submit and it to the Administrator for approval in the initial test report.</p> <p>(NOTE: These requirements for idling emissions monitoring apply when the operator is complying with the following equipment standards:</p> <ul style="list-style-type: none"> <li>– using a batch vapor-cleaning machine with a solvent/air interface area of 1.21 m<sup>2</sup> (13 ft<sup>2</sup>) or less that can achieve and maintain an idling emission limit of 0.22 kg/h/m<sup>2</sup> (0.045 lb/h/ft<sup>2</sup>) of solvent/air interface area</li> <li>– using a batch vapor-cleaning machines with a solvent/air interface area greater than 1.21 m<sup>2</sup> (13 ft<sup>2</sup>) that can achieve and maintain an idling emission limit of 0.22 kg/h/m<sup>2</sup> (0.045 lb/h/ft<sup>2</sup>) of solvent/air interface area</li> <li>– using an existing in-line cleaning machine that can achieve and maintain an idling emission limit of 0.10 kg/h/m<sup>2</sup> (0.021 lb/h/ft<sup>2</sup>) of solvent/air interface area</li> <li>– using a new in-line cleaning machine that can achieve and maintain an idling emission limit of 0.10 kg/h/m<sup>2</sup> (0.021 lb/h/ft<sup>2</sup>) of solvent/air interface area.)</li> </ul> <p>(NOTE: The requirements in 40 CFR 63.460 through 63.469 [see checklist items AE.116.1.US through AE.118.7.US] apply to each individual batch vapor, in-line</p>

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<p style="text-align: center;"><b>REGULATORY REQUIREMENTS:</b></p>	<p style="text-align: center;"><b>REVIEWER CHECKS</b>  <b>December 2018</b></p>
<p><b>AE.117.9.US.</b> Operators of batch vapor or in-line solvent-cleaning machines are required to keep specific records (40 CFR 63.467(a) and 63.467(b)). <b>[Revised October 1999]</b>.</p>	<p>vapor, in-line cold, and batch cold solvent-cleaning machine that uses any solvent containing methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, or chloroform or any combination of these halogenated HAP solvents, in total concentration greater than 5 percent by weight, as a cleaning and/or drying agent. Wipe cleaning activities, such as using a rag containing halogenated solvent or a spray cleaner containing halogenated solvent are not included.)</p> <p>Verify that operators of batch vapor or in-line solvent-cleaning machines maintain the following records in written or electronic form for the life of the machine:</p> <ul style="list-style-type: none"> <li>– owners manuals or, if not available, written maintenance and operating procedures for the machine and the control equipment</li> <li>– the date of installation for the machine and all of its control devices</li> <li>– records of required tests if a dwell is used</li> <li>– records of the initial performance test for machines complying with the idling emissions limit standards</li> <li>– records of the halogenated HAP solvent content for each solvent used in a solvent-cleaning machine</li> <li>– records of the test required by 40 CFR 63.466(f) (see checklist item AE.117.8.US.) to determine the maximum product throughput for the squeegees if a squeegee system is used to comply</li> <li>– records of the determination of the proper operating parameter and parameter value for the air knife system if an air knife system is used to comply.</li> </ul> <p>(NOTE: If the exact date of installation is not known, a letter certifying that the cleaning machine and control devices were installed prior to, on, or after 29 November 1993 can be substituted.)</p> <p>Verify that operators of batch vapor or in-line solvent-cleaning machines maintain the following records in written or electronic form for 5 yr:</p> <ul style="list-style-type: none"> <li>– the results of control device monitoring</li> <li>– information on action taken to comply with monitoring and performance test requirements</li> <li>– estimates of annual solvent consumption for each solvent-cleaning machine</li> <li>– records of the date and result of weekly measurement if a carbon adsorber is used.</li> </ul> <p>(NOTE: The requirements in 40 CFR 63.460 through 63.469 [see checklist items AE.116.1.US through AE.118.7.US] apply to each individual batch vapor, in-line vapor, in-line cold, and batch cold solvent-cleaning machine that uses any solvent containing methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, or chloroform or any combination of these halogenated HAP solvents, in total concentration greater than 5 percent by weight, as a cleaning and/or drying agent. Wipe cleaning activities, such as using a rag</p>

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<p><b>AE.117.10.US.</b> Operators of batch vapor cleaning machines, in-line solvent-cleaning machines, or continuous web cleaning machines, who choose to comply with the alternate standard of 40 CFR 63.464, are required to keep specific records (40 CFR 63.467(c) through 63.467(e)) <b>[Revised January 2000]</b>.</p>	<p>containing halogenated solvent or a spray cleaner containing halogenated solvent are not included.)</p> <p>Verify that operators of batch vapor or in-line solvent-cleaning machines, who choose to comply with the alternate standard of 40 CFR 63.464, maintain the following records in written or electronic form for 5 yr:</p> <ul style="list-style-type: none"> <li>– the dates and amounts of solvent that are added to the solvent-cleaning machine</li> <li>– the solvent composition of the wastes removed from cleaning machines</li> <li>– calculation sheets showing how monthly emissions and the rolling 3-mo average emissions were determined and the results of all calculations.</li> </ul> <p>Verify that operators of batch vapor or in-line solvent-cleaning machines without a solvent/air interface, who choose to comply with the alternate standard of 40 CFR 63.464, maintain records on the method used to determine cleaning capacity of the cleaning machine.</p> <p>Verify that owners or operators of a continuous web cleaning machine complying with the alternate standards of 40 CFR 63.464(d) maintain the following records in either electronic or written form for 5 yr:</p> <ul style="list-style-type: none"> <li>– the dates and amounts of solvent that are added to the solvent-cleaning machine</li> <li>– the dates and amounts of solvent that are recovered from the desorption of the carbon adsorber system</li> <li>– the solvent composition of wastes removed from each cleaning machine</li> <li>– calculation sheets showing the calculation and results of determining the overall cleaning system control efficiency.</li> </ul> <p>(NOTE: The requirements in 40 CFR 63.460 through 63.469 [see checklist items AE.116.1.US through AE.118.7.US] apply to each individual batch vapor, in-line vapor, in-line cold, and batch cold solvent-cleaning machine that uses any solvent containing methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, or chloroform or any combination of these halogenated HAP solvents, in total concentration greater than 5 percent by weight, as a cleaning and/or drying agent. Wipe cleaning activities, such as using a rag containing halogenated solvent or a spray cleaner containing halogenated solvent are not included.)</p>
<p><b>AE.117.11.US.</b> Existing or new web cleaning machines are required to be designed and operated to meet specific emission control standards (40</p>	<p>(NOTE: These requirements do not apply when alternative standards as detailed in 40 CFR 63.464 (see checklist item AE.117.7.US) or 63.463(h) (see checklist item AE.117.12.US) are applied.)</p>

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CFR 63.463(g)) [Added <b>October 1999; Revised</b> <b>January 2000; Revised</b> <b>October 2000].</b>	<p>Verify that, for each existing continuous web cleaning machine, one of the following control combinations is used:</p> <ul style="list-style-type: none"> <li>– superheated vapor or superheated part technology and a freeboard ratio of 1.0 or greater</li> <li>– freeboard refrigeration device and a freeboard ratio of 1.0 or greater</li> <li>– carbon adsorption system.</li> </ul> <p>Verify that, for each new continuous web cleaning machine, one of the following control combinations is used:</p> <ul style="list-style-type: none"> <li>– superheated vapor or superheated part technology and a freeboard refrigeration device</li> <li>– a freeboard refrigeration device and a carbon adsorber</li> <li>– superheated vapor or superheated part technology and a carbon adsorber.</li> </ul> <p>(NOTE: If a carbon adsorber system can be demonstrated to the Administrator's satisfaction to have an overall solvent control efficiency (i.e., capture efficiency times removal efficiency) of 70 percent or greater, this system is equivalent to the listed options.)</p> <p>Verify that, if the owner/operator of a continuous web cleaning machine does not comply with 40 CFR 63.463(a) (see checklist item AE.117.1.US), they comply with the following:</p> <ul style="list-style-type: none"> <li>– each continuous web cleaning machine meets one of the following control equipment or technique requirements:               <ul style="list-style-type: none"> <li>– an idling and downtime mode cover that may be readily opened or closed, that completely covers the cleaning machine openings when in place, and is free of cracks, holes, and other defects (NOTE: a continuous web part that completely occupies an entry or exit port when the machine is idle is considered to meet this requirement.)</li> <li>– a reduced room draft</li> <li>– gasketed or leakproof doors that separate both the continuous web part feed reel and take-up reel from the room atmosphere if the doors are checked</li> <li>– a cleaning machine that is demonstrated to the Administrator's satisfaction to be under negative pressure during idling and downtime and is vented to a carbon adsorption system</li> </ul> </li> <li>– each continuous web cleaning machine has a freeboard ratio of 0.75 or greater unless that cleaning machine is a remote reservoir continuous web cleaning machine</li> <li>– each cleaning machine has an automated parts handling system capable of moving parts or parts baskets at a speed of 3.4 m/min (11 ft/min) or less from the initial loading of parts through removal of cleaned parts unless the cleaning machine is a continuous web cleaning machine that has a squeegee system or</li> </ul>	

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	<p>air knife system installed, maintained, and operated on the continuous web cleaning machine</p> <ul style="list-style-type: none"> <li>– each vapor-cleaning machine is equipped with a device that shuts off the sump heat if the sump liquid solvent level drops to the sump heater coils (NOTE: This does not apply to a vapor cleaning machine that uses steam to heat solvent.)</li> <li>– each vapor-cleaning machine is equipped with a vapor level control device that shuts off sump heat if the vapor level in the vapor-cleaning machine rises above the height of the primary condenser</li> <li>– each vapor-cleaning machine has a primary condenser</li> <li>– each cleaning machine that uses an exhaust is designed and operated to route all collected solvent vapors through a properly operated and maintained carbon adsorber.)</li> </ul> <p>Verify that, if the owner/operator of a continuous web cleaning machine does not comply with 40 CFR 63.463(d) (see checklist item AE.117.2.US), they comply with the following:</p> <ul style="list-style-type: none"> <li>– control air disturbances across the cleaning machine opening by incorporating one of the following pieces of control equipment or techniques: <ul style="list-style-type: none"> <li>– cover to each solvent-cleaning machine is in place during the idling mode and during the downtime mode unless either the solvent has been removed from the machine or maintenance or monitoring is being performed that requires the cover to be off (NOTE: A continuous web part that completely occupies an entry or exit port when the machine is idle is considered to meet this requirement.)</li> <li>– a reduced room draft</li> <li>– gasketed or leakproof doors or covers that separate both the continuous web part feed reel and take-up reel from the room atmosphere if the doors are checked</li> <li>– a cleaning machine that is demonstrated to the Administrator's satisfaction to be under negative pressure during idling and downtime and is vented to a carbon adsorption system</li> </ul> </li> <li>– any spraying operations are conducted in a section of the solvent-cleaning machine that is not directly exposed to the ambient air (i.e., a baffled or enclosed area of the solvent-cleaning machine) or within a machine having an appropriate door or cover</li> <li>– during startup of each vapor-cleaning machine, the primary condenser is turned on before the sump heater</li> <li>– during shutdown of each vapor-cleaning machine, the sump heater is turned off and the solvent vapor layer allowed to collapse before the primary condenser is turned off</li> <li>– when solvent is added or drained from any solvent-cleaning machine, the solvent is transferred using threaded or other leakproof couplings and the end of the pipe in the solvent sump is located beneath the liquid solvent surface</li> </ul>

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<p><b>AE.117.12.US.</b> Remote reservoir continuous web cleaning machines are required to be designed and operated to meet specific emission control standards (40 CFR 63.463(h)). <b>[Added January 2000].</b></p>	<ul style="list-style-type: none"> <li>– each solvent-cleaning machine and its associated controls is maintained as recommended by the manufacturers of the equipment or using alternative maintenance practices that have been demonstrated to the Administrator's satisfaction to achieve the same or better results as those recommended by the manufacturer</li> <li>– waste solvent, still bottoms, sump bottoms, and waste absorbent materials used in the cleaning process for continuous web cleaning machines are collected and stored in waste containers</li> <li>– sponges, fabric, wood, and paper products are not cleaned except for absorbent materials that are used as part of the cleaning process of continuous web cleaning machines, including rollers and roller covers.</li> </ul> <p>(NOTE: The requirements in 40 CFR 63.460 through 63.469 [see checklist items AE.116.1.US through AE.118.7.US] apply to each individual batch vapor, in-line vapor, in-line cold, and batch cold solvent-cleaning machine that uses any solvent containing methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, or chloroform or any combination of these halogenated HAP solvents, in total concentration greater than 5 percent by weight, as a cleaning and/or drying agent. Wipe cleaning activities, such as using a rag containing halogenated solvent or a spray cleaner containing halogenated solvent are not included.)</p> <p>(NOTE: These requirements do not apply when alternative standards as detailed in 40 CFR 63.464 (see checklist item AE.117.7.US.) are applied.)</p> <p>Verify that each owner or operator of a remote reservoir continuous web cleaning machine installs, maintains, and operates one of the following controls on each new remote reservoir continuous web cleaning machine.</p> <ul style="list-style-type: none"> <li>– superheated vapor or superheated part technology</li> <li>– a carbon adsorber.</li> </ul> <p>(NOTE: If a carbon adsorber system can be demonstrated to the Administrator's satisfaction to have an overall solvent control efficiency (i.e., capture efficiency removal efficiency) of 70 percent or greater, this system is equivalent to the options listed above.)</p> <p>(NOTE: In lieu of complying with the above provisions, the owner or operator of a remote reservoir continuous web cleaning machine shall comply with the following provisions:</p> <ul style="list-style-type: none"> <li>– each cleaning machine has an automated parts handling system capable of moving parts or parts baskets at a speed of 3.4 m/min (11 ft/min) or less from the initial loading of parts through removal of cleaned parts, unless the cleaning machine is a continuous web cleaning machine that has a squeegee system or air knife system installed, maintained, and operated on the</li> </ul>

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	<p>continuous web cleaning machine meeting the requirements of 40 CFR 63.463(e) (see checklist items AE.117.5.US. and AE.118.7.US.)</p> <ul style="list-style-type: none"> <li>– each vapor cleaning machine is equipped with a device that shuts off the sump heat if the sump liquid solvent level drops to the sump heater coils</li> <li>– each vapor cleaning machine shall be equipped with a vapor level control device that shuts off sump heat if the vapor level in the vapor cleaning machine rises above the height of the primary condenser</li> <li>– each vapor cleaning machine has a primary condenser</li> <li>– each cleaning machine that uses an exhaust is designed and operated to route all collected solvent vapors through a properly operated and maintained carbon adsorber.)</li> </ul> <p>Verify that, if the owner/operator of a remote reservoir continuous web cleaning machine does not comply with 40 CFR 63.463(d) (see checklist item AE.117.2.US.), they comply with the following:</p> <ul style="list-style-type: none"> <li>– any spraying operation is conducted in a section of the solvent-cleaning machine that is not directly exposed to the ambient air (i.e., a baffled or enclosed area of the solvent-cleaning machine) or within a machine having a compliant door or cover</li> <li>– during startup of each vapor cleaning machine, the primary condenser are turned on before the sump heater</li> <li>– during shutdown of each vapor cleaning machine, the sump heater is turned off and the solvent vapor layer allowed to collapse before the primary condenser is turned off</li> <li>– when solvent is added or drained from any solvent-cleaning machine, the solvent is transferred using threaded or other leakproof couplings, and the end of the pipe in the solvent sump is located beneath the liquid solvent surface</li> <li>– each solvent-cleaning machine and associated controls is maintained as recommended by the manufacturers of the equipment or using alternative maintenance practices that have been demonstrated to the Administrator's satisfaction to achieve the same or better results as those recommended by the manufacturer</li> <li>– waste solvent, still bottoms, sump bottoms, and waste absorbent materials used in the cleaning process for continuous web cleaning machines is collected and stored in waste containers.</li> <li>– sponges, fabric, wood, and paper products are not cleaned except for absorbent materials that are used as part of the cleaning process of continuous web cleaning machines, including rollers and roller covers.</li> </ul> <p>(NOTE: The closed containers may contain a device that would allow pressure relief, but would not allow liquid solvent to drain from the container.)</p> <p>(NOTE: The requirements in 40 CFR 63.460 through 63.469 [see checklist items AE.116.1.US through AE.118.7.US] apply to each individual batch vapor, in-line vapor, in-line cold, and batch cold solvent-cleaning machine that uses any solvent containing methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-</p>

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	trichloroethane, carbon tetrachloride, or chloroform or any combination of these halogenated HAP solvents, in total concentration greater than 5 percent by weight, as a cleaning and/or drying agent. Wipe cleaning activities, such as using a rag containing halogenated solvent or a spray cleaner containing halogenated solvent are not included.)



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<p><b>AE.118.3.US.</b> Operators of batch cold solvent-cleaning machine are required to submit a compliance report to the Administrator (40 CFR 63.468(c)) [Added January 1995].</p>	<p>(NOTE: The requirements in 40 CFR 63.460 through 63.469 [see checklist items AE.116.1.US through AE.118.7.US] apply to each individual batch vapor, in-line vapor, in-line cold, and batch cold solvent-cleaning machine that uses any solvent containing methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, or chloroform or any combination of these halogenated HAP solvents, in total concentration greater than 5 percent by weight, as a cleaning and/or drying agent. Wipe cleaning activities, such as using a rag containing halogenated solvent or a spray cleaner containing halogenated solvent are not included.)</p> <p>Verify that, for existing sources, this report is submitted no later than 150 days after 2 December 1997.</p> <p>Verify that, for new sources, the report is submitted no later than 150 days after startup or 1 May 1995, whichever is later.</p> <p>Verify that the report includes:</p> <ul style="list-style-type: none"> <li>– the name and address of the owner or operator</li> <li>– the address (i.e., physical location) of the solvent-cleaning machine</li> <li>– a statement signed by the owner or operator stating that the solvent-cleaning machine for which the report is being submitted is in compliance</li> <li>– the compliance approach for each machine.</li> </ul> <p>(NOTE: The requirements in 40 CFR 63.460 through 63.469 [see checklist items AE.116.1.US through AE.118.7.US] apply to each individual batch vapor, in-line vapor, in-line cold, and batch cold solvent-cleaning machine that uses any solvent containing methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, or chloroform or any combination of these halogenated HAP solvents, in total concentration greater than 5 percent by weight, as a cleaning and/or drying agent. Wipe cleaning activities, such as using a rag containing halogenated solvent or a spray cleaner containing halogenated solvent are not included.)</p>
<p><b>AE.118.4.US.</b> Operators of batch vapor or in-line solvent-cleaning machines are required to submit an initial statement of compliance to the Administrator (40 CFR 63.468(d)) [Added January 1995].</p>	<p>Verify that, for existing sources, this report is submitted no later than 150 days after 2 December 1997.</p> <p>Verify that, for new sources, the report is submitted no later than 150 days after startup or 1 May 1995, whichever is later.</p> <p>Verify that the report includes:</p> <ul style="list-style-type: none"> <li>– the name and address of the owner or operator</li> <li>– the address (i.e., physical location) of the solvent-cleaning machine</li> </ul>

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<p><b>AE.118.5.US.</b> Operators of batch vapor or in-line solvent-cleaning machines complying with the alternate standards in 40 CFR 63.464 are required to submit an initial statement of compliance to the Administrator (40 CFR 63.468(e)) [Added January 1995].</p>	<ul style="list-style-type: none"> <li>– a list of control equipment required to be monitored, a list of the parameters that are monitored, and the values of these parameters measured on or during the first month after the compliance date</li> <li>– conditions to maintain the wind speed requirements</li> <li>– a test report for machines complying with the idling emission limit standards for tests of idling emissions.</li> </ul> <p>Verify that, if a carbon adsorber is used, the date and results of the weekly measurements of the halogenated HAP solvent concentration is included in the report.</p> <p>(NOTE: The requirements in 40 CFR 63.460 through 63.469 [see checklist items AE.116.1.US through AE.118.7.US] apply to each individual batch vapor, in-line vapor, in-line cold, and batch cold solvent-cleaning machine that uses any solvent containing methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, or chloroform or any combination of these halogenated HAP solvents, in total concentration greater than 5 percent by weight, as a cleaning and/or drying agent. Wipe cleaning activities, such as using a rag containing halogenated solvent or a spray cleaner containing halogenated solvent are not included.)</p> <p>Verify that, for existing sources, this report is submitted no later than 150 days after 2 December 1997.</p> <p>Verify that, for new sources, the report is submitted no later than 150 days after startup or 1 May 1995, whichever is later.</p> <p>Verify that the report includes:</p> <ul style="list-style-type: none"> <li>– the name and address of the owner or operator</li> <li>– the address (i.e., physical location) of the solvent-cleaning machine</li> <li>– the solvent/air interface area for cleaning machines without a solvent/air interface, a description of the method used to determine the cleaning capability and the results</li> <li>– the results of the first 3 mo average emissions calculation.</li> </ul> <p>(NOTE: The requirements in 40 CFR 63.460 through 63.469 [see checklist items AE.116.1.US through AE.118.7.US] apply to each individual batch vapor, in-line vapor, in-line cold, and batch cold solvent-cleaning machine that uses any solvent containing methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, or chloroform or any combination of these halogenated HAP solvents, in total concentration greater than 5 percent by weight, as a cleaning and/or drying agent. Wipe cleaning activities, such as using a rag containing halogenated solvent or a spray cleaner containing halogenated solvent are not included.)</p>

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<p><b>AE.118.6.US.</b> Operators of batch vapor or in-line solvent-cleaning machines are required to submit an annual report by 1 February of the year following the one for which the report is being made and a solvent emissions report (40 CFR 63.468(f) and 63.468(g)) [Added January 1995].</p>	<p>Verify that operators of batch vapor or in-line solvent-cleaning machines are required to submit an annual report by 1 February of the year following the one for which the report is being made.</p> <p>Verify that the annual report includes the following:</p> <ul style="list-style-type: none"> <li>– a signed statement from the owner or his designee stating that "All operators of solvent-cleaning machines have received training on the proper operation of solvent-cleaning machines and their control devices sufficient to pass the test in 40 CFR 63.463(d)(10)"</li> <li>– an estimate of solvent consumption for each solvent-cleaning machine during the reporting period.</li> </ul> <p>Verify that the solvent emission report is submitted yearly and includes the following information:</p> <ul style="list-style-type: none"> <li>– the size and type of each unit (solvent/air interface area or cleaning capacity)</li> <li>– the average monthly solvent consumption for the solvent-cleaning machine in kilograms per month</li> <li>– the 3-mo rolling average solvent emission estimates calculated each month.</li> </ul> <p>(NOTE: The annual report and the solvent emissions report can be combined into a single report.)</p> <p>(NOTE: The requirements in 40 CFR 63.460 through 63.469 [see checklist items AE.116.1.US through AE.118.7.US] apply to each individual batch vapor, in-line vapor, in-line cold, and batch cold solvent-cleaning machine that uses any solvent containing methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, or chloroform or any combination of these halogenated HAP solvents, in total concentration greater than 5 percent by weight, as a cleaning and/or drying agent. Wipe cleaning activities, such as using a rag containing halogenated solvent or a spray cleaner containing halogenated solvent are not included.)</p>
<p><b>AE.118.7.US.</b> Report exceedances from batch vapor or in-line solvent-cleaning machines (40 CFR 63.463(e)(3), 63.468(h), and 63.468(i)) [Added January 1995].</p>	<p>(NOTE: This applies to the control techniques outlined in 40 CFR 63.463(e)(2), see checklist item AE.117.5.US.)</p> <p>Verify that all exceedances are reported to the Administrator semiannually except when required more frequently as determined by the administrator.</p> <p>Verify that, once an exceedance has occurred, quarterly reporting is done until a request to reduce reporting is approved.</p>

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	<p>Verify that reports are delivered or postmarked by the 30th day following the end of each calendar half or quarter as appropriate.</p> <p>Verify that exceedance reports include the following information:</p> <ul style="list-style-type: none"> <li>– actions taken to comply with monitoring and performance test requirements, including records of written or verbal orders for replacement parts, a description of repairs made and additional monitoring conducted to demonstrate compliance</li> <li>– if an exceedance has occurred, the reason for the exceedance and a description of the actions taken</li> <li>– if no exceedance has occurred and no equipment has been inoperative or out of control, repaired, or adjusted, such information is stated in the report.</li> </ul> <p>(NOTE: Quarterly reporting may be reduced if there has not been an exceedance for a year, all recordkeeping and monitoring requirements are being met, and the Administrator does not object.)</p> <p>(NOTE: An exceedance has occurred if:</p> <ul style="list-style-type: none"> <li>– a reduced room draft is used to achieve compliance and operating conditions under which the wind speed was demonstrated to be 15.2 m/min (50 ft/min) or less have not been established and maintained</li> <li>– a working mode cover is used to achieve compliance and the cover is open for more than just part entrance and removal or it does not completely cover the cleaning machine openings when closed</li> <li>– an idling mode cover is used to achieve compliance and the cover is not in place whenever parts are not in the solvent-cleaning machine and it does not completely cover the cleaning machine openings when in place</li> <li>– dwell is used to achieve compliance and neither of the following are done: <ul style="list-style-type: none"> <li>– the appropriate dwell time is determined for each part or parts basket or the maximum dwell time</li> <li>– after cleaning, each part is held in the freeboard area above the vapor zone for the dwell time necessary</li> </ul> </li> <li>– a superheated vapor system is used to achieve compliance and: <ul style="list-style-type: none"> <li>– the manufacturers specifications for determining the minimum proper dwell time are not followed</li> <li>– the parts do not remain within the superheated vapor for at least the minimum proper dwell time</li> </ul> </li> <li>– a carbon adsorber in conjunction with a lip exhaust is used to achieve compliance and: <ul style="list-style-type: none"> <li>– the carbon adsorber bed is bypassed during desorption</li> <li>– the lip exhaust is not located above the solvent-cleaning machine cover so that the cover closes below the lip exhaust level.)</li> </ul> </li> </ul> <p>(NOTE: An exceedance has also occurred if the following conditions exist and they have not been corrected within 15 days of detection:</p>

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	<ul style="list-style-type: none"> <li>– freeboard refrigeration devices are used and the chilled air blanket temperature measured at the center of the air blanket is greater than 30 percent of the solvents boiling point</li> <li>– a reduced room draft is used to achieve compliance and the flow or movement of air across the top of the freeboard area of the solvent-cleaning machine closure does exceeds 15.2 m/min (50 ft/min) at any time</li> <li>– a working mode cover is used to achieve compliance and it has cracks, holes, or other defects</li> <li>– an idling mode cover is used to achieve compliance and it has cracks, holes, or other defects</li> <li>– a superheated vapor system is used to achieve compliance and the temperature of the vapor at the center of the superheated vapor is at less than 10 oF above the solvents boiling point</li> <li>– a carbon adsorber in conjunction with a lip exhaust is used to achieve compliance, and the concentration of the organic solvent in the exhaust exceeds 100 ppm of any halogenated HAP compound.)</li> </ul> <p>(NOTE: The requirements in 40 CFR 63.460 through 63.469 [see checklist items AE.116.1.US through AE.118.7.US] apply to each individual batch vapor, in-line vapor, in-line cold, and batch cold solvent-cleaning machine that uses any solvent containing methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, or chloroform or any combination of these halogenated HAP solvents, in total concentration greater than 5 percent by weight, as a cleaning and/or drying agent. Wipe cleaning activities, such as using a rag containing halogenated solvent or a spray cleaner containing halogenated solvent are not included.)</p>

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<p><b>AE.150</b></p> <p><b>ETHYLENE OXIDE SOURCES</b></p> <p><b>AE.150.1.US.</b> Ethylene oxide sterilization facilities must sterilize full loads of items having common aeration time, except under medically necessary circumstances and demonstrate compliance (40 CFR 63.10382, 63.10384, 63.10390, 63.10400, and 63.10420) [Added January 2008].</p>	<p>(NOTE: This checklist item applies:</p> <ul style="list-style-type: none"> <li>– if the owned/operated operate an ethylene oxide sterilization facility is at a hospital that is an area source of hazardous air pollutant (HAP) emissions</li> <li>– to each new or existing sterilization facility: <ul style="list-style-type: none"> <li>– an affected source is existing if construction or reconstruction of the affected source commenced before 6 November 2006</li> <li>– an affected source is new if construction or reconstruction of the affected source commenced on or after 6 November 2006.)</li> </ul> </li> </ul> <p>(NOTE: An existing affected source must comply with applicable requirements in no later than 29 December 2008. If a new affected source is started up on or before 28 December 2007, the applicable requirements must be met December 28, 2007. If a new affected source is started up after 28 December 2007, compliance must be achieved upon startup.)</p> <p>Verify that, when in use, the ethylene oxide sterilization facility sterilizes full loads of items having common aeration time, except under medically necessary circumstances.</p> <p>(NOTE: According to 40 CFR 63.10448, medically necessary means circumstances that a hospital central services staff, a hospital administrator, or a physician concludes, based on generally accepted medical practices, necessitate sterilizing without a full load in order to protect human health.)</p> <p>Verify that, in order to demonstrate initial compliance, the facility submits an Initial Notification of Compliance Status certifying that the facility is sterilizing full loads of items having a common aeration time except under medically necessary circumstances.</p> <p>(NOTE: If the sterilization unit(s) is operated with an air pollution control device due to a State or local regulation, the facility may demonstrate initial compliance by submitting an Initial Notification of Compliance Status certifying that the facility is operating the sterilization unit in accordance with applicable State or local regulation and following control device manufacturer's recommended procedures.)</p> <p>(NOTE: If the sterilization unit(s) is operated with an air pollution control device but is not subject to any State or local regulation, initial compliance can be demonstrated by submitting an Initial Notification of Compliance Status certifying that the ethylene oxide emissions from each sterilization unit are being vented to an add-on air pollution control device. Additionally, the facility must certify that the</p>

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<p><b>AE.150.2.US.</b> Ethylene oxide sterilization facilities must submit required notifications (40 CFR 63.10430) [<b>Added January 2008</b>].</p>	<p>control device is operating during all sterilization processes and in accordance with manufacturer's recommended procedures.)</p> <p>Verify that initial compliance is demonstrated upon startup or no later than 180 days after the applicable compliance date listed earlier in this checklist item.</p> <p>Verify that, for each sterilization unit not equipped with an air pollution control device, continuous compliance is demonstrated by recording the date and time of each sterilization cycle, whether each sterilization cycle contains a full load of items, and if not, a statement from a hospital central services staff, a hospital administrator, or a physician that it was medically necessary.</p> <p>Verify that the Initial Notification of Compliance Status is submitted and contains the following information:</p> <ul style="list-style-type: none"> <li>– the name and address of the owner or operator</li> <li>– the address (i.e., physical location) of the affected source</li> <li>– an identification of the standard and other applicable requirements that serve as the basis of the notification and the source's compliance date</li> <li>– a brief description of the sterilization facility, including the number of ethylene oxide sterilizers, the size (volume) of each, the number of aeration units, if any, the amount of annual ethylene oxide usage at the facility, the control technique used for each sterilizer, and typical number of sterilization cycles per year</li> <li>– a statement that the affected source is an area source.</li> </ul> <p>Verify that the Initial Notification of Compliance Status is submitted to the appropriate authorities.</p> <p>Verify that, additionally, a copy of the Initial Notification of Compliance Status is submitted to EPA's Office of Air Quality Planning and Standards as follows:</p> <ul style="list-style-type: none"> <li>– notification via e-mail to CCG-ONG@EPA.GOV</li> <li>– notification via U.S. mail or other mail delivery service to U.S. EPA, Sector Policies and Programs Division, Coatings and Chemicals Group (E143-01), Attn: Hospital Sterilizers Project Leader, Research Triangle Park, NC 27711.</li> </ul> <p>Verify that the Initial Notification of Compliance Status is submitted no later than 180 calendar days after the applicable compliance date, consistent with 40 CFR 63.10402 (see checklist item AE.150.1.US).</p>
<p><b>AE.150.3.US.</b> Ethylene oxide sterilization facilities must keep required records (40 CFR</p>	<p>Verify that the following records are kept by ethylene oxide sterilization facilities:</p> <ul style="list-style-type: none"> <li>– a copy of the Initial Notification of Compliance Status</li> </ul>

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63.10432 and 63.10434) <b>[Added January 2008].</b>	<p>– records required by 40 CFR 63.10420 (see checklist item AE.150.1.US) for each sterilization unit not equipped with an air pollution control device.</p> <p>Verify that records are in a form suitable and readily available for expeditious review.</p> <p>Verify that each record is kept for 5 yr following the date of each record.</p> <p>Verify that each record is kept onsite for at least 2 yr after the date of each record.</p> <p>(NOTE: Records may be kept offsite for the remaining 3 yr.)</p>



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<p><b>AEROSPACE MANUFACTURING/REWORK FACILITIES</b></p> <p><b>AE.170 General</b></p> <p><b>AE.170.1.US.</b> Checklist item deleted [Added January 1999; Revised July 2006; Deleted January 2016].</p> <p><b>AE.170.2.US.</b> Affected aerospace facilities that use an air pollution control device, or equipment not addressed in 40 CFR 63.741 through 63.753, are required to provide specific information to the Regional Administrator (40 CFR 63.743(c) [Added January 1999].</p> <p><b>AE.170.3.US.</b> New or existing cleaning operations at affected aerospace facilities are required to meet specific operational standards (40 CFR 63.744(a) [Added January 1999; Revised January 2016].</p>	<p>(NOTE: This checklist item concerning startup, shutdown, and malfunction plan is deleted per the revision of 40 CFR 63.743(b) published 7 December 2015.)</p> <p>Verify that an owner or operator who uses an air pollution control device, or equipment not listed in 40 CFR 741 through 63.753, submits a description of the device or equipment, test data verifying the performance of the device or equipment in controlling organic HAP and/or VOC emissions, as appropriate, and specific operating parameters that will be monitored to establish compliance with the regulations to the Regional Administrator for approval.</p> <p>Verify that the information was submitted not later than 120 days prior to the compliance date.</p> <p>(NOTE: These requirements do not apply when the cleaning solvent used is identified in Appendix 1-19 or meets the definition of “non-HAP material,” see <i>Definitions</i>.)</p> <p>(NOTE: These requirements do not apply to spent cleaning solvents, and solvent laden applicators that are subject to and handled in accordance with 40 CFR 262 – 268 [i.e., as hazardous waste].)</p> <p>Verify that cleaning solvent-laden cloth, paper, or any other absorbent applicators used for cleaning are placed in bags or other closed containers upon completing their use and the bags and containers are kept closed at all times except when depositing or removing materials.</p> <p>Verify that bags and containers are used that contain the vapors of the cleaning solvent.</p> <p>(NOTE: Cotton-tipped swabs used for very small cleaning operations are exempt from this containerizing requirement.)</p> <p>Verify that fresh and spent cleaning solvents, except semi-aqueous solvent cleaners, used in aerospace cleaning operations are stored in closed containers.</p>

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<b>AE.170.4.US.</b> New or existing hand-wipe cleaning operations at affected aerospace facilities are required to meet specific operational standards (40 CFR 63.744(b) and 63.744(e) [Added January 1999].	<p>Verify that the handling and transfer of cleaning solvents to or from enclosed systems, vats, waste containers, and other cleaning operation equipment that hold or store fresh or spent cleaning solvents is done in a manner that minimizes spills.</p> <p>(NOTE: These requirements do not apply when the cleaning solvent used is identified in Appendix 1-19 or contains HAP and VOC at concentrations less than 0.1 percent for carcinogens or 1.0 percent for noncarcinogens.)</p> <p>Verify that new or existing hand-wipe cleaning operations use cleaning solvents that meet one of the following:</p> <ul style="list-style-type: none"> <li>– the composition requirements in Appendix 1-19</li> <li>– a composite vapor pressure of 45 mm Hg or less at 20 C (68 F)</li> <li>– the volume of hand-wipe solvents used in cleaning operations has been reduced by at least 60 percent from a baseline adjusted for production.</li> </ul> <p>(NOTE: The baseline is established as part of an approved alternative plan administered by the state. The alternative plan shall be submitted by the State and approved by the Administrator, and shall demonstrate that the 60 percent volume reduction in cleaning solvents provides equivalent reductions to the listed options for hand-cleaning operations.)</p> <p>(NOTE: The following cleaning operations are exempt from these requirements:</p> <ul style="list-style-type: none"> <li>– cleaning during the manufacture, assembly, installation, maintenance, or testing of components of breathing oxygen systems that are exposed to the breathing oxygen</li> <li>– cleaning during the manufacture, assembly, installation, maintenance, or testing of parts, subassemblies, or assemblies that are exposed to strong oxidizers or reducers (e.g., nitrogen tetroxide, liquid oxygen, or hydrazine)</li> <li>– cleaning and surface activation prior to adhesive bonding</li> <li>– cleaning of electronic parts and assemblies containing electronic parts</li> <li>– cleaning of aircraft and ground support equipment fluid systems that are exposed to the fluid, including air-to-air heat exchangers and hydraulic fluid systems</li> <li>– cleaning of fuel cells, fuel tanks, and confined spaces</li> <li>– surface cleaning of solar cells, coated optics, and thermal control surfaces</li> <li>– cleaning during fabrication, assembly, installation, and maintenance of upholstery, curtains, carpet, and other textile materials used in the interior of the aircraft</li> <li>– cleaning of metallic and nonmetallic materials used in honeycomb cores during the manufacture or maintenance of these cores, and cleaning of the completed cores used in the manufacture of aerospace vehicles or components</li> <li>– cleaning of aircraft transparencies, polycarbonate, or glass substrates</li> <li>– cleaning and cleaning solvent usage associated with research and development, quality control, and laboratory testing</li> </ul>

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<p><b>AE.170.5.US.</b> New or existing spray gun cleaning operations at affected aerospace facilities are required to meet specific operational standards (40 CFR 63.744(c) and 63.751(a) [Added January 1999].</p>	<ul style="list-style-type: none"> <li>– cleaning operations, using nonflammable liquids, conducted within 5 ft of energized electrical systems</li> <li>– cleaning operations identified as essential uses under the Montreal Protocol for which the Administrator has allocated essential use allowances or exemptions.)</li> </ul> <p>(NOTE: Energized electrical systems means any AC or DC electrical circuit on an assembled aircraft once electrical power is connected, including interior passenger and cargo areas, wheel wells, and tail sections.)</p> <p>(NOTE: These requirements do not apply when the cleaning solvent used is identified in Appendix 1-19 or contains HAP and VOC at concentrations less than 0.1 percent for carcinogens or 1.0 percent for noncarcinogens.)</p> <p>Verify that new or existing spray gun cleaning operations in which spray guns are used for the application of coatings or any other materials that require the spray guns to be cleaned use one or more of the following techniques, or their equivalent:</p> <ul style="list-style-type: none"> <li>– the spray gun is cleaned in an enclosed system that is closed at all times except when inserting or removing the spray gun and cleaning consists of forcing solvent through the gun.</li> <li>– nonatomized cleaning is done by placing cleaning solvent in the pressure pot and forcing it through the gun with the atomizing cap in place without using atomizing air and the cleaning solvent is directed from the spray gun into a vat, drum, or other waste container that is closed when not in use</li> <li>– disassemble the spray gun and clean the components by hand in a vat, which remains closed at all times except when in use, or soak the components in a vat, which remains closed during the soaking period and when not inserting or removing components</li> <li>– atomizing cleaning is done by forcing the cleaning solvent through the gun and directing the resulting atomized spray into a waste container that is fitted with a device designed to capture the atomized cleaning solvent emissions.</li> </ul> <p>Verify that visual inspection is done of the seals and all other potential sources of leaks associated with each enclosed spray gun system, while the system is in operation, at least monthly.</p> <p>(NOTE: If leaks are found during the monthly inspection of the enclosed system, repairs shall be made as soon as practicable, but no later than 15 days after the leak was found. If the leak is not repaired by the 15th day after detection, the cleaning solvent shall be removed, and the enclosed cleaner shall be shut down until the leak is repaired or its use is permanently discontinued.)</p>

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<p><b>AE.170.6.US.</b> New or existing flush cleaning operations at affected aerospace facilities are required to meet specific operational standards (40 CFR 63.744(d) [Added January 1999].</p>	<p>(NOTE: These requirements do not apply when the cleaning solvent used is identified in Appendix 1-19 or semi-aqueous cleaning solvents are used.)</p> <p>Verify that the used cleaning solvent is emptied each time aerospace parts or assemblies, or components of a coating unit (with the exception of spray guns) are flush cleaned into an enclosed container or collection system or into a system with equivalent emission control.</p> <p>Verify that the enclosed container or collection system is kept closed when not in use.</p>
<p><b>AE.170.7.US.</b> New or existing primer, topcoat, or specialty coating application operations for those coatings that are uncontrolled at affected aerospace facilities are required to meet specific operational standards (40 CFR 63.741(g), 63.743(d), 63.745(a) through 63.745(c), and 63.745(e) [Added January 1999; Revised January 2001; Revised January 2016].</p>	<p>Verify that the handling and transfer of primers, topcoats, or specialty coatings to or from containers, tanks, vats, vessels, and piping systems is done in a manner to minimize spills.</p> <p>Verify that, for coating where no control device is used to reduce organic HAP emissions from the operation, the following emissions limitations are met:</p> <ul style="list-style-type: none"> <li>– organic HAP emissions from primers are limited to an organic HAP content level of no more than one of the following: <ul style="list-style-type: none"> <li>– 540 g/L (4.5 lb/gal) of primer (less water), as applied, for general aviation rework facilities</li> <li>– 650 g/L (5.4 lb/gal) of exterior primer (less water), as applied, to large commercial aircraft components (parts or assemblies) or fully assembled, large commercial aircraft at existing affected sources that produce fully assembled, large commercial aircraft</li> <li>– 350 g/L (2.9 lb/gal) of primer (less water), as applied</li> </ul> </li> <li>– VOC emissions from primers are limited to a VOC content level of no more than one of the following: <ul style="list-style-type: none"> <li>– 540 g/L (4.5 lb/gal) of primer (less water and exempt solvents), as applied, for general aviation rework facilities</li> <li>– 650 g/L (5.4 lb/gal) of exterior primer (less water and exempt solvents), as applied, to large commercial aircraft components (parts or assemblies) or fully assembled, large commercial aircraft at existing affected sources that produce fully assembled, large commercial aircraft</li> <li>– 350 g/L (2.9 lb/gal) of primer (less water and exempt solvents), as applied</li> </ul> </li> <li>– organic HAP emissions from topcoats are limited to an organic HAP content level of no more than 420 g/L (3.5 lb/gal) of coating (less water) as applied</li> <li>– organic HAP emissions from self-priming topcoats are limited to an organic HAP content level of no more than 420 g/L (3.5 lb/gal) of self-priming topcoat (less water) as applied</li> <li>– VOC emissions from topcoats are limited to a VOC content level of no more than 420 g/L (3.5 lb/gal) of coating (less water and exempt solvents) as applied</li> </ul>

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	<ul style="list-style-type: none"> <li>– VOC emissions from self-priming topcoats are limited to a VOC content level of no more than 420 g/L (3.5 lb/gal) of self-priming topcoat (less water and exempt solvents) as applied</li> <li>– organic HAP emissions from specialty coatings is limited to an organic HAP content level of not more than the HAP content limit listed in Table 1 of 40 CFR 63.745 (see Appendix 1-19a) for each applicable specialty coating type</li> <li>– VOC emissions from specialty coatings is limited to a VOC content level of not more than the VOC content limit listed in Table 1 of 40 CFR 63.745 (see Appendix 1-19a) for each applicable specialty coating type.</li> </ul> <p>Verify that compliance is attained by using these methods either by themselves or in conjunction with one another:</p> <ul style="list-style-type: none"> <li>– use primers and topcoats (including self-priming topcoats), and specialty coatings with HAP and VOC content levels <math>\leq</math> than the limits specified</li> <li>– comply with the averaging provisions of 40 CFR 63.743(d).</li> </ul> <p>(NOTE: Averaging is allowed only for uncontrolled primers or topcoats (including self-priming topcoats), specialty coatings, Type I chemical milling maskants, or Type II chemical milling maskants. Each averaging scheme shall be approved in advance by the permitting agency and be adopted as part of the facility's Title V permit. Averaging is not allowed between specialty coating types defined in Appendix A of Subpart GG or between the following different types of coatings:</p> <ul style="list-style-type: none"> <li>– primers and topcoats (including self-priming topcoats)</li> <li>– Type I and Type II chemical milling maskants</li> <li>– primers and chemical milling maskants</li> <li>– topcoats and specialty coatings</li> <li>– chemical milling maskants and specialty coatings.)</li> </ul> <p>(NOTE: These requirements do not apply to the use of low-volume coatings in categories for which the annual total of each separate formulation used at a facility does not exceed 189 L (50 gal), and the combined annual total of all such primers, topcoats, specialty coatings, and chemical milling maskants used at a facility does not exceed 757 L (200 gal).)</p> <p>(NOTE: The following primers and topcoats are not included in the 50 and 200 gal limits:</p> <ul style="list-style-type: none"> <li>– use of an airbrush or an extension on the spray gun to properly reach limited access space</li> <li>– application of coatings that contain fillers that adversely affect atomization with HVLP spray guns</li> <li>– application of coatings that normally have a dried film thickness of less than 0.0013 cm (0.0005 in.)</li> <li>– use of an airbrush application for stenciling, lettering, and other identification markings</li> <li>– touch-up and repair operations</li> </ul>

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<p><b>AE.170.8.US.</b> New or existing primer, topcoat, or specialty coating application operations for those coatings that are controlled at affected aerospace facilities are required to meet specific operational standards (40 CFR 63.741(g), 63.743(d) 63.745(a), 63.745(b), and 63.745(d) [Added January 1999; Revised January 2016].</p>	<ul style="list-style-type: none"> <li>– touch-up of scratched surfaces or damaged paint</li> <li>– hole daubing for fasteners</li> <li>– touch-up of trimmed edges</li> <li>– coating prior to joining dissimilar metal components</li> <li>– stencil operations performed by brush or air brush</li> <li>– section joining</li> <li>– touch-up of bushings and other similar parts</li> <li>– sealant detackifying</li> <li>– painting parts in an area identified in a Title V permit, where the permitting authority has determined that it is not technically feasible to paint the parts in a booth.</li> </ul> <p>(NOTE: Aerospace equipment that is no longer operational, intended for public display, and not easily capable of being moved is exempt from these requirements.)</p> <p>Verify that each control system reduces the operation's organic HAP and VOC emissions to the atmosphere by 81 percent or greater, taking into account capture and destruction or removal efficiencies.</p> <p>Verify that the handling and transfer of primers, topcoats, or specialty coatings to or from containers, tanks, vats, vessels, and piping systems is done in a manner to minimize spills.</p> <p>(NOTE: Percent reduction is determined using the procedures in 40 CFR 63.750(g) when a carbon adsorber is used and in 40 CFR 63.750(h) when a control device other than a carbon adsorber is used.)</p> <p>(NOTE: Instead of complying with individual coating limits, a facility may choose to comply with averaging provisions specified in 40 CFR 63.743(d).)</p> <p>(NOTE: Averaging is allowed only for uncontrolled primers or topcoats (including self-priming topcoats), specialty coatings, Type I chemical milling maskants, or Type II chemical milling maskants. Each averaging scheme shall be approved in advance by the permitting agency and be adopted as part of the facility's Title V permit. Averaging is not allowed between specialty coating types defined in Appendix A of Subpart GG or between the following different types of coatings:</p> <ul style="list-style-type: none"> <li>– primers and topcoats (including self-priming topcoats</li> <li>– Type I and Type II chemical milling maskants</li> <li>– primers and chemical milling maskants</li> <li>– topcoats and specialty coatings</li> <li>– chemical milling maskants and specialty coatings.)</li> </ul> <p>(NOTE: These requirements do not apply to the use of low-volume coatings in categories for which the annual total of each separate formulation used at a facility does not exceed 189 L (50 gal), and the combined annual total of all such primers,</p>

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<p><b>AE.170.9.US.</b> New or existing primer, topcoat, or specialty coating application operations in which the coating contains organic HAP or VOC at affected aerospace facilities are required to meet specific operational standards (40 CFR 63.741(g), 63.743(d) 63.745(a), and 63.745(f) [Added January 1999; Revised January 2016].</p>	<p>topcoats, specialty coatings, and chemical milling maskants used at a facility does not exceed 757 L (200 gal).)</p> <p>(NOTE: The following primers and topcoats are not included in the 50 and 200 gal limits:</p> <ul style="list-style-type: none"> <li>– use of an airbrush or an extension on the spray gun to properly reach limited access space</li> <li>– application of coatings that contain fillers that adversely affect atomization with HVLP spray guns</li> <li>– application of coatings that normally have a dried film thickness of less than 0.0013 cm (0.0005 in.)</li> <li>– use of an airbrush application for stenciling, lettering, and other identification markings</li> <li>– touch-up and repair operations</li> <li>– touch-up of scratched surfaces or damaged paint</li> <li>– hole daubing for fasteners</li> <li>– touch-up of trimmed edges</li> <li>– coating prior to joining dissimilar metal components</li> <li>– stencil operations performed by brush or air brush</li> <li>– section joining</li> <li>– touch-up of bushings and other similar parts</li> <li>– sealant detackifying</li> <li>– painting parts in an area identified in a Title V permit, where the permitting authority has determined that it is not technically feasible to paint the parts in a booth.</li> </ul> <p>(NOTE: Aerospace equipment that is no longer operational, intended for public display, and not easily capable of being moved is exempt from these requirements.)</p> <p>Verify that new or existing primer or topcoat (including self-priming topcoat) application operations in which any of the coatings contain organic HAP or VOC comply with the following requirements:</p> <ul style="list-style-type: none"> <li>– spray applied primers and topcoats (including self-priming topcoats), and specialty coatings are applied using one or more of the following application techniques: <ul style="list-style-type: none"> <li>– HVLP spraying</li> <li>– electrostatic spray application</li> <li>– airless spray application</li> <li>– air-assisted airless spray application</li> <li>– other coating application methods that achieve emission reductions or a transfer efficiency equivalent to or better than HVLP, electrostatic spray, airless spray, or air assisted airless spray application methods</li> </ul> </li> <li>– all coating spray application devices used to apply primers, topcoats (including self-priming topcoats), or specialty coatings are operated according</li> </ul>

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	<p>to company procedures, local specified operating procedures, and/or the manufacturer's specifications, whichever is most stringent, at all times</p> <ul style="list-style-type: none"> <li>– spray application equipment modified by the facility maintains a transfer efficiency equivalent to HVLP spray, electrostatic spray, airless spray, or air assisted airless spray application techniques.</li> </ul> <p>(NOTE: The following situations are exempt from the requirements for application techniques:</p> <ul style="list-style-type: none"> <li>– any situation that normally requires an extension on the spray gun to properly reach limited access spaces</li> <li>– the application of coatings that contain fillers that adversely affect atomization with HVLP spray guns</li> <li>– the application of coatings that normally have a dried film thickness of less than 0.0013 cm (0.0005 in.) and that the permitting agency has determined cannot be applied by any of the application methods specified</li> <li>– the use of airbrush application methods for stenciling, lettering, and other identification markings and the spray application of no more than 3 fluid oz of coating in a single application from a hand held device with a paint cup capacity that is <math>\leq</math> 8 fluid oz</li> <li>– the use of hand-held non-refillable aerosol containers</li> <li>– touch-up and repair operations</li> <li>– adhesives, sealants, maskants, caulking materials, and inks</li> <li>– the application of coatings that contain less than 20 of VOC per liter of coating.)</li> </ul> <p>(NOTE: When using airbrush application methods for stenciling, lettering, and other identification markings it is prohibited to use multiple small paint cups or refilling a small paint cup to apply more than 3.0 fluid oz. If a paint cup liner is used in a reusable holder or cup, then the holder or cup must be designed to hold a liner with a capacity of no more than 3.0 fluid oz. For example, a 3.0 oz liner cannot be used in a holder that can also be used with a 6.0 oz liner.)</p> <p>(NOTE: Percent reduction is determined using the procedures in 40 CFR 63.750(g) when a carbon adsorber is used and in 40 CFR 63.750(h) when a control device other than a carbon adsorber is used.)</p> <p>(NOTE: These requirements do not apply to the use of low-volume coatings in categories for which the annual total of each separate formulation used at a facility does not exceed 189 L (50 gal), and the combined annual total of all such primers, topcoats, specialty coatings, and chemical milling maskants used at a facility does not exceed 757 L (200 gal).)</p> <p>(NOTE: The following primers and topcoats are not included in the 50 and 200 gal limits:</p> <ul style="list-style-type: none"> <li>– use of an airbrush or an extension on the spray gun to properly reach limited access space</li> </ul>

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<p><b>AE.170.10.US.</b> New or existing primer, topcoat, or specialty coating application operations in which the coatings contain inorganic HAP at affected aerospace facilities are required to meet specific operational standards (40 CFR 63.741(g), 63.743(d))</p>	<ul style="list-style-type: none"> <li>– application of coatings that contain fillers that adversely affect atomization with HVLP spray guns</li> <li>– application of coatings that normally have a dried film thickness of less than 0.0013 cm (0.0005 in.)</li> <li>– use of an airbrush application for stenciling, lettering, and other identification markings</li> <li>– touch-up and repair operations</li> <li>– touch-up of scratched surfaces or damaged paint</li> <li>– hole daubing for fasteners</li> <li>– touch-up of trimmed edges</li> <li>– coating prior to joining dissimilar metal components</li> <li>– stencil operations performed by brush or air brush</li> <li>– section joining</li> <li>– touch-up of bushings and other similar parts</li> <li>– sealant detackifying</li> <li>– painting parts in an area identified in a Title V permit, where the permitting authority has determined that it is not technically feasible to paint the parts in a booth.)</li> </ul> <p>(NOTE: Instead of complying with individual coating limits, a facility may choose to comply with averaging provisions specified in 40 CFR 63.743(d).)</p> <p>(NOTE: Averaging is allowed only for uncontrolled primers or topcoats (including self-priming topcoats), specialty coatings, Type I chemical milling maskants, or Type II chemical milling maskants. Each averaging scheme shall be approved in advance by the permitting agency and be adopted as part of the facility's Title V permit. Averaging is not allowed between specialty coating types defined in Appendix A of Subpart GG or between the following different types of coatings:</p> <ul style="list-style-type: none"> <li>– primers and topcoats (including self-priming topcoats</li> <li>– Type I and Type II chemical milling maskants</li> <li>– primers and chemical milling maskants</li> <li>– topcoats and specialty coatings</li> <li>– chemical milling maskants and specialty coatings.)</li> </ul> <p>(NOTE: Aerospace equipment that is no longer operational, intended for public display, and not easily capable of being moved is exempt from these requirements.)</p> <p>Verify that these coatings are applied in a booth, hangar, or portable enclosure in which airflow is directed downward onto or across the part or assembly being coated and exhausted through one or more outlets.</p> <p>Verify that, for existing sources, one of the following is used:</p> <ul style="list-style-type: none"> <li>– before exhausting the air stream to the atmosphere, pass it through a certified dry particulate filter system meeting or exceeding the efficiency data points in Tables 1 and 2 in Appendix 1-20</li> </ul>

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63.745(a), and 63.745(g)) <b>[Added January 1999; Revised January 2016].</b>	<ul style="list-style-type: none"> <li>– before exhausting the air stream to the atmosphere, pass it through a waterwash system that remains in operation during all coating application operations</li> <li>– before exhausting the air stream to the atmosphere, pass it through an air pollution control system that meets or exceeds the efficiency data points in Tables 1 and 2 of Appendix 1-20 and is approved by the permitting authority.</li> </ul> <p>Verify that, for new sources, one of the following is used:</p> <ul style="list-style-type: none"> <li>– before exhausting the air stream to the atmosphere, pass it through a certified dry particulate filter system meeting or exceeding the efficiency data points in Tables 3 and 4 of Appendix 1-20</li> <li>– before exhausting the air stream to the atmosphere, pass it through an air pollution control system that meets or exceeds the efficiency data points in Tables 3 and 4 of Appendix 1-20 and is approved by the permitting authority.</li> </ul> <p>(NOTE: Owners or operators of new sources that have commenced construction or reconstruction after 6 June 1994 but prior to 29 October 1996 may comply with the following requirements instead of the requirements for new sources:</p> <ul style="list-style-type: none"> <li>– pass the air stream through either a two-stage dry particulate filter system or a waterwash system before exhausting it to the atmosphere</li> <li>– if the primer, topcoat, or specialty coating contains chromium or cadmium, control consists of a HEPA filter system, three-stage filter system, or other control system equivalent to the three-stage filter system as approved by the permitting agency.)</li> </ul> <p>Verify that, if a dry particulate filter system is used, the following requirements are met:</p> <ul style="list-style-type: none"> <li>– the system is maintained in good working order</li> <li>– a differential pressure gauge is installed across the filter banks</li> <li>– the pressure drop across the filter is continuously monitored and the pressure drop is read and recorded once per shift or install an interlock system that will automatically shut down the coating spray application system if the pressure drop exceeds or falls below the filter manufacturer's recommended limits</li> <li>– corrective action is taken when the pressure drop exceeds or falls below the filter manufacturer's recommended limit(s).</li> </ul> <p>Verify that, if a conventional waterwash system is used, the water flow rate is continuously monitored and the water flow rate is read and recorded once per shift or install an interlock system that will automatically shut down the coating spray application system if the water flow rate exceeds or falls below the limits specified by the booth manufacturer or in locally prepared operating procedures.</p> <p>Verify that, if a pumpless system is used, the booth parameter that indicates performance of the booth per the manufacturer's recommendations to maintain the booth within acceptable operating efficiency is monitored continuously and the</p>

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	<p>parameter is read or record once per shift; or install an interlock system that will automatically shut down the coating spray application system if the booth parameters are outside the parameter range in the manufacturer's recommendations.</p> <p>Verify that, if the pressure drop across the dry particulate filter system is outside the limit(s) specified by the filter manufacturer or in locally prepared operating procedures, the operation is shut down immediately and corrective action taken.</p> <p>Verify that, if the water path in the waterwash system fails the visual continuity/flow characteristics check, or the recorded water flow exceeds the limit(s) specified by the booth manufacturer or in locally prepared operating procedures, or the booth manufacturer's or locally prepared maintenance procedures for the filter or waterwash system have not been performed as scheduled, the operation is shut down immediately and corrective action taken.</p> <p>Verify that operation is not resumed until the pressure drop or water flow rate is returned within the specified limit(s).</p> <p>(NOTE: These requirements do not apply to the following:</p> <ul style="list-style-type: none"> <li>– touch-up of scratched surfaces or damaged paint</li> <li>– hole daubing for fasteners</li> <li>– touch-up of trimmed edges</li> <li>– coating prior to joining dissimilar metal components</li> <li>– stencil operations performed by brush or air brush</li> <li>– section joining</li> <li>– touch-up of bushings and other similar parts</li> <li>– sealant detackifying</li> <li>– painting parts in an area identified in a Title V permit, where the permitting authority has determined that it is not technically feasible to paint the parts in a booth</li> <li>– the use of handheld spray can application methods.)</li> </ul> <p>(NOTE: These requirements do not apply to the use of low-volume coatings in categories for which the annual total of each separate formulation used at a facility does not exceed 189 L (50 gal), and the combined annual total of all such primers, topcoats, specialty coatings, and chemical milling maskants used at a facility does not exceed 757 L (200 gal).)</p> <p>(NOTE: The following primers and topcoats are not included in the 50 and 200 gal limits:</p> <ul style="list-style-type: none"> <li>– use of an airbrush or an extension on the spray gun to properly reach limited access space</li> <li>– application of coatings that contain fillers that adversely affect atomization with HVLP spray guns</li> <li>– application of coatings that normally have a dried film thickness of less than 0.0013 cm (0.0005 in.)</li> </ul>

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	<ul style="list-style-type: none"> <li>– use of an airbrush application for stenciling, lettering, and other identification markings</li> <li>– touch-up and repair operations</li> <li>– touch-up of scratched surfaces or damaged paint</li> <li>– hole daubing for fasteners</li> <li>– touch-up of trimmed edges</li> <li>– coating prior to joining dissimilar metal components</li> <li>– stencil operations performed by brush or air brush</li> <li>– section joining</li> <li>– touch-up of bushings and other similar parts</li> <li>– sealant detackifying</li> <li>– spray application of primers, topcoats, and specialty coatings in an area identified in a title V permit where the permitting authority has determined it is not technically feasible to spray apply coatings to the parts in a booth</li> <li>– the use of hand-held non-refillable aerosol containers</li> <li>– the spray application of no more than 3.0 fluid oz of coating in a single application (<i>i.e.</i>, the total volume of a single coating formulation applied during any one day to any one aerospace vehicle or component) from a hand-held device with a paint cup capacity that is equal to or less than 3.0 fluid oz (89 cubic centimeters).</li> </ul> <p>(NOTE: Using multiple small paint cups or refilling a small paint cup to apply more than 3.0 fluid oz is prohibited. If a paint cup liner is used in a reusable holder or cup, then the holder or cup must be designed to hold a liner with a capacity of no more than 3.0 fluid ounces. For example, a 3.0 oz liner cannot be used in a holder that can also be used with a 6.0 ounce liner.)</p> <p>(NOTE: Instead of complying with individual coating limits, a facility may choose to comply with averaging provisions specified in 40 CFR 63.743(d).)</p> <p>(NOTE: Averaging is allowed only for uncontrolled primers or topcoats (including self-priming topcoats), specialty coatings, Type I chemical milling maskants, or Type II chemical milling maskants. Each averaging scheme shall be approved in advance by the permitting agency and be adopted as part of the facility's Title V permit. Averaging is not allowed between specialty coating types defined in Appendix A of Subpart GG or between the following different types of coatings:</p> <ul style="list-style-type: none"> <li>– primers and topcoats (including self-priming topcoats)</li> <li>– Type I and Type II chemical milling maskants</li> <li>– primers and chemical milling maskants</li> <li>– topcoats and specialty coatings</li> <li>– chemical milling maskants and specialty coatings.)</li> </ul> <p>(NOTE: Aerospace equipment that is no longer operational, intended for public display, and not easily capable of being moved is exempt from these requirements.)</p>

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<p><b>AE.170.11.US.</b> New or existing depainting operations are required to meet specific operational standards related to organic and inorganic HAP emissions (40 CFR 63.746 [Added January 1999; Revised January 2016].</p>	<p>(NOTE: These requirements apply to the depainting of the outer surface areas of completed aerospace vehicles, including the fuselage, wings, and vertical and horizontal stabilizers of the aircraft, and the outer casing and stabilizers of missiles and rockets. These requirements do not apply to:</p> <ul style="list-style-type: none"> <li>– an aerospace manufacturing or rework facility that depaints six or less completed aerospace vehicles in a calendar year</li> <li>– aerospace vehicles or components that are intended for public display, no longer operational, and not easily capable of being moved</li> <li>– depainting of radomes</li> <li>– depainting of parts, subassemblies, and assemblies normally removed from the primary aircraft structure before depainting</li> <li>– the depainting of parts or units normally removed from the aerospace vehicle for depainting.</li> </ul> <p>However, depainting of wings and stabilizers is always subject these requirements regardless of whether their removal is considered by the owner or operator to be normal practice for depainting.)</p> <p>Verify that no organic HAP is emitted from chemical stripping formulations and agent or chemical paint softeners.</p> <p>Verify that, where nonchemical-based equipment is used to comply with the no emission of organic HAP standard, either in total or in part, the equipment is operated and maintained according to the manufacturer's specifications or locally prepared operating procedures.</p> <p>(NOTE: During periods of malfunction of equipment used to comply with the no emissions of organic HAP standard, substitute materials may be used during the repair period if the substitute materials used are those available that minimize organic HAP emissions. In no event shall substitute materials be used for more than 15 days annually, unless such materials are organic HAP-free.)</p> <p>Verify that a new or existing depainting operation does not, on an annual average basis, use &gt; 26 gal of organic HAP-containing chemical strippers or alternatively 190 lb of organic HAP per commercial aircraft depainted; or &gt; 50 gal of organic HAP-containing chemical strippers or alternatively 365 lb of organic HAP per military aircraft depainted for spot stripping and decal removal.</p> <p>Verify that, when nonchemical based equipment that generate airborne inorganic HAP emissions from dry media blasting, except mechanical and hand sanding operations, is used to comply with the no emissions of organic HAP standard, the following are met:</p> <ul style="list-style-type: none"> <li>– the depainting operation is performed in an enclosed area, unless a closed-cycle depainting system is used</li> </ul>

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	<ul style="list-style-type: none"> <li>– for existing sources, pass any air stream removed from the enclosed area or closed-cycle depainting system through a certified dry particulate filter system meeting or exceeding the efficiency data points in Tables 1 and 2 of Appendix 1-20, through a baghouse, or through a waterwash system before exhausting it to the atmosphere</li> <li>– for new sources, pass any air stream removed from the enclosed area or closed-cycle depainting system through a certified dry particulate filter system certified meeting or exceeding the efficiency data points in Tables 3 and 4 of Appendix 1-20 or through a baghouse before exhausting it to the atmosphere</li> <li>– if a dry particulate filter system is used, it is maintained in good working order, a drop across the filter is continuously monitored, the pressure drop is read and recorded once per shift, and corrective action is taken when the pressure drop exceeds or falls below the filter manufacturer's recommended limits</li> <li>– continuous monitoring of the water flow rate and reading and recording the water flow rate once per shift if a waterwash system is used.</li> </ul> <p>Verify that, if the pressure drop is outside the recommended limits specific by the filter manufacturer or in locally prepared operating procedures, the operation is shut down immediately and corrective actions taken.</p> <p>Verify that, if the water path in the waterwash system fails the visual continuity/flow characteristics check or the water flow rate exceeds the limit(s) specified by the booth manufacturer or in locally prepared operating procedures, or the booth manufacturer's or locally prepared maintenance procedures for the filter or waterwash system have not been performed as scheduled the operation is shut down immediately and corrective action taken.</p> <p>Verify that all organic HAP emissions from the operation are reduced by the use of a control system.</p> <p>Verify that each control system for the reduction of organic HAP emissions installed before 27 March 1998 reduces the operations' organic HAP emissions to the atmosphere by 81 percent or greater, taking into account capture and destruction or removal efficiencies.</p> <p>Verify that each control system for the reduction of organic HAP emissions installed on or after 27 March 1998 reduces organic HAP emissions to the atmosphere by 95 percent or greater, taking into account capture and destruction or removal efficiencies, and possibly taking into account the volume of chemical stripper used relative to baseline levels (e.g., the 95 percent efficiency may be achieved by controlling emissions at 81 percent efficiency with a control system and using 74 percent less stripper than in baseline applications).</p> <p>(NOTE: The baseline shall be calculated using data from 1996 and 1997, which shall be on a usage per aircraft or usage per square foot of surface basis. The capture and destruction or removal efficiencies are to be determined using the procedures</p>

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<p><b>AE.170.12.US.</b> New or existing chemical milling maskant operations are required to meet specific operational standards related to controlled and uncontrolled organic HAP emissions (40 CFR 63.741(g), 63.743(d), and 63.747 [Added January 1999; Revised January 2016].</p>	<p>in 40 CFR 63.750(g) when a carbon adsorber is used and those in 40 CFR 63.750(h) when a control device other than a carbon adsorber is used.)</p> <p>Verify that the handling and transfer of chemical milling maskants to or from containers, tanks, vats, vessels, and piping systems is done in a manner that minimizes spills.</p> <p>Verify that, for each chemical milling maskant that is uncontrolled, except for the touch-up of scratched surfaces or damaged maskant and the touch-up of trimmed edges, the following are met:</p> <ul style="list-style-type: none"> <li>– organic HAP emissions are limited to organic HAP content levels of no more than 622 g/L of organic HAP (5.2 lb/gal) of Type I chemical milling maskant (less water) as applied, and no more than 160 g/L of organic HAP (1.3 lb/gal) of Type II chemical milling maskant (less water) as applied</li> <li>– VOC emissions are limited to VOC content levels of no more than 622 g/L of VOC (5.2 lb/gal) of Type I chemical milling maskant (less water and exempt solvents) as applied, and no more than 160 g/L of VOC (1.3 lb/gal) of Type II chemical milling maskant (less water and exempt solvents) as applied.</li> </ul> <p>Verify that, for controlled emissions, each control system reduces the operation's organic HAP and VOC emissions to the atmosphere by 81 percent or greater, taking into account capture and destruction or removal efficiencies, as determined using the procedures in 40 CFR 63.750(g) when a carbon adsorber is used and in 40 CFR 63.750(h) when a control device other than a carbon adsorber is used.</p> <p>(NOTE: Compliance with the content limits specified for uncontrolled maskants may be achieved by using the following methods either by themselves or in conjunction with one another:</p> <ul style="list-style-type: none"> <li>– use chemical milling maskants with HAP and VOC content levels</li> <li>– equal to or less than the limits specified</li> <li>– use the averaging provisions described in 40 CFR 63.743(d).)</li> </ul> <p>(NOTE: These requirements do not apply to the use of low-volume coatings in categories for which the annual total of each separate formulation used at a facility does not exceed 189 L (50 gal), and the combined annual total of all such primers, topcoats, specialty coatings, and chemical milling maskants used at a facility does not exceed 757 L (200 gal).)</p> <p>(NOTE: The following primers and topcoats are not included in the 50 and 200 gal limits:</p> <ul style="list-style-type: none"> <li>– use of an airbrush or an extension on the spray gun to properly reach limited access space</li> <li>– application of coatings that contain fillers that adversely affect atomization with HVLP spray guns</li> </ul>

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<p><b>AE.170.13.US.</b> Wastes containing HAP generated at aerospace affected sources are required to handle the waste in a manner to prevent spills (40 CFR 63.741(e) and 63.748 [Added January 1999; Revised January 2016].</p>	<ul style="list-style-type: none"> <li>– application of coatings that normally have a dried film thickness of less than 0.0013 cm (0.0005 in.)</li> <li>– use of an airbrush application for stenciling, lettering, and other identification markings</li> <li>– touch-up and repair operations</li> <li>– touch-up of scratched surfaces or damaged paint</li> <li>– hole daubing for fasteners</li> <li>– touch-up of trimmed edges</li> <li>– coating prior to joining dissimilar metal components</li> <li>– stencil operations performed by brush or air brush</li> <li>– section joining</li> <li>– touch-up of bushings and other similar parts</li> <li>– sealant detackifying</li> <li>– painting parts in an area identified in a Title V permit, where the permitting authority has determined that it is not technically feasible to paint the parts in a booth.)</li> </ul> <p>(NOTE: Instead of complying with individual coating limits, a facility may choose to comply with averaging provisions specified in 40 CFR 63.743(d).)</p> <p>(NOTE: Averaging is allowed only for uncontrolled primers or topcoats (including self-priming topcoats), specialty coatings, Type I chemical milling maskants, or Type II chemical milling maskants. Each averaging scheme shall be approved in advance by the permitting agency and be adopted as part of the facility's Title V permit. Averaging is not allowed between specialty coating types defined in Appendix A of Subpart GG or between the following different types of coatings:</p> <ul style="list-style-type: none"> <li>– primers and topcoats (including self-priming topcoats</li> <li>– Type I and Type II chemical milling maskants</li> <li>– primers and chemical milling maskants</li> <li>– topcoats and specialty coatings</li> <li>– chemical milling maskants and specialty coatings.)</li> </ul> <p>(NOTE: See the definitions <i>Aerospace Affected Source</i> and <i>Aerospace Exempted Sources</i> for guidance on the applicability of this regulation.)</p> <p>Verify that each facility that produces a waste that contains HAP from aerospace primer, topcoat, specialty coating, chemical milling maskant, or chemical depainting operations conducts the handling and transfer of the waste to or from containers, tanks, vats, vessels, and piping systems in a manner that minimizes spills.</p> <p>Verify that all wastes that contains organic HAP is stored in closed containers.</p>

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	(NOTE: This does not apply to wastes that are determined to be hazardous wastes under RCRA.)



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<p><b>AEROSPACE MANUFACTURING/REWORK FACILITIES</b></p> <p><b>AE.171 Monitoring</b></p> <p><b>AE.171.1.US.</b> Owners and operators using carbon adsorbers to comply with the emissions limitations for affected aerospace facilities are required to meet specific monitoring requirements (40 CFR 63.751(b)(1) through 63.751(b)(7), 63.751(e), and 63.751(f)) [Added January 1999].</p>	<p>(NOTE: See the definitions <i>Aerospace Affected Source</i> and <i>Aerospace Exempted Sources</i> for guidance on the applicability of this regulation.)</p> <p>Verify that the owner or operator has established as a site-specific operating parameter the outlet total HAP or VOC concentration that demonstrates compliance or has established as the site-specific operating parameter the control device efficiency that demonstrates compliance.</p> <p>(NOTE: For each solvent recovery device, instead of establishing the outlet total HAP or VOC concentration or the control device efficiency, the results of the required material balance calculation may serve as the site-specific operating parameter that demonstrates compliance.)</p> <p>Verify that, when a nonregenerative carbon adsorber is used, the site-specific operating parameter value is established as part of the design evaluation used to demonstrate initial compliance or the site-specific operating parameter value is established during the initial performance test.</p> <p>(NOTE: Instead of establishing the site-specific operating parameter value as part of the design evaluation or during the initial performance test for each nonregenerative carbon adsorber, the owner or operator may establish as the site-specific operating parameter the carbon replacement time interval, as determined by the maximum design flow rate and organic concentration in the gas stream vented to the carbon adsorption system. The carbon replacement time interval is to be established either as part of the design evaluation to demonstrate initial compliance or during the initial performance test.)</p> <p>Verify that, when solvent HAP emissions are vented from a source through a room, enclosure, or hood, to a control device, the following are met:</p> <ul style="list-style-type: none"> <li>– a plan is submitted to the Administrator with the compliance status report that identifies the operating parameter to be monitored to ensure that the capture efficiency measured during the initial compliance test is maintained, discusses why this parameter is appropriate for demonstrating ongoing compliance, and identifies the specific monitoring procedures</li> <li>– the operating parameter value, or range of values, that demonstrate compliance are set</li> </ul>

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	<p>– monitoring is done in accordance with the plan submitted to the Administrator unless comments received from the Administrator require an alternate monitoring scheme.</p> <p>Verify that the site-specific operating parameter value, or range of values, is calculated as the arithmetic average of the maximum and/or minimum operating parameter values, as appropriate, during the multiple test runs.</p> <p>Verify that continuous compliance monitoring is done, as appropriate, for control systems for primer or topcoat applications, control systems for organic HAP emission from depainting operations, and control systems for chemical milling maskant operations as follows:</p> <ul style="list-style-type: none"> <li>– except for nonregenerative carbon adsorbers, all continuous emission monitors comply with performance specification (PS) 8 or 9 in 40 CFR 60, Appendix B, as appropriate depending on whether VOC or HAP concentration is being measured</li> <li>– requirements in Appendix F of 40 CFR 60 are followed and, when conducting the quarterly audits required by Appendix F, the monitors are challenged with compounds representative of the gaseous emission stream being controlled</li> <li>– if the effluents from multiple emission points are combined prior to being channeled to a common control device, only the common control device is monitored, not each emission point.</li> </ul> <p>Verify that, when a control device is used to achieve compliance with primer or topcoat applications, with organic HAP emission from depainting operations, and for chemical milling maskant operations, the following requirements are met:</p> <ul style="list-style-type: none"> <li>– a continuous emissions monitor is installed, calibrated, and maintained</li> <li>– if using a carbon adsorption system with a common exhaust stack for all of the carbon vessels, the control device is not operated at an average control efficiency less than that required for three consecutive adsorption cycles</li> <li>– if using a carbon adsorption system with individual exhaust stacks for each of the multiple carbon adsorber vessels, no carbon adsorber vessel is operated at an average control efficiency less than that required, as calculated daily using a 7- to 30-day rolling average.</li> </ul> <p>(NOTE: If using a nonregenerative carbon adsorber, the carbon may be replaced in the carbon adsorber system with fresh carbon at a regular predetermined time interval.)</p> <p>Verify that, when achieving compliance with primer or topcoat application limitations, organic HAP emission from depainting operations, and for chemical milling maskant operations is done through capturing emissions through a room, enclosure, or hood, instrumentation is installed, calibrated, operated, and maintained to measure continuously the site-specific operating parameter</p>

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<p><b>AE.171.2.US.</b> Owners and operators using incinerators to comply with the emissions limitations for affected aerospace facilities are required to meet specific monitoring requirements (40 CFR 63.751(b)(8) through 63.751(b)(12), 63.751(e), and 63.751(f)) [<b>Added January 1999</b>].</p>	<p>established whenever VOC and HAP from coating and stripper operations are vented through the capture device.</p> <p>Verify that the capture device is not operated at an average value greater than or less than (as appropriate) the established operating parameter value established for any 3-h period.</p> <p>Verify that site-specific operating parameter values are calculated as the arithmetic average of the minimum operating parameter values that demonstrate compliance during the three required test runs.</p> <p>Verify that alternative monitoring methods are not used unless permission has been received from the Administrator.</p> <p>(NOTE: The data may be recorded in reduced or nonreduced form (e.g., PPM pollutant and percent O<sub>2</sub> or ng/J of pollutant). But, all emissions data will be converted into units specified in the requirements. The data may be rounded to the same number of significant digits as used in the regulations to specify the emissions limit.)</p> <p>(NOTE: See the definitions <i>Aerospace Affected Source</i> and <i>Aerospace Exempted Sources</i> for guidance on the applicability of this regulation.)</p> <p>Verify that all temperature monitoring equipment is installed, calibrated, maintained, and operated according to manufacturer's specifications.</p> <p>Verify that every 3 mo, facilities replace the temperature sensors or have the temperature sensors recalibrated.</p> <p>(NOTE: As an alternative to replacing temperature sensors, a facility may use a continuous emission monitoring system (CEMS) to verify that there has been no change in the destruction efficiency and effluent composition of the incinerator.)</p> <p>Verify that, where an incinerator other than a catalytic incinerator is used, a thermocouple equipped with a continuous recorder is installed and continuously operated in the firebox or in the ductwork immediately downstream of the firebox in a position before any substantial heat exchange occurs.</p> <p>Verify that, where a catalytic incinerator is used, thermocouples, each equipped with a continuous recorder, are installed and continuously operated in the gas stream immediately before and after the catalyst bed.</p> <p>Verify that, for each incinerator other than a catalytic incinerator, each owner or operator establishes during each performance test during which compliance is demonstrated, including the initial performance test, the minimum combustion temperature as a site-specific operating parameter.</p>

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<p><b>AE.171.3.US.</b> Owners and operators using dry particulate filters or a waterwash system to comply with the emissions limitations for affected aerospace facilities are required to meet specific monitoring requirements (40 CFR 63.751(c) through 63.751(f)) [Added January 1999; Revised January 2016].</p>	<p>(NOTE: The minimum combustion temperature is the operating parameter value that demonstrates compliance.)</p> <p>Verify that, for each catalytic incinerator, each owner or operator establishes during each performance test during which compliance is demonstrated, including the initial performance test, the minimum gas temperature upstream of the catalyst bed and the minimum gas temperature difference across the catalyst bed as site-specific operating parameters.</p> <p>(NOTE: These minimum gas temperatures are the operating parameter values that demonstrate compliance.)</p> <p>Verify that alternative monitoring methods are not used unless permission has been received from the Administrator.</p> <p>(NOTE: The data may be recorded in reduced or nonreduced form (e.g., PPM pollutant and percent O<sub>2</sub> or ng/J of pollutant). But, all emissions data will be converted into units specified in the requirements. The data may be rounded to the same number of significant digits as used in the regulations to specify the emissions limit.)</p> <p>Verify that, when using a dry particulate matter filter system to meet the requirements of 40 CFR 63.745(g)(2), while primer, topcoat, or specialty coating application operations are occurring the owner or operator continuously monitors the pressure drop across the system and reads and records the pressure drop once per shift following the recordkeeping requirements of 40 CFR 63.752(d), or installs an interlock system as specified in 40 CFR 63.745(g)(2)(iv)(C).</p> <p>Verify that, when using a conventional waterwash system to meet the requirements of 40 CFR 63.745(g)(2), while primer, topcoat, or specialty coating application operations are occurring, the owner or operator continuously monitors the water flow rate through the system, and reads and records the water flow rate once per shift following the recordkeeping requirements of 40 CFR 63.752(d), or installs an interlock system as specified in 40 CFR 63.745(g)(2)(v).</p> <p>Verify that, when using a pumpless waterwash system to meet the requirements of 40 CFR 63.745(g)(2), while primer, topcoat, or specialty coating application operations are occurring, the owner or operator continuously measures and records the parameters recommended by the booth manufacturer that indicate booth performance once per shift following the recordkeeping requirements of 40 CFR 63.752(d), or installs an interlock system as specified in 40 CFR 63.745(g)(2)(v).</p> <p>Verify that, when a dry particulate filter or a conventional waterwash system is being used in accordance with the requirements of 40 CFR 62.746(b)(4), while depainting operations are occurring the owner or operator continuously monitors the pressure drop across the particulate filters or the water flow rate through the</p>

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	<p>waterwash system and reads and records the pressure drop or the water flow rate once per shift.</p> <p>Verify that, when using a pumpless waterwash system to meet the requirements of 40 CFR 63.746(b)(4) when depainting, the parameters recommended by the booth manufacturer as indicating performance are measured and record once per shift.</p> <p>Verify that alternative monitoring methods are not used unless permission has been received from the Administrator.</p> <p>(NOTE: The data may be recorded in reduced or nonreduced form (e.g., PPM pollutant and percent O<sub>2</sub> or ng/J of pollutant). But, all emissions data will be converted into units specified in the requirements. The data may be rounded to the same number of significant digits as used in the regulations to specify the emissions limit.)</p>



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<p><b>AEROSPACE MANUFACTURING/REWORK FACILITIES</b></p> <p><b>AE.172</b>  <b>Reporting/Recordkeeping Requirements</b></p> <p><b>AE.172.1.US.</b> Owners and operators of a new or existing affected aerospace cleaning operation are required to meet specific recordkeeping requirements (40 CFR 63.752(b)(1) through 63.752(b)(5)) [Added January 1999].</p>	<p>(NOTE: See the definitions <i>Aerospace Affected Source</i> and <i>Aerospace Exempted Sources</i> for guidance on the applicability of this regulation.)</p> <p>Verify that the following information is recorded at new or existing affected aerospace cleaning operations:</p> <ul style="list-style-type: none"> <li>– the name, vapor pressure, and documentation showing the organic HAP constituents of each cleaning solvent used for affected cleaning operations at the facility</li> <li>– for each cleaning solvent used in hand-wipe cleaning operations that complies with the composition requirements specified in Appendix 1-19 or for semi-aqueous cleaning solvents used for flush cleaning operations, the following: <ul style="list-style-type: none"> <li>– the name of each cleaning solvent used</li> <li>– all data and calculations that demonstrate that the cleaning solvent complies with one of the composition requirements</li> <li>– annual records of the volume of each solvent used, as determined from facility purchase records or usage records</li> </ul> </li> <li>– for each cleaning solvent used in hand-wipe cleaning operations that does not comply with the composition requirements in Appendix 1-19, but does comply with the vapor pressure requirement of 45 mm Hg (24 in. H<sub>2</sub>O) or less at 20 C (68 F), the following: <ul style="list-style-type: none"> <li>– the name of each cleaning solvent used</li> <li>– the composite vapor pressure of each cleaning solvent used</li> <li>– all vapor pressure test results, if appropriate, data, and calculations used to determine the composite vapor pressure of each cleaning solvent</li> <li>– the amount (in gallons) of each cleaning solvent used each month at each operation</li> </ul> </li> <li>– for each cleaning solvent used for the exempt hand-wipe cleaning operations specified in 40 CFR 63.744(e) that does not conform to the composition requirements of Appendix 1-19 or the vapor pressure requirements of 45 mm Hg (24 in H<sub>2</sub>O) or less at 20 C (68 F), the following: <ul style="list-style-type: none"> <li>– the identity and amount (in gallons) of each cleaning solvent used each month at each operation</li> <li>– a list of the processes set forth in 40 CFR 63.744(e) to which the cleaning operation applies.</li> </ul> </li> </ul>

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<p><b>AE.172.2.US.</b> Owners and operators of a new or existing affected aerospace primer, topcoat, or specialty coatings application operation with uncontrolled coatings are required to meet specific recordkeeping requirements (40 CFR 63.752(c)(1) through 63.752(c)(6)) <b>[Added January 1999; Revised January 2016]</b>.</p>	<ul style="list-style-type: none"> <li>– a record of all leaks from enclosed spray gun cleaners that includes, for each leak found: <ul style="list-style-type: none"> <li>– source identification</li> <li>– date leak was discovered</li> <li>– date leak was repaired.</li> </ul> </li> </ul> <p>Verify that owners and operators of a new or existing affected aerospace primer, topcoat, or specialty coatings application operation with uncontrolled coatings maintains the name and VOC content as received and as applied of each primer, topcoat, and specialty coating used at the facility.</p> <p>Verify that owners and operators of a new or existing affected aerospace primer, topcoat, or specialty coatings application operation with uncontrolled coatings using coating manufacturer’s supplied data to demonstrate compliance based on the HAP content of the coating and adding non-HAP solvent to those coatings maintains records of the non-HAP solvent added to the coating.)</p> <p>Verify that, for uncontrolled primers, topcoats, and specialty coatings that meet the organic HAP and VOC content limits in 40 CFR 63.745(c)(1) through 63.745(c)(4) (see checklist item AE.170.7.US.) without averaging, the following records are kept:</p> <ul style="list-style-type: none"> <li>– the mass of organic HAP emitted per unit volume of coating as applied (less water) and the mass of VOC emitted per unit volume of coating as applied (less water and exempt solvents) for each coating formulation within each coating category used each month</li> <li>– all data, calculations, and test results (including USEPA Method 24 results) used in determining values</li> <li>– the volume (gal) of each coating formulation within each coating category used each month.</li> </ul> <p>(NOTE: Owners and operators of a new or existing affected aerospace primer, topcoat, or specialty coatings application operation with uncontrolled coatings using coating manufacturer’s supplied data to demonstrate compliance with the applicable HAP or VOC limit instead of the records for uncontrolled primer required above.)</p> <p>Verify that, for “low HAP content” uncontrolled primers with organic HAP content less than or equal to 250 g/L (2.1 lb/gal) less water as applied and VOC content <math>\leq</math> 250 g/L (2.1 lb/gal) less water and exempt solvents as applied, the following records are kept:</p> <ul style="list-style-type: none"> <li>– annual purchase records of the total volume of each primer purchased</li> <li>– all data, calculations, and test results (including USEPA Method 24 results) used in determining the organic HAP and VOC content as applied. These records shall consist of the manufacturer's certification when the primer is</li> </ul>

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<p><b>AE.172.3.US.</b> Owners and operators of a new or existing affected aerospace primers, topcoats, and specialty coatings application operation</p>	<p>applied as received, or the data and calculations used to determine appropriate values if not applied as received.</p> <p>Verify that, for primers, topcoats, and specialty coatings complying with the organic HAP or VOC content level by averaging, the following records are kept:</p> <ul style="list-style-type: none"> <li>– the monthly volume-weighted average masses of organic HAP emitted per unit volume of coating as applied (less water) and of VOC emitted per unit volume of coating as applied (less water and exempt solvents) for all coatings</li> <li>– all data, calculations, and test results (including USEPA Method 24 results) used to determine appropriate values.</li> </ul> <p>Verify that, for primers, topcoats, and specialty coatings that are controlled by a control device other than a carbon adsorber, the following records are kept:</p> <ul style="list-style-type: none"> <li>– the overall control efficiency of the control system (as determined using the procedures specified in 40 CFR 63.750(h)) and all test results, data, and calculations used in determining the overall control efficiency</li> <li>– if an incinerator other than a catalytic incinerator is used, continuous records of the firebox temperature recorded and all calculated 3-h averages of the firebox temperature</li> <li>– if a catalytic incinerator is used, continuous records of the temperatures recorded and all calculated 3-h averages of the recorded temperatures.</li> </ul> <p>Verify that, for primers, topcoats, and specialty coatings that are controlled by a carbon adsorber, the following records are kept:</p> <ul style="list-style-type: none"> <li>– the overall control efficiency of the control system and all test results, data, and calculations used in determining the overall control efficiency</li> <li>– the length of the rolling material balance period and all data and calculations used for determining this rolling period</li> <li>– the record of the certification of the accuracy of the device that measures the amount of HAP or VOC recovered.</li> </ul> <p>Verify that, for primers, topcoats, and specialty coatings that are controlled by a nonregenerative carbon adsorber, the following records are kept:</p> <ul style="list-style-type: none"> <li>– the overall control efficiency of the control system and all test results, data, and calculations used in determining the overall control efficiency</li> <li>– the record of the carbon replacement time established as the site-specific operating parameter to demonstrate compliance.</li> </ul> <p>Verify that owners and operators of a new or existing affected aerospace primers, topcoats, and specialty coatings application operation controlling inorganic HAP by using a dry particulate filter or a HEPA filter, record the pressure drop across the operating system once each shift during which coating operations occur.</p>

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<p>with inorganic HAP are required to meet specific recordkeeping requirements (40 CFR 63.752(d)(1) through 63.752(d)(3)) <b>[Added January 1999; Revised January 2016]</b>.</p> <p><b>AE.172.4.US.</b> Owners and operators of a new or existing affected aerospace depainting operation are required to meet specific recordkeeping requirements (40 CFR 63.752(e)(1) through 63.752(e)(7)) <b>[Added January 1999]</b>.</p>	<p>Verify that owners and operators of a new or existing affected aerospace primer or topcoat application operation controlling inorganic HAP by a waterwash system, record the water flow rate through the operating system once each shift during which coating operations occur.</p> <p>Verify that the logs include the acceptable limits of pressure drop or water flow rate, as applicable, as specified by the filter or booth manufacturer or in locally prepared operating procedures.</p> <p>Verify that, for all chemical strippers used in the depainting operation, the following information is kept:</p> <ul style="list-style-type: none"> <li>– the name of each chemical stripper</li> <li>– monthly volumes of each organic HAP-containing chemical stripper used or monthly weight of organic HAP material used for spot stripping and decal removal.</li> </ul> <p>Verify that, for HAP-containing chemical strippers that are controlled by a carbon adsorber, the following records are kept:</p> <ul style="list-style-type: none"> <li>– the overall control efficiency of the control system and all test results, data, and calculations used in determining the overall control efficiency</li> <li>– the length of the rolling material balance period and all data and calculations used for determining this rolling period</li> <li>– the record of the certification of the accuracy of the device that measures the amount of HAP or VOC recovered.</li> </ul> <p>Verify that, for HAP-containing chemical strippers that are controlled by a nonregenerative carbon adsorber, the following records are kept:</p> <ul style="list-style-type: none"> <li>– the overall control efficiency of the control system and all test results, data, and calculations used in determining the overall control efficiency</li> <li>– the record of the carbon replacement time established as the site-specific operating parameter to demonstrate compliance.</li> </ul> <p>Verify that, for HAP-containing chemical strippers that are controlled by a control device other than a carbon adsorber, records of the overall control efficiency of the control system and all test results, data, and calculations used in determining the overall control efficiency are kept.</p> <p>Verify that, for each type of aircraft depainted at the facility, a listing is kept of the parts, subassemblies, and assemblies normally removed from the aircraft before depainting. Prototype, test model, or aircraft that exist in low numbers (i.e., less than 25 aircraft of any one type) are exempt from this requirement.</p>

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<p><b>AE.172.5.US.</b> Owners and operators of new or existing affected aerospace chemical milling maskant application operations are required to meet specific recordkeeping requirements (40 CFR 63.752(f)(1) through 63.752(f)(4)) [Added January 1999; Revised January 2016].</p>	<p>Verify that, if dry media blasting equipment is used to comply with the no organic HAP emission limit, the following records are kept:</p> <ul style="list-style-type: none"> <li>– the names and types of nonchemical based equipment</li> <li>– for periods of malfunction: <ul style="list-style-type: none"> <li>– the nonchemical method or technique that malfunctioned</li> <li>– the date that the malfunction occurred</li> <li>– a description of the malfunction</li> <li>– the methods used to depaint aerospace vehicles during the malfunction period</li> <li>– the dates that these methods were begun and discontinued</li> <li>– the date that the malfunction was corrected.</li> </ul> </li> </ul> <p>Verify that, for spot stripping and decal removal, the volume of organic HAP-containing chemical stripper or weight of organic HAP used, the annual average volume of organic HAP-containing chemical stripper or weight of organic HAP used per aircraft, the annual number of aircraft stripped, and all data and calculations used are maintained.</p> <p>Verify that, for inorganic HAP emissions, records are kept of the actual pressure drop across the particulate filters or the visual continuity of the water curtain and water flow rate for waterwash systems, once each shift in which the depainting process is in operation.</p> <p>(NOTE: This log shall include the acceptable limits of the pressure drop as specified by the filter manufacturer and the visual continuity of the water curtain and water flow rate for waterwash systems as specified by the booth manufacturer or in locally prepared operating procedures.)</p> <p>Verify that owners and operators of a new or existing affected chemical milling maskant application operation using coating manufacturer's supplied data to demonstrate compliance based on the HAP content of the coating, and adding non-HAP solvent to the coatings, maintains records of the non-HAP solvent added to the coating.</p> <p>Verify that, for uncontrolled chemical milling maskants that meet the organic HAP or VOC content limit without averaging, the following records are kept:</p> <ul style="list-style-type: none"> <li>– the mass of organic HAP emitted per unit volume of chemical milling maskant as applied (less water) and the mass of VOC emitted per unit volume of chemical milling maskant as applied (less water and exempt solvents) for each chemical milling maskant formulation used each month</li> <li>– all data, calculations, and test results (including USEPA Method 24 results) used in determining the appropriate values</li> <li>– the volume (gal) of each chemical milling maskant formulation used each month.</li> </ul>

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	<p>(NOTE: Owners and operators of a new or existing affected chemical milling maskant application operation using coating manufacturer's supplied data to demonstrate compliance with the applicable HAP or VOC limit specified in 40 CFR 63.747(c) may retain the manufacturer documentation and annual purchase records in place of the above records when averaging is not being done.)</p> <p>Verify that, for chemical milling maskants complying with the organic HAP or VOC content level by averaging, the following records are kept:</p> <ul style="list-style-type: none"> <li>– the monthly volume-weighted average masses of organic HAP emitted per unit volume of chemical milling maskant as applied (less water) and of VOC emitted per unit volume of chemical milling maskant as applied (less water and exempt solvents) for all chemical milling maskants</li> <li>– all data, calculations, and test results (including USEPA Method 24 results) used to determine the required values.</li> </ul> <p>Verify that, for chemical milling maskants that are controlled by a carbon adsorber, the following records are kept:</p> <ul style="list-style-type: none"> <li>– the overall control efficiency of the control system (and all test results, data, and calculations used in determining the overall control efficiency)</li> <li>– the length of the rolling material balance period and all data and calculations used for determining this rolling period</li> <li>– the record of the certification of the accuracy of the device that measures the amount of HAP or VOC recovered.</li> </ul> <p>Verify that, for chemical milling maskants that are controlled by a nonregenerative carbon adsorber, the following records are kept:</p> <ul style="list-style-type: none"> <li>– the overall control efficiency of the control system and all test results, data, and calculations used in determining the overall control efficiency</li> <li>– the record of the carbon replacement time established as the site-specific operating parameter to demonstrate compliance.</li> </ul> <p>Verify that, for chemical milling maskants that are controlled by a control device other than a carbon adsorber, records of the following are kept:</p> <ul style="list-style-type: none"> <li>– the overall control efficiency of the control system and all test results, data, and calculations used in determining the overall control efficiency</li> <li>– if an incinerator other than a catalytic incinerator is used, continuous records of the firebox temperature and all calculated 3-h averages of the firebox temperature</li> <li>– if a catalytic incinerator is used, continuous records of the temperature recorded and all calculated 3-h averages of the recorded temperatures.</li> </ul>

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<p><b>AE.172.6.US.</b> Owners and operators of new or existing affected aerospace facilities are required to meet specific reporting requirements (40 CFR 63.753(a)) [Added January 1999; Revised January 2016].</p>	<p>Verify that owners and operators of new or existing affected aerospace facilities fulfill the requirements contained in 40 CFR 63.9(a) through 40 CFR 63.9(e) and 40 CFR 63.9(h) through 40 CFR 63.9(j), and 40 CFR 63.10(a), 63.10(b), 63.10(d), and 63.10(f) which cover the reporting and notification requirements in the General Provisions.</p> <p>(NOTE: Compliance with 40 CFR 63.10(b)(2)(i), (b)(2)(iv), (b)(2)(v), and (d)(5) is not required for facilities subject to this checklist item.)</p> <p>Verify that the notification of compliance status includes:</p> <ul style="list-style-type: none"> <li>– information detailing whether the source has operated within the specified ranges of its designated operating parameters</li> <li>– for each coating line, where averaging will be used along with the types of quantities of coatings the facility expects to use in the first year of operation.</li> </ul> <p>(NOTE: Averaging scheme shall be approved by the Administrator or delegated state authority and shall be included as part of the facility's Title V or 40 CFR 70 permit.)</p> <p>Verify that the initial notification for existing sources was submitted no later than 1 September 1997.</p> <p>(NOTE: A Title V or part 70 permit application may be used in lieu of the initial notification required under 40 CFR 63.9(b)(2), provided the same information is contained in the permit application as required by 40 CFR 63.9(b)(2), and the state to which the permit application has been submitted has an approved operating permit program under part 70 of this chapter and has received delegation of authority from the USEPA. Permit applications shall be submitted by the same due dates as those specified for the initial notifications.)</p> <p>(NOTE: The Administrator will notify the owner or operator in writing of approval or disapproval of the request for an adjustment to a particular time period or postmark deadline submitted under 40 CFR 63.9(i) within 30 calendar days of receiving sufficient information to evaluate the request, rather than 15 calendar days as provided for in 40 CFR 63.9(i)(3).)</p> <p>Verify that, if a source fails to meet an applicable standard specified in 40 CFR 63.744 through 63.748, this event is reported in the semiannual report as follows:</p> <ul style="list-style-type: none"> <li>– the number of failures to meet an applicable standard</li> <li>– for each instance, the date, time, and duration of each failure</li> <li>– for each failure a list of the affected sources or equipment, an estimate of the quantity of each regulated pollutant emitted over any emission limit, and a description of the method used to estimate the emissions.</li> </ul>

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<p><b>AE.172.7.US.</b> Owners and operators of new or existing affected aerospace facility cleaning operations are required to meet specific reporting requirements (40 CFR 63.753(b)) [Added January 1999].</p>	<p>Verify that the following information is submitted for affected aerospace cleaning operations in semiannual reports every 6 mo from the date of the notification of compliance status:</p> <ul style="list-style-type: none"> <li>– any instance where a noncompliant cleaning solvent is used for a non-exempt hand-wipe cleaning operation</li> <li>– a list of any new cleaning solvents used for hand-wipe cleaning in the previous 6 mo and, as appropriate, their composite vapor pressure or notification that they comply with the composition requirements specified in Appendix 1-19</li> <li>– any instance where a noncompliant spray gun cleaning method is used</li> <li>– any instance where a leaking enclosed spray gun cleaner remains unrepaired and in use for more than 15 days</li> <li>– if the operations have been in compliance for the semiannual period, a statement that the cleaning operations have been in compliance with the applicable standards.</li> </ul> <p>Verify that sources also submit a statement of compliance signed by a responsible company official certifying that the facility is in compliance with all applicable requirements.</p>
<p><b>AE.172.8.US.</b> Owners and operators of new or existing affected aerospace facility primer, topcoat, and specialty coatings application operations are required to meet specific reporting requirements (40 CFR 63.753(c)) [Added January 1999; Revised January 2016].</p>	<p>Verify that the following information is submitted for affected aerospace primer and topcoat application operations in semiannual reports every 6 mo from the date of the notification of compliance status:</p> <ul style="list-style-type: none"> <li>– for primers, topcoats, and specialty coatings where compliance is not being achieved through the use of averaging or a control device, one of the following when the applicable HAP or VOC content limits specified in 40 CFR 765(c) are exceeded: <ul style="list-style-type: none"> <li>– the HAP or VOC content in manufacturer’s supplied data as recorded under 40 CFR 63.752(c)</li> <li>– each value of <math>H_i</math> and <math>G_i</math>, as recorded under 40 CFR 63.752(c)(2)(i)</li> </ul> </li> <li>– for primers, topcoats, and specialty coatings where compliance is being achieved through the use of averaging, one of the following when the applicable organic HAP or VOC content limit is exceeded: <ul style="list-style-type: none"> <li>– each value of <math>H_i</math> and <math>G_i</math>, as recorded under 40 CFR 63.752(c)(4)(i)</li> <li>– VOC content limit specified in 30 CFR 63.745(c)</li> </ul> </li> <li>– if incinerators are used to comply with the standards, all periods when the 3-h average combustion temperature is less than the average combustion temperature established during the most recent performance test during which compliance was demonstrated</li> <li>– if a carbon adsorber is used: <ul style="list-style-type: none"> <li>– each rolling period when the overall control efficiency of the control system is calculated to be less than 81 percent, the initial material balance calculation, and any exceedances as demonstrated through the calculation</li> </ul> </li> </ul>

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<p><b>AE.172.9.US.</b> Owners and operators of new or existing affected aerospace facility depainting operations are required to meet specific reporting requirements (40 CFR 63.753(d)) [Added January 1999].</p>	<ul style="list-style-type: none"> <li>– for nonregenerative carbon adsorbers, submit the design evaluation, the continuous monitoring system performance report, and any excess emissions as demonstrated through deviations of monitored values</li> <li>– for control devices other than an incinerator or carbon adsorber, each exceedance of the operating parameters established for the control device under the initial performance test during which compliance was demonstrated</li> <li>– all times when a primer or topcoat application operation was not immediately shut down when the pressure drop across a dry particulate filter or HEPA filter system, or the water flow rate through a waterwash system, as appropriate, was outside the limits specified by the filter or booth manufacturer or in locally prepared operating procedures</li> <li>– if the operations have been in compliance for the semiannual period, a statement that the operations have been in compliance with the applicable standards.</li> </ul> <p>Verify that annual reports are submitted beginning 12 mo after the date of the notification of compliance status listing the number of times the pressure drop or water flow rate for each dry filter or waterwash system, as applicable, was outside the limit(s) specified by the filter or booth manufacturer or in locally prepared operating procedures.</p> <p>Verify that the following information is submitted for affected aerospace depainting operations in semiannual reports every 6 mo from the date of the notification of compliance status:</p> <ul style="list-style-type: none"> <li>– any 24-h period where organic HAP were emitted from the depainting of aerospace vehicles, other than from exempt operations</li> <li>– any new chemical strippers used at the facility during the reporting period</li> <li>– the organic HAP content of new chemical strippers</li> <li>– for each chemical stripper that undergoes reformulation, its organic HAP content</li> <li>– any new nonchemical depainting technique in use at the facility since the notification of compliance status or any subsequent semiannual report was filed</li> <li>– for periods of malfunctions: <ul style="list-style-type: none"> <li>– the nonchemical method or technique that malfunctioned</li> <li>– the date that the malfunction occurred</li> <li>– a description of the malfunction</li> <li>– the methods used to depaint aerospace vehicles during the malfunction period</li> <li>– the dates that these methods were begun and discontinued</li> <li>– the date that the malfunction was corrected</li> </ul> </li> <li>– all periods where a nonchemical depainting operation subject to 40 CFR 63.746 (b)(2) and (b)(4) for the control of inorganic HAP emissions was not immediately shut down when the pressure drop or water flow rate was outside</li> </ul>

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<p><b>AE.172.10.US.</b> Owners and operators of new or existing affected aerospace facility chemical milling maskant application operations are required to meet specific</p>	<p>the limit(s) specified by the filter or booth manufacturer or in locally prepared operational procedures</p> <ul style="list-style-type: none"> <li>– a list of new and discontinued aircraft models depainted at the facility over the last 6 months and a list of the parts normally removed for depainting for each new aircraft model being depainted</li> <li>– if the depainting operation has been in compliance for the semiannual period, a statement signed by a responsible company official that the operation was in compliance with the applicable standards.</li> </ul> <p>Verify that annual reports are submitted every 12 mo from the date of the notification of compliance status and include:</p> <ul style="list-style-type: none"> <li>– the average volume per aircraft of organic HAP-containing chemical strippers or weight of organic HAP used for spot stripping and decal removal operations if it exceeds the established limits</li> <li>– the number of times the pressure drop limit for each filter system or the number of times the water flow rate limit for each waterwash system was outside the limit specified by the filter or booth manufacturer or in locally prepared operating procedures.</li> </ul> <p>Verify that, where a carbon adsorber is used to control organic HAP emissions, semiannual reports include each rolling period when the overall control efficiency of the control system is calculated to be &lt; 81 percent for existing systems or &lt; 95 percent for new systems, the initial material balance calculation, and any exceedances as demonstrated through the calculation.</p> <p>Verify that, where a nonregenerative carbon adsorber is used to control organic HAP emissions, semiannual reports include the design evaluation, the continuous monitoring system performance report, and any excess emissions as demonstrated through deviations of monitored values.</p> <p>Verify that, where a control device is used to control organic HAP emissions, semiannual reports include:</p> <ul style="list-style-type: none"> <li>– for control devices other than a carbon adsorber, each exceedance of the operating parameters established for the control device under the initial performance test during which compliance was demonstrated</li> <li>– descriptions of any control devices currently in use that were not listed in the notification of compliance status or any subsequent report.</li> </ul> <p>Verify that the following information is submitted for affected aerospace chemical milling maskant application operations in semiannual reports every 6 mo from the date of the notification of compliance status:</p> <ul style="list-style-type: none"> <li>– for chemical milling maskants where compliance is not being achieved through the use of averaging or a control device, one of the following when</li> </ul>

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<p>reporting requirements (40 CFR 63.753(e)) [Added January 1999; Revised January 2016].</p> <p><b>AE.172.11.US.</b> Owners and operators of new or existing affected aerospace application operation are required to meet specific performance test reporting requirements (40 CFR 63.753(f)) [Added January 2016].</p>	<p>the applicable HAP or VOC content limits specified in 40 CFR 747(c) are exceeded:</p> <ul style="list-style-type: none"> <li>– the applicable organic HAP or VOC content limit specified in 40 CFR 63.747(c)</li> <li>– each value of <math>H_i</math> and <math>G_i</math>, as recorded under 40 CFR 63.752(f)(1)(i)</li> </ul> <p>– for chemical milling maskants where compliance is being achieved through the use of averaging, each required value that exceeds the applicable organic HAP or VOC content limit specified in 40 CFR 63.747(c)</p> <p>– if incinerators are used to comply with the standards, all periods when the 3-h average combustion temperature is less than the average combustion temperature established) during the most recent performance test during which compliance was demonstrated</p> <p>– for a carbon adsorber, each rolling period when the overall control efficiency of the control system is calculated to be &lt; 81 percent, the initial material balance calculation, and any exceedances as demonstrated through the calculation</p> <p>– for nonregenerative carbon adsorbers, submit the design evaluation, the continuous monitoring system performance report, and any excess emissions as demonstrated through deviations of monitored values</p> <p>– for control devices other than an incinerator or carbon adsorber, each exceedance of the operating parameter(s) established for the control device under the initial performance test during which compliance was demonstrated</p> <p>– all chemical milling maskants currently in use that were not listed in the notification of compliance status or any other subsequent semiannual report</p> <p>– descriptions of any control devices currently in use that were not listed in the notification of compliance status or any subsequent report</p> <p>– if the operations have been in compliance for the semiannual period, a statement that the chemical milling maskant application operation has been in compliance with the applicable standards.</p> <p>(NOTE: See the definitions <i>Aerospace Affected Source</i> and <i>Aerospace Exempted Sources</i> for guidance on the applicability of this regulation.)</p> <p>Verify that, within 60 days after the date of completing each required performance test, the results of the performance tests as follows:</p> <ul style="list-style-type: none"> <li>– for data collected using test methods supported by the EPA’s Electronic Reporting Tool (ERT) as listed on the EPA’s ERT Web site (<a href="http://www.epa.gov/ttn/chief/ert/index.html">http://www.epa.gov/ttn/chief/ert/index.html</a>) at the time of the test, the results of the performance test were to the EPA via the Compliance and Emissions Data Reporting Interface (CEDRI)</li> <li>– for data collected using test methods not supported by EPA’s ERT at the time of test, the results of the performance test were submitted to the Administrator as required in 40 CFR 63.13.</li> </ul> <p>(NOTE: CEDRI be accessed through the EPA’s Central Data Exchange (CDX) (<a href="http://">http://</a></p>

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	<p><i>cdx.epa.gov/</i>). Performance test data must be submitted in a file format generated through the use of the EPA's ERT or an alternate electronic file format consistent with the extensible markup language (XML) schema listed on the EPA's ERT Web site. If you claim that some of the performance test information being submitted is confidential business information (CBI), you must submit a complete file generated through the use of the EPA's ERT or an alternate electronic file consistent with the XML schema listed on the EPA's ERT Web site, including information claimed to be CBI, on a compact disc, flash drive, or other commonly used electronic storage media to the EPA. The same ERT or alternate file with the CBI omitted must be submitted to the EPA via the EPA's CDX.)</p>

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<p><b>WASTEWATER TREATMENT</b></p> <p><b>AE.180</b> <b>General</b></p> <p><b>AE.180.1.US.</b> Industrial POTW treatment plants are required to meet specific emissions standards (40 CFR 63.1580, and 63.1582 through 63.1585) [<b>Revised January 2003</b>].</p>	<p>(NOTE: These requirements apply if the following are all true:</p> <ul style="list-style-type: none"> <li>– the facility owns or operates a POTW that includes an affected source (see definitions)</li> <li>– the affected source is located at a major source of HAP emissions, or at any industrial POTW regardless of whether or not it is a major source of HAP</li> <li>– the POTW is required to develop and implement a pretreatment program as defined by 40 CFR 403.8 (for a POTW owned or operated by a municipality, State, or intermunicipal or interstate agency), or the POTW would meet the general criteria for development and implementation of a pretreatment program (for a POTW owned or operated by a department, agency, or instrumentality of the Federal government).</li> </ul> <p>(NOTE: If the existing POTW treatment plant is not located at a major source as of 26 October 1999, but thereafter becomes a major source for any reason other than reconstruction, then the POTW treatment plant would be considered an existing source. If the POTW treatment plant is reconstructed, then the requirements for a new or reconstructed POTW treatment plant, as defined in 40 CFR 63.1595 (see Definitions), apply.)</p> <p>(NOTE: The following are the characteristics of an industrial POTW treatment plant:</p> <ul style="list-style-type: none"> <li>– the POTW is an industrial POTW treatment plant if an industrial discharger complies with its NESHAP by using the treatment and controls located at the POTW</li> <li>– the POTW accepts the regulated waste stream and provides treatment and controls as an agent for the industrial discharger.</li> </ul> <p>If, in the future, an industrial discharger begins complying with its NESHAP by using the treatment and controls at the POTW, then on the date that the industrial discharger certifies compliance, the POTW treatment plant will be considered an industrial POTW treatment plant. If the POTW treatment plant accepts one or more specific regulated industrial waste streams as part of compliance with one or more other NESHAP, then the POTW is subject to all the requirements of each appropriate NESHAP for each waste stream. In the case of overlapping NESHAP requirements, the more stringent of the requirements applies.)</p> <p>(NOTE: See also the definition of Emission Points and Control Requirements for an Industrial POTW Treatment Plant.)</p>

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	<p>Verify that an existing industrial POTW treatment plant meets the emission points and control requirements specified in the appropriate NESHAPs for the industrial users.</p> <p>Verify that, if it is a new or reconstructed industrial POTW plant, it is first determined which of the following control requirements set forth in the applicable industrial would require more stringent overall control of HAP emissions and that the most stringent requirements are met:</p> <ul style="list-style-type: none"> <li>– particular NESHAPs that apply to the industrial users who discharge their waste to the POTW</li> <li>– the emission points and control requirements applicable to a new or reconstructed non-industrial POTW under 40 CFR 63.1586 (see checklist item AE.180.2.US.).</li> </ul> <p>Verify that an existing industrial POTW treatment plant meets the appropriate NESHAPs for the industrial users which sets the compliance date, or the compliance date is 60 days after 26 October 1999, whichever is later.</p> <p>Verify that new industrial POTW treatment plants are in compliance as soon as they begin accepting waste streams for treatment.</p> <p>Verify that, if the POTW treatment plant begins accepting a specific regulated industrial waste stream for treatment, the plant is in compliance by the time specified in the appropriate NESHAPs for the industrial users.</p> <p>Verify that an existing industrial POTW treatment plant demonstrates compliance by operating treatment and control devices that meet all requirements specified in the appropriate industrial NESHAPs, including performance tests, routine monitoring, recordkeeping, and reporting.</p> <p>Verify that, for a new or reconstructed POTW treatment plant, it is determined which of the following are more stringent, and the most stringent requirement is met:</p> <ul style="list-style-type: none"> <li>– the controls required by the applicable industrial NESHAPs</li> <li>– the control requirements applicable to a new or reconstructed non-industrial POTW treatment plant under 40 CFR 63.1586 (see checklist item AE.180.2.US.).</li> </ul> <p>Verify that, if it is determined that the controls required for a new or reconstructed non-industrial POTW are more stringent, compliance is demonstrated by meeting all requirements in 40 CFR 63.1586 through 63.1590 (see checklist item AE.180.2.US., AE.190.2.US., and AE.190.3.US.).</p>

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<b>AE.180.2.US.</b> Non-industrial POTW treatment plants are required to meet specific operational standards (40 CFR 63.1580, 63.1586 through 63.1588) [Revised January 2003; Revised January 2005].	<p>(NOTE: These requirements apply if the following are all true:</p> <ul style="list-style-type: none"> <li>– the facility owns or operates a POTW that includes an affected source [see definitions]</li> <li>– the affected source is located at a major source of HAP emissions, or at any industrial POTW regardless of whether or not it is a major source of HAP</li> <li>– the POTW is required to develop and implement a pretreatment program as defined by 40 CFR 403.8 [for a POTW owned or operated by a municipality, State, or intermunicipal or interstate agency], or the POTW would meet the general criteria for development and implementation of a pretreatment program [for a POTW owned or operated by a department, agency, or instrumentality of the Federal government].)</li> </ul> <p>(NOTE: If the existing POTW treatment plant is not located at a major source as of 26 October 1999, but thereafter becomes a major source for any reason other than reconstruction, then the POTW treatment plant would be considered an existing source. If the POTW treatment plan is reconstructed, then the requirements for a new or reconstructed POTW treatment plant, as defined in 40 CFR 63.1595 (see Definitions), apply.)</p> <p>(NOTE: There are no control requirements for an existing non-industrial POTW treatment plant. There are no control requirements for any new or reconstructed area source non-industrial POTW treatment plant which is not a major source of HAP.)</p> <p>Verify that a new or reconstructed major source non-industrial POTW treatment plant which is a major source of HAP has covers on the emission points up to, but not including, the secondary influent pumping station or the secondary treatment units.</p> <p>(NOTE: The emission points requiring covers are treatment units that include, but are not limited to, influent waste stream conveyance channels, bar screens, grit chambers, grinders, pump stations, aerated feeder channels, primary clarifiers, primary effluent channels, and primary screening stations.)</p> <p>Verify that, all covered units, except primary clarifiers, have the air in the headspace ducted to a control device in accordance with the standards for closed-vent systems and control devices in 40 CFR 63.693, except that visual inspections may be substituted for leak checks rather than Method 21 of 40 CFR 60, appendix A.</p> <p>Verify that covers are tightly fitted and designed and operated to minimize exposure of the wastewater to the atmosphere.</p> <p>(NOTE: The requirement for a tight fit to minimize wastewater exposure includes, but is not limited to, the absence of visible cracks, holes, or gaps in the roof sections or between the roof and the supporting wall; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.)</p>

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	<p>Verify that, if wastewater is in a treatment unit, each opening is maintained in a closed, sealed position, unless plant personnel are present and conducting wastewater or sludge sampling, or equipment inspection, maintenance, or repair.</p> <p>(NOTE: As an alternative to the requirements for and pertaining to covers and openings, compliance may be achieved for all units up to the secondary influent pumping station or the secondary treatment units, by demonstrating that the fraction emitted does not exceed 0.014. It must be demonstrated that for the POTW, the sum of all HAP emissions from those units divided by the sum of all HAP mass loadings results in an annual rolling average of the fraction emitted is no greater than 0.014. Any combination of pretreatment, wastewater treatment plant modifications, and control devices may be used to achieve this performance standard; however, it must be demonstrated, to the Administrator's satisfaction that:</p> <ul style="list-style-type: none"> <li>– the POTW's annual HAP mass loadings and the POTW's annual HAP emissions have been accurately determined as of the date of startup</li> <li>– the POTW meets the fraction emitted standard of 0.014 or less</li> <li>– the POTW has established procedures to demonstrate continuous compliance.)</li> </ul> <p>Verify that, if the POTW treatment plant began construction on or after 1 December 1998, compliance with all the requirements in this checklist item is achieved either immediately upon startup, or by 6 mo after 26 October 1999, whichever date is later.</p> <p>Verify that, if the treatment units are required to have covers, the following inspections are done:</p> <ul style="list-style-type: none"> <li>– visually check the cover and its closure devices for defects that could result in air emissions</li> <li>– perform an initial visual inspection with follow-up inspections at least once per year.</li> </ul> <p>(NOTE: Defects include, but are not limited to, visible cracks, holes, or gaps in the roof sections or between the roof and the supporting wall; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.)</p> <p>Verify that, in the event that a defect is found on a treatment unit in use, the defect is repaired within 45 days.</p> <p>Verify that, if repair cannot be done within 45 days:</p> <ul style="list-style-type: none"> <li>– the USEPA or the designated state authority is notified immediately</li> <li>– the reason for the delay and the date repair is expected to be completed are reported.</li> </ul>

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	<p>Verify that, if a defect is found on a treatment unit that is not in service, the defect is repaired prior to putting the treatment unit back in wastewater service.</p> <p>Verify that, if the facility owns or operates a control device used to meet the emission points and control requirements for non-industrial POTW treatment plants, the owner or operator complies with the inspection and monitoring requirements of 40 CFR 63.695(c).</p> <p>Verify that, if complying with the alternative to the requirements for and pertaining to covers and openings, the non-industrial POTW has an inspection and monitoring plan which includes, at a minimum, the following:</p> <ul style="list-style-type: none"> <li>– a method to determine, to the satisfaction of the Administrator, the influent HAP mass loading, i.e., the annual mass quantity for each HAP entering the wastewater treatment plant</li> <li>– a method to determine, to the satisfaction of the Administrator, the POTW's annual HAP emissions for all units up to and including the secondary influent pumping station or up to and not including the secondary treatment units as of 26 October 1999</li> <li>– documentation, to the satisfaction of the Administrator, that the POTW meets the fraction emitted standard of 0.014 or less, i.e., the sum of all HAP emissions divided by the sum of all HAP mass loadings results in a fraction emitted of 0.014 or less</li> <li>– a method to demonstrate, to the satisfaction of the Administrator, that the POTW is in continuous compliance with the alternative requirements.</li> </ul> <p>Verify that, if complying with the alternative to the requirements for and pertaining to covers and openings, the method used to determine HAP emissions, such as modeling or direct source measurement:</p> <ul style="list-style-type: none"> <li>– is approved by the USEPA Regional Office, state, or local regulatory agency for use at the POTW</li> <li>– accounts for all factors affecting emissions from the plant including, but not limited to, emissions from wastewater treatment units; emissions resulting from inspection, maintenance, and repair activities; fluctuations (e.g., daily, monthly, annual, seasonal) in influent wastewater HAP concentrations; annual industrial loading; performance of control devices; or any other factors that could affect annual HAP emissions</li> <li>– includes documentation that the values and sources of all data, operating conditions, assumptions, etc., used in the selected method result in an accurate estimation of annual emissions from the plant.</li> </ul> <p>(NOTE: When complying with the alternative to the requirements for and pertaining to covers and openings, continuous compliance means that emissions, when averaged over the course of a year, do not exceed the level of emissions that allows the POTW to comply.)</p>

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	<p>Verify that, where emission reductions are due to proper operation of equipment, work practices, or other operational procedures, the demonstration specifies the frequency of inspections and the number of days to completion of repairs.</p> <p>Verify that, if complying with the alternative to the requirements for and pertaining to covers and openings, the following are performed each month to demonstrate that the annual rolling average of the fraction emitted is 0.014 or less:</p> <ul style="list-style-type: none"> <li>–determine the average daily flow of the wastewater entering the POTW treatment plant for the month</li> <li>–determine the flow-weighted monthly concentration of each HAP in the influent listed in Table 1 to 40 CFR 63, Subpart DD (see Appendix 1-20c)</li> <li>–using the current month's average daily flow and the flow-weighted monthly concentration, determine a total annual loading value (Mg/year) of each HAP entering the POTW treatment plant</li> <li>–sum up the values in and determine a total annual loading value (Mg/year) for all HAP entering the POTW treatment plant for the current month</li> <li>–based on the current month's information along with source testing and emission modeling, for each HAP, determine annual emissions (Mg/year) from all wastewater units up to, but not including, secondary treatment units</li> <li>–sum up the values and determine the total annual emissions value for the month for all HAP from all wastewater units up to, but not including, secondary treatment units</li> <li>–calculate the fraction emitted value for the month by dividing the total annual HAP emissions value by the total annual loading</li> <li>–average the fraction emitted value for the month with the values determined for the previous 11 mo, to calculate an annual rolling average of the fraction HAP emitted.</li> </ul>

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<b>WASTEWATER TREATMENT</b>  <b>AE.190</b> <b>Reporting/Recordkeeping Requirements</b>  <b>AE.190.1.US.</b> POTWs, industrial and non-industrial, are required to meet specific notification requirements (40 CFR 63.1580 and 63.1591) [Revised January 2003].	<p>(NOTE: Industrial POTW treatment plants or a new or reconstructed non-industrial POTW which is a major source of HAP located in States which have not been delegated authority, must submit notifications to the appropriate USEPA Regional Office. If the State has been delegated authority, submit notifications to the State and a copy of each notification to the appropriate USEPA Regional Office. The Regional Office may waive this requirement for any notifications at its discretion.)</p> <p>Verify that the Administrator is notified in writing no later than 120 calendar days after 26 October 1999 (or within 120 calendar days after the POTW treatment plant becomes subject to the relevant standard), and the owner or operator provides the following information:</p> <ul style="list-style-type: none"> <li>– name and address</li> <li>– the address (i.e., physical location) of the POTW treatment plant</li> <li>– an identification of these standards as the basis of the notification and the POTW treatment plant's compliance date</li> <li>– a brief description of the nature, size, design, and method of operation of the POTW treatment plant, including its operating design capacity and an identification of each point of emission for each HAP, or, if a definitive identification is not yet possible, a preliminary identification of each point of emission for each HAP.</li> </ul> <p>Verify that the Administrator is notified if data shows that the POTW treatment plant is no longer in continuous compliance.</p> <p>(NOTE: These requirements apply if the following are all true:</p> <ul style="list-style-type: none"> <li>– the facility owns or operates a POTW that includes an affected source (see definitions)</li> <li>– the affected source is located at a major source of HAP emissions, or at any industrial POTW regardless of whether or not it is a major source of HAP</li> <li>– the POTW is required to develop and implement a pretreatment program as defined by 40 CFR 403.8 (for a POTW owned or operated by a municipality, State, or intermunicipal or interstate agency), or the POTW would meet the general criteria for development and implementation of a pretreatment program (for a POTW owned or operated by a department, agency, or instrumentality of the Federal government).</li> </ul> <p>(NOTE: If the existing POTW treatment plant is not located at a major source as of 26 October 1999, but thereafter becomes a major source for any reason other than reconstruction, then the POTW treatment plant would be considered an existing</p>

<p style="text-align: center;"><b>COMPLIANCE CATEGORY</b>  <b>AIR EMISSIONS MANAGEMENT</b>  <b>U.S. TEAM Guide</b></p>	
<p style="text-align: center;"><b>REGULATORY REQUIREMENTS</b></p>	<p style="text-align: center;"><b>REVIEWER CHECKS</b>  <b>December 2018</b></p>
<p><b>AE.190.2.US.</b> Non-industrial POTW treatment plants are required to meet specific recordkeeping standards (40 CFR 63.1580 and 63.1589) [Revised January 2003].</p>	<p>source. If the POTW treatment plan is reconstructed, then the requirements for a new or reconstructed POTW treatment plant, as defined in 40 CFR 63.1595 (see Definitions), apply.)</p> <p>Verify that, if complying with the requirements for and pertaining to covers and openings, the following records are prepared and maintained:</p> <ul style="list-style-type: none"> <li>– a record for each required treatment unit inspection, including a treatment unit identification number (or other unique identification description) and the date of inspection</li> <li>– for each defect detected during inspections, record the location of the defect, a description of the defect, the date of detection, the corrective action taken to repair the defect, and the date the repair to correct the defect is completed</li> <li>– in the event that repair of the defect is delayed, also record the reason for the delay and the expected date of repair completion</li> <li>– if a control device is used to meet the emission control requirements, comply with the recordkeeping requirements of 40 CFR 63.696(a), 63.696(b), 63.696(g), and 463.696 (h).</li> </ul> <p>Verify that, when complying with the alternative performance standards, the following records are prepared and maintained:</p> <ul style="list-style-type: none"> <li>– a record of the methods and data used to determine the POTW's annual HAP emissions</li> <li>– a record of the methods and data used to determine that the POTW meets the fraction emitted standard of 0.014 or less</li> <li>– a record of the methods and data that demonstrates that the POTW is in continuous compliance.</li> </ul> <p>(NOTE: These requirements apply if the following are all true:</p> <ul style="list-style-type: none"> <li>– the facility owns or operates a POTW that includes an affected source (see definitions)</li> <li>– the affected source is located at a major source of HAP emissions, or at any industrial POTW regardless of whether or not it is a major source of HAP</li> <li>– the POTW is required to develop and implement a pretreatment program as defined by 40 CFR 403.8 (for a POTW owned or operated by a municipality, State, or intermunicipal or interstate agency), or the POTW would meet the general criteria for development and implementation of a pretreatment program (for a POTW owned or operated by a department, agency, or instrumentality of the Federal government).</li> </ul> <p>(NOTE: If the existing POTW treatment plant is not located at a major source as of 26 October 1999, but thereafter becomes a major source for any reason other than reconstruction, then the POTW treatment plant would be considered an existing source. If the POTW treatment plan is reconstructed, then the requirements for a</p>

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<p><b>AE.190.3.US.</b> Non-industrial POTW treatment plants are required to meet specific reporting standards (40 CFR 63.1580 and 63.1590) [Revised January 2003].</p>	<p>new or reconstructed POTW treatment plant, as defined in 40 CFR 63.1595 (see Definitions), apply.)</p> <p>(NOTE: A notification of compliance status is not required for an existing non-industrial POTW treatment plant, or a new or reconstructed area source non-industrial POTW treatment plant.)</p> <p>Verify that a new or reconstructed non-industrial POTW treatment plant which is a major source of HAP submits to the Administrator a notification of compliance status, signed by the responsible official who must certify its accuracy, attesting to whether the POTW treatment plant is in compliance.</p> <p>Verify that the notification of compliance status is submitted initially, and each time a notification of compliance status is required that it lists, at a minimum, the following:</p> <ul style="list-style-type: none"> <li>– the methods used to determine compliance</li> <li>– the results of any monitoring procedures or methods that were conducted</li> <li>– the methods that will be used for determining continuing compliance</li> <li>– the type and quantity of HAP emitted by the POTW treatment plant</li> <li>– a description of the air pollution control equipment (or method) for each emission point</li> <li>– a statement that the POTW treatment plant has complied with this subpart (i.e., 40 CFR 63, Subpart VVV).</li> </ul> <p>Verify that the notification of compliance is sent before the close of business on the 60th day following the completion of the relevant compliance demonstration activity.</p> <p>Verify that, after being issued a title V permit, the owner or operator complies with all requirements for compliance status reports contained in the title V permit, including reports required under this checklist item.</p> <p>Verify that, after being issued a title V permit, and each time a notification of compliance status is required, the owner or operator submits the notification of compliance status to the appropriate permitting authority following completion of the relevant compliance demonstration activity.</p> <p>(NOTE: If the state in which the non-industrial POTW treatment plant is located has not been delegated authority, reports are submitted to the USEPA Regional Office. If the state has been delegated authority, reports are submitted to the delegated state authority, and a copy of each report submitted to the state is sent to the USEPA Regional Office. The USEPA Regional Office, at its discretion, may waive this requirement for any reports.)</p>

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	<p>Verify that, if applying for a waiver of recordkeeping and reporting requirements, the owner or operator of a control device used to meet the requirements for and pertaining to covers and openings, the owner or operator submits reports required by 40 CFR 63.697(b), including a notification of performance tests; a performance test report; a startup, shutdown, and malfunction report; and a summary report.</p> <p>Verify that, if complying with the alternative standards to the requirements for and pertaining to covers and openings, the owner or operator submits, for approval by the Administrator, an initial report explaining the compliance approach 90 days prior to beginning operation of your new or reconstructed POTW and a startup, shutdown, and malfunction report.</p> <p>(NOTE: These requirements apply if the following are all true:</p> <ul style="list-style-type: none"> <li>–the facility owns or operates a POTW that includes an affected source (see definitions)</li> <li>–the affected source is located at a major source of HAP emissions, or at any industrial POTW regardless of whether or not it is a major source of HAP</li> <li>–the POTW is required to develop and implement a pretreatment program as defined by 40 CFR 403.8 (for a POTW owned or operated by a municipality, State, or intermunicipal or interstate agency), or the POTW would meet the general criteria for development and implementation of a pretreatment program (for a POTW owned or operated by a department, agency, or instrumentality of the Federal government).</li> </ul> <p>(NOTE: If the existing POTW treatment plant is not located at a major source as of 26 October 1999, but thereafter becomes a major source for any reason other than reconstruction, then the POTW treatment plant would be considered an existing source. If the POTW treatment plant is reconstructed, then the requirements for a new or reconstructed POTW treatment plant, as defined in 40 CFR 63.1595 (see Definitions), apply.)</p>

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<b>GREENHOUSE GAS EMISSION</b>  <b>AE.205</b>  <b>Reporting</b>  <b>AE.205.1.US.</b> Owners and operators of certain facilities that directly emit greenhouse gases (GHG) are required to report specific information (40 CFR 98.2(a)(1) through 98.2(a)(3), 98.2(b), 98.2(c), 98.2(i), 98.3(b), 98.3(c), 98.3(h), 98.3(k), and 98.3(l)) [Added January 2010; Revised July 2010; Revised October 2010; Revised January 2011; Revised January 2012; Revised October 2012; Revised January 2014; Revised January 2015; Revised January 2017; Revised October 2017].	<p>(NOTE: A facility or supplier that was not subject to any subparts of 40 CFR 98 for reporting year 2012, but first became subject to any subpart of 40 CFR 98 due to a change in the GWP for one or more compounds in Table A-1, Global Warming Potentials [see Appendix 1-40] is not required to submit an annual GHG report for reporting year 2013. But, these facilities or suppliers must start monitoring and collecting GHG data for the annual greenhouse gas report for reporting year 2014 which is due by 31 March 2015.)</p> <p>(NOTE: A facility or supplier that was subject to a subpart of 40 CFR 98 for reporting year 2012, but first becomes subject to any other subpart of 40 CFR 98 due to a change in the GWP for one or more compounds in Table A-1 [see Appendix 1-40] is not required to include those additional subparts in the annual GHG report submitted for reporting year 2013. But, these facilities or suppliers must start monitoring and collecting GHG data for all applicable subparts as part of the annual greenhouse gas report for reporting year 2014 which is due by 31 March 2015.)</p> <p>(NOTE: The owner or operator of a facility is not required to report the data elements specified in Table A-6 of 40 CFR 98 for calendar years 2010 through 2011 until 31 March 2013. The owner or operator of a facility is not required to report the data elements specified in Table A-7 of 40 CFR 98 for calendar years 2010 through 2013 until 31 March 2015 (as part of the annual report for reporting year 2014), except as otherwise specified in Table A-7 of 40 CFR 98.)</p> <p>(NOTE: A facility or supplier that first becomes subject to any subpart of 40 CFR 98 due to a change in the GWP for one or more compounds in Table A-1, Global Warming Potentials [see Appendix 1-40] may use best available monitoring methods for any parameters [e.g., fuel use, feedstock rates] that cannot reasonably be measured according to the facility/supplier-specific monitoring and QA/QC requirements from 1 January 2014 to 31 March 2014. Starting no later than 1 April 2014, the owner or operator must discontinue using best available methods and begin following all applicable monitoring and QA/QC requirements unless an extension has been received from the EPA. Best available monitoring methods means any of the following methods:</p> <ul style="list-style-type: none"> <li>– monitoring methods currently used by the facility that do not meet the specifications of a relevant subpart of 40 CFR 98</li> <li>– supplier data</li> <li>– engineering calculations</li> <li>– other company records.)</li> </ul>

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	<p>Verify that a facility that contains any source category in Table A-3 of Appendix 1-40, the annual GHG report covers stationary fuel combustion sources, miscellaneous use of carbonates, and all applicable source categories listed in Table A-3 and A-4 in Appendix 1-40.</p> <p>Verify that the facilities listed in Table A-4 of Appendix 1-40 that emit more than 25,000 metric tons CO<sub>2</sub>e or more per year submit the annual report starting in 2010.</p> <p>Verify that for the facilities listed in Table A-4 of Appendix 1-40, the annual report covers combined emissions from stationary fuel combustion units, miscellaneous uses of carbonate, and all applicable source categories that are listed in Table A-3 and A-4 of Appendix 1-40.</p> <p>(NOTE: See the text of 40 CFR 98.2(b) for the methodology to use when calculating GHG emissions for comparison to the 25,000 metric tons CO<sub>2</sub>e/yr emission threshold.)</p> <p>Verify that, for a facility that in any calendar year starting in 2010 meets all three of the following conditions, the annual GHG report covers emissions from stationary fuel combustion sources only:</p> <ul style="list-style-type: none"> <li>– the facility does not meet the requirements for facilities listed in Tables A-3 and A-4 of Table 1-40</li> <li>– the aggregate maximum rated heat input capacity of the stationary fuel combustion units at the facility is 30 mmBtu/hr or greater</li> <li>– the facility emits 25,000 metric tons CO<sub>2</sub>e or more per year in combined emissions from all stationary fuel combustion sources.</li> </ul> <p>(NOTE: See checklist item AE.205.5.US for further clarification specific to stationary fuel combustion sources.)</p> <p>(NOTE: See the text of 40 CFR 98.2(c) for the methodology to use when calculating GHG emissions for comparison to the 25,000 metric tons CO<sub>2</sub>e per year emission threshold for stationary fuel combustion.)</p> <p>Verify, that once a facility is required to submit GHG report it continues submitting the reports even if the facility no longer meets the applicability requirements, unless:</p> <ul style="list-style-type: none"> <li>– reported emissions are less than 25,000 metric tons CO<sub>2</sub>e/yr for 5 consecutive years and the owner/operator has submitted a notification to the Administrator explaining the reasons for the reduction in emissions, and: <ul style="list-style-type: none"> <li>– the notification is submitted no later than March 31 of the year immediately following the 5th consecutive year of emissions less than 25,000 metric tons CO<sub>2</sub>e/yr</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– the owner and/or operator maintains required records for each of the 5 consecutive years for 3 yr following the year that reporting was discontinued</li> <li>– reporting resumes if annual emissions in any future calendar year increase to 25,000 metric tons CO<sub>2</sub>e/yr or more</li> <li>– reported emissions are less than 15,000 metric tons CO<sub>2</sub>e/yr for 3 consecutive years and the owner/operator has submitted a notification to the Administrator explaining the reasons for the reduction in emissions, and: <ul style="list-style-type: none"> <li>– the notification is submitted no later than March 31 of the year immediately following the 3rd consecutive year of emissions less than 15,000 metric tons CO<sub>2</sub>e/yr</li> <li>– the owner/operator maintains required records for each of the 3 consecutive years for 3 yr following the year that reporting was discontinued</li> <li>– reporting resumes if annual emissions in any future calendar year increase to 25,000 metric tons CO<sub>2</sub>e/yr or more</li> </ul> </li> <li>– the operations of the facility have changed such that all applicable processes and operations have stopped operating and the owner/operator has submitted notification announcing cessation of reporting and certifies to the closure of all applicable processes and operations, and: <ul style="list-style-type: none"> <li>– reporting resumes for any future calendar year during which any GHG-emitting processes or operations resume operation</li> <li>– this exemption from report submission for facilities where all applicable GHG-emission processes have stopped operating does not apply to seasonal or temporary cessation of operations</li> <li>– this exemption from report submission for facilities where all applicable GHG-emission processes have stopped operating does not apply to facilities with municipal solid waste landfills or industrial waste landfills, or to underground coal mines.</li> </ul> </li> </ul> <p>(NOTE: If the operations of a facility or supplier are changed such that all applicable processes and operations cease to operate, then the owner or operator may discontinue complying with the reporting requirements for the reporting years following the year in which cessation of such operations occurs. If one or more processes or operations subject to reporting at a facility or supplier cease to operate, but not all applicable processes or operations cease to operate, then the owner or operator is exempt from reporting for any such processes or operations in the reporting years following the reporting year in which cessation of the process or operation occurs. This does not apply to seasonal or other temporary cessation of operations. This does not apply to the municipal solid waste landfills source category, or the industrial waste landfills source category. The owner or operator must resume reporting for any future calendar year during which any of the GHG-emitting processes or operations resume operation.)</p> <p>Verify that, if the operations of a facility or supplier are changed such that all applicable processes and operations cease to operate, the owner or operator must submit a notification to the Administrator that announces the cessation of reporting</p>

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	<p>and certifies to the closure of all applicable processes and operations no later than March 31 of the year following such changes.</p> <p>Verify that, if one or more processes or operations subject to reporting at a facility or supplier cease to operate, but not all applicable processes or operations cease to operate, the owner or operator submits a notification to the Administrator that announces the cessation of reporting for the process or operation no later than March 31 following the first reporting year in which the process or operation has ceased for an entire reporting year.</p> <p>Verify that, in the case of stopped operations or processes, the owner or operator resume reporting for any future calendar year during which any of the GHG-emitting processes or operations resume operation.</p> <p>(NOTE: If the operations of a facility or supplier are changed so that a process or operation no longer meets the "Definition of Source Category", then the owner or operator may discontinue complying with the applicable requirements for the reporting years following the year in which change occurs, provided that the owner or operator submits a notification to the Administrator that announces the cessation of reporting for the process or operation no later than March 31 following the first reporting year in which such changes persist for an entire reporting year.)</p> <p>Verify that the GHG annual report is submitted no later than 31 March of each calendar year for the GHG emissions in the previous calendar year and:</p> <ul style="list-style-type: none"> <li>– for a new facility starting operation on or after 1 January 2010 and becomes subject to the rule in the year that it becomes operational, report emissions beginning with the first operating month and ending on December 31 of that CY</li> <li>– for a facility that become subject to these GHG reporting requirements because of a physical or operational change made after 1 January 2010, report emissions for the first calendar year in which the change occurs, beginning with the first month of the change and ending on December 31 of that year.</li> </ul> <p>(NOTE: Effective 1 January 2018, If an entire facility or supplier is merged into another facility or supplier that is already reporting GHG data, then the owner or operator may discontinue complying with these reporting requirements if the owner or operator submits a notification to the Administrator that announces the discontinuation of reporting and the e-GGRT identification number of the reconstituted facility no later than March 31 of the year following such changes.)</p> <p>Verify that subsequent reports cover emissions for the calendar year, beginning on 1 January and ending on 31 December.</p> <p>(NOTE: The content of the report is described in detail in the text of 40 CFR 98.3(c).)</p>

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<p><b>AE.205.2.US.</b> Owners and/or operators of facilities required to annually report GHG emissions are required to authorize a designated representative who must fulfill specific tasks (40 CFR 98.4) [Added January 2010; Revised January 2011; Revised January 2017].</p>	<p>Verify that the owner or operator submits a revised report within 45 days of discovering or being notified by EPA of errors in an annual report.</p> <p>Verify that the owner or operator submits a revised annual GHG report within 45 days of discovering that an annual GHG report that the owner or operator previously submitted contains one or more substantive errors.</p> <p>Verify that the revised report corrects all substantive errors.</p> <p>(NOTE: A substantive error is an error that impacts the quantity of GHG emissions reported or otherwise prevents the reported data from being validated or verified. The EPA may extend, upon request, the 45 day period.)</p> <p>(NOTE: The GHG mandatory reporting rule covers numerous types of sources which are not typically found on Federal facilities. These are sources such as: adipic acid production; aluminum production; ammonia manufacturing; cement production; HCFC-22 production; HFC-destruction processes that destroy more than 2.14 metric tons of HFC-23/year; lime manufacturing; nitric acid production; petrochemical production; petroleum refineries; phosphoric acid production; silicon carbide production; soda ash production; titanium dioxide production; ferroalloy production; glass production; hydrogen production; iron and steel production; lead production; pulp and paper manufacturing; zinc production; coal-to-liquids suppliers; petroleum product suppliers; natural gas and natural gas liquids suppliers; industrial greenhouse gas suppliers; or carbon dioxide suppliers have not been included in the U.S. TEAM Guide.)</p> <p>(NOTE: A “Supplier” is defined as “a producer, importer, or exporter of a fossil fuel or an industrial greenhouse gas.”)</p> <p>Verify that each facility required to annually report GHG emissions has one and only one designated representative, who is responsible for certifying, signing, and submitting GHG emissions reports and any other required submissions for the facility.</p> <p>(NOTE: If the facility is required under any other part of title 40 CFR to submit to the Administrator any other emission report that is subject to any requirement in 40 CFR 75, the same individual is the designated representative responsible for certifying, signing, and submitting the GHG emissions reports and all such other emissions reports under 40 CFR 98.)</p> <p>Verify that the designated representative of the facility is an individual selected by an agreement binding on the owners and operators of the facility.</p> <p>(NOTE: Upon receipt by the Administrator of a complete certificate of representation for a facility, the designated representative identified in the certificate of representation represents and, by his or her representations, actions,</p>

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	<p>inactions, or submissions, legally bind each owner and operator of the facility in all matters pertaining to 40 CFR 98, notwithstanding any agreement between the designated representative and such owners and operators. The owners and operators are bound by any decision or order issued to the designated representative by the Administrator or a court.)</p> <p>(NOTE: No GHG emissions report or other submissions under 40 CFR 98 for a facility or supplier will be accepted until the Administrator has received a complete certificate of representation for a designated representative of the facility.)</p> <p>Verify that the certificate of representation is submitted at least 60 days before the deadline for submission of the facility's initial emission report under 40 CFR 98.</p> <p>Verify that each GHG emission report and any other submission under 40 CFR 98 for a facility is certified, signed, and submitted by the designated representative or any alternate designated representative of the facility or supplier.</p> <p>Verify that each submission includes the following certification statement signed by the designated representative or any alternate designated representative:</p> <p style="padding-left: 40px;">“I am authorized to make this submission on behalf of the owners and operators of the facility or supplier, as applicable, for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.”</p> <p>(NOTE: A certificate of representation for a facility may designate one alternate designated representative, who shall be an individual selected by an agreement binding on the owners and operators, and may act on behalf of the designated representative, of such facility or supplier. The agreement by which the alternate designated representative is selected shall include a procedure for authorizing the alternate designated representative to act in lieu of the designated representative.)</p> <p>(NOTE: Upon receipt by the Administrator of a complete certificate of representation for a facility identifying an alternate designated representative:</p> <ul style="list-style-type: none"> <li>– the alternate designated representative may act on behalf of the designated representative for such facility</li> <li>– any representation, action, inaction, or submission by the alternate designated representative shall be deemed to be a representation, action, inaction, or submission by the designated representative.</li> </ul>

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	<p>Verify that, if the designated representative, or the alternate, is changed, the Administrator is sent a new certificate of representation.</p> <p>Verify that, if the owner or operator change for the facility, an amended certificate of representation is submitted to the Administrator within 90 days of the determination of change.</p> <p>Verify that, in order to be complete, a certification of representation includes the following:</p> <ul style="list-style-type: none"> <li>– identification of the facility or supplier for which the certificate of representation is submitted</li> <li>– the name, organization name (company affiliation-employer), address, e-mail address (if any), telephone number, and facsimile transmission number (if any) of the designated representative and any alternate designated representative</li> <li>– a list of the owners and operators of the facility, provided that, if the list includes the operators of the facility and the owners with control of the facility or supplier, the failure to include any other owners shall not make the certificate of representation incomplete</li> <li>– the signature of the designated representative and any alternate designated representative and the dates signed</li> <li>– effective 1 January 2018, a list of the subparts from 40 CFR 98 which the owners and operators anticipate will be included in the annual GHG report for an initial certificate of representation that is submitted after 1 January 2018 (NOTE: The list of potentially applicable subparts does not need to be revised with revisions to the COR or if the actual applicable subparts change)</li> <li>– the following certification statements by the designated representative and any alternate designated representative:</li> </ul> <p style="padding-left: 40px;">“I certify that I was selected as the designated representative or alternate designated representative, as applicable, by an agreement binding on the owners and operators of the facility or supplier, as applicable.”</p> <p style="padding-left: 40px;">“I certify that I have all the necessary authority to carry out my duties and responsibilities under 40 CFR part 98 on behalf of the owners and operators of the facility or supplier, as applicable, and that each such owner and operator shall be fully bound by my representations, actions, inactions, or submissions.”</p> <p style="padding-left: 40px;">“I certify that the owners and operators of the facility or supplier, as applicable, shall be bound by any order issued to me by the Administrator or a court regarding the facility or supplier.”</p> <p style="padding-left: 40px;">“If there are multiple owners and operators of the facility or supplier, as applicable, I certify that I have given a written notice of my selection as the ‘designated representative’ or ‘alternate designated representative’,</p>

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	<p style="text-align: center;">as applicable, and of the agreement by which I was selected to each owner and operator of the facility or supplier.”</p> <p>(NOTE: Unless otherwise required by the Administrator, documents of agreement referred to in the certificate of representation are not submitted to the Administrator. The Administrator shall not be under any obligation to review or evaluate the sufficiency of such documents, if submitted.)</p> <p>(NOTE: Once a complete certificate of representation for a facility has been received, the Administrator will rely on the certificate of representation unless and until a later signed, complete certificate of representation under this section for the facility or supplier is received by the Administrator.)</p> <p>(NOTE: A designated representative or an alternate designated representative may delegate his or her own authority, to one or more individuals, to submit an electronic submission to the Administrator if the submission is accompanied by a notice of delegation, that includes the following elements:</p> <ul style="list-style-type: none"> <li>– the name, organization name (company affiliation-employer) address, e-mail address (if any), telephone number, and facsimile transmission number (if any) of such designated representative or alternate designated representative</li> <li>– the name, address, e-mail address, telephone number, and facsimile transmission number (if any) of each such individual (referred to as an “agent”).</li> <li>– for each such individual, a list of the type or types of electronic submissions for which authority is delegated to him or her</li> <li>– for each type of electronic submission, the facility for which the electronic submission may be made</li> <li>– the signature of such designated representative or alternate designated representative and the date signed</li> <li>– the following certification statements by such designated representative or alternate designated representative: <p style="margin-left: 40px;">“I agree that any electronic submission to the Administrator that is by an agent identified in this notice of delegation and of a type listed, and for a facility or supplier designated, for such agent in this notice of delegation and that is made when I am a designated representative or alternate designated representative, as applicable, and before this notice of delegation is superseded by another notice of delegation under §98.4(m)(3) shall be deemed to be an electronic submission certified, signed, and submitted by me.”</p> <p style="margin-left: 40px;">“Until this notice of delegation is superseded by a later signed notice of delegation under §98.4(m)(3), I agree to maintain an e-mail account and to notify the Administrator immediately of any change in my e-mail address unless all delegation of authority by me under §98.4(m) is terminated.”.</p> </li> </ul>

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<b>AE.205.3.US.</b> Owners and/or operators of facilities required to annually report GHG emissions must meet calibration requirements (40 CFR 98.3(i)) [Added January 2010; Revised July 2010; Revised January 2011].	<p>(NOTE: A notice of delegation is effective, with regard to the designated representative or alternate designated representative identified in such notice, upon receipt of such notice by the Administrator and until receipt by the Administrator of another such notice that was signed later by such designated representative or alternate designated representative, as applicable. The later signed notice of delegation may replace any previously identified agent, add a new agent, or eliminate entirely any delegation of authority.)</p> <p>Verify that the owner or operator of a facility or supplier meets the applicable flow meter calibration and accuracy requirements.</p> <p>(NOTE: The accuracy specifications do not apply where either the use of company records or the use of "best available information" is specified in an applicable portion of the regulation to quantify fuel usage and/or other parameters. The provisions of this checklist item do not apply to stationary fuel combustion units that use the methodologies in 40 CFR 75 to calculate CO<sub>2</sub> mass emissions.)</p> <p>Verify that flow meters that measure liquid and gaseous fuel feed rates, process stream flow rates, or feedstock flow rates and provide data for the GHG emissions calculations were calibrated prior to 1 April 2010 using the procedures specified in 40 CFR 98.3(1) (see text) when calibration is required.</p> <p>Verify that flow meters meet the applicable accuracy specification in 40 CFR 98.3(i)(2) or 98.3(i)(3) (see text).</p> <p>Verify that required measurement devices (e.g., weighing devices), other than flow meters, which are used to provide data for the GHG emissions calculations, were calibrated prior to 1 April 2010.</p> <p>Verify that all flow meters and other measurement devices are calibrated according to one of the following:</p> <ul style="list-style-type: none"> <li>– the manufacturer's recommended procedures</li> <li>– an appropriate industry consensus standard method</li> <li>– a method specified in a relevant portion of 40 CFR 98.</li> </ul> <p>Verify that the calibration method(s) used are documented in the monitoring plan.</p> <p>Verify that, for facilities and suppliers that become 40 CFR 98 after 1 April 2010, all flow meters and other measurement devices (if any) that are required to provide data for the GHG emissions calculations will be installed no later than the date on which data collection is required to begin using the measurement device, and the required initial calibration(s)(if any) are performed no later than that date.</p> <p>Verify that subsequent recalibrations of the flow meters and other measurement devices are performed at one of the following frequencies:</p>

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<p><b>AE.205.4.US.</b> Owners and/or operators of facilities required to annually report GHG emissions must meet documentation and recordkeeping requirements (40 CFR 98.3(g)) [Added January 2010; Revised January 2011; Revised January 2012; Revised January 2015].</p>	<ul style="list-style-type: none"> <li>– the frequency specified in each applicable subpart of 40 CFR 98</li> <li>– the frequency recommended by the manufacturer or by an industry consensus standard practice, if no recalibration frequency is specified in an applicable subpart of 40 CFR 98.</li> </ul> <p>(NOTE: Fuel billing meters are exempted from the calibration requirements and from the GHG Monitoring Plan and recordkeeping provisions provided that the fuel supplier and any unit combusting the fuel do not have any common owners and are not owned by subsidiaries or affiliates of the same company. Meters used exclusively to measure the flow rates of fuels that are used for unit startup are also exempted from the calibration requirements.)</p> <p>(NOTE: For a flow meter that has been previously calibrated, an additional calibration is not required by 1 April 2010 if, as of that date, the previous calibration is still active (i.e., the device is not yet due for recalibration because the time interval between successive calibrations has not elapsed). In this case, the deadline for the successive calibrations of the flow meter shall be set according to one of the following. Use either the manufacturer's recommended calibration schedule or the industry consensus calibration schedule.)</p> <p>(NOTE: For units and processes that operate continuously with infrequent outages, it may not be possible to have met the 1 April 2010 deadline for the initial calibration of a flow meter or other measurement device without disrupting normal process operation. In such cases, the owner or operator may postpone the initial calibration until the next scheduled maintenance outage. The best available information from company records may be used in the interim. The subsequent required recalibrations of the flow meters may be similarly postponed. Such postponements shall be documented in the monitoring plan.)</p> <p>Verify that, if the results of an initial calibration or a recalibration fail to meet the required accuracy specification, data from the flow meter is considered invalid, beginning with the hour of the failed calibration and continuing until a successful calibration is completed.</p> <p>Verify that an owner/operator required to report GHGs retains all required records for at least 3 yr from the date of submission of the annual GHG report for the reporting year in which the record was generated.</p> <p>Verify that, if the owner or operator of a facility is required to use verification software specified by the Administrator, then all records required for the facility must be retained for at least 5 yr from the date of submission of the annual GHG report for the reporting year in which the record was generated, starting with records for reporting year 2010.)</p> <p>(NOTE: The records shall be kept in an electronic or hard-copy format (as appropriate) and recorded in a form that is suitable for expeditious inspection and</p>

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	<p>review. Records may be retained off site if the records are readily available for expeditious inspection and review. For records that are electronically generated or maintained, the equipment or software necessary to read the records shall be made available, or, if requested by EPA, electronic records shall be converted to paper documents.)</p> <p>Verify that the following records are retained:</p> <ul style="list-style-type: none"> <li>– a list of all units, operations, processes, and activities for which GHG emission were calculated</li> <li>– the data used to calculate the GHG emissions for each unit, operation, process, and activity, categorized by fuel or material type, including, but not limited to: <ul style="list-style-type: none"> <li>– the GHG emissions calculations and methods used</li> <li>– analytical results for the development of site-specific emissions factors</li> <li>– the results of all required analyses for high heat value, carbon content, and other required fuel or feedstock parameters</li> <li>– any facility operating data or process information used for the GHG emission calculations</li> </ul> </li> <li>– the annual GHG reports</li> <li>– missing data computations (NOTE: For each missing data event, also retain a record of the cause of the event and the corrective actions taken to restore malfunctioning monitoring equipment)</li> <li>– a written GHG Monitoring Plan, including the following elements: <ul style="list-style-type: none"> <li>– identification of positions of responsibility (i.e., job titles) for collection of the emissions data</li> <li>– explanation of the processes and methods used to collect the necessary data for the GHG calculations</li> <li>– description of the procedures and methods that are used for quality assurance, maintenance, and repair of all continuous monitoring systems, flow meters, and other instrumentation used to provide data for the GHGs reported under 40 CFR 98</li> </ul> </li> <li>– the results of all required certification and quality assurance tests of continuous monitoring systems, fuel flow meters, and other instrumentation used to provide data for the GHGs reported under 40 CFR 98</li> <li>– maintenance records for all continuous monitoring systems, flow meters, and other instrumentation used to provide data for the GHGs reported under 40 CFR 98.</li> </ul> <p>(NOTE: For the emissions calculations and methods used, for the data required to be entered into verification software, maintain the entered data in the format generated by the verification software.</p> <p>(NOTE: The GHG Monitoring Plan may rely on references to existing corporate documents (e.g., standard operating procedures, quality assurance programs under</p>

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<p><b>AE.205.5.US.</b> Owners and operators of stationary fuel combustion sources are required to perform GHG emissions reporting and must report specific information and perform certain monitoring (40 CFR 98.30, 98.31, 98.36, and 98.37) [Added January 2010; Revised January 2011; Revised January 2014; Revised January 2015; Revised January 2017; Revised October 2017].</p>	<p>appendix F to 40 CFR 60 or appendix B to 40 CFR 75, and other documents) provided that the required elements are easily recognizable.)</p> <p>Verify that the owner or operator revises the GHG Monitoring Plan as needed to reflect changes in production processes, monitoring instrumentation, and quality assurance procedures; or to improve procedures for the maintenance and repair of monitoring systems to reduce the frequency of monitoring equipment downtime.</p> <p>(NOTE: Upon request by the Administrator, the owner or operator shall make all information that is collected in conformance with the GHG Monitoring Plan available for review during an audit. Electronic storage of the information in the plan is permissible, provided that the information can be made available in hard copy upon request during an audit.)</p> <p>(NOTE: This checklist item applies to stationary fuel combustion sources which are devices that combust solid, liquid, or gaseous fuel, generally for the purposes of producing electricity, generating steam, or providing useful heat or energy for industrial, commercial, or institutional use, or reducing the volume of waste by removing combustible matter. Stationary fuel combustion sources include, but are not limited to, boilers, simple and combined-cycle combustion turbines, engines, incinerators, and process heaters. This checklist item does not apply to:</p> <ul style="list-style-type: none"> <li>– portable equipment [see definitions]</li> <li>– emergency generators and emergency equipment (see definitions)</li> <li>– irrigation pumps at agricultural operations</li> <li>– flares, unless otherwise required by provisions of another subpart of 40 CFR 98 to use the methodologies for stationary fuel combustion sources</li> <li>– electricity generating units that are subject to 40 CFR 98, subpart D [40 CFR 98.40 through 98.48].)</li> </ul> <p>(NOTE: See AE.205.1.US for additional information on the types of stationary fuel combustion sources required to report.)</p> <p>Verify that the facility reports GHG emissions if there is one or more regulated stationary combustion fuel source onsite.</p> <p>Verify that the facility reports CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O mass emissions from each stationary fuel combustion unit.</p> <p>(NOTE: See the text of 40 CFR 98.33 for the details on calculating GHG emissions. See the text of 40 CFR 98.34 for information on monitoring and QA methodologies.)</p> <p>Verify that, for required stationary fuel combustion sources (e.g., individual unit, aggregation of units, common pipe, or common stack) the annual GHG emissions report contains the following unit-level or process-level emissions (as applicable) data:</p>

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	<ul style="list-style-type: none"> <li>– for stationary combustion units that use the Tier 1, Tier 2, Tier 3, or Tier 4 methodology to calculate CO<sub>2</sub> emissions: <ul style="list-style-type: none"> <li>– the unit ID number</li> <li>– a code representing the type of unit</li> <li>– maximum rated heat input capacity of the unit, in mmBtu/hr</li> <li>– each type of fuel combusted in the unit during the report year</li> <li>– the methodology (i.e., tier) used to calculate the CO<sub>2</sub> emissions for each type of fuel combusted (i.e., Tier 1, 2, 3, or 4)</li> <li>– the methodology start date, for each fuel type</li> <li>– the methodology end date, for each fuel type</li> </ul> </li> <li>– for a unit that uses Tiers 1, 2, and 3; <ul style="list-style-type: none"> <li>– the annual CO<sub>2</sub> mass emissions (including biogenic CO<sub>2</sub>), and the annual CH<sub>4</sub>, and N<sub>2</sub>O mass emissions for each type of fuel combusted during the reporting year, expressed in metric tons of each gas and in metric tons of CO<sub>2</sub></li> <li>– metric tons of biogenic CO<sub>2</sub> emissions (if applicable).</li> </ul> </li> <li>– for a unit that uses Tier 4: <ul style="list-style-type: none"> <li>– if the total annual CO<sub>2</sub> mass emissions measured by the CEMS consists entirely of non-biogenic CO<sub>2</sub> (i.e., CO<sub>2</sub> from fossil fuel combustion plus, if applicable, CO<sub>2</sub> from sorbent and/or process CO<sub>2</sub>), report the total annual CO<sub>2</sub> mass emissions, expressed in metric tons (NOTE: Facilities are not required to report the combustion CO<sub>2</sub> emissions by fuel type)</li> <li>– report the total annual CO<sub>2</sub> mass emissions measured by the CEMS (NOTE: If this total includes both biogenic and non-biogenic CO<sub>2</sub>, separately report the annual non-biogenic CO<sub>2</sub> mass emissions and the annual CO<sub>2</sub> mass emissions from biomass combustion, each expressed in metric tons. Facilities are not required to report the combustion CO<sub>2</sub> emissions by fuel type) an estimate of the heat input from each type of fuel listed in Table C-2 of 40 CFR 98 that was combusted in the unit during the report year</li> <li>– the annual CH<sub>4</sub> and N<sub>2</sub>O emissions for each type of fuel listed in Table C-2 of 40 CFR 98 that was combusted in the unit during the report year, expressed in metric tons of each gas and in metric tons of CO<sub>2</sub>e</li> </ul> </li> <li>– annual CO<sub>2</sub> emissions from sorbent (if calculated using Equation C-11), expressed in metric tons</li> <li>– if applicable, the plant code.</li> </ul> <p>(NOTE: The following reporting alternative may be used to simplify the unit-level reporting required for units using the four tiers:</p> <ul style="list-style-type: none"> <li>– aggregation of units</li> <li>– monitored common stack or duct configurations</li> <li>– common pipe configurations.)</li> </ul> <p>Verify that each stationary fuel combustion source (e.g., individual unit, aggregation of units, common pipe, or common stack) using the four tiers indicates if both of the following two conditions are met:</p>

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	<ul style="list-style-type: none"> <li>– the stationary fuel combustion source contains at least one combustion unit connected to a fuel-fired electric generator owned or operated by an entity that is subject to regulation of customer billing rates by the public utility commission (excluding generators that are connected to combustion units that are subject to 40 CFR 98, subpart D)</li> <li>– the stationary fuel combustion source is located at a facility for which the sum of the nameplate capacities for all electric generators specified directly above is greater than or equal to 1 megawatt electric output.</li> </ul> <p>(NOTE: The aggregation of units option may be used if a facility contains two or more units (e.g., boilers or combustion turbines), each of which has a maximum rated heat input capacity of 250 mmBtu/hr or less. In this situation, the facility may report the combined GHG emissions for the group of units instead of reporting GHG emissions from the individual units, provided that the use of Tier 4 is not required or elected for any of the units and the units use the same tier for any common fuels combusted. If this option is selected, the following information is reported:</p> <ul style="list-style-type: none"> <li>– group ID number, beginning with the prefix “GP”</li> <li>– effective 1 January 2018, cumulative maximum rated heat input capacity of the group (mmBtu/hr)</li> <li>– the highest maximum rated heat input capacity of any unit in the group (mmBtu/hr)</li> <li>– each type of fuel combusted in the group of units during the reporting year</li> <li>– annual CO<sub>2</sub> mass emissions and annual CH<sub>4</sub>, and N<sub>2</sub>O mass emissions, aggregated for each type of fuel combusted in the group of units during the report year, expressed in metric tons of each gas and in metric tons of CO<sub>2</sub>e</li> <li>– if any of the units burn both fossil fuels and biomass, report also the annual CO<sub>2</sub> emissions from combustion of all fossil fuels combined and annual CO<sub>2</sub> emissions from combustion of all biomass fuels combined, expressed in metric tons</li> <li>– the methodology (i.e., tier) used to calculate the CO<sub>2</sub> mass emissions for each type of fuel combusted in the units (i.e., Tier 1, Tier 2, or Tier 3)</li> <li>– the methodology start date, for each fuel type</li> <li>– the methodology end date, for each fuel type</li> <li>– the calculated CO<sub>2</sub> mass emissions (if any) from sorbent expressed in metric tons</li> <li>– if applicable, the plant code.</li> </ul> <p>If any of the units burn both fossil fuels and biomass, report also the annual CO<sub>2</sub> emissions from combustion of all fossil fuels combined and annual CO<sub>2</sub> emissions from combustion of all biomass fuels combined, expressed in metric tons.)</p> <p>(NOTE: The monitored common stack or duct configurations option may be used when the flue gases from two or more stationary fuel combustion units at a facility are combined together in a common stack or duct before exiting to the atmosphere and if CEMS are used to continuously monitor CO<sub>2</sub> mass emissions at the common stack or duct according to the Tier 4 Calculation Methodology, the facility may</p>

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	<p>report the combined emissions from the units sharing the common stack or duct, instead of separately reporting the GHG emissions from the individual units. This monitoring and reporting alternative may also be used when process off-gases or a mixture of combustion products and process gases are combined together in a common stack or duct before exiting to the atmosphere. If this option is selected, the following information shall be reported:</p> <ul style="list-style-type: none"> <li>– common stack or duct identification number, beginning with the prefix “CS”</li> <li>– number of units sharing the common stack or duct (NOTE: Report “1” when the flue gas flowing through the common stack or duct includes combustion products and/or process off-gases, and all of the effluent comes from a single unit (e.g., a furnace, kiln, petrochemical production unit, or smelter).</li> <li>– combined maximum rated heat input capacity of the units sharing the common stack or duct (mmBtu/hr) (NOTE: This data element is required only when all of the units sharing the common stack are stationary fuel combustion units)</li> <li>– each type of fuel combusted in the units during the year</li> <li>– the methodology (tier) used to calculate the CO<sub>2</sub> mass emissions, i.e., Tier 4</li> <li>– the methodology start date</li> <li>– the methodology end date</li> <li>– total annual CO<sub>2</sub> mass emissions measured by the CEMS, expressed in metric tons (NOTE: If any of the units burn both fossil fuels and biomass, separately report the annual non-biogenic CO<sub>2</sub> mass emissions [i.e., CO<sub>2</sub> from fossil fuel combustion plus, if applicable, CO<sub>2</sub> from sorbent and/or process CO<sub>2</sub>] and the annual CO<sub>2</sub> mass emissions from biomass combustion, each expressed in metric tons)</li> <li>– an estimate of the heat input from each type of fuel listed in Table C-2 that was combusted in the units sharing the common stack or duct during the report year</li> <li>– for each type of fuel listed in Table C-2 that was combusted during the report year in the units sharing the common stack or duct during the report year, the annual CH<sub>4</sub> and N<sub>2</sub>O mass emissions from the units sharing the common stack or duct, expressed in metric tons of each gas and in metric tons of CO<sub>2</sub>e..</li> </ul> <p>(NOTE: The common pipe configurations option can be used when two or more stationary combustion units at a facility combust the same liquid or gaseous fuel and the fuel is fed to the individual units through a common supply line or pipe. The facility may report the combined emissions from the units served by the common supply line, instead of separately reporting the GHG emissions from the individual units, provided that the total amount of fuel combusted by the units is accurately measured at the common pipe or supply line using a calibrated fuel flow meter or, for natural gas, the amount of fuel combusted may be obtained from gas billing records. If a portion of the fuel measured or obtained from gas billing records) at the main supply line is diverted to either: A flare; or another stationary fuel combustion unit (or units), including units that use a CO<sub>2</sub> mass emissions calculation method in 40 CFR 75; or a chemical or industrial process (where it is used as a raw material but not combusted), and the remainder of the fuel is distributed to a group of combustion units for which the facility elects to use the</p>

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	<p>common pipe reporting option, the facility may use company records to subtract out the diverted portion of the fuel from the fuel measured (or obtained from gas billing records) at the main supply line prior to performing the GHG emissions calculations for the group of units using the common pipe option. If the diverted portion of the fuel is combusted, the GHG emissions from the diverted portion shall be accounted for. When the common pipe option is selected, the applicable tier shall be used based on the maximum rated heat input capacity of the largest unit served by the common pipe configuration, except where the applicable tier is based on criteria other than unit size. For example, if the maximum rated heat input capacity of the largest unit is greater than 250 mmBtu/hr, Tier 3 will apply, unless the fuel transported through the common pipe is natural gas or distillate oil, in which case Tier 2 may be used. When the common pipe reporting option is selected, the following information shall be reported:</p> <ul style="list-style-type: none"> <li>– common pipe identification number, beginning with the prefix “CP”</li> <li>– effective 1 January 2018, cumulative maximum rated heat input capacity of the units served by the common pipe</li> <li>– the highest maximum rated heat input capacity of any unit served by the common pipe (mmBtu/hr)</li> <li>– the fuels combusted in the units during the reporting year</li> <li>– the methodology used to calculate the CO<sub>2</sub> mass emissions (i.e., Tier 1, Tier 2, or Tier 3)</li> <li>– if the any of the units burns both fossil fuels and biomass, the annual CO<sub>2</sub> mass emissions from combustion of all fossil fuels and annual CO<sub>2</sub> emissions from combustion of all biomass fuels from the units served by the common pipe, expressed in metric tons</li> <li>– annual CO<sub>2</sub> mass emissions and annual CH<sub>4</sub> and N<sub>2</sub>O emissions from each fuel type for the units served by the common pipe, expressed in metric tons of each gas and in metric tons of CO<sub>2</sub>e.</li> <li>– methodology start date</li> <li>– methodology end date</li> <li>– if applicable, the plant code.</li> </ul> <p>(NOTE: The following alternative reporting option applies to facilities at which a common liquid or gaseous fuel supply is shared between one or more large combustion units, such as boilers or combustion turbines (including units subject to subpart D and other units subject to 40 CFR 75) and small combustion sources, including, but not limited to, space heaters, hot water heaters, and lab burners. In this case, the facility may simplify reporting by attributing all of the GHG emissions from combustion of the shared fuel to the large combustion unit(s), provided that:</p> <ul style="list-style-type: none"> <li>– the total quantity of the fuel combusted during the report year in the units sharing the fuel supply is measured, either at the “gate” to the facility or at a point inside the facility, using a fuel flow meter, billing meter, or tank drop measurements (as applicable)</li> <li>– on an annual basis, at least 95 percent (by mass or volume) of the shared fuel is combusted in the large combustion unit(s), and the remainder is combusted in the small combustion sources (NOTE: Company records may be used to</li> </ul>

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	<p>determine the percentage distribution of the shared fuel to the large and small units)</p> <ul style="list-style-type: none"> <li>– the use of this reporting option is documented in the Monitoring Plan and the Monitoring Plan indicates which units share the common fuel supply and the method used to demonstrate that this alternative reporting option applies (NOTE: For the small combustion sources, a description of the types of units and the approximate number of units is sufficient.)</li> </ul> <p>Verify that, for stationary combustion units that are subject to 40 CFR 98, subpart D (Electricity Generation), the facility reports the following unit-level information:</p> <ul style="list-style-type: none"> <li>– unit or stack identification numbers. Use exact same unit, common stack, common pipe, or multiple stack identification numbers that represent the monitored locations (e.g., 1, 2, CS001, MS1A, CP001, etc.) that are reported under 40 CFR 75.64</li> <li>– annual CO<sub>2</sub> emissions at each monitored location, expressed in both short tons and metric tons (NOTE: Separate reporting of biogenic CO<sub>2</sub> emissions is optional only for the 2010 reporting year )</li> <li>– annual CH<sub>4</sub> and N<sub>2</sub>O emissions at each monitored location, for each fuel type listed in Table C-2 (<i>Default CH<sub>4</sub> and N<sub>2</sub>O Emission Factors for Various Fuels</i>, see text) that was combusted during the year (except as otherwise provided in 40 CFR 98.33(c)(4)(ii)(B)), expressed in metric tons of CO<sub>2</sub>e</li> <li>– the total heat input from each fuel listed in Table C-2 (<i>Default CH<sub>4</sub> and N<sub>2</sub>O Emission Factors for Various Fuels</i>, see text) that was combusted during the year (except as otherwise provided in 40 CFR 98.33(c)(4)(ii)(B)), expressed in mmBtu</li> <li>– identification of the 40 CFR 75 methodology used to determine the CO<sub>2</sub> mass emissions</li> <li>– methodology start date</li> <li>– methodology end date</li> <li>– Acid Rain Program indicator</li> <li>– annual CO<sub>2</sub> mass emissions from the combustion of biomass, expressed in metric tons of CO<sub>2</sub>e, except where the reporting provisions of 40 CFR 98.33(c)(12)(i) through (c)(12)(iii) are implemented for the 2010 reporting year</li> <li>– for units that use the alternative CO<sub>2</sub> mass emissions calculation methods provided in 40 CFR 98.33(a)(5), report the unit, stack, or pipe ID numbers using exact same unit, common stack, common pipe, or multiple stack identification numbers that represent the monitored locations (e.g., 1, 2, CS001, MS1A, CP001, etc.) reported under 40 CFR 75.64</li> <li>– if applicable, the plant code.</li> </ul> <p>Verify that, for units that use the alternative methods specified in 40 CFR 98.33(a)(5)(i) and (ii) to monitor and report heat input data year-round according to appendix D to 40 CFR 75 of this chapter or 40 CFR 75.19 the following are reported:</p>

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	<ul style="list-style-type: none"> <li>– each type of fuel combusted in the unit during the reporting year</li> <li>– the methodology used to calculate the CO<sub>2</sub> mass emissions for each fuel type</li> <li>– methodology start date</li> <li>– methodology end date</li> <li>– a code or flag to indicate whether heat input is calculated according to appendix D to 40 CFR 75 or 40 CFR 75.19</li> <li>– annual CO<sub>2</sub> emissions at each monitored location, across all fuel types, expressed in metric tons of CO<sub>2</sub>e</li> <li>– annual heat input from each type of fuel listed in Table C-2 (<i>Default CH<sub>4</sub> and N<sub>2</sub>O Emission Factors for Various Fuels</i>, see text) that was combusted during the reporting year, expressed in mmBtu</li> <li>– annual CH<sub>4</sub> and N<sub>2</sub>O emissions at each monitored location, from each fuel type listed in Table C-2 (<i>Default CH<sub>4</sub> and N<sub>2</sub>O Emission Factors for Various Fuels</i>, see text) that was combusted during the reporting year (except as otherwise provided in 40 CFR 98.33(c)(4)(ii)(D)), expressed in metric tons CO<sub>2</sub>e</li> <li>– annual CO<sub>2</sub> mass emissions from the combustion of biomass, expressed in metric tons CO<sub>2</sub>e, except where the reporting provisions of 40 CFR 98.3(c)(12)(i) through (c)(12)(iii) are implemented for the 2010 reporting year</li> <li>– if applicable, the plant code.</li> </ul> <p>Verify that, for units with continuous monitoring systems that use the alternative method for units with continuous monitoring systems in 40 CFR 98.33(a)(5)(iii) to monitor heat input year-round according to 40 CFR 75 the following are included in the report:</p> <ul style="list-style-type: none"> <li>– each type of fuel combusted during the reporting year</li> <li>– methodology used to calculate the CO<sub>2</sub> mass emissions</li> <li>– methodology start date</li> <li>– methodology end date</li> <li>– a code or flag to indicate that the heat input data is derived from CEMS measurements</li> <li>– the total annual CO<sub>2</sub> emissions at each monitored location, expressed in metric tons of CO<sub>2</sub>e</li> <li>– annual heat input from each type of fuel listed in Table C-2 (Default CH<sub>4</sub> and N<sub>2</sub>O Emission Factors for Various Fuels, see text) that was combusted during the reporting year, expressed in mmBtu</li> <li>– annual CH<sub>4</sub> and N<sub>2</sub>O emissions at each monitored location, from each fuel type listed in Table C-2 (Default CH<sub>4</sub> and N<sub>2</sub>O Emission Factors for Various Fuels, see text) that was combusted during the reporting year (except as otherwise provided in 40 CFR 98.33(c)(4)(ii)(B)), expressed in metric tons CO<sub>2</sub>e</li> <li>– annual CO<sub>2</sub> mass emissions from the combustion of biomass, expressed in metric tons CO<sub>2</sub>e, except where the reporting provisions of 40 CFR 98.3(c)(12)(i) through (c)(12)(iii) are implemented for the 2010 reporting year</li> <li>– if applicable, the plant code.</li> </ul>

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<p><b>AE.205.6.US.</b> Owners and operators of municipal solid waste landfills (MSWLF) required to perform GHG emissions reporting must report specific information and perform certain monitoring (40 CFR 98.340 through 98.347) [Added January 2010; Revised January 2011; Revised January 2014; Revised January 2017; Revised October 2017].</p>	<p>Verify that, for required stationary fuel combustion sources the annual GHG emissions report contains the emissions verification data.</p> <p>Verify that, for required stationary combustion sources, sufficient data to verify the reported GHG emissions is kept on file in a format suitable for auditing and inspection.</p> <p>(NOTE: Depending on the methodologies used, different types of verification data are required. See the text of 40 CFR 98.36(e) and 98.37).</p> <p>(NOTE: Verification data is not required to be kept on file or reported for units that meet any one of the three following conditions:</p> <ul style="list-style-type: none"> <li>– they are subject to the Acid Rain Program</li> <li>– they use the alternative methods for units with continuous monitoring systems provided in 40 CFR 98.33(a)(5)</li> <li>– they are not in the Acid Rain Program, but are required to monitor and report CO<sub>2</sub> mass emissions and heat input data year-round, in accordance with 40 CFR 75.)</li> </ul> <p>(NOTE: For a unit that combusts hazardous waste, reporting of GHG emissions is not required unless either of the following conditions apply:</p> <ul style="list-style-type: none"> <li>– continuous emission monitors (CEMS) are used to quantify CO<sub>2</sub> mass emissions</li> <li>– any fuel listed in Appendix 1-20e is also combusted in the unit.</li> </ul> <p>In this case, report GHG emissions from combustion of all fuels listed in Appendix 1-20e.)</p> <p>(NOTE: Facilities are not required to report GHG emissions from pilot lights. A pilot light is a small auxiliary flame that ignites the burner of a combustion device when the control valve opens.)</p> <p>(NOTE: These requirements apply to municipal solid waste (MSW) landfills that accepted waste on or after 1 January 1980, unless all three of the following conditions apply:</p> <ul style="list-style-type: none"> <li>– the MSW landfill did not receive waste on or after 1 January 2013</li> <li>– the MSW landfill had CH<sub>4</sub> generation as determined using Equation HH-5 and, if applicable, Equation HH-7 of 40 CFR 98 of less than 1,190 metric tons of CH<sub>4</sub> in the 2013 reporting year</li> <li>– the owner or operator of the MSW landfill was not required to submit an annual report under any requirement of 40 CFR 98 in any reporting year prior to 2013.)</li> </ul> <p>Verify that CH<sub>4</sub> generation and CH<sub>4</sub> emissions from landfills are reported.</p>

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	<p>Verify that CH<sub>4</sub> destruction resulting from landfill gas collection and combustion systems is reported.</p> <p>Verify that the MSWLF includes in its report the emissions of CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O from each regulated stationary combustion unit (see checklist item AE.205.5.US).</p> <p>(NOTE: See the text of 40 CFR 98.343 for the methods and equations to use when calculating GHG emissions.)</p> <p>Verify that, the quantity of waste landfilled is determined using mass measurement equipment meeting the requirements for weighing equipment as described in “Specifications, Tolerances, and Other Technical Requirements For Weighing and Measuring Devices” NIST Handbook 44 (2009).</p> <p>Verify that, for landfills with gas collection systems, the facility installs, operates, maintains, and calibrates a gas composition monitor capable of measuring the concentration of CH<sub>4</sub> in the recovered landfill gas using one of the methods specified in 40 CFR 98.344(b)(1) through 98.344(b)(6) (see the text of the regulation) or as specified by the manufacturer.</p> <p>Verify that, for landfills with gas collection systems, the facility installs, operates, maintains, and calibrates a gas flow meter capable of measuring the volumetric flow rate of the recovered landfill gas using one of the methods specified in 40 CFR 98.344(c)(1) through (c)(8) or as specified by the manufacturer.</p> <p>Verify that each gas flow meter is recalibrated either biennially (every 2 yr) or at the minimum frequency specified by the manufacturer.</p> <p>Verify that all temperature, pressure, and if necessary, moisture content monitors are calibrated using the procedures and frequencies specified by the manufacturer</p> <p>(NOTE: See the text of 40 CRR 98.344(e) for additional calculation requirements for landfills electing to measure the fraction by volume of CH<sub>4</sub> in landfill gas.)</p> <p>Verify that the owner or operator documents the procedures used to ensure the accuracy of the estimates of disposal quantities and, if applicable, gas flow rate, gas composition, temperature, pressure, and moisture content measurements.</p> <p>(NOTE: These procedures include, but are not limited to, calibration of weighing equipment, fuel flow meters, and other measurement devices. The estimated accuracy of measurements made with these devices shall also be recorded, and the technical basis for these estimates shall be provided.)</p> <p>Verify that a complete record of all measured parameters used in the GHG emissions calculations is maintained.</p>

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	<p>Verify that, whenever a quality-assured value of a required parameter is unavailable (e.g., if a meter malfunctions during unit operation or if a required fuel sample is not taken), a substitute data value for the missing parameter is used in the calculations, according to the following requirements:</p> <ul style="list-style-type: none"> <li>– for each missing value of the CH<sub>4</sub> content, the substitute data value is be the arithmetic average of the quality-assured values of that parameter immediately preceding and immediately following the missing data incident</li> <li>– for missing gas flow rates, the substitute data value is the arithmetic average of the quality-assured values of that parameter immediately preceding and immediately following the missing data incident</li> <li>– for missing daily waste disposal quantity data for disposal in reporting year, the substitute value is the average daily waste disposal quantity for that day of the week as measured on the week before and week after the missing daily data.</li> </ul> <p>(NOTE: For the missing value of the CH<sub>4</sub> content or missing gas flow rates, if the “after” value is not obtained by the end of the reporting year, the facility may use the “before” value for the missing data substitution. If, for a particular parameter, no quality-assured data are available prior to the missing data incident, the substitute data value shall be the first quality-assured value obtained after the missing data period. )</p> <p>Verify that, for MSWLF required to report GHG emissions the annual report contains the following information in addition to the information required by 40 CFR 98.3(c) (see checklist item AE.205.1.US):</p> <ul style="list-style-type: none"> <li>– a classification of the landfill as “open” (actively received waste in the reporting year) or “closed” (no longer receiving waste), the year in which the landfill first started accepting waste for disposal, the last year the landfill accepted waste (for open landfills, enter the estimated year of landfill closure), the capacity (in metric tons) of the landfill, an indication of whether leachate recirculation is used during the reporting year and its typical frequency of use over the past 10 yr (e.g., used several times a year for the past 10 yr, used at least once a year for the past 10 yr, used occasionally but not every year over the past 10 yr, not used), an indication as to whether scales are present at the landfill, and the waste disposal quantity for each year of landfilling required to be used when using Equation HH-1 (see text)</li> <li>– method estimating reporting year and historical waste disposal quantities, and reason for its selection, and the range of years it is applied: <ul style="list-style-type: none"> <li>– for years when the waste quantity are determined using the methods in 40 CFR 98.343(a)(3), report separately the quantity of waste determined</li> <li>– for historical waste disposal quantities not determined using the method in 40 CFR 98.343(a)(3), provide the population served by the landfill for each year the Equation HH-2 is applied</li> <li>– for open landfills using Equation HH-3, provide the value of the landfill capacity (LFC) used in the calculation</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– waste composition for each year required for Equation HH-1, in percentage by weight, for each waste category listed in Table HH-1 that used in Equation HH-1 to calculate the annual modeled CH<sub>4</sub></li> <li>– for each waste type used to calculate CH<sub>4</sub> generation using Equation HH-1 (see 40 CFR 98.343(a)(1)), report the following: <ul style="list-style-type: none"> <li>– degradable organic carbon (DOC) and fraction of DOC dissimilated (DOCF) values used in the calculations</li> <li>– decay rate (k) value used in the calculations</li> </ul> </li> <li>– fraction of CH<sub>4</sub> in landfill gas and an indication of whether the fraction of CH<sub>4</sub> was determined based on measured values or the default value</li> <li>– fraction of CH<sub>4</sub> in landfill gas and an indication of whether the fraction of CH<sub>4</sub> was determined based on measured values or the default value, and the methane correction factor (MCF) used in the calculations: <ul style="list-style-type: none"> <li>– if an MCF other than the default of 1 is used, provide an indication of whether active aeration of the waste in the landfill was conducted during the reporting year, a description of the aeration system, including aeration blower capacity, the fraction of the landfill containing waste affected by aeration, the total number of hours during the year the aeration blower was operated, and other factors used as a basis for the selected MCF value</li> </ul> </li> <li>– the surface area of the landfill containing waste (in square meters), identification of the type of cover material used (as either organic cover, clay cover, sand cover, or other soil mixtures)</li> <li>– the modeled annual methane generation rate for the reporting year (metric tons CH<sub>4</sub>) calculated using Equation HH-1 (see 40 CFR 98.343(a)(1))</li> <li>– for landfills without gas collection systems, the annual methane emissions (i.e., the methane generation, adjusted for oxidation, calculated using Equation HH-5) (see 40 CFR 98.343(c)(1)), reported in metric tons CH<sub>4</sub>, and an indication of whether passive vents and/or passive flares are present at this landfill</li> <li>– for landfills without gas collection systems, the annual methane emissions (i.e., the methane generation, adjusted for oxidation, calculated using Equation HH-5 of 40 CFR 98), reported in metric tons CH<sub>4</sub>, the oxidation fraction used in the calculation, and an indication of whether passive vents and/or passive flares (vents or flares that are not considered part of the gas collection system) are present at this landfill</li> <li>– for landfills with gas collection systems, report the following: <ul style="list-style-type: none"> <li>– total volumetric flow of landfill gas collected for destruction (ft<sup>3</sup> at 520°R or 60°F and 1 atm)</li> <li>– annual average CH<sub>4</sub> concentration of landfill gas collected for destruction (percent by volume)</li> <li>– monthly average temperature and pressure for each month at which flow is measured for landfill gas collected for destruction, or statement that temperature and/or pressure is incorporated into internal calculations run by the monitoring equipment</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– an indication of whether destruction occurs at the landfill facility, off-site, or both: <ul style="list-style-type: none"> <li>– if destruction occurs at the landfill facility, also report for each measurement location the number of destruction devices associated with the measurement location, the annual operating hours of the gas collection system associated with the measurement location, and the destruction efficiency (decimal) for each destruction device associated with that measurement location along with the annual operating hours where active gas flow was sent to the destruction device</li> </ul> </li> <li>– annual quantity of recovered CH<sub>4</sub> (metric tons CH<sub>4</sub>) calculated using Equation HH-4 of 40 CFR 98 for each measurement location</li> <li>– a description of the gas collection system (manufacturer, capacity, and number of wells), the surface area (square meters) and estimated waste depth (meters) for each area specified in Table HH-3 (see Appendix 1-20d), the estimated gas collection system efficiency for landfills with this gas collection system and an indication of whether passive vents and/or passive flares (vents or flares that are not considered part of the gas collection system as defined in 40 CFR 98.6) are present at the landfill</li> <li>– methane generation corrected for oxidation calculated using Equation HH-5 of 40 CFR 98, reported in metric tons CH<sub>4</sub>, and the oxidation fraction used in the calculation</li> <li>– methane generation (GCH<sub>4</sub>) value used as an input to Equation HH-6 (see 40 CFR 98.343(c)(3)(i)) (NOTE: Specify whether the value is modeled)</li> <li>– methane generation corrected for oxidation calculated using Equation HH-7 of 40 CFR 98, reported in metric tons CH<sub>4</sub>, and the oxidation fraction used in the calculation</li> <li>– methane emissions calculated using Equation HH-6 of 40 CFR 98, reported in metric tons CH<sub>4</sub>, and the oxidation fraction used in the calculation</li> <li>– methane emissions calculated using Equation HH-8 of 40 CFR 98, reported in metric tons CH<sub>4</sub>, and the oxidation fraction used in the calculation</li> <li>– methane emissions for the landfill (i.e., the subpart HH total methane emissions) using the methane emissions from either Equation HH-6 or Equation HH-8 that best represents the emissions from the landfill (NOTE: If the quantity of recovered CH<sub>4</sub> from Equation HH-4 is used as the value of GCH<sub>4</sub> in Equation HH-6, use the methane emissions calculated using Equation HH-8 as the methane emissions for the landfill).</li> </ul> <p>(NOTE: If destruction occurs at the landfill facility, also report an indication of whether a back-up destruction device is present at the landfill, the annual operating hours for the primary destruction device, the annual operating hours for the backup destruction device [if present], and the destruction efficiency used [percent].)</p>

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<p><b>AE.205.7.US.</b> Owners and operators of industrial wastewater treatment facilities required to perform GHG emissions reporting must report specific information and perform certain monitoring (40 CFR 98.350 through 98.357) [Added July 2010; Revised January 2012; Revised October 2017].</p>	<p>Verify that calibration records for all monitoring equipment are maintained, including the method or manufacturer's specification used for calibration.</p> <p>Verify that records are retained of all measurements made to determine tare weights and working capacities by vehicle/container type if these are used to determine the annual waste quantities.</p> <p>(NOTE: This source category consists of anaerobic processes used to treat industrial wastewater and industrial wastewater treatment sludge at facilities that perform the following operations:</p> <ul style="list-style-type: none"> <li>– pulp and paper manufacturing</li> <li>– food processing</li> <li>– ethanol production</li> <li>– petroleum refining.</li> </ul> <p>An anaerobic process is a procedure in which organic matter in wastewater, wastewater treatment sludge, or other material is degraded by micro-organisms in the absence of oxygen, resulting in the generation of CO<sub>2</sub> and CH<sub>4</sub>.)</p> <p>(NOTE: This source category consists of the following: anaerobic reactors, anaerobic lagoons, anaerobic sludge digesters, and biogas destruction devices (for example, burners, boilers, turbines, flares, or other devices):</p> <ul style="list-style-type: none"> <li>– an anaerobic reactor is an enclosed vessel used for anaerobic wastewater treatment (e.g., upflow anaerobic sludge blanket, fixed film)</li> <li>– an anaerobic sludge digester is an enclosed vessel in which wastewater treatment sludge is degraded anaerobically</li> <li>– an anaerobic lagoon is a lined or unlined earthen basin used for wastewater treatment, in which oxygen is absent throughout the depth of the basin, except for a shallow surface zone (NOTE: Anaerobic lagoons are not equipped with surface aerators. Anaerobic lagoons are classified as deep (depth more than 2 meters) or shallow (depth less than 2 m).)</li> </ul> <p>(NOTE: This source category does not include municipal wastewater treatment plants or separate treatment of sanitary wastewater at industrial sites.)</p> <p>Verify that GHG reporting is done if the facility meets the following conditions:</p> <ul style="list-style-type: none"> <li>– for petroleum refineries and pulp and paper manufacturing: <ul style="list-style-type: none"> <li>– the facility is subject to reporting under subpart Y of 40 CFR 98 (Petroleum Refineries) or subpart AA of 40 CFR 98 (Pulp and Paper Manufacturing).</li> <li>– the facility meets the requirements of either 40 CFR 98.2(a)(1) or (2) [see checklist item AE.205.1.US]</li> <li>– the facility operates an anaerobic process to treat industrial wastewater and/or industrial wastewater treatment sludge</li> </ul> </li> <li>– for ethanol production and food processing facilities: <ul style="list-style-type: none"> <li>– the facility performs an ethanol production or food processing operation</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– the facility meets the requirements of 40 CFR 98.2(a)(2) [see checklist item AE.205.1.US]</li> <li>– the facility operates an anaerobic process to treat industrial wastewater and/or industrial wastewater treatment sludge.</li> </ul> <p>Verify that the following are reported:</p> <ul style="list-style-type: none"> <li>– CH<sub>4</sub> generation, CH<sub>4</sub> emissions, and CH<sub>4</sub> recovered from treatment of industrial wastewater at each anaerobic lagoon and anaerobic reactor.</li> <li>– CH<sub>4</sub> emissions and CH<sub>4</sub> recovered from each anaerobic sludge digester.</li> <li>– CH<sub>4</sub> emissions and CH<sub>4</sub> destruction resulting from each biogas collection and biogas destruction device.</li> <li>– under subpart C of 40 CFR 98 (General Stationary Fuel Combustion Sources): the emissions of CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O from each stationary combustion unit associated with the landfill gas destruction device, if present, by following the requirements of subpart C, 40 CFR 98.</li> </ul> <p>(NOTE: See the text of 40 CFR 98.353 for information on calculating GHG emissions for this source.)</p> <p>(NOTE: A complete record of all measured parameters used in the GHG emissions calculations is required. Therefore, whenever a quality-assured value of a required parameter is unavailable (e.g., if a meter malfunctions during unit operation or if a required sample is not taken), a substitute data value for the missing parameter must be used in the calculations. See the text of 40 CFR 98.355.)</p> <p>Verify that each annual report contains the following information for each wastewater treatment system:</p> <ul style="list-style-type: none"> <li>– identification of the anaerobic processes used in the industrial wastewater treatment system to treat industrial wastewater and industrial wastewater treatment sludge</li> <li>– a unique identifier for each anaerobic process</li> <li>– the average depth in meters of each anaerobic lagoon</li> <li>– whether or not biogas generated by each anaerobic process is recovered</li> <li>– a description or diagram of the industrial wastewater treatment system, identifying the processes used, indicating how the processes are related to each other, and providing a unique identifier for each anaerobic process</li> <li>– identification of each anaerobic process as one of the following: <ul style="list-style-type: none"> <li>– anaerobic reactor</li> <li>– anaerobic deep lagoon (depth more than 2 m)</li> <li>– anaerobic shallow lagoon (depth less than 2 m)</li> <li>– anaerobic sludge digester.</li> </ul> </li> </ul> <p>Verify that, for each anaerobic wastewater treatment process (reactor, deep lagoon, or shallow lagoon) the following is reported:</p>

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	<ul style="list-style-type: none"> <li>– weekly average COD or BOD5 concentration of wastewater entering each anaerobic wastewater treatment process, for each week the anaerobic process was operated</li> <li>– volume of wastewater entering each anaerobic wastewater treatment process for each week the anaerobic process was operated</li> <li>– maximum CH<sub>4</sub> production potential (B<sub>0</sub>) used as an input to Equation II-1 or II-2</li> <li>– methane conversion factor (MCF) used as an input to Equation II-1 or II-2</li> <li>– annual mass of CH<sub>4</sub> generated by each anaerobic wastewater treatment process, calculated using Equation II-1 or II-2 .</li> </ul> <p>Verify that, if the facility performs an ethanol production processing operation the report indicates if the facility uses a wet milling process or a dry milling process.</p> <p>Verify that, for each anaerobic wastewater treatment process from which biogas is not recovered, the annual CH<sub>4</sub> emissions, calculated using Equation II-3 are reported.</p> <p>Verify that, for each anaerobic wastewater treatment process and anaerobic sludge digester from which some biogas is recovered, the following is reported:</p> <ul style="list-style-type: none"> <li>– annual quantity of CH<sub>4</sub> recovered from the anaerobic process calculated using Equation II-4</li> <li>– total weekly volumetric biogas flow for each week (up to 52 weeks/year) that biogas is collected for destruction</li> <li>– weekly average CH<sub>4</sub> concentration for each week that biogas is collected for destruction</li> <li>– weekly average biogas temperature for each week at which flow is measured for biogas collected for destruction, or statement that temperature is incorporated into monitoring equipment internal calculations</li> <li>– whether flow was measured on a wet or dry basis, whether CH<sub>4</sub> concentration was measured on a wet or dry basis, and if required for Equation II-4, weekly average moisture content for each week at which flow is measured for biogas collected for destruction, or statement that moisture content is incorporated into monitoring equipment internal calculations</li> <li>– weekly average biogas pressure for each week at which flow is measured for biogas collected for destruction, or statement that pressure is incorporated into monitoring equipment internal calculations</li> <li>– CH<sub>4</sub> collection efficiency (CE) used in Equation II-5</li> <li>– whether destruction occurs at the facility or off-site, if onsite: <ul style="list-style-type: none"> <li>– report whether a back-up destruction device is present at the facility</li> <li>– the annual operating hours for the primary destruction device</li> <li>– the annual operating hours for the back-up destruction device (if present)</li> <li>– the destruction efficiency for the primary destruction device</li> <li>– the destruction efficiency for the backup destruction device (if present)</li> </ul> </li> </ul>

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<p><b>AE.205.8.US.</b> Owners and operators of industrial waste landfills required to perform GHG emissions reporting must report specific information and perform certain monitoring (40 CFR 98.460 through 98.467) [Added July 2010; Revised January 2012; Revised October 2012; Revised January 2014; Revised January 2015].</p>	<p>– for each anaerobic process from which some biogas is recovered, the annual CH<sub>4</sub> emissions, as calculated by Equation II-6.</p> <p>Verify that the report includes the total mass of CH<sub>4</sub> emitted from all anaerobic processes from which biogas is not recovered (calculated in Equation II-3) and from all anaerobic processes from which some biogas is recovered (calculated in Equation II-6) using Equation II-7.</p> <p>Verify that the calibration records for all monitoring equipment, including the method or manufacturer's specification used for calibration are retained.</p> <p>(NOTE: This source category applies to industrial waste landfills that accepted waste on or after 1 January 1980, and that are located at a facility whose total landfill design capacity is greater than or equal to 300,000 metric tons. An industrial waste landfill is a landfill other than a municipal solid waste landfill, a RCRA Subtitle C hazardous waste landfill, or a TSCA hazardous waste landfill, in which industrial solid waste, such as RCRA Subtitle D wastes (non-hazardous industrial solid waste, defined in 40 CFR 257.2), commercial solid wastes, or conditionally exempt small quantity generator wastes, is placed. An industrial waste landfill includes all disposal areas at the facility.)</p> <p>(NOTE: This source category does not include:</p> <ul style="list-style-type: none"> <li>– construction and demolition waste landfills</li> <li>– industrial waste landfills that only receive one or more of the following inert waste materials: <ul style="list-style-type: none"> <li>– coal combustion or incinerator ash (e.g., fly ash)</li> <li>– cement kiln dust</li> <li>– rocks and/or soil from excavation and construction and similar activities</li> <li>– glass</li> <li>– non-chemically bound sand (e.g., green foundry sand)</li> <li>– clay, gypsum, or pottery cull</li> <li>– bricks, mortar, or cement</li> <li>– furnace slag</li> <li>– materials used as refractory (e.g., alumina, silicon, fire clay, fire brick)</li> <li>– plastics (e.g., polyethylene, polypropylene, polyethylene terephthalate, polystyrene, polyvinyl chloride)</li> <li>– other waste material that has a volatile solids concentration of 0.5 weight percent (on a dry basis) or less</li> <li>– other waste material that has a DOC value of 0.3 weight percent (on a wet basis) or less with the DOC value being determined using an approved 60-day anaerobic biodegradation test procedure.)</li> </ul> </li> </ul> <p>(NOTE: This source category consists of the following sources at industrial waste landfills: Landfills, gas collection systems at landfills, and destruction devices for landfill gases (including flares).)</p>

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	<p>Verify that GHG emissions are reported if the facility contains an industrial waste landfill meeting the criteria listed in the above NOTES and the facility meets the requirements of 40 CFR 98.2(a)(2) concerning facilities listed in Table A-4 of Appendix 1-40.</p> <p>(NOTE: For the purposes of 40 CFR 98.2(a)(2), the emissions from the industrial waste landfill are to be determined using the methane generation corrected for oxidation as determined using Equation TT-6 times the global warming potential for methane in 40 CFR 98, Table A-1 of subpart A.)</p> <p>Verify that the following GHGs are reported:</p> <ul style="list-style-type: none"> <li>– CH<sub>4</sub> generation and CH<sub>4</sub> emissions from industrial waste landfills</li> <li>– CH<sub>4</sub> destruction resulting from landfill gas collection and destruction devices, if present</li> <li>– under 40 CFR 98, subpart C (General Stationary Fuel Combustion Sources) the emissions of CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O from each stationary combustion unit associated with the landfill gas destruction device, if present, by following the requirements of 40 CFR 98 subpart C [see checklist item AE.205.5.US].</li> </ul> <p>(NOTE: See the text of 40 CFR 98.463 for information on calculating GHG emissions.)</p> <p>(NOTE: See the text of 40 CFR 98.464 for details on monitoring and QA methodology.)</p> <p>Verify that the annual report contains the following information for each landfill:</p> <ul style="list-style-type: none"> <li>– general landfill information: <ul style="list-style-type: none"> <li>– a classification of the landfill as “open” (actively received waste in the reporting year) or “closed” (no longer receiving waste)</li> <li>– the year in which the landfill first started accepting waste for disposal</li> <li>– the last year the landfill accepted waste (for open landfills, enter the estimated year of landfill closure)</li> <li>– the capacity (in metric tons) of the landfill</li> <li>– an indication of whether leachate recirculation is used during the reporting year and its typical frequency of use over the past 10 yr (e.g., used several times a year for the past 10 yr, used at least once a year for the past 10 yr, used occasionally but not every year over the past 10 yr, not used)</li> </ul> </li> <li>– waste characterization and modeling information: <ul style="list-style-type: none"> <li>– the number of waste streams (including “Other Industrial Solid Waste (not otherwise listed)” and “Inerts”) for which Equation TT-1 is used to calculate modeled CH<sub>4</sub> generation</li> <li>– a description of each waste stream (including the types of materials in each waste stream) for which Equation TT-1 is used to calculate modeled CH<sub>4</sub> generation</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– the fraction of CH<sub>4</sub> in the landfill gas, F, (volume fraction, dry basis, corrected to 0% oxygen) for the reporting year and an indication as to whether this was the default value or a value determined through measurement data</li> <li>– the methane correction factor (MCF) value used in the calculations: <ul style="list-style-type: none"> <li>– if an MCF value other than the default of 1 is used, a description of the aeration system, including aeration blower capacity, the fraction of the landfill containing waste affected by the aeration, the total number of hours during the year the aeration blower was operated, and other factors used as a basis for the selected MCF value</li> </ul> </li> <li>– for each waste stream: <ul style="list-style-type: none"> <li>– the decay rate (k) value used in the calculations</li> <li>– the method(s) for estimating historical waste disposal quantities and the range of years for which each method applies</li> <li>– if Equation TT-2 is used, provide: <ul style="list-style-type: none"> <li>– the total number of years (N) for which disposal and production data are both available</li> <li>– the year, the waste disposal quantity and production quantity for each year used in Equation TT-2 to calculate the average waste disposal factor (WDF)</li> <li>– the year of the data used in Equation TT-2 for the waste disposal quantity and production quantity, for each year used in Equation TT-2 to calculate the average waste disposal factor (WDF)</li> </ul> </li> <li>– if Equation TT-4a of 40 CFR 98 is used, provide: <ul style="list-style-type: none"> <li>– the value of landfill capacity (LFC)</li> <li>– YrData</li> <li>– YrOpen</li> </ul> </li> <li>– if Equation TT-4b is used, provide: <ul style="list-style-type: none"> <li>– WIP (i.e., the quantity of waste in-place at the start of the reporting year from design drawings or engineering estimates (metric tons) or, for closed landfills for which waste in-place quantities are not available, the landfill's design capacity).</li> <li>– the cumulative quantity of waste placed in the landfill for the years for which disposal quantities are available from company record or from Equation TT-3</li> <li>– YrLast</li> <li>– YrOpen</li> <li>– NYrData.</li> </ul> </li> </ul> </li> </ul> <p>Verify that, for each year of landfilling starting with the “Start Year” (S) and each year thereafter up to the current reporting year, the following information is reported:</p> <ul style="list-style-type: none"> <li>– the calendar year for which the following data elements apply</li> </ul>

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	<ul style="list-style-type: none"> <li>– the quantity of waste (Wx) disposed of in the landfill (metric tons, wet weight) for the specified year for each identified waste stream</li> <li>– for each waste stream, the degradable organic carbon (DOCx) value (mass fraction) for the specified year and an indication as to whether this was the default value from Table TT-1, a measured value using a 60-day anaerobic biodegradation test as specified in 40 CFR 98.464(b)(4)(i), or a value based on total and volatile solids measurements as specified in 40 CFR 98.464(b)(4)(ii)</li> <li>– if DOCx was determined by a 60-day anaerobic biodegradation test, specification of the test method used.</li> </ul> <p>Verify that the following information describing the landfill cover material is reported:</p> <ul style="list-style-type: none"> <li>– the type of cover material used (as either organic cover, clay cover, sand cover, or other soil mixtures)</li> <li>– for each type of cover material used, the surface area (in square meters) at the start of the reporting year for the landfill sections that contain waste and that are associated with the selected cover type.</li> </ul> <p>Verify that the modeled annual methane generation (GCH<sub>4</sub>) for the reporting year (metric tons CH<sub>4</sub>) calculated using Equation TT-1 is reported.</p> <p>Verify that, for landfills without gas collection systems, the following information is provided:</p> <ul style="list-style-type: none"> <li>– the annual methane emissions (i.e., the methane generation [MG], adjusted for oxidation, calculated using Equation TT-5), reported in metric tons CH<sub>4</sub></li> <li>– an indication of whether passive vents and/or passive flares (vents or flares that are not considered part of the gas collection system) are present at this landfill.</li> </ul> <p>Verify that for landfills with gas collection systems, the following additional information is provided:</p> <ul style="list-style-type: none"> <li>– the annual methane generation, adjusted for oxidation, calculated using Equation TT-6, reported in metric tons CH<sub>4</sub></li> <li>– the oxidation factor used in Equation TT-6</li> <li>– all information required under 40 CFR 98.346(i)(1) through (7) and 40 CFR 98.346(i)(9) through (12) (see checklist item AE.205.6.US).</li> </ul> <p>Verify that the facility retains the calibration records for all monitoring equipment, including the method or manufacturer's specification used for calibration, and all measurement data used for the purposes of 40 CFR 98.460(c)(2)(xii) or (xiii) or used to determine waste stream-specific DOCX values for use in Equation TT-1.</p>

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<p><b>AE.205.9.US.</b> Owners and operators of electrical transmission and distribution equipment are required to perform GHG emissions reporting must report specific information and perform certain monitoring (40 CFR 98.300 through 98.307) [Added January 2011; Revised January 2014; Revised October 2017].</p>	<p>Verify that, for verification software records, a record is kept of the file generated by the verification software for the applicable data.</p> <p>Verify that records are retained of the quantity of each product produced or feedstock entering the process or facility per waste stream per year, from measurement data and/or other company records using the same basis for all years in the calculation (i.e., based on production or based on quantity of feedstock) (metric tons) (Equation TT-2).</p> <p>(NOTE: This checklist item applies to the electrical transmission and distribution equipment use source category which consists of all electric transmission and distribution equipment and servicing inventory insulated with or containing sulfur hexafluoride (SF6) or perfluorocarbons (PFCs) used within an electric power system. Electric transmission and distribution equipment and servicing inventory includes, but is not limited to:</p> <ul style="list-style-type: none"> <li>– gas-insulated substations</li> <li>– circuit breakers</li> <li>– switchgear, including closed-pressure and hermetically sealed-pressure switchgear and gas-insulated lines containing SF6 or PFCs</li> <li>– gas containers such as pressurized cylinders</li> <li>– gas carts</li> <li>– electric power transformers</li> <li>– other containers of SF6 or PFC.)</li> </ul> <p>Verify that the facility reports GHG emissions from an electric power system if the total nameplate capacity of SF6 and PFC containing equipment (excluding hermetically sealed-pressure equipment) located within the facility, when added to the total nameplate capacity of SF6 and PFC containing equipment (excluding hermetically sealed-pressure equipment) that is not located within the facility but is under common ownership or control, exceeds 17,820 lbs.</p> <p>(NOTE: A facility other than an electric power system that is subject to these requirements because of emissions from any other source category listed in Table A-3 or A-4 [see Appendix 1-40] is not required to report emissions unless the total nameplate capacity of SF6 and PFC containing equipment located within that facility exceeds 17,820 lbs.)</p> <p>Verify that the facility reports total SF6 and PFC emissions (including emissions from fugitive equipment leaks, installation, servicing, equipment decommissioning and disposal, and from storage cylinders) resulting from the transmission and distribution servicing inventory and equipment including, but not limited to:</p> <ul style="list-style-type: none"> <li>– gas-insulated substations</li> <li>– circuit breakers</li> <li>– switchgear, including closed-pressure and hermetically sealed-pressure switchgear and gas-insulated lines containing SF6 or PFCs</li> </ul>

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	<ul style="list-style-type: none"> <li>– gas containers such as pressurized cylinders</li> <li>– gas carts</li> <li>– electric power transformers</li> <li>– other containers of SF6 or PFC.</li> </ul> <p>Verify that, for acquisitions of equipment containing or insulated with SF6 or PFCs, the facility reports emissions from the equipment after the title to the equipment is transferred to the electric power transmission or distribution entity.</p> <p>(NOTE: See the text of 40 CFR 98.303 for details on calculating GHG emissions for these sources.)</p> <p>(NOTE: For calendar year 2011 monitoring, facilities may follow the provisions of 40 CFR 98.3(d)(1) through 98.3(d)(2) (see text) for best available monitoring methods. )</p> <p>Verify that the following QA/QC methods are used for reviewing the completeness and accuracy of reporting:</p> <ul style="list-style-type: none"> <li>– review inputs to Equation DD-1 to ensure inputs and outputs to the company's system are included</li> <li>– do not enter negative inputs and confirm that negative emissions are not calculated; however, the Decrease in SF6 Inventory and the Net Increase in Total Nameplate Capacity may be calculated as negative numbers</li> <li>– ensure that beginning-of-year inventory matches end-of-year inventory from the previous year</li> <li>– ensure that in addition to SF6 purchased from bulk gas distributors, SF6 purchased from Original Equipment Manufacturers (OEM) and SF6 returned to the facility from off-site recycling are also accounted for among the total additions.</li> </ul> <p>Verify that the following QA/QC methods are employed throughout the year:</p> <ul style="list-style-type: none"> <li>– cylinders returned to the gas supplier are consistently weighed on a scale that is certified to be accurate and precise to within 2 lbs of true weight and is periodically recalibrated per the manufacturer's specifications: <ul style="list-style-type: none"> <li>– either measure residual gas (the amount of gas remaining in returned cylinders) or have the gas supplier measure it</li> <li>– If the gas supplier weighs the residual gas, obtain from the gas supplier a detailed monthly accounting, within 2 lbs, of residual gas amounts in the cylinders returned to the gas supplier</li> </ul> </li> <li>– cylinders weighed for the beginning and end of year inventory measurements are weighed on a scale that is certified to be accurate to within 2 lbs of true weight and is periodically recalibrated per the manufacturer's specifications: <ul style="list-style-type: none"> <li>– all scales used to measure reported must be calibrated using calibration procedures specified by the scale manufacturer</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– calibration must be performed prior to the first reporting year</li> <li>– after the initial calibration, recalibration must be performed at the minimum frequency specified by the manufacturer</li> <li>– all substations must provide information to the manager compiling the emissions report (if it is not already handled through an electronic inventory system).</li> </ul> <p>Verify that GHG Monitoring Plans, as described in 40 CFR 98.3(g)(5) (see checklist item AE.205.4.US.), are completed by 1 April 2011.</p> <p>Verify that the facility has a complete record of all measured parameters used in the GHG emissions calculations and missing data is replaced, if needed, based on data from equipment with a similar nameplate capacity for SF6 and PFC, and from similar equipment repair, replacement, and maintenance operations.</p> <p>Verify that, in addition to the information required by 40 CFR 98.3(c) (see checklist item AE.205.1.US), each annual report contains the following information for each electric power system, by chemical:</p> <ul style="list-style-type: none"> <li>– nameplate capacity of equipment (pounds) containing SF6 and nameplate capacity of equipment (pounds) containing each PFC: <ul style="list-style-type: none"> <li>– existing at the beginning of the year (excluding hermetically sealed-pressure switchgear)</li> <li>– new hermetically sealed-pressure switchgear during the year</li> <li>– new equipment other than hermetically sealed-pressure switchgear during the year.</li> <li>– retired hermetically sealed-pressure switchgear during the year</li> <li>– retired equipment other than hermetically sealed-pressure switchgear during the year</li> </ul> </li> <li>– transmission miles (length of lines carrying voltages above 35 kilovolts)</li> <li>– distribution miles (length of lines carrying voltages at or below 35 kilovolts)</li> <li>– pounds of SF6 and PFC stored in containers, but not in energized equipment, at the beginning of the year</li> <li>– pounds of SF6 and PFC stored in containers, but not in energized equipment, at the end of the year</li> <li>– pounds of SF6 and PFC purchased in bulk from chemical producers or distributors</li> <li>– pounds of SF6 and PFC purchased from equipment manufacturers or distributors with or inside equipment, including hermetically sealed-pressure switchgear</li> <li>– pounds of SF6 and PFC returned to facility after off-site recycling</li> <li>– pounds of SF6 and PFC in bulk and contained in equipment sold to other entities</li> <li>– pounds of SF6 and PFC returned to suppliers</li> <li>– pounds of SF6 and PFC sent off-site for recycling</li> <li>– pounds of SF6 and PFC sent off-site for destruction</li> </ul>

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	<ul style="list-style-type: none"> <li>– State(s) or territory in which the facility lies</li> <li>– the number of SF6- or PFC-containing pieces of equipment in each of the following equipment categories: <ul style="list-style-type: none"> <li>– new hermetically sealed-pressure switchgear during the year</li> <li>– new equipment other than hermetically sealed-pressure switchgear during the year</li> <li>– retired hermetically sealed-pressure switchgear during the year</li> <li>– retired equipment other than hermetically sealed-pressure switchgear during the year.</li> </ul> </li> </ul>

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<b>ENGINE TEST CELLS</b>  <b>AE.230</b> <b>General</b>  <b>AE.230.1.US.</b> Engine test cells must meet specific emissions limitations and plan requirements (40 CFR 63.9285, 63.9290(b) through 63.9290(d), 63.9295, 63.9300, 63.9301, and 63.9305) [Added July 2003; Revised July 2006].	<p>(NOTE: This checklist item applies when a facility owns or operates an engine test cell/stand that is located at a major source of hazardous air pollutants [HAP] emissions. An engine test cell/stand is any apparatus used for testing uninstalled stationary or uninstalled mobile [motive] engines. An uninstalled engine is an engine that is not installed in, or an integrated part of, the final product. A major source of HAP emissions is a plant site that emits or has the potential to emit any single HAP at a rate of 10 tons [9.07 megagrams] or more per year or any combination of HAP at a rate of 25 tons [22.68 megagrams] or more per year.)</p> <p>(NOTE: This checklist item applies to each new, reconstructed, or existing affected source, see definitions.)</p> <p>(NOTE: This checklist item does not apply to:</p> <ul style="list-style-type: none"> <li>– existing affected sources</li> <li>– any portion of a new or reconstructed affected source located at a major source that is used exclusively for testing internal combustion engines with rated power of less than 25 horsepower [hp] [19 kilowatts (kW)]</li> <li>– any portion of a new or reconstructed affected source located at a major source that meets any of the following criteria:               <ul style="list-style-type: none"> <li>– any portion of the affected source used exclusively for testing combustion turbine engines</li> <li>– any portion of the affected source used exclusively for testing rocket engines</li> <li>– any portion of the affected source used in research and teaching activities at facilities that are not engaged in the development of engines or engine test services for commercial purposes</li> <li>– any portion of the affected source operated to test or evaluate fuels [such as knock engines], transmissions, or electronics.)</li> </ul> </li> </ul> <p>Verify that each new or reconstructed affected source that is used in whole or in part for testing internal combustion engines with rated power of 25 hp (19 kW) or more and that is located at a major source, meets the emission limitations in Appendix 1-21.</p> <p>Verify that the facility uses either a continuous parameter monitoring system (CPMS) or a continuous emission monitoring system (CEMS) to demonstrate compliance with the emission limitations.</p>

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<p><b>AE.230.2.US.</b> Engine test cells must meet specific operating limits (40 CFR 63.9285, 63.9290(b) through 63.9290(d), 63.9295, 63.9302, and 63.9324) [Added July 2003].</p>	<p>(NOTE: Continuous monitoring systems must meet the requirements in 40 CFR 63.9306 (CPMS) and 40 CFR 63.9307 (CEMS) (see checklist items AE.240.1.US. through AE.240.3.US).)</p> <p>Verify that the facility is in compliance with the emission limitation at all times, except during periods of startup, shutdown, or malfunction (SSM) of the control device or associated monitoring equipment.</p> <p>Verify that the engine test cell/stand, air pollution control equipment, and monitoring equipment is operated and maintained in a manner consistent with good air pollution control practices for minimizing emissions at all times.</p> <p>Verify that the facility develops a written SSM plan (SSMP) for emission control devices and associated monitoring equipment according to the provisions in 40 CFR 63.6(e)(3).</p> <p>(NOTE: The plan will apply only to emission control devices, and not to engine test cells/stands.)</p> <p>(NOTE: Compliance dates are as follows:</p> <ul style="list-style-type: none"> <li>– if the new or reconstructed affected source starts up before 27 May 2003, compliance with the emission limitations is required no later than 27 May 2003</li> <li>– if the new or reconstructed affected source starts up on or after 27 May 2003, compliance with emission limitations is required upon startup</li> <li>– if a new or reconstructed affected source is located at an area source that increases its emissions or its potential to emit such that it becomes a major source of HAP, the new or reconstructed affected source must be in compliance when the area source becomes a major source.)</li> </ul> <p>(NOTE: This checklist item applies when a facility owns or operates an engine test cell/stand that is located at a major source of HAP emissions. An engine test cell/stand is any apparatus used for testing uninstalled stationary or uninstalled mobile (motive) engines. An uninstalled engine is an engine that is not installed in, or an integrated part of, the final product. A major source of HAP emissions is a plant site that emits or has the potential to emit any single HAP at a rate of 10 tons (9.07 megagrams) or more per year or any combination of HAP at a rate of 25 tons (22.68 megagrams) or more per year.)</p> <p>(NOTE: This checklist item applies to each new, reconstructed, or existing affected source, see definitions.)</p> <p>(NOTE: This checklist item does not apply to:</p> <ul style="list-style-type: none"> <li>– existing affected sources</li> </ul>

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	<ul style="list-style-type: none"> <li>– any portion of a new or reconstructed affected source located at a major source that is used exclusively for testing internal combustion engines with rated power of less than 25 hp [19 kW]</li> <li>– any portion of a new or reconstructed affected source located at a major source that meets any of the following criteria:               <ul style="list-style-type: none"> <li>– any portion of the affected source used exclusively for testing combustion turbine engines</li> <li>– any portion of the affected source used exclusively for testing rocket engines</li> <li>– any portion of the affected source used in research and teaching activities at facilities that are not engaged in the development of engines or engine test services for commercial purposes</li> <li>– any portion of the affected source operated to test or evaluate fuels [such as knock engines], transmissions, or electronics.)</li> </ul> </li> </ul> <p>Verify that any new or reconstructed affected source on which add-on controls are used, meets the operating limits specified in Appendix 1-22.</p> <p>Verify that the operating limits are established during the performance test according to the requirements in 40 CFR 63.9324 (see text for details of methodology).</p> <p>(NOTE: After being established, the operating limits must be met at all times.)</p> <p>Verify that, if the add-on control device is a thermal oxidizer, the operating limits are established as follows:</p> <ul style="list-style-type: none"> <li>– during the performance test, monitor and record the combustion temperature at least once every 15 min during each of the three test runs and monitor the temperature in the firebox of the thermal oxidizer or immediately downstream of the firebox before any substantial heat exchange occurs</li> <li>– use the data collected during the performance test to calculate and record the average combustion temperature maintained during the performance test.</li> </ul> <p>(NOTE: The average combustion temperature is the minimum operating limit for the thermal oxidizer.)</p> <p>Verify that, if the add-on control device is a catalytic oxidizer, the operating limits are established as follows:</p> <ul style="list-style-type: none"> <li>– monitor and record the temperature just before the catalyst bed and the temperature difference across the catalyst bed at least once every 15 min during each of the three test runs</li> <li>– use the data collected during the performance test to calculate and record the average temperature just before the catalyst bed and the average temperature difference across the catalyst bed maintained during the performance test.</li> </ul>

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	<p>(NOTE: The average temperature just before the catalyst bed and the average temperature difference across the catalyst bed are the minimum operating limits for the catalytic oxidizer.)</p> <p>(NOTE: As an alternative to monitoring the temperature difference across the catalyst bed for the catalytic oxidizer, the facility may monitor the temperature at the inlet to the catalyst bed and implement a site-specific inspection and maintenance plan for the catalytic oxidizer. During the performance test, the facility must monitor and record the temperature just before the catalyst bed at least once every 15 min during each of the three test runs. Use the data collected during the performance test to calculate and record the average temperature just before the catalyst bed during the performance test. This is the minimum operating limit for the catalytic oxidizer.)</p> <p>Verify that, if the alternative monitoring scenario is used for developing operating limits for the catalytic oxidizer, an inspection and maintenance plan for the catalytic oxidizer(s) to be monitored is developed, implemented, and contains the following:</p> <ul style="list-style-type: none"> <li>– annual sampling and analysis of the catalyst activity (i.e., conversion efficiency) following the manufacturer's or catalyst supplier's recommended procedures.</li> <li>– monthly inspection of the oxidizer system, including the burner assembly and fuel supply lines for problems and, as necessary, adjust the equipment to assure proper air-to-fuel mixtures</li> <li>– annual internal and monthly external visual inspection of the catalyst bed to check for channeling, abrasion, and settling.</li> </ul> <p>Verify that, if problems are found during inspections, corrective actions consistent with the manufacturer's recommendation are implemented and a new performance test to determine destruction efficiency is conducted.</p> <p>Verify that, if an add-on control device other than those listed in Appendix 1-22 is used, or the facility wishes to monitor an alternative parameter and comply with a different operating limit, the facility applies to the Administrator for approval of alternative monitoring.</p> <p>Verify that, for each capture device that is not part of a PTE that meets the criteria of 40 CFR 63.9322(a) (see text), an operating limit is established for either the gas volumetric flow rate or duct static pressure, as follows:</p> <ul style="list-style-type: none"> <li>– during the capture efficiency determination, monitor and record either the gas volumetric flowrate or the duct static pressure for each separate capture device in the emission capture system at least once every 15 min during each of the three test runs at a point in the duct between the capture device and the add-on control device inlet</li> <li>– calculate and record the average gas volumetric flow rate or duct static pressure for the three test runs for each capture device.</li> </ul>

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<p><b>AE.230.3.US.</b> Initial compliance demonstrations for engine test cells must be done according to specific requirements (40 CFR 63.9285, 63.9290(b) through 63.9290(d), 63.9295, 63.9310, 63.9320, and 63.9321) [Added July 2003].</p>	<p>(NOTE: This average gas volumetric flow rate or duct static pressure is the minimum operating limit for that specific capture device.)</p> <p>(NOTE: The operating limit for a PTE is specified in Appendix 1-23.)</p> <p>(NOTE: Compliance dates are as follows:</p> <ul style="list-style-type: none"> <li>– if the new or reconstructed affected source starts up before 27 May 2003, compliance with the emission limitations is required no later than 27 May 2003</li> <li>– if the new or reconstructed affected source starts up on or after 27 May 2003, compliance with emission limitations is required upon startup</li> <li>– if a new or reconstructed affected source is located at an area source that increases its emissions or its potential to emit such that it becomes a major source of HAP, the new or reconstructed affected source must be in compliance when the area source becomes a major source.)</li> </ul> <p>(NOTE: This checklist item applies when a facility owns or operates an engine test cell/stand that is located at a major source of HAP emissions. An engine test cell/stand is any apparatus used for testing uninstalled stationary or uninstalled mobile [motive] engines. An uninstalled engine is an engine that is not installed in, or an integrated part of, the final product. A major source of HAP emissions is a plant site that emits or has the potential to emit any single HAP at a rate of 10 tons [9.07 megagrams] or more per year or any combination of HAP at a rate of 25 tons [22.68 megagrams] or more per year.)</p> <p>(NOTE: This checklist item applies to each new, reconstructed, or existing affected source, see definitions.)</p> <p>(NOTE: This checklist item does not apply to:</p> <ul style="list-style-type: none"> <li>– existing affected sources</li> <li>– any portion of a new or reconstructed affected source located at a major source that is used exclusively for testing internal combustion engines with rated power of less than 25 hp (19 kilowatts kW)</li> <li>– any portion of a new or reconstructed affected source located at a major source that meets any of the following criteria: <ul style="list-style-type: none"> <li>– any portion of the affected source used exclusively for testing combustion turbine engines</li> <li>– any portion of the affected source used exclusively for testing rocket engines</li> <li>– any portion of the affected source used in research and teaching activities at facilities that are not engaged in the development of engines or engine test services for commercial purposes</li> <li>– any portion of the affected source operated to test or evaluate fuels (such as knock engines), transmissions, or electronics.)</li> </ul> </li> </ul>

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<p><b>AE.230.4.US.</b> Demonstration of continuous compliance for engine test cells must be done according to specific</p>	<p>Verify that the initial compliance demonstrations that apply (see Appendix 1-23) are done within 180 calendar days after the compliance date that is specified for the new or reconstructed affected source.</p> <p>(NOTE: Compliance dates are as follows:</p> <ul style="list-style-type: none"> <li>– if the new or reconstructed affected source starts up before 27 May 2003, compliance with the emission limitations is required no later than 27 May 2003</li> <li>– if the new or reconstructed affected source starts up on or after 27 May 2003, compliance with emission limitations is required upon startup</li> <li>– if a new or reconstructed affected source is located at an area source that increases its emissions or its potential to emit such that it becomes a major source of HAP, the new or reconstructed affected source must be in compliance when the area source becomes a major source.)</li> </ul> <p>(NOTE: 40 CFR 63.9320 details the procedures to use for the initial compliance demonstration. See the text of the regulation.)</p> <p>Verify that the performance tests are conducted under representative operating conditions for the test cell/stand.</p> <p>(NOTE: Operations during periods of SSM and during periods of no operation do not constitute representative conditions.)</p> <p>Verify that the process information that is necessary to document operating conditions is recorded during the test and explain why the conditions represent normal operation.</p> <p>Verify that the performance test is conducted when the emission capture system and add-on control device are operating at a representative flow rate, and the add-on control device is operating at a representative inlet concentration.</p> <p>Verify that the information necessary to document emission capture system and add-on control device operating conditions is recorded during the test and explain why the conditions represent normal operation.</p> <p>Verify that each performance test of an emission capture system is conducted according to the requirements in 40 CFR 63.9322 (see text).</p> <p>Verify that each performance test of an add-on control device is conducted according to the requirements in 40 CFR 63.9323 (see text).</p> <p>(NOTE: This checklist item applies when a facility owns or operates an engine test cell/stand that is located at a major source of HAP emissions. An engine test cell/stand is any apparatus used for testing uninstalled stationary or uninstalled mobile motive engines. An uninstalled engine is an engine that is not installed in,</p>

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<p>requirements (40 CFR 63.9285, 63.9290(b) through 63.9290(d), 63.9295, 63.9310, 63.9330, 63.9335, and 63.9340) [Added July 2003; Revised July 2006].</p>	<p>or an integrated part of, the final product. A major source of HAP emissions is a plant site that emits or has the potential to emit any single HAP at a rate of 10 tons [9.07 megagrams] or more per year or any combination of HAP at a rate of 25 tons [22.68 megagrams] or more per year.)</p> <p>(NOTE: This checklist item applies to each new, reconstructed, or existing affected source, see definitions.)</p> <p>(NOTE: This checklist item does not apply to:</p> <ul style="list-style-type: none"> <li>– existing affected sources</li> <li>– any portion of a new or reconstructed affected source located at a major source that is used exclusively for testing internal combustion engines with rated power of less than 25 hp (19 kW)</li> <li>– any portion of a new or reconstructed affected source located at a major source that meets any of the following criteria: <ul style="list-style-type: none"> <li>– any portion of the affected source used exclusively for testing combustion turbine engines</li> <li>– any portion of the affected source used exclusively for testing rocket engines</li> <li>– any portion of the affected source used in research and teaching activities at facilities that are not engaged in the development of engines or engine test services for commercial purposes</li> <li>– any portion of the affected source operated to test or evaluate fuels [such as knock engines], transmissions, or electronics.)</li> </ul> </li> </ul> <p>Verify that, except for monitor malfunctions, associated repairs, and required quality assurance or quality control activities (including, as applicable, calibration drift checks and required zero and high-level adjustments of the monitoring system), the facility conducts all monitoring in continuous operation at all times the engine test cell/stand is operating.</p> <p>(NOTE: Do not use data recorded during monitor malfunctions, associated repairs, and required quality assurance or quality control activities for meeting these requirements, including data averages and calculations. Use all the data collected during all other periods in assessing the performance of the emission control device or in assessing emissions from the new or reconstructed affected source.)</p> <p>Verify that continuous compliance with the emission limitation in Appendix 1-21 is demonstrated according to methods specified in Appendix 1-24.</p> <p>Verify that the facility reports each instance in which they did not meet the applicable emission limitation.</p> <p>(NOTE: See 40 CFR 63.9350 [see checklist item AE.250.2.US] for additional information on reporting requirements.)</p>

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	<p>Verify that the facility reports each instance in which they did not meet the requirements in Table 7 as applicable (this is a list of other applicable paragraphs in 40 CFR 63, see text).</p> <p>Verify that, during periods of SSM of control device and associated monitoring equipment, the facility operates in accordance with their SSMP.</p> <p>(NOTE: Deviations that occur during a period of SSM of control devices and associated monitoring equipment are not violations if the facility demonstrates to the Administrator's satisfaction that they were operating in accordance with 40 CFR 63.6(e)(1)(i). The Administrator will determine whether deviations that occur during a period of SSM of control devices and associated monitoring equipment are violations.)</p> <p>(NOTE: Compliance dates are as follows:</p> <ul style="list-style-type: none"> <li>– if the new or reconstructed affected source starts up before 27 May 2003, compliance with the emission limitations is required no later than 27 May 2003</li> <li>– if the new or reconstructed affected source starts up on or after 27 May 2003, compliance with emission limitations is required upon startup</li> <li>– if a new or reconstructed affected source is located at an area source that increases its emissions or its potential to emit such that it becomes a major source of HAP, the new or reconstructed affected source must be in compliance when the area source becomes a major source.)</li> </ul>

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<b>ENGINE TEST CELLS</b>  <b>AE.240</b> <b>Monitoring</b>  <b>AE.240.1.US.</b> When using thermal oxidizers or catalytic oxidizers for CPMS at engine test cells, specific parameters must be met (40 CFR 63.9285, 63.9290(b) through 63.9290(d), 63.9295, and 63.9306(a), and 63.9306(c)) <b>[Added July 2003].</b>	<p>(NOTE: This checklist item applies when a facility owns or operates an engine test cell/stand that is located at a major source of HAP emissions. An engine test cell/stand is any apparatus used for testing uninstalled stationary or uninstalled mobile [motive] engines. An uninstalled engine is an engine that is not installed in, or an integrated part of, the final product. A major source of HAP emissions is a plant site that emits or has the potential to emit any single HAP at a rate of 10 tons [9.07 megagrams] or more per year or any combination of HAP at a rate of 25 tons [22.68 megagrams] or more per year.)</p> <p>(NOTE: This checklist item applies to each new, reconstructed, or existing affected source, see definitions.)</p> <p>(NOTE: This checklist item does not apply to:</p> <ul style="list-style-type: none"> <li>– existing affected sources</li> <li>– any portion of a new or reconstructed affected source located at a major source that is used exclusively for testing internal combustion engines with rated power of less than 25 hp [19 kW]</li> <li>– any portion of a new or reconstructed affected source located at a major source that meets any of the following criteria: <ul style="list-style-type: none"> <li>– any portion of the affected source used exclusively for testing combustion turbine engines</li> <li>– any portion of the affected source used exclusively for testing rocket engines</li> <li>– any portion of the affected source used in research and teaching activities at facilities that are not engaged in the development of engines or engine test services for commercial purposes</li> <li>– any portion of the affected source operated to test or evaluate fuels [such as knock engines], transmissions, or electronics.)</li> </ul> </li> </ul> <p>Verify that, when thermal oxidizers or catalytic oxidizers are used, the following are met:</p> <ul style="list-style-type: none"> <li>– the CPMS completes a minimum of one cycle of operation for each successive 15-min period and there are a minimum of four equally spaced successive cycles of CPMS operation in 1 h</li> <li>– the average of all recorded readings are determined for each successive 3-h period of the emission capture system and add-on control device operation</li> <li>– results of each inspection, calibration, and validation check of the CPMS is recorded</li> <li>– CPMS is maintained at all times and there are available necessary parts for routine repairs of the monitoring equipment</li> </ul>

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	<ul style="list-style-type: none"> <li>– the CPMS and collect emission capture system and add-on control device parameter data are operated at all times that an engine test cell/stand is operating, except during monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, if applicable, calibration checks and required zero and span adjustments)</li> <li>– do not use emission capture system or add-on control device parameter data recorded during monitoring malfunctions, associated repairs, out-of-control periods, or required quality assurance or control activities when calculating data averages</li> <li>– all the data collected during all other periods is used in calculating the data averages for determining compliance with the emission capture.</li> </ul> <p>(NOTE: A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the CPMS to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions. Any period for which the monitoring system is out-of-control and data are not available for a required calculation is a deviation from the monitoring requirements.)</p> <p>Verify that, if a thermal oxidizer or catalytic oxidizer is used as an add-on control device, the following are met:</p> <ul style="list-style-type: none"> <li>– for a thermal oxidizer, install a gas temperature monitor in the firebox of the thermal oxidizer or in the duct immediately downstream of the firebox before any substantial heat exchange occurs</li> <li>– for a catalytic oxidizer, install a gas temperature monitor in the gas stream immediately before the catalyst bed, and if operating limits have been established, also install a gas temperature monitor in the gas stream immediately after the catalyst bed: <ul style="list-style-type: none"> <li>– if operating limits were established according to 40 CFR 63.9324(b)(1) (see checklist item AE.230.2.US), install the gas temperature monitors both upstream and downstream of the catalyst bed with the temperature monitors in the gas stream immediately before and after the catalyst bed to measure the temperature difference across the bed</li> <li>– if operating limits were established according to 40 CFR 63.9324(b)(3) (see checklist item AE.230.2.US), then install a gas temperature monitor upstream of the catalyst bed with the temperature monitor in the gas stream immediately before the catalyst bed to measure the temperature</li> </ul> </li> <li>– for all thermal oxidizers and catalytic oxidizers, meet the following for each gas temperature monitoring device: <ul style="list-style-type: none"> <li>– locate the temperature sensor in a position that provides a representative temperature</li> <li>– use a temperature sensor with a measurement sensitivity of 4 degrees F or 0.75 percent of the temperature value, whichever is larger</li> <li>– shield the temperature sensor system from electromagnetic interference and chemical contaminants</li> </ul> </li> </ul>

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<p><b>AE.240.2.US.</b> When using emissions capture systems for CPMS at engine test cells, specific parameters must be met (40 CFR 63.9285, 63.9290(b) through 63.9290(d), 63.9295, and 63.9306(a), 63.9306(b), and 63.9306(d)) <b>[Added July 2003]</b>.</p>	<ul style="list-style-type: none"> <li>– if a gas temperature chart recorder is used, it has a measurement sensitivity in the minor division of at least 20 degrees F</li> <li>– an electronic calibration is performed at least semiannually according to the procedures in the manufacturer's owner's manual</li> <li>– following the electronic calibration, conduct a temperature sensor validation check in which a second or redundant temperature sensor placed near the process temperature sensor yields a reading within 30 degrees F of the process temperature sensor reading</li> <li>– conduct calibration and validation checks anytime the sensor exceeds the manufacturer's specified maximum operating temperature range or install a new temperature sensor</li> <li>– at least monthly, inspect components for integrity and electrical connections for continuity, oxidation, and galvanic corrosion.</li> </ul> <p>(NOTE: Compliance dates are as follows:</p> <ul style="list-style-type: none"> <li>– if the new or reconstructed affected source starts up before 27 May 2003, compliance with the emission limitations is required no later than 27 May 2003</li> <li>– if the new or reconstructed affected source starts up on or after 27 May 2003, compliance with emission limitations is required upon startup</li> <li>– if a new or reconstructed affected source is located at an area source that increases its emissions or its potential to emit such that it becomes a major source of HAP, the new or reconstructed affected source must be in compliance when the area source becomes a major source.)</li> </ul> <p>(NOTE: This checklist item applies when a facility owns or operates an engine test cell/stand that is located at a major source of HAP emissions. An engine test cell/stand is any apparatus used for testing uninstalled stationary or uninstalled mobile [motive] engines. An uninstalled engine is an engine that is not installed in, or an integrated part of, the final product. A major source of HAP emissions is a plant site that emits or has the potential to emit any single HAP at a rate of 10 tons [9.07 megagrams] or more per year or any combination of HAP at a rate of 25 tons [22.68 megagrams] or more per year.)</p> <p>(NOTE: This checklist item applies to each new, reconstructed, or existing affected source, see definitions.)</p> <p>(NOTE: This checklist item does not apply to:</p> <ul style="list-style-type: none"> <li>– existing affected sources</li> <li>– any portion of a new or reconstructed affected source located at a major source that is used exclusively for testing internal combustion engines with rated power of less than 25 hp [19 kW]</li> <li>– any portion of a new or reconstructed affected source located at a major source that meets any of the following criteria:</li> </ul>

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	<ul style="list-style-type: none"> <li>– any portion of the affected source used exclusively for testing combustion turbine engines</li> <li>– any portion of the affected source used exclusively for testing rocket engines</li> <li>– any portion of the affected source used in research and teaching activities at facilities that are not engaged in the development of engines or engine test services for commercial purposes</li> <li>– any portion of the affected source operated to test or evaluate fuels [such as knock engines], transmissions, or electronics.)</li> </ul> <p>Verify that, when emission capture systems are used, the following are met:</p> <ul style="list-style-type: none"> <li>– the CPMS completes a minimum of one cycle of operation for each successive 15-min period and there are a minimum of four equally spaced successive cycles of CPMS operation in 1 h</li> <li>– the average of all recorded readings are determined for each successive 3-h period of the emission capture system and add-on control device operation</li> <li>– results of each inspection, calibration, and validation check of the CPMS is recorded</li> <li>– CPMS is maintained at all times and there are available necessary parts for routine repairs of the monitoring equipment</li> <li>– the CPMS and collect emission capture system and add-on control device parameter data are operated at all times that an engine test cell/stand is operating, except during monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, if applicable, calibration checks and required zero and span adjustments)</li> <li>– do not use emission capture system or add-on control device parameter data recorded during monitoring malfunctions, associated repairs, out-of-control periods, or required quality assurance or control activities when calculating data averages</li> <li>– all the data collected during all other periods is used in calculating the data averages for determining compliance with the emission capture.</li> </ul> <p>(NOTE: A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the CPMS to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions. Any period for which the monitoring system is out-of-control and data are not available for a required calculation is a deviation from the monitoring requirements.)</p> <p>Verify that when a capture system bypass line is used, the following are met:</p> <ul style="list-style-type: none"> <li>– results of each inspection, calibration, and validation check of the CPMS are recorded</li> <li>– CPMS is maintained at all times and necessary parts are available for routine repairs of the monitoring equipment</li> </ul>

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	<ul style="list-style-type: none"> <li>– the CPMS and collect emission capture system and add-on control device parameter data are operated at all times that an engine test cell/stand is operating, except during monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, if applicable, calibration checks and required zero and span adjustments).</li> </ul> <p>Verify that, for each emission capture system that contains bypass lines that could divert emissions away from the add-on control device to the atmosphere, the following are met:</p> <ul style="list-style-type: none"> <li>– monitor or secure the valve or closure mechanism controlling the bypass line in a nondiverting position in such a way that the valve or closure mechanism cannot be opened without creating a record that the valve was opened as follows: <ul style="list-style-type: none"> <li>– install, calibrate, maintain, and operate a flow control position indicator according to the manufacturer's specifications, that takes a reading at least once every 15 min and provides a record indicating whether the emissions are directed to the add-on control device or diverted from the add-on control device and: <ul style="list-style-type: none"> <li>– the time of occurrence</li> <li>– flow control position is recorded, as well as every time the flow direction is changed</li> <li>– the flow control position indicator is installed at the entrance to any bypass line that could divert the emissions away from the add-on control device to the atmosphere</li> </ul> </li> <li>– secure any bypass line valve in the closed position with a car-seal or a lock-and-key type configuration, and: <ul style="list-style-type: none"> <li>– visually inspect the seal or closure mechanism at least once every month to ensure that the valve is maintained in the closed position</li> <li>– do not divert the emissions away from the add-on control device to the atmosphere</li> </ul> </li> <li>– ensure that any bypass line valve is in the closed (nondiverting) position through monitoring of valve position at least once every 15 min, and inspect the monitoring system at least once every month to verify that the monitor will indicate valve position</li> <li>– use an automatic shutdown system in which the engine testing operation is stopped when flow is diverted by the bypass line away from the add-on control device to the atmosphere when an engine test cell/stand is operating, and inspect the automatic shutdown system at least once every month to verify that it will detect diversions of flow and shut down the engine test cell/stand in operation</li> <li>– if any bypass line is opened, include a description of why the bypass line was opened and the length of time it remained open in the semiannual compliance reports required in 40 CFR 63.9350 (see checklist item AE.250.2.US).</li> </ul> </li></ul>

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<p><b>AE.240.3.US.</b> When using CEMS at engine test cells, specific parameters must be met (40 CFR 63.9285, 63.9290(b) through</p>	<p>Verify that capture system monitoring systems meet the following:</p> <ul style="list-style-type: none"> <li>– for each flow measurement device: <ul style="list-style-type: none"> <li>– locate a flow sensor in a position that provides a representative flow measurement in the duct from each capture device in the emission capture system to the add-on control device</li> <li>– reduce swirling flow or abnormal velocity distributions due to upstream and downstream disturbances</li> <li>– conduct a flow sensor calibration check at least semiannually</li> <li>– at least monthly, inspect components for integrity, electrical connections for continuity, and mechanical connections for leakage</li> </ul> </li> <li>– for each pressure drop measurement device: <ul style="list-style-type: none"> <li>– locate the pressure sensor(s) in or as close to a position that provides a representative measurement of the pressure drop across each opening being monitored</li> <li>– minimize or eliminate pulsating pressure, vibration, and internal and external corrosion</li> <li>– check pressure tap pluggage daily</li> <li>– using an inclined manometer with a measurement sensitivity of 0.0002 in water, check gauge calibration quarterly and transducer calibration monthly</li> <li>– conduct calibration checks any time the sensor exceeds the manufacturer's specified maximum operating pressure range or install a new pressure sensor</li> <li>– at least monthly, inspect components for integrity, electrical connections for continuity, and mechanical connections for leakage.</li> </ul> </li> </ul> <p>(NOTE: Compliance dates are as follows:</p> <ul style="list-style-type: none"> <li>– if the new or reconstructed affected source starts up before 27 May 2003, compliance with the emission limitations is required no later than 27 May 2003</li> <li>– if the new or reconstructed affected source starts up on or after 27 May 2003, compliance with emission limitations is required upon startup</li> <li>– if a new or reconstructed affected source is located at an area source that increases its emissions or its potential to emit such that it becomes a major source of HAP, the new or reconstructed affected source must be in compliance when the area source becomes a major source.)</li> </ul> <p>(NOTE: This checklist item applies when a facility owns or operates an engine test cell/stand that is located at a major source of HAP emissions. An engine test cell/stand is any apparatus used for testing uninstalled stationary or uninstalled mobile [motive] engines. An uninstalled engine is an engine that is not installed in, or an integrated part of, the final product. A major source of HAP emissions is a plant site that emits or has the potential to emit any single HAP at a rate of 10 tons</p>

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63.9290(d), 63.9295, and 63.9307) [Added July 2003].	<p>[9.07 megagrams] or more per year or any combination of HAP at a rate of 25 tons [22.68 megagrams] or more per year.)</p> <p>(NOTE: This checklist item applies to each new, reconstructed, or existing affected source, see definitions.)</p> <p>(NOTE: This checklist item does not apply to:</p> <ul style="list-style-type: none"> <li>– existing affected sources</li> <li>– any portion of a new or reconstructed affected source located at a major source that is used exclusively for testing internal combustion engines with rated power of less than 25 hp [19 kW]</li> <li>– any portion of a new or reconstructed affected source located at a major source that meets any of the following criteria:             <ul style="list-style-type: none"> <li>– any portion of the affected source used exclusively for testing combustion turbine engines</li> <li>– any portion of the affected source used exclusively for testing rocket engines</li> <li>– any portion of the affected source used in research and teaching activities at facilities that are not engaged in the development of engines or engine test services for commercial purposes</li> <li>– any portion of the affected source operated to test or evaluate fuels [such as knock engines], transmissions, or electronics.)</li> </ul> </li> </ul> <p>Verify that each CEMS is installed, operated, and maintained to monitor CO or total hydrocarbons (THC) and O<sub>2</sub> at the outlet of the exhaust system of the engine test cell/stand or at the outlet of the emission control device.</p> <p>(NOTE: To comply with the CO or THC percent reduction emission limitation, the facility may install, operate, and maintain a CEMS to monitor CO or THC and O<sub>2</sub> at both the inlet and the outlet of the emission control device.)</p> <p>Verify that, to comply with either emission limitations, the CEMS is installed and operated as follows:</p> <ul style="list-style-type: none"> <li>– install, operate, and maintain each CEMS according to the applicable Performance Specification (PS) of 40 CFR 60, appendix B (PS-3 or PS-4A)(see text)</li> <li>– conduct a performance evaluation of each CEMS according to the requirements in 40 CFR 63.8 and according to PS-3 of 40 CFR 60, appendix B, using Reference Method 3A or 3B for the O<sub>2</sub> CEMS, and according to PS-4A of 40 CFR 60, appendix B, using Reference Method 10 or 10B for the CO CEMS (see text)</li> <li>– each CEMS completes a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-min period and there are at least two data points, each representing a different 15-min period within the same hour, to have a valid hour of data</li> </ul>

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	<p>– all CEMS data are reduced as specified in 40 CFR 63.8(g)(2) (see text) and recorded as CO concentration in ppmvd, corrected to 15 percent O<sub>2</sub> content.</p> <p>(NOTE: For the performance evaluation of each CEMS, if the fuel used in the engines being tested is natural gas, the facility may use ASTM D 6522-00, Standard Test Method for Determination of Nitrogen Oxides, Carbon Monoxide and Oxygen Concentrations in Emissions from Natural Gas Fired Reciprocating Engines, Combustion Turbines, Boilers, and Process Heaters Using Portable Analyzers (incorporated by reference, see 40 CFR 63.14). As an alternative to Method 3B, The facility may use ANSI/ASME PTC 19.10-1981, “Flue and Exhaust Gas Analyses [Part 10, Instruments and Apparatus],” (incorporated by reference, see 40 CFR 63.14).)</p> <p>Verify that, if CEMS is installed, operated, and monitored at the outlet of the exhaust system of the engine test cell/stand, at the outlet of the emission control device, or at both the inlet and the outlet of the emission control device, the monitors are maintained and operated constantly as follows:</p> <ul style="list-style-type: none"> <li>– maintain the monitoring equipment at all times that the engine test cell/stand is operating, including, but not limited to, maintaining necessary parts for routine repairs of the monitoring equipment</li> <li>– conduct all monitoring in continuous operation at all times that the engine test cell/stand is operating, except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration drift checks and required zero and high-level adjustments)</li> <li>– data recorded during monitoring malfunctions, associated repairs, out-of-control periods, and required quality assurance or control activities are not used for purposes of calculating data averages.</li> </ul> <p>(NOTE: Quality assurance or control activities must be performed according to procedure 1 of 40 CFR 60, appendix F.)</p> <p>(NOTE: A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring equipment to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions. Any period for which the monitoring system is out-of-control and data are not available for a required calculation constitutes a deviation from the monitoring requirements.)</p> <p>(NOTE: Compliance dates are as follows:</p> <ul style="list-style-type: none"> <li>– if the new or reconstructed affected source starts up before 27 May 2003, compliance with the emission limitations is required no later than 27 May 2003</li> <li>– if the new or reconstructed affected source starts up on or after 27 May 2003, compliance with emission limitations is required upon startup</li> </ul>

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	<p>–if a new or reconstructed affected source is located at an area source that increases its emissions or its potential to emit such that it becomes a major source of HAP, the new or reconstructed affected source must be in compliance when the area source becomes a major source.)</p>



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<b>ENGINE TEST CELLS</b>  <b>AE.250</b> <b>Documentation</b>  <b>AE.250.1.US.</b> Specific notifications are required for owners/operators of engine test cells (40 CFR 63.9285, 63.9290(b) through 63.9290(d), 63.9295, 63.9310, and 63.9345) [ <b>Added July 2003</b> ].	<p>(NOTE: This checklist item applies when a facility owns or operates an engine test cell/stand that is located at a major source of HAP emissions. An engine test cell/stand is any apparatus used for testing uninstalled stationary or uninstalled mobile [motive] engines. An uninstalled engine is an engine that is not installed in, or an integrated part of, the final product. A major source of HAP emissions is a plant site that emits or has the potential to emit any single HAP at a rate of 10 tons [9.07 megagrams] or more per year or any combination of HAP at a rate of 25 tons [22.68 megagrams] or more per year.)</p> <p>(NOTE: This checklist item applies to each new, reconstructed, or existing affected source, see definitions.)</p> <p>(NOTE: This checklist item does not apply to:</p> <ul style="list-style-type: none"> <li>– existing affected sources</li> <li>– any portion of a new or reconstructed affected source located at a major source that is used exclusively for testing internal combustion engines with rated power of less than 25 hp [19 kW]</li> <li>– any portion of a new or reconstructed affected source located at a major source that meets any of the following criteria:             <ul style="list-style-type: none"> <li>– any portion of the affected source used exclusively for testing combustion turbine engines</li> <li>– any portion of the affected source used exclusively for testing rocket engines</li> <li>– any portion of the affected source used in research and teaching activities at facilities that are not engaged in the development of engines or engine test services for commercial purposes</li> <li>– any portion of the affected source operated to test or evaluate fuels [such as knock engines], transmissions, or electronics.)</li> </ul> </li> </ul> <p>Verify that the facility submits the following, as applicable:</p> <ul style="list-style-type: none"> <li>– performance evaluation of continuous monitoring systems (see 40 CFR 63.8(e) for details)</li> <li>– request to use an alternative monitoring method (see 40 CFR 63.8(f)(4) for details)</li> <li>– request to use an alternative to the relative accuracy test (see 40 CFR 63.8(f)(6) for details)</li> <li>– initial notifications (see 40 CFR 63.9(b) for details)</li> </ul>

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	<ul style="list-style-type: none"> <li>– notification of the date the CMS performance evaluation is scheduled to begin (see 40 CFR 63.9(g)(1) for details)</li> <li>– notification that COMS data results will be used to determine compliance with the applicable opacity emission standard during a performance test (see 40 CFR 63.9(g)(2) for details)</li> <li>– notification of compliance status (see 40 CFR 63.9(h) for details).</li> </ul> <p>Verify that, if the facility owns or operates a new or reconstructed test cell/stand used for testing internal combustion engines, they submit an Initial Notification as follows:</p> <ul style="list-style-type: none"> <li>– if the new or reconstructed affected source starts up before 27 May 2003, an Initial Notification is submitted not later than 120 calendar days after 27 May 2003.</li> <li>– if the new or reconstructed affected source starts up on or after 27 May 2003, an Initial Notification is submitted not later than 120 calendar days after the facility becomes subject to these regulations.</li> </ul> <p>Verify that, if the facility is required to submit an Initial Notification but is otherwise not affected by the requirements of this subpart (i.e., 40 CFR 63, Subpart PPPPP), the notification includes the following information in 40 CFR 63.9(b)(2)(i) through 40 CFR 63.9(b)(2)(v) and a statement that the new or reconstructed engine test cell/stand has no additional requirements and explain the basis of the exclusion (for example, that the test cell/stand is used exclusively for testing internal combustion engines with rated power of less than 25 hp (19 kW):</p> <ul style="list-style-type: none"> <li>– the name and address of the owner or operator</li> <li>– the address (i.e., physical location) of the affected source</li> <li>– an identification of the relevant standard, or other requirement, that is the basis of the notification and the source's compliance date</li> <li>– a brief description of the nature, size, design, and method of operation of the source, including its operating design capacity and an identification of each point of emission for each HAP, or if a definitive identification is not yet possible, a preliminary identification of each point of emission for each HAP</li> <li>– a statement of whether the affected source is a major source or an area source.</li> </ul> <p>Verify that, if the facility is required to comply with the emission limitations in Appendix 1-21, the facility submits a Notification of Compliance Status according to 40 CFR 63.9(h)(2)(ii) (see text).</p> <p>Verify that, for each initial compliance demonstration with the emission limitation, the facility submits the Notification of Compliance Status before the close of business on the 30th calendar day following the completion of the initial compliance demonstration.</p>

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<p><b>AE.250.2.US.</b> Specific reports are required for owners/operators of engine test cells (40 CFR 63.9285, 63.9290(b) through 63.9290(d), 63.9295, 63.9310, and 63.9350) [Added July 2003].</p>	<p>Verify that the facility submits a notification of initial performance evaluation of the CEMS or performance testing of the control device at least 60 calendar days before the performance testing/evaluation is scheduled to begin.</p> <p>(NOTE: Compliance dates are as follows:</p> <ul style="list-style-type: none"> <li>– if the new or reconstructed affected source starts up before 27 May 2003, compliance with the emission limitations is required no later than 27 May 2003</li> <li>– if the new or reconstructed affected source starts up on or after 27 May 2003, compliance with emission limitations is required upon startup</li> <li>– if a new or reconstructed affected source is located at an area source that increases its emissions or its potential to emit such that it becomes a major source of HAP, the new or reconstructed affected source must be in compliance when the area source becomes a major source.)</li> </ul> <p>(NOTE: This checklist item applies when a facility owns or operates an engine test cell/stand that is located at a major source of HAP emissions. An engine test cell/stand is any apparatus used for testing uninstalled stationary or uninstalled mobile [motive] engines. An uninstalled engine is an engine that is not installed in, or an integrated part of, the final product. A major source of HAP emissions is a plant site that emits or has the potential to emit any single HAP at a rate of 10 tons [9.07 megagrams] or more per year or any combination of HAP at a rate of 25 tons [22.68 megagrams] or more per year.)</p> <p>(NOTE: This checklist item applies to each new, reconstructed, or existing affected source, see definitions.)</p> <p>(NOTE: This checklist item does not apply to:</p> <ul style="list-style-type: none"> <li>– existing affected sources</li> <li>– any portion of a new or reconstructed affected source located at a major source that is used exclusively for testing internal combustion engines with rated power of less than 25 hp [19 kW]</li> <li>– any portion of a new or reconstructed affected source located at a major source that meets any of the following criteria: <ul style="list-style-type: none"> <li>– any portion of the affected source used exclusively for testing combustion turbine engines</li> <li>– any portion of the affected source used exclusively for testing rocket engines</li> <li>– any portion of the affected source used in research and teaching activities at facilities that are not engaged in the development of engines or engine test services for commercial purposes</li> <li>– any portion of the affected source operated to test or evaluate fuels [such as knock engines], transmissions, or electronics.)</li> </ul> </li> </ul> <p>Verify that owners or operators of a new or reconstructed affected source that must meet the emission limitation submit a semiannual compliance report according to</p>

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	<p>Appendix 1-25 to the Administrator by the following applicable dates unless the Administrator has approved a different schedule:</p> <ul style="list-style-type: none"> <li>– the first semiannual compliance report covers the period beginning on the compliance date and ending on 30 June or 31 December, whichever date is the first date following the end of the first calendar half after the compliance date</li> <li>– the first semiannual compliance report is postmarked or delivered no later than 31 July or 31 January, whichever date follows the end of the first calendar half after the compliance date</li> <li>– each subsequent semiannual compliance report covers the semiannual reporting period from 1 January through 30 June or the semiannual reporting period from 1 July through 31 December</li> <li>– each subsequent semiannual compliance report is postmarked or delivered no later than 31 July or 31 January, whichever is the first date following the end of the semiannual reporting period</li> <li>– for each new or reconstructed engine test cell/stand that is subject to permitting regulations pursuant to 40 CFR 70 or 71, and if the permitting authority has established the date for submitting</li> <li>– semiannual reports, submit the first and subsequent compliance reports according to the dates the permitting authority has established instead of according to the dates above.</li> </ul> <p>Verify that, if the facility had an SSM of a control device or associated monitoring equipment during the reporting period and actions were taken consistent with the facility SSMP, the compliance report includes the information in 40 CFR 63.10(d)(5)(i) (i.e., a letter, containing the name, title, and signature of the owner or operator or other responsible official who is certifying its accuracy).</p> <p>Verify that, if there is no deviation from the applicable emission limitation and the CEMS or CPMS was not out-of-control, the semiannual compliance report contains the following information:</p> <ul style="list-style-type: none"> <li>– company name and address</li> <li>– statement by a responsible official, with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report</li> <li>– date of report and beginning and ending dates of the reporting period</li> <li>– a statement that no deviation from the emission limit occurred during the reporting period and that no CEMS or CPMS was out-of control.</li> </ul> <p>Verify that, for each deviation from an emission limit, the semiannual compliance report includes the following information:</p> <ul style="list-style-type: none"> <li>– company name and address</li> <li>– statement by a responsible official, with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report</li> </ul>

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	<ul style="list-style-type: none"> <li>– date of report and beginning and ending dates of the reporting period</li> <li>– the date and time that each deviation started and stopped</li> <li>– the total operating time of each new or reconstructed engine test cell/stand during the reporting period</li> <li>– a summary of the total duration of the deviation during the reporting period (recorded in 4-h periods), and the total duration as a percent of the total operating time during that reporting period</li> <li>– a breakdown of the total duration of the deviations during the reporting period into those that are due to control equipment problems, process problems, other known causes, and unknown causes.</li> </ul> <p>Verify that, for each CEMS or CPMS deviation, the semiannual compliance report includes the following information:</p> <ul style="list-style-type: none"> <li>– company name and address</li> <li>– statement by a responsible official, with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report</li> <li>– date of report and beginning and ending dates of the reporting period</li> <li>– the date and time that each CEMS or CPMS was inoperative except for zero (low-level) and high-level checks</li> <li>– the date and time that each CEMS or CPMS was out-of-control including the information in 40 CFR 63.8(c)(8) as follows: <ul style="list-style-type: none"> <li>– all information concerning out-of-control periods, including start and end dates and hours and descriptions of corrective actions taken</li> <li>– in the excess emissions and continuous monitoring system performance report</li> </ul> </li> <li>– a summary of the total duration of CEMS or CPMS downtime during the reporting period (reported in 4-h periods), and the total duration of CEMS or CPMS downtime as a percent of the total engine test cell/stand operating time during that reporting period</li> <li>– a breakdown of the total duration of CEMS or CPMS downtime during the reporting period into periods that are due to monitoring equipment malfunctions, nonmonitoring equipment malfunctions, quality assurance/quality control calibrations, other known causes and other unknown causes</li> <li>– the monitoring equipment manufacturer(s) and model number(s) of each monitor</li> <li>– the date of the latest CEMS or CPMS certification or audit</li> <li>– the date and time period of each deviation from an operating limit in Appendix 1-22; date and time period of any bypass of the add-on control device; and whether each deviation occurred during a period of SSM or during another period</li> <li>– a summary of the total duration of each deviation from an operating limit in Appendix 1-22, each bypass of the add-on control device during the</li> </ul>

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<p><b>AE.250.3.US.</b> Specific records are required for owners/operators of engine test cells (40 CFR 63.9285, 63.9290(b) through 63.9290(d), 63.9295, 63.9310,</p>	<p>semiannual reporting period, and the total duration as a percent of the total source operating time during that semiannual reporting period</p> <ul style="list-style-type: none"> <li>– a breakdown of the total duration of the deviations from the operating limits in Appendix 1-22 and bypasses of the add-on control device during the semiannual reporting period by identifying deviations due to startup, shutdown, control equipment problems, process problems, other known causes, and other unknown causes</li> <li>– a description of any changes in CEMS, CPMS, or controls since the last reporting period.</li> </ul> <p>Verify that, if the facility had an SSM of a control device or associated monitoring equipment during the semiannual reporting period that was not consistent with the facility's SSMP, the facility submits an immediate SSM report according to the requirements in 40 CFR 63.10(d)(5)(ii) as follows:</p> <ul style="list-style-type: none"> <li>– report the actions taken for that event within 2 working days after commencing actions inconsistent with the plan via a telephone call (or FAX transmission) to the Administrator</li> <li>– follow up with a letter that includes the following within 7 working days after the end of the event: <ul style="list-style-type: none"> <li>– the name, title, and signature of the owner or operator or other responsible official who is certifying its accuracy</li> <li>– an explanation the circumstances of the event</li> <li>– the reasons for not following the startup, shutdown, and malfunction plan</li> <li>– whether any excess emissions and/or parameter monitoring exceedances are believed to have occurred.</li> </ul> </li> </ul> <p>(NOTE: Compliance dates are as follows:</p> <ul style="list-style-type: none"> <li>– if the new or reconstructed affected source starts up before 27 May 2003, compliance with the emission limitations is required no later than 27 May 2003</li> <li>– if the new or reconstructed affected source starts up on or after 27 May 2003, compliance with emission limitations is required upon startup</li> <li>– if a new or reconstructed affected source is located at an area source that increases its emissions or its potential to emit such that it becomes a major source of HAP, the new or reconstructed affected source must be in compliance when the area source becomes a major source.)</li> </ul> <p>(NOTE: This checklist item applies when a facility owns or operates an engine test cell/stand that is located at a major source of HAP emissions. An engine test cell/stand is any apparatus used for testing uninstalled stationary or uninstalled mobile [motive] engines. An uninstalled engine is an engine that is not installed in, or an integrated part of, the final product. A major source of HAP emissions is a plant site that emits or has the potential to emit any single HAP at a rate of 10 tons</p>

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63.9355, and 63.9360) [Added July 2003].	<p>[9.07 megagrams] or more per year or any combination of HAP at a rate of 25 tons [22.68 megagrams] or more per year.)</p> <p>(NOTE: This checklist item applies to each new, reconstructed, or existing affected source, see definitions.)</p> <p>(NOTE: This checklist item does not apply to:</p> <ul style="list-style-type: none"> <li>– existing affected sources</li> <li>– any portion of a new or reconstructed affected source located at a major source that is used exclusively for testing internal combustion engines with rated power of less than 25 hp [19 kW]</li> <li>– any portion of a new or reconstructed affected source located at a major source that meets any of the following criteria: <ul style="list-style-type: none"> <li>– any portion of the affected source used exclusively for testing combustion turbine engines</li> <li>– any portion of the affected source used exclusively for testing rocket engines</li> <li>– any portion of the affected source used in research and teaching activities at facilities that are not engaged in the development of engines or engine test services for commercial purposes</li> <li>– any portion of the affected source operated to test or evaluate fuels [such as knock engines], transmissions, or electronics.)</li> </ul> </li> </ul> <p>Verify that a copy is kept of all of the following records:</p> <ul style="list-style-type: none"> <li>– a copy of each notification and report submitted to comply with this subpart (i.e. 40 CFR 63, Subpart PPPPP), including all documentation supporting any Initial Notification or Notification of Compliance Status submitted</li> <li>– records of performance evaluations as required</li> <li>– records of the occurrence and duration of each malfunction of the air pollution control equipment, if applicable</li> <li>– records of all maintenance on the air pollution control equipment, if applicable</li> <li>– the calculations of the mass of organic HAP emission reduction by emission capture systems and add-on control devices.</li> </ul> <p>Verify that, for each CPMS, the following records are kept:</p> <ul style="list-style-type: none"> <li>– for each deviation, a record of whether the deviation occurred during a period of SSM of the control device and associated monitoring equipment</li> <li>– the records in 40 CFR 63.6(e)(3)(iii) through (v) related to SSM: <ul style="list-style-type: none"> <li>– records of actions taken by the owner or operator during a startup, shutdown, or malfunction (NOTE: These records may take the form of a “checklist,” or other effective form of recordkeeping, that confirms conformance with the startup, shutdown, and malfunction plan for that event)</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– records of the occurrence and duration of each startup, shutdown, or malfunction of operation and each malfunction of the air pollution control equipment</li> <li>– records of action inconsistent with the procedures specified in the affected source's startup, shutdown, and malfunction plan</li> <li>– the written startup, shutdown, and malfunction plan</li> <li>– if the startup, shutdown, and malfunction plan is revised, previous (i.e., superseded) versions of the startup, shutdown, and malfunction plan on record for a 5 yr after each revision to the plan</li> <li>– the records required to show continuous compliance with each operating limit specified in Appendix 1-22 that applies to the facility</li> <li>– for each capture system that is a PTE, the data and documentation used to support a determination that the capture system meets the criteria in Method 204 of appendix M to 40 CFR 51 for a PTE and has a capture efficiency of 100 percent</li> <li>– for each capture system that is not a PTE, the data and documentation used to determine capture efficiency according to the requirements specified in 40 CFR 63.9321 and 63.9322(b) through (e) (see checklist item AE.230.3.US), including the following records that apply to you: <ul style="list-style-type: none"> <li>– records for a gas-to-gas protocol using a temporary total enclosure or a building enclosure (NOTE: Records of the mass of TVH emissions captured by the emission capture system as measured by Method 204B or C of appendix M to 40 CFR 51 at the inlet to the add-on control device, including a copy of the test report)</li> <li>– records of the mass of TVH emissions not captured by the capture system that exited the temporary total enclosure or building enclosure during each capture efficiency test run as measured by Method 204D or E of appendix M to 40 CFR 51, including a copy of the test report</li> <li>– records documenting that the enclosure used for the capture efficiency test met the criteria in Method 204 of appendix M to 40 CFR 51 for either a temporary total enclosure or a building enclosure</li> <li>– records for an alternative protocol</li> <li>– records needed to document a capture efficiency determination using an alternative method or protocol, if applicable</li> </ul> </li> <li>– the following records for each add-on control device organic HAP destruction or removal efficiency determination: <ul style="list-style-type: none"> <li>– records of each add-on control device performance test conducted according to 40 CFR 63.9321, 63.9322, and 63.9323 (see checklist items AE.230.3.US)</li> <li>– records of the engine testing conditions during the add-on control device performance test showing that the performance test was conducted under representative operating conditions</li> </ul> </li> <li>– records of the data and calculations used to establish the emission capture and add-on control device operating limits as specified in 40 CFR 63.9324 (see checklist item AE.230.2.US) and to document compliance with the operating limits as specified in Appendix 1-22.</li> </ul>

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	<p>Verify that, for each CEMS, the following records are kept:</p> <ul style="list-style-type: none"> <li>– records described in 40 CFR 63.10(b)(2)(vi) through (xi)</li> <li>– previous (i.e., superseded) versions of the performance evaluation plan</li> <li>– request for alternatives to the relative accuracy test for CEMS, if applicable.</li> <li>– the records in 40 CFR 63.6(e)(3)(iii) through (v) related to SSM of the control device and associated monitoring equipment: <ul style="list-style-type: none"> <li>– records of actions taken by the owner or operator during a startup, shutdown, or malfunction (NOTE: These records may take the form of a “checklist,” or other effective form of recordkeeping, that confirms conformance with the startup, shutdown, and malfunction plan for that event.)</li> <li>– records of the occurrence and duration of each startup, shutdown, or malfunction of operation and each malfunction of the air pollution control equipment</li> <li>– records of action inconsistent with the procedures specified in the affected source's startup, shutdown, and malfunction plan</li> <li>– the written startup, shutdown, and malfunction plan</li> <li>– if the startup, shutdown, and malfunction plan is revised, previous (i.e., superseded) versions of the startup, shutdown, and malfunction plan on record for a 5 yr after each revision to the plan.</li> </ul> </li> </ul> <p>Verify that the records required in Appendix 1-24 are kept to show continuous compliance with each emission limitation that applies to the facility.</p> <p>Verify that all applicable records are maintained in such a manner that they can be readily accessed and are suitable for inspection.</p> <p>Verify that records are kept for 5 yr following the date of each occurrence, measurement, maintenance, corrective action, report, or record.</p> <p>Verify that records of the most recent 2 years are retained onsite, or are accessible onsite.</p> <p>(NOTE: Records of the remaining 3 yr may be retained offsite.</p> <p>(NOTE: Compliance dates are as follows:</p> <ul style="list-style-type: none"> <li>– if the new or reconstructed affected source starts up before 27 May 2003, compliance with the emission limitations is required no later than 27 May 2003</li> <li>– if the new or reconstructed affected source starts up on or after 27 May 2003, compliance with emission limitations is required upon startup</li> <li>– if a new or reconstructed affected source is located at an area source that increases its emissions or its potential to emit such that it becomes a major source of HAP, the new or reconstructed affected source must be in compliance when the area source becomes a major source.)</li> </ul>

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<p><b>REMEDIATION SITE EMISSIONS</b></p> <p><b>AE.300 General</b></p> <p><b>AE.300.1.US.</b> In certain circumstances, site remediations have to comply only with the documentation requirements for HAP determination (40 CFR 63.7881(c)) [Added April 2004; Revised January 2007].</p> <p><b>AE.300.2.US.</b> Completed site remediations are not required to comply with 40 CFR 63, Subpart GGGGG if appropriate records of compliance are maintained (40</p>	<p>Verify that a site remediation which prepares and maintains documentation to support the determination of the total HAP quantity used to demonstrate compliance, including a description of the methodology and data used for determining the total HAP content of the material, also meets the following:</p> <ul style="list-style-type: none"> <li>– before beginning the site remediation, it is determined that the remediation material will be excavated, extracted, pumped, or otherwise removed during the site remediation and that the total quantity of the HAP listed in Appendix 1-27 which is contained in the material is less than 1 Mg/yr</li> <li>– this exemption is applied to more than one site remediation at the facility only if the total quantity of the HAP listed in Appendix 1-27 for all of the site remediations exempted is less than 1 Mg/yr.</li> </ul> <p>Verify that, in order to be exempt from the requirements of 40 CFR Subpart GGGG, except for recordkeeping requirements, the site remediation meets the following:</p> <ul style="list-style-type: none"> <li>– it is determined that the total quantity of the HAP listed in Appendix 1-27 that is contained in the remediation material excavated, extracted, pumped, or otherwise removed during all of the site remediations conducted at the facility is less than 1 megagram (Mg) annually</li> <li>– written documentation is prepared and maintained at the facility to support the determination that the total HAP quantity in the remediation materials for the year is less than 1 Mg</li> <li>– the written documentation includes a description of the methodology and data used for determining the total HAP content of the remediation material</li> </ul> <p>(NOTE: The facility's Title V permit does not have to be reopened or revised solely to include the recordkeeping requirement specified in this checklist item. However, the requirement must be included in the permit the next time the permit is renewed, reopened, or revised for another reason.)</p> <p>(NOTE: The exemption applies the 1 Mg limit on a facility-wide, annual basis, and there is no restriction to the number of site remediations that can be conducted during this period.)</p> <p>Verify that, if not complying with the requirements in 40 CFR 63, Subpart GGGGG [40 CFR 63.7880 through 63.7957, see checklist items AE.300.1.US through AE.300.12.US], all remediation activities potentially subject to 40 CFR 63, Subpart GGGGG [40 CFR 63.7880 through 63.7957, see checklist items AE.300.1.US</p>

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<p>CFR 63.7881(d)) [Added April 2004].</p> <p><b>AE.300.3.US.</b> A site remediation completed within 30 consecutive calendar days must meet certain standards to claim exemption from 40 CFR 63.7885 through 63.7953 (40 CFR 63.7884(b)) [Added April 2004; Revised January 2007].</p>	<p>through AE.300.12.US] are complete and the Administrator has been notified in writing that all potentially subject remediation activities are complete.</p> <p>Verify that records of compliance, in accordance with 40 CFR 63.7953 (see checklist item AE.300.12.US) are kept for each remediation activity that was subject to 40 CFR 63, Subpart GGGGG [40 CFR 63.7880 through 63.7957, see checklist items AE.300.1.US through AE.300.12.US].</p> <p>(NOTE: All future remediation activity meeting the applicability criteria in 40 CFR 63, Subpart GGGGG [40 CFR 63.7880 through 63.7957, see checklist items AE.300.1.US through AE.300.12.US] must comply with the Federal regulations.)</p> <p>Verify that the 30-day period for a site remediation is determined from the first day that any action is initiated that removes, destroys, degrades, transforms, immobilizes, or otherwise manages the remediation materials.</p> <p>Verify that the end of the site remediation is determined by the last day on which treatment or disposal of the remediation materials from the cleanup is completed.</p> <p>Verify that the following activities, when completed before beginning this initial action, are not counted as part of the 30-day period:</p> <ul style="list-style-type: none"> <li>– activities to characterize the type and extent of the</li> <li>– contamination by collecting and analyzing samples</li> <li>– activities to obtain permits from Federal, State, or local authorities to conduct the site remediation</li> <li>– activities to schedule workers and necessary equipment</li> <li>– activities to arrange for contractor or third party assistance in performing the site remediation.</li> </ul> <p>(NOTE: This exemption cannot be used for a site remediation involving the staged or intermittent cleanup of remediation material whereby the remediation activities at the site are started, stopped, and then re-started in a series of intervals, with durations less than 30-days per interval, when the time period from the beginning of the first interval to the end of the last interval exceeds 30 days.)</p> <p>Verify that the first day of the 30-day period is defined as the day on which the facility initiates any action that removes, destroys, degrades, transforms, immobilizes, or otherwise manages the remediation materials.</p> <p>(NOTE: The following activities, when completed before beginning the initial action, are not counted as part of the 30-day period:</p> <ul style="list-style-type: none"> <li>– activities to characterize the type and extent of the contamination by collecting and analyzing samples; activities to obtain permits from Federal, State, or local authorities to conduct the site remediation</li> <li>– activities to schedule workers and necessary equipment</li> </ul>

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<p><b>AE.300.4.US.</b> Site remediations must meet specific general compliance requirements for HAP emissions (40 CFR 63.7881(a), 63.7881(b), 63.7882(a), 63.7935) [Added April 2004; Revised July 2006; Revised January 2007].</p>	<p>– activities to arrange for contractor or third party assistance in performing the site remediation.)</p> <p>Verify that the last day of the 30-day period is defined as the day on which treatment or disposal of all of the remediation materials generated by the cleanup is completed such that the organic constituents in these materials no longer have a reasonable potential for volatilizing and being released to the atmosphere.</p> <p>Verify that, if treatment or disposal of the remediation materials is conducted at an off-site facility where the final treatment or disposal of the material cannot, or may not, be completed within the 30-day exemption period, then the shipment of all of the remediation material generated from the cleanup that is transferred to another party, or shipped to another facility, within the 30-day period, is performed according to the applicable requirements specified in 40 CFR 63.7936.</p> <p>Verify that, if the facility ships or otherwise transfers the remediation material off-site the facility includes in the applicable shipping documentation a statement that the shipped material was generated by a site remediation activity subject to the conditions of this exemption.</p> <p>Verify that the statement includes the date on which the facility initiated the site remediation activity generating the shipped remediation materials, and the date 30 calendar days following the initiation date.</p> <p>Verify that written documentation describing the exempted site remediation, and listing the initiation and completion dates for the site remediation is prepared and maintained at the facility.</p> <p>(NOTE: These requirements apply at facilities at which a site remediation [see definitions] meets all three of the following conditions:</p> <ul style="list-style-type: none"> <li>– the site remediation cleans up a remediation material</li> <li>– the site remediation is co-located at the facility with one or more other stationary sources that emit HAP and meet an affected source definition specified for a source category that is regulated by another subpart under 40 CFR 63 [NOTE: This condition applies regardless whether or not the affected stationary source(s) at the facility is subject to the standards under the applicable subpart(s)]</li> <li>– the facility is a major source of HAP except as follows: <ul style="list-style-type: none"> <li>– for production field facilities, only the HAP emissions from the glycol dehydration units and storage vessels with the potential for flash emissions are aggregated with the HAP emissions from the site remediation activities at the facility for a major source determination</li> <li>– for natural gas transmission and storage facilities, HAP emissions are aggregated in accordance with the definition of major source in 40 CFR 63.1271 for a major source determination. )</li> </ul> </li> </ul>

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	<p>(NOTE: A major source emits or has the potential to emit any single HAP at the rate of 10 tons [9.07 megagrams] or more per year of any HAP or any combination of HAP at a rate of 25 tons [22.68 megagrams] or more per year. All emissions of HAP from every source at the facility [i.e., both the site remediation activity and all other facility activities] must be considered in making this calculation.)</p> <p>(NOTE: See also the definitions for Exempted Site Remediation and Affected Site Remediation Sources.)</p> <p>(NOTE: See Appendix 1-26 for the compliance schedule.)</p> <p>Verify that the remediation site is in compliance with the emissions limitations (including operating limits) and the work practice standards except during periods of startup, shutdown, and malfunction.</p> <p>Verify that remediation sites always operate and maintain affected sources, including air pollution control and monitoring equipment, according to the provisions in 40 CFR 63.6(e)(1)(i).</p> <p>Verify that a written startup, shutdown, and malfunction plan (SSMP) is developed according to the provisions in 40 CFR 63.6(e)(3).</p> <p>Verify that the facility reports each instance in which it did not meet each emissions limitation and each operating limit that applies.</p> <p>(NOTE: This report includes periods of startup, shutdown, and malfunction.)</p> <p>Verify that each instance in which the facility did not meet the requirements for applicable work practice standards are reported.</p> <p>(NOTE: These instances are deviations from the emissions limitations and work practice standards and must be reported according to the requirements in 40 CFR 63.7951 [see checklist item AE.300.11.US].)</p> <p>(NOTE: Deviations that occur during a period of startup, shutdown, or malfunction are not violations if it is demonstrated to the Administrator's satisfaction that the facility was operating according to the SSMP in accordance with 40 CFR 63.6(e)(1). The Administrator will determine whether deviations that occur during a period of startup, shutdown, or malfunction are violations, according to the provisions in 40 CFR 63.6(e).)</p> <p>Verify that, for each required monitoring system, a site-specific monitoring plan that addresses the following is developed and made available for inspection by the permitting authority, upon request:</p> <ul style="list-style-type: none"> <li>– installation of the continuous monitoring system sampling probe or other interface at a measurement location relative to each affected process unit such</li> </ul>

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<p><b>AE.300.5.US.</b> Site remediations must demonstrate initial compliance with general compliance requirements for HAP emissions (40 CFR 63.7937) [Added April 2004; Revised January 2007].</p>	<p>that the measurement is representative of control of the exhaust emissions (e.g., on or downstream of the last control device)</p> <ul style="list-style-type: none"> <li>– performance and equipment specifications for the sample interface, the pollutant concentration or parametric signal analyzer, and the data collection and reduction system</li> <li>– performance evaluation procedures and acceptance criteria (e.g., calibrations).</li> </ul> <p>Verify that, in the site-specific monitoring plan, the following are addressed:</p> <ul style="list-style-type: none"> <li>– ongoing operation and maintenance procedures according to the general requirements of 40 CFR 63.8(c)(1), 63.8(c)(3), 63.8(c)(4)(ii), 63.8(c)(7), and 63.8(c)(8)</li> <li>– ongoing data quality assurance procedures according to the general requirements of 40 CFR 63.8(d)</li> <li>– ongoing recordkeeping and reporting procedures according to the general requirements of 40 CFR 63.10(c), 63.10(e)(1), and 63.10(e)(2)(i).</li> </ul> <p>Verify that the continuous monitoring system is operated and maintained according to the site-specific monitoring plan.</p> <p>Verify that a performance evaluation of each continuous monitoring is conducted according to the site-specific monitoring plan.</p> <p>(NOTE: See checklist item AE.300.4.US for applicability information.)</p> <p>Verify that initial compliance with the general standards in 40 CFR 63.7885 (see checklist item AE.305.1.US) that apply to affected process vents are demonstrated by meeting the following requirements as applicable:</p> <ul style="list-style-type: none"> <li>– if HAP emissions are controlled from the affected process vents according to the emission limitations and work practice standards, the initial compliance requirements in 40 CFR 63.7891 (see checklist item AE.305.4.US) are met</li> <li>– if the remediation material treated or managed by the process vented through the affected process vents has an average total VOHAP of less than 10 ppmw, part of the notification of compliance status includes a signed statement that the facility determined, according to the procedures of 40 CFR 63.7943, and recorded the average VOHAP concentration of the remediation material placed in the affected remediation material management unit</li> <li>– HAP emissions are controlled from the affected process vents to meet standards in another subpart under 40 CFR 61 or 40 CFR 63, the facility has submitted as part of the notification of compliance status, a signed statement that the following requirements have been met: <ul style="list-style-type: none"> <li>– the facility includes in its statement the citations for the specific emission limitations and work practice standards that apply to the process vents under the subpart in 40 CFR 61 or 40 CFR 63 to which the vents are also subject</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– the facility is complying with all applicable emissions limitations and work practice standards specified by the applicable subpart</li> <li>– for each process vent exempted according to 40 CFR 63.7885(c) (see checklist item AE.305.1.US), the facility has submitted as part of their notification of compliance status, a signed statement that the following requirements are met: <ul style="list-style-type: none"> <li>– the statement identifies each process vent that qualifies for an exemption and the exemption conditions that apply to each exempted process vent</li> <li>– the measurements have been performed and the documentation prepared that demonstrates that each exempted process vent stream meets the applicable exemption conditions.</li> </ul> </li> </ul> <p>Verify that initial compliance with the general standards in 40 CFR 63.7886 (see checklist item AE.307.1.US) that apply to your affected remediation material management units is demonstrated by meeting the following requirements as applicable to the remediation material management units:</p> <ul style="list-style-type: none"> <li>– if the remediation material management unit uses air pollution controls according to the standards specified in 40 CFR 63.7886(b)(1) (see checklist item AE.307.1.US), the initial compliance requirements applicable to the remediation material management unit in 40 CFR 40 CFR 63.7896, 63.7901, 63.7906, 63.7911, or 63.7816 are met</li> <li>– if the remediation material managed in the affected remediation material management unit has an average total VOHAP of less than 500 ppmw according to 40 CFR 63.7886(b)(2) (see checklist item AE.307.1.US), and as part of the notification of compliance status, a signed statement is submitted that the average VOHAP concentration of the remediation material placed in the affected remediation material management unit has been determined and recorded</li> <li>– if HAP emissions are controlled from the affected remediation material management units to meet standards in another subpart under 40 CFR 61 or 40 CFR 63 according to 40 CFR 63.7886(b)(3) (see checklist item AE.307.1.US), the facility has submitted as part of your notification of compliance status a signed statement that the following requirements have been met: <ul style="list-style-type: none"> <li>– included in the statement are the citations for the specific emission limitations and work practice standards that apply to the remediation material management units under the subpart in 40 CFR 61 or 40 CFR 63 that the units are also subject</li> <li>– all applicable emissions limitations and work practice standards specified by the applicable subpart re being complied with</li> </ul> </li> <li>– if HAP emissions are controlled from the affected remediation material management unit that is an open tank or surface impoundment used for a biological treatment process according to 40 CFR 63.7886(b)(4) (see checklist item AE.307.1.US), the facility has submitted, as part of their notification of compliance status, a signed statement that the facility has met the following requirements:</li> </ul>

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<p><b>AE.300.6.US.</b> Site remediations must demonstrate continuous compliance with general compliance requirements for HAP emissions (40 CFR 63.7938) [Added April 2004; Revised January 2007].</p>	<ul style="list-style-type: none"> <li>– the measurements have been performed and the documentation prepared as required in 40 CFR 63.7886(b)(4)(i) (see checklist item AE.307.1.US) that demonstrates that each unit meets the applicable performance levels</li> <li>– the biological treatment process conducted in each unit is monitored according the requirements in 40 CFR 63.684(e)(4)</li> <li>– for each remediation material management unit used for cleanup of radioactive mixed waste and exempted according to 40 CFR 63.7886(c) (see checklist item AE.307.1.US), the facility has submitted, as part of their notification of compliance status, a signed statement that the facility has met the following requirements:               <ul style="list-style-type: none"> <li>– included in the statement are the citations for the specific requirements that apply to the remediation material management units under regulations, directives, and other requirements under the Atomic Energy Act, the Nuclear Waste Policy Act, or the Waste Isolation Pilot Plant Land Withdrawal Act</li> <li>– all requirements that apply to the remediation material management units under the applicable regulations or directives are met</li> </ul> </li> <li>– for each remediation material management unit exempted according to 40 CFR 63.7886(d) (see checklist item AE.307.1.US), the facility has submitted, as part of their notification of compliance status, a signed statement that the facility has met the following requirements:               <ul style="list-style-type: none"> <li>– according to the requirements in 40 CFR 63.7886(d)(1) (see checklist item AE.307.1.US) each of the remediation material management units selected to be exempted have been designated</li> <li>– an initial determination has been performed and the documentation prepared as required in 40 CFR 63.7886(d)(2) (see checklist item AE.307.1.US) that demonstrates that the total annual HAP quantity (based on the HAP listed in Appendix 1-27) in the remediation material placed in all of the designated exempted remediation material management units will be less than 1 Mg/yr.</li> </ul> </li> </ul> <p>Verify that initial compliance is demonstrated with the general standards in 40 CFR 63.7887 that apply to affected equipment leak sources by meeting the requirements in 40 CFR 63.7921.</p> <p>(NOTE: See checklist item AE.300.4.US for applicability information.)</p> <p>Verify that continuous compliance with the general standards in 40 CFR 63.7885 (see checklist item AE.305.1.US) that apply to affected process vents is demonstrated by meeting the following requirements, as applicable to the facilities process vents:</p> <ul style="list-style-type: none"> <li>– if HAP emissions are controlled from the affected process vents according to the emission limitations and work practice standards, continuous compliance is demonstrated by meeting the requirements in 40 CFR 63.7893</li> </ul>

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	<ul style="list-style-type: none"> <li>– if the remediation material treated or managed by the process vented through the affected process vents has an average total VOHAP of less than 10 ppmw according to 40 CFR 63.7885(c)(1) (see checklist item AE.305.1.US), continuous compliance is demonstrated by performing a new determination and preparing new documentation as required in 40 CFR 63.7885(c)(2) (see checklist item AE.305.1.US) to show that the total VOHAP concentration of the remediation material remains less than 10 ppmw</li> <li>– if HAP emissions are controlled from the affected process vents to meet standards in another subpart under 40 CFR 61 or 40 CFR 63, continuous compliance is demonstrated by complying with all applicable emissions limitations and work practice standards specified by the applicable subpart</li> <li>– for each process vent exempted according to 40 CFR 63.7885(c), continuous compliance is demonstrated by performing new measurements and preparing new documentation that demonstrates that each exempted process vent stream meets the applicable exemption conditions in 40 CFR 63.7885(c)(1) (see checklist item AE.305.1.US).</li> </ul> <p>Verify that continuous compliance with the general standards in 40 CFR 63.7886 (see checklist item AE.307.1.US) that apply to the affected remediation material management units is demonstrated by meeting the following requirements, as applicable to the remediation material management units:</p> <ul style="list-style-type: none"> <li>– if the remediation material management unit uses air pollution controls according to the standards specified in 40 CFR 63.7886(b)(1) (see checklist item AE.307.1.US), continuous compliance is demonstrated by meeting the requirements applicable to the remediation material management unit in 40 CFR 63.7898, 63.7903, 63.7908, 63.7913, or 63.7818 (see checklist items AE.315.4.US, AE.317.4.US)</li> <li>– if the remediation material managed in the affected remediation material management units has an average total VOHAP concentration of less than 500 ppmw according to 40 CFR 63.7886(b)(2) (see checklist item AE.307.1.US), continuous compliance is demonstrated by performing a new determination and preparing new documentation as required in 40 CFR 63.7886(c)(2) (see checklist item AE.307.1.US) to show that the total VOHAP concentration of the remediation material remains less than 500 ppmw.</li> </ul> <p>Verify that, if HAP emissions are controlled from the affected remediation material management units to meet standards in another subpart under 40 CFR 61 or 40 CFR 63 according to 40 CFR 63.7886(b)(3) (see checklist item AE.307.1.US), continuous compliance is demonstrated by meeting all applicable emissions limitations and work practice standards specified by the applicable subpart.</p> <p>Verify that, if HAP emissions are controlled from the affected remediation material management unit that is an open tank or surface impoundment used for a biological treatment process according to 40 CFR 63.7886(b)(4) (see checklist item AE.307.1.US), continuous compliance is demonstrated by meeting the following requirements:</p>

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<b>AE.300.7.US.</b> Site remediations transferring remediation material offsite to another facility must meet specific requirements (40 CFR 63.7936) [Added April 2004; Citation Revised July 2014].	<ul style="list-style-type: none"> <li>– performing new measurements and preparing new documentation as required in 40 CFR 63.7886(4)(i) (see checklist item AE.307.1.US) that demonstrates that each unit meets the applicable performance levels</li> <li>– monitoring the biological treatment process conducted in each unit according to the requirements in 40 CFR 63.7886(4)(i) (see checklist item AE.307.1.US).</li> </ul> <p>Verify that, for each remediation material management unit used for cleanup of radioactive mixed waste and exempted according to 40 CFR 63.7886(c) (see checklist item AE.307.1.US), continuous compliance is demonstrated by meeting all requirements that apply to the remediation material management units under the applicable regulations or directives.</p> <p>Verify that, for each remediation material management unit exempted according to 40 CFR 63.7886(d) (see checklist item AE.307.1.US), continuous compliance is demonstrated by performing new measurements and preparing new documentation as required in 40 CFR 63.7886(d)(2) (see checklist item AE.307.1.US) to show that the total annual HAP quantity (based on the HAP listed in Appendix 1-27) in the remediation material placed in all of the designated exempted remediation material management units remains less than 1 Mg/yr.</p> <p>Verify that continuous compliance with the general standards in 40 CFR 63.7887 that apply to your affected equipment leak sources is demonstrated by meeting the requirements in 40 CFR 63.7923.</p> <p>(NOTE: See checklist item AE.300.4.US for applicability information.)</p> <p>Verify that, if the facility transfers to another facility a remediation material generated by the facilities remediation activities and having an average total VOHAP concentration equal to or greater than 10 ppmw (as determined using the procedures specified in 40 CFR 63.7943), the remediation material is transferred to a facility that meets one of the following requirements:</p> <ul style="list-style-type: none"> <li>– a facility where the remediation material will be directly disposed in a landfill or other land disposal unit according to all applicable Federal and State requirements</li> <li>– a facility subject to 40 CFR 63, Subpart DD: National Emission Standards for HAP from Offsite Waste and Recovery Operations where the exemption under 40 CFR 63.680(b)(2)(iii) is waived and air emissions from the management of the remediation material at the facility are controlled according to all applicable requirements in the subpart for an offsite material.</li> <li>– a facility where the remediation material will be managed according to all applicable requirements under this subpart (i.e., 40 CFR 63, Subpart GGGGG).</li> </ul> <p>Verify that the name, street address, and telephone number of the facility where the remediation material is sent is recorded.</p>

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	<p>Verify that, if sending the material to a facility subject to 40 CFR 63, Subpart D: <i>Regulations Governing Compliance Extensions for Early Reductions of HAP</i> where the exemption under 40 CFR 63.680(b)(2)(iii) is waived and air emissions from the management of the remediation material are controlled according to all applicable requirements, meet the following:</p> <ul style="list-style-type: none"> <li>– prior to sending the remediation material, a written statement is obtained from the owner or operator of the facility to which remediation material is sent acknowledging that the exemption under 40 CFR 63.680(b)(2)(iii) will be waived for all remediation material received at the facility and the material will be managed as an off-site material at the facility according to all applicable requirements</li> <li>– the statement is signed by the responsible official of the receiving facility, provides the name and address of the receiving facility, and a copy is sent to the appropriate EPA Regional Office at the addresses listed in 40 CFR 63.13.</li> </ul> <p>Verify that, if sending the material to a facility where it will be managed according to the applicable requirements under this subpart (i.e., 40 CFR 63, Subpart GGGGG), the following are met:</p> <ul style="list-style-type: none"> <li>– prepare and include a notice with each shipment or transport of remediation material that states that the remediation material contains organic HAP that are to be treated according to the provisions of this subpart (i.e., 40 CFR 63, Subpart GGGGG)</li> <li>– when the transport is continuous or ongoing (for example, discharge to a publicly owned treatment works), the notice is submitted to the receiving facility owner or operator initially and whenever there is a change in the required treatment</li> <li>– do not transfer the remediation material unless the owner or operator of the facility receiving the remediation material has submitted to the EPA a written certification that he or she will manage remediation material received according to the requirements of 40 CFR 63.7885 through 63.7957 (see checklist items AE.300.1.US through AE.300.12.US)</li> <li>– written certifications and revocation statements to the EPA from the receiving facility owner or operator are signed by the responsible official of the receiving facility, provide the name and address of the receiving facility, and a copy is sent to the appropriate EPA Regional Office at the addresses listed in 40 CFR 63.13.</li> </ul> <p>(NOTE: Written certifications are not transferable.)</p> <p>(NOTE: The receiving facility owner or operator may revoke the written certification by sending a written statement to the EPA and to the facility providing at least 90 days notice that they rescind acceptance of responsibility for compliance with the regulatory provisions listed in this section. Upon expiration of the notice period, remediation material may not be transferred to the facility.)</p>

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	<p>(NOTE: By providing the written certification to the EPA, the receiving facility owner or operator accepts responsibility for compliance with the regulatory provisions with respect to any shipment of remediation material covered by the written certification. Failure to abide by any of those provisions with respect to such shipments may result in enforcement action by the EPA against the certifying entity according to the enforcement provisions applicable to violations of these provisions by owners or operators of sources.)</p> <p>(NOTE: Acceptance by a facility owner or operator of remediation material from a site remediation subject to this subpart (i.e., 40 CFR 63, Subpart GGGGG) does not, by itself, require that the facility owner or operator obtain a Title V permit under 40 CFR 70.3 or 40 CFR 71.3.)</p> <p>(NOTE: See checklist item AE.300.4.US for applicability information.)</p> <p>Verify that a performance test or design evaluation is done for each existing affected source within 180 calendar days after the compliance date that is specified in 40 CFR 63.7883.</p> <p>Verify that, for each work practice standard that applies to the facility where initial compliance is not demonstrated using a performance test or design evaluation, the facility demonstrates initial compliance within 30 calendar days after the compliance date that is specified in 40 CFR 63.7883 for the affected source.</p> <p>Verify that, for new sources, initial performance tests and other initial compliance demonstrations are conducted according to the provisions in 40 CFR 63.7(a)(2)(i) and 63.7(a)(2).</p> <p>(NOTE: See 40 CFR 63.7941 through 63.7944 for details on conducting performance tests.)</p>
<p><b>AE.300.8.US.</b> Performance tests at site remediations must be conducted according to specific parameters (40 CFR 63.7940) [Added April 2004; Revised January 2007].</p>	<p>(NOTE: See checklist item AE.300.4.US for applicability information.)</p> <p>Verify that each continuous parameter monitoring system (CPMS) meets the following requirements:</p> <ul style="list-style-type: none"> <li>– a minimum of one cycle of operation is completed for each successive 15-min period</li> <li>– to calculate a valid hourly value, there must be at least three of four equally spaced data values (or at least two, if that condition is included to allow for periodic calibration checks) for that hour from a CPMS that is not out of control according to the monitoring plan referenced in 40 CFR 63.7935</li> <li>– to calculate the average emissions for each averaging period, there must be at least 75 percent of the hourly averages for that period using only block hourly average values that are based on valid data (i.e., not from out-of-control periods).</li> </ul>
<p><b>AE.300.9.US.</b> Monitoring, installation, operation, and maintenance requirements must be met at site remediations (40 CFR 63.7945 through 63.7947) [Added April 2004].</p>	

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	<p>– unless otherwise specified, each CPMS must determine the hourly average of all recorded readings and daily average, if required.</p> <p>Verify that the results of each inspection, calibration, and validation check are recorded.</p> <p>Verify that a performance evaluation is conducted for each CPMS according to the requirements in 40 CFR 63.8(e) and the site-specific monitoring plan.</p> <p>Verify that, except for monitor malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the facility monitors continuously (or collect data at all required intervals) at all times that the affected source is operating.</p> <p>(NOTE: Data recorded during monitoring malfunctions, associated repairs, out of control periods and required quality assurance or control activities in data averages and calculations used to report emissions or operating levels may not be used, nor may such data be used in fulfilling a minimum data availability requirement, if applicable. All the data collected during all other periods in assessing the operation of the control device and associated control system must be used.)</p> <p>(NOTE: As an alternative to the parametric monitoring, the facility may install, calibrate, and operate a continuous emission monitoring system (CEMS) to measure the control device outlet total organic emissions or organic HAP emissions concentration.)</p> <p>Verify that the CEMS used on combustion control devices includes a diluent gas monitoring system (for O<sub>2</sub> or CO<sub>2</sub>) with the pollutant monitoring system in order to correct for dilution (e.g., to 0 percent excess air).</p> <p>Verify that each CEMS completes a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-min period.</p> <p>Verify that data is reduced as specified in 40 CFR 63.8(g)(2).</p> <p>Verify that a performance evaluation of the CEMS is done according to the requirements in 40 CFR 63.8 and Performance Specification 8 (for a total organic emissions CEMS) or Performance Specification 9 (for a HAP emissions CEMS) and Performance Specification 3 (for an O<sub>2</sub> or CO<sub>2</sub> CEMS) of 40 CFR 60, appendix B.</p> <p>(NOTE: The relative accuracy provision of Performance Specification 8, sections 2.4 and 3 need not be conducted.)</p> <p>Verify that a site-specific monitoring plan is prepared for operating, calibrating, and verifying the operation of the CEMS according to the requirements in 40 CFR 63.8(c), (d), and (e).</p>

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<b>AE.300.10.US.</b> Site remediations must submit certain notifications (40 CFR 63.7950) [Added April 2004; Revised January 2007].	<p>Verify that the emissions concentration operating limit is established according to the following:</p> <ul style="list-style-type: none"> <li>– during the performance test, monitor and record the total organic or HAP emissions concentration at least once every 15 min during each of the three test runs</li> <li>– use the data collected during the performance test to calculate and record the average total organic or HAP emissions concentration maintained during the performance test.</li> </ul> <p>(NOTE: The average total organic or HAP emissions concentration, corrected for dilution as appropriate, is the maximum operating limit for the control device.)</p> <p>Verify that the daily (24-h) average total organic or HAP emissions concentration in the exhaust vent stream of the control device outlet less than or equal to the site-specific operating limit established during the performance test is maintained.</p> <p>(NOTE: See checklist item AE.300.4.US for applicability information.)</p> <p>Verify that the facility submits all of the notifications in 40 CFR 63.7(b) and 63.7(c), 63.8(e), 63.8(f)(4) and 63.8(f)(6), and 63.9(b) through 63.9(h) that apply.</p> <p>Verify that, if the facility started up an affected source before 8 October 2003, the facility submits an Initial Notification not later than 120 calendar days after 8 October 2003.</p> <p>Verify that, if the facility starts up a new or reconstructed affected source on or after 8 October 2003, they submit an Initial Notification no later than 120 calendar days after initial startup.</p> <p>Verify that, if the facility is required to conduct a performance test, they submit a notification of intent to conduct a performance test at least 60 calendar days before the performance test is scheduled to begin.</p> <p>Verify that, if the facility is required to conduct a performance test, design evaluation, or other initial compliance demonstration, a Notification of Compliance Status is submitted as follows:</p> <ul style="list-style-type: none"> <li>– for each initial compliance demonstration that includes a performance test or design evaluation, submit the Notification of Compliance Status, including the performance test results, before the close of business on the 60th calendar day following the completion of the performance test and submit the complete design evaluation and supporting documentation</li> <li>– for each initial compliance demonstration that does not include a performance test, submit the Notification of Compliance Status before the close of business on the 30th calendar day following the completion of the initial compliance demonstration.</li> </ul>

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<b>AE.300.11.US.</b> Site remediations must submit certain reports (40 CFR 63.7951) [Added April 2004].	<p>Verify that the facility provides written notification to the Administrator of the alternative standard selected under 40 CFR 63.1006(b)(5) or 63.1006(b)(6) before implementing either of the provisions.</p> <p>(NOTE: See checklist item AE.300.4.US for applicability information.)</p> <p>Verify that, unless the Administrator has approved a different schedule, the facility submits a semiannual compliance report to the permitting authority according to the following requirements:</p> <ul style="list-style-type: none"> <li>– the first compliance report covers the period beginning on the compliance date that is specified for the affected source and ending on 30 June or 31 December, whichever date comes first after the compliance date that is specified for the affected source</li> <li>– the first compliance report is postmarked or delivered no later than 31 July or 31 January, whichever date comes first after the first compliance report is due</li> <li>– each subsequent compliance report covers the semiannual reporting period from 1 January through 30 June or the semiannual reporting period from 1 July through 31 December</li> <li>– each subsequent compliance report is postmarked or delivered no later than 31 July or 31 January, whichever date comes first after the end of the semiannual reporting period.</li> </ul> <p>(NOTE: For each affected source that is subject to permitting regulations pursuant to 40 CFR 70 or 40 CFR 71, and if the permitting authority has established dates for submitting semiannual reports, the facility may submit the first and subsequent compliance reports according to the dates the permitting authority has established.)</p> <p>Verify that each compliance report includes the following:</p> <ul style="list-style-type: none"> <li>– company name and address</li> <li>– statement by a responsible official, with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report</li> <li>– date of report and beginning and ending dates of the reporting period</li> <li>– if the facility had a startup, shutdown, or malfunction during the reporting period and the facility took action consistent with the startup, shutdown, and malfunction plan, the compliance report includes the information in 40 CFR 63.10(d)(5)(i).</li> </ul> <p>Verify that each compliance report includes the following, as applicable:</p> <ul style="list-style-type: none"> <li>– if there were no deviations from any emissions limitations (including operating limit), work practice standards, or operation and maintenance requirements, a statement that there were no deviations from the emissions limitations, work practice standards, or operation and maintenance requirements during the reporting period</li> </ul>

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	<ul style="list-style-type: none"> <li>–if there were no periods during which a continuous monitoring system (including a CPMS or CEMS) was out-of-control, a statement that there were no periods during which the CPMS was out-of-control during the reporting period</li> <li>–for each deviation from an emissions limitation (including an operating limit) that occurs at an affected source for which a continuous monitoring system (including a CPMS or CEMS) is not used to comply with an emissions limitation or work practice standard required, the compliance report must contain the following information: <ul style="list-style-type: none"> <li>– the total operating time of each affected source during the reporting period.</li> <li>– information on the number, duration, and cause of deviations (including unknown cause) as applicable and the corrective action taken.</li> </ul> </li> <li>–for each deviation from an emissions limitation (including an operating limit) or work practice standard occurring at an affected source where a continuous monitoring system (including a CPMS or CEMS) is used to comply with the emissions limitations or work practice standard in this subpart (i.e., 40 CFR 63, Subpart GGGGG), include the following information: <ul style="list-style-type: none"> <li>– the date and time that each malfunction started and stopped</li> <li>– the date and time that each continuous monitoring system was inoperative, except for zero (low-level) and high-level checks</li> <li>– the date, time, and duration that each continuous monitoring system was out-of-control, including the information in 40 CFR 63.8(c)(8)</li> <li>– the date and time that each deviation started and stopped, and whether each deviation occurred during a period of startup, shutdown, or malfunction or during another period</li> <li>– a summary of the total duration of the deviations during the reporting period and the total duration as a percent of the total source operating time during that reporting period</li> <li>– a breakdown of the total duration of the deviations during the reporting period into those that are due to startup, shutdown, control equipment problems, process problems, other known causes, and unknown causes.</li> <li>– a summary of the total duration of continuous monitoring system downtime during the reporting period and the total duration of continuous monitoring system downtime as a percent of the total source operating time during the reporting period</li> <li>– a brief description of the process units</li> <li>– a brief description of the continuous monitoring system</li> <li>– the date of the latest continuous monitoring system certification or audit</li> <li>– a description of any changes in continuous monitoring systems, processes, or controls since the last reporting period</li> </ul> </li> <li>– the information on equipment leaks required in periodic reports by 40 CFR 63.1018(a) or 40 CFR 63.1039(b).</li> </ul>

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<p><b>AE.300.12.US.</b> Site remediations must meet recordkeeping requirements (40 CFR 63.7952 and 63.7953) [Added April 2004].</p>	<p>Verify that, if the facility had a startup, shutdown, or malfunction during the semiannual reporting period that was not consistent with the startup, shutdown, and malfunction plan, the facility submits an immediate startup, shutdown, and malfunction report.</p> <p>Verify that, if the facility has obtained a Title V operating permit for an affected source pursuant to 40 CFR 70 or 40 CFR 71, all deviations as defined in this subpart (i.e., 40 CFR 63, Subpart GGGGG) are reported in the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A).</p> <p>(NOTE: If the facility submits a compliance report for an affected source along with, or as part of, the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), and the compliance report includes all the required information concerning deviations from any emissions limitation or operation and maintenance requirement in this subpart (i.e., 40 CFR 63, Subpart GGGGG), submission of the compliance report satisfies any obligation to report the same deviations in the semiannual monitoring report. However, submission of a compliance report does not otherwise affect any obligation you may have to report deviations from permit requirements for an affected source to your permitting authority.)</p> <p>(NOTE: See checklist item AE.300.4.US for applicability information.)</p> <p>Verify that the following records are kept:</p> <ul style="list-style-type: none"> <li>– a copy of each notification and report that you submitted to comply with this subpart (i.e., 40 CFR 63, Subpart GGGGG), including all documentation supporting any Initial Notification or Notification of Compliance Status submitted</li> <li>– the records related to startups, shutdowns, and malfunctions</li> <li>– results of performance tests and performance evaluations</li> <li>– the records of initial and ongoing determinations for affected sources that are exempt from control requirements.</li> </ul> <p>Verify that, for each continuous monitoring system, the following records are kept:</p> <ul style="list-style-type: none"> <li>– records that apply to the continuous monitoring system.</li> <li>– performance evaluation plans, including previous (i.e., superseded) versions of the plan.</li> </ul> <p>Verify that the facility keeps the records required by this subpart (i.e., 40 CFR 63, Subpart GGGGG) to show continuous compliance with each emissions limitation, work practice standard, and operation and maintenance requirement that applies.</p>

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	<p>Verify that the facility records, on a semiannual basis, the information in 40 CFR 63.696(g) for planned routine maintenance of a control device for emissions from process vents.</p> <p>Verify that records are in a form suitable and readily available for expeditious review.</p> <p>Verify that files of all information (including all reports and notifications) are kept for 5 yr following the date of each occurrence, measurement, maintenance, action taken to correct the cause of a deviation, report, or record.</p> <p>Verify that each record is kept onsite for at least 2 yr after the date of each occurrence, measurement, maintenance, corrective action, report, or record.</p> <p>(NOTE: The facility can keep records offsite for the remaining 3 yr.)</p> <p>(NOTE: If, after the remediation activity is completed, no other remediation activity occurs at the facility, and you are no longer the owner of the facility, all records for the completed remediation activity may be kept at an offsite location provided the Administrator is notified in writing of the name, address and contact person for the offsite location.)</p>



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<p><b>REMEDIATION SITE EMISSIONS</b></p> <p><b>AE.305</b>  <b>Process Vents</b></p> <p><b>AE.305.1.US.</b> Affected process vents at site remediations must meet specific emissions standards (40 CFR 63.7881(a), 63.7881(b), 63.7882(a), and 63.7885) [Added April 2004; Revised January 2007].</p>	<p>(NOTE: These requirements apply at facilities at which a site remediation [see definitions] meets all three of the following conditions:</p> <ul style="list-style-type: none"> <li>– the site remediation cleans up a remediation material</li> <li>– the site remediation is co-located at the facility with one or more other stationary sources that emit HAP and meet an affected source definition specified for a source category that is regulated by another subpart under 40 CFR 63 [NOTE: This condition applies regardless whether or not the affected stationary source(s) at the facility is subject to the standards under the applicable subpart(s)]</li> <li>– the facility is a major source of HAP except as follows: <ul style="list-style-type: none"> <li>– for production field facilities, only the HAP emissions from the glycol dehydration units and storage vessels with the potential for flash emissions are aggregated with the HAP emissions from the site remediation activities at the facility for a major source determination</li> <li>– for natural gas transmission and storage facilities, HAP emissions are aggregated in accordance with the definition of major source in 40 CFR 63.1271 for a major source determination. )</li> </ul> </li> </ul> <p>(NOTE: A major source emits or has the potential to emit any single HAP at the rate of 10 tons (9.07 megagrams) or more per year of any HAP or any combination of HAP at a rate of 25 tons (22.68 megagrams) or more per year. All emissions of HAP from every source at the facility (i.e., both the site remediation activity and all other facility activities) must be considered in making this calculation.)</p> <p>(NOTE: See also the definitions for Exempted Site Remediation and Affected Site Remediation Sources.)</p> <p>(NOTE: See Appendix 1-26 for the compliance schedule.)</p> <p>Verify that, for each affected process vent (see the definition of <i>Affected Site Remediation Sources</i>) one of the following options is met:</p> <ul style="list-style-type: none"> <li>– HAP emissions are controlled from the affected process vents according to the standards specified in 40 CFR 63.7890 through 63.7893</li> <li>– it is determined for the remediation material treated or managed by the process vented through the affected process vents, that the average total VOHAP concentration of this material is less than 10 ppmw</li> <li>– if the process vent is also subject to another subpart under 40 CFR 61 or 40 CFR 63, emissions of the HAP listed in Appendix 1-27 are controlled from</li> </ul>

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<p><b>AE.305.2.US.</b> Affected process vents at site remediations must meet specific emissions standards (40 CFR 63.7890 through 63.7893) [Added April 2004; Revised January 2007].</p>	<p>the affected process vent in compliance with the standards specified in the other applicable subpart.</p> <p>(NOTE: A process vent that meets the following standards is exempt from this checklist item:</p> <ul style="list-style-type: none"> <li>– the process vent stream exiting the process vent meets any of the following conditions: <ul style="list-style-type: none"> <li>– the process vent stream flow rate is less than 0.005 m3/min at standard conditions</li> <li>– the process vent stream flow rate is less than 6.0 m3/min at standard conditions and the total concentration of HAP listed in Appendix 1-27 is less than 20 ppmv</li> </ul> </li> <li>– demonstrate that the process vent stream is less than 0.005 m3/min at standard conditions using the procedures specified in 40 CFR 63.694(m) and prepare and maintain documentation to support the determination of process vent stream flow.)</li> </ul> <p>Verify that the documentation on the determination of the process vent stream flow rate includes identification of each exempted process vent and the test results used to determine the process vent stream flow rate and total HAP concentration.</p> <p>Verify that a new determination of the process vent stream flow rate and total HAP concentration is performed, as applicable to the exemption conditions for the process vent, whenever changes to operation of the unit on which the process vent is used could cause the process vent stream conditions to exceed the maximum limits of the exemption.</p> <p>(NOTE: See checklist item AE.300.4.US for applicability information.)</p> <p>Verify that HAP emissions from each new and existing process vent are controlled according to emissions limitations and work practice standards that apply to the affected process vents.</p> <p>Verify that affected process vents meet one of the facility-wide emission limit options below:</p> <ul style="list-style-type: none"> <li>– reduce from all affected process vents the total emissions of the HAP listed in Appendix 1-27 to a level less than 1.4 kg/h and 2.8 Mg/yr (3.0 lb/h) and 3.1 tpy)</li> <li>– reduce from all affected process vents the emissions of total organic compounds (TOC) (minus methane and ethane) to a level below 1.4 kg/hr and 2.8 Mg/yr (3.0 lb/h and 3.1 tpy)</li> <li>– reduce from all affected process vents the total emissions of the HAP listed in Appendix 1-27 by 95 percent by weight or more</li> <li>– reduce from all affected process vents the emissions of TOC (minus methane and ethane) by 95 percent by weight or more.</li> </ul>

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<p><b>AE.305.3.US.</b> Affected process vents at site remediations must meet specific inspection and monitoring standards (40 CFR 63.7892) [Added April 2004].</p> <p><b>AE.305.4.US.</b> Affected process vents at site remediations must demonstrate compliance (40 CFR 63.7891 and 63.7893) [Added April 2004; Revised January 2007].</p>	<p>(NOTE: If there are multiple affected process vent streams, compliance may be achieved using a combination of controlled and uncontrolled process vent streams that achieve the applicable facility-wide emission limit.)</p> <p>Verify that each closed vent system and control device used to comply with the emissions limitations for affected process vents meets the operating limit requirements and work practice standards in 40 CFR 63.7925(c) through 63.7925(j) (see checklist item AE.307.1.US) that apply to the closed vent system and control device.</p> <p>(NOTE: See checklist item AE.300.4.US for applicability information.)</p> <p>Verify that, for each closed vent system and control device used to comply with the emissions limits for affected process vents, the facility monitors and inspects the closed vent system and control device according to the applicable requirements in 40 CFR. 63.7927 (see checklist item AE.323.3.US).</p> <p>(NOTE: See checklist item AE.300.4.US for applicability information.)</p> <p>Verify that initial compliance with the emissions limitations and work practice standards applicable to the affected process vents is demonstrated by meeting the following requirements:</p> <ul style="list-style-type: none"> <li>– the facility has measured or determined using the procedures for performance tests and design evaluations in 40 CFR 63.7941 that emission levels from all affected process vents meet the applicable facility-wide emission limits as follows: <ul style="list-style-type: none"> <li>– if the facility elected to reduce the total emissions of the HAP, the facility demonstrates that the total emissions of the HAP listed in Appendix 1-27 from all affected process vents at the facility are less than 1.4 kg/h and 2.8 Mg/yr (3.0 lb/h and 3.1 tpy)</li> <li>– if the facility elected to reduce the emissions of TOC, the facility demonstrates that emissions of TOC (minus methane and ethane) from all affected process vents at the facility are less than 1.4 kg/h and 2.8 Mg/yr (3.0 lb/h and 3.1 tpy)</li> <li>– if the facility elected to reduce the total emissions of HAP by 95 percent by weight, the facility demonstrates that the total emissions of the HAP listed in Appendix 1-27 from all affected process vents are reduced by 95 percent by weight or more</li> <li>– if the facility elected to reduce the emissions of TOC by 95 percent by weight, the facility demonstrates that the emissions of TOC (minus methane and ethane) from all affected process vents are reduced by 95 percent by weight or more.</li> </ul> </li> </ul>

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	<p>Verify that, for each closed vent system and control device used to comply with the emissions limits for affected process vents, the facility has met each requirement for demonstrating initial compliance with the emission limitations and work practice standards for a closed vent system and control device in 40 CFR 63.7926 (see checklist item AE.323.2.US).</p> <p>Verify that the facility submitted a notification of compliance status.</p> <p>Verify that the facility demonstrates continuous compliance with the emissions limitations and work practice standards applicable to affected process vents by meeting the following requirements:</p> <ul style="list-style-type: none"> <li>– maintain emission levels from all affected process vents to meet the facility-wide emission limits in 40 CFR 63.7890 (see checklist item AE.305.2.US) as specified in the following: <ul style="list-style-type: none"> <li>– if the facility elected to reduce the total emissions of the HAP, the facility maintains the total emissions of the HAP listed in Appendix 1-27 from all affected process vents at the facility so that they are less than 1.4 kg/h and 2.8 Mg/yr (3.0 lb/h and 3.1 tpy)</li> <li>– if the facility elected to reduce the emissions of TOC, the facility maintains emissions of TOC (minus methane and ethane) from all affected process vents at less than 1.4 kg/h and 2.8 Mg/yr (3.0 lb/h and 3.1 tpy)</li> <li>– if the facility elected to reduce the total emissions of HAP by 95 percent by weight, the facility maintains the total emissions of the HAP listed in Appendix 1-27 from all affected process vents are reduced by 95 percent by weight or more</li> <li>– if the facility elected to reduce the emissions of TOC by 95 percent by weight, the facility maintains that the emissions of TOC (minus methane and ethane) from all affected process vents are reduced by 95 percent by weight or more.</li> </ul> </li> <li>– for each closed vent system and control device used to comply with the emissions limitations, each requirement for demonstrating continuous compliance with the emission limitations and work practice standards for a closed vent system and control device in 40 CFR 63.7928 (see checklist item AE.323.4.US) have been met</li> </ul> <p>records are kept to document continuous compliance with these requirements according to the requirements in 40 CFR 63.7952 (see checklist item AE.300.12.US).</p>

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<b>REMEDIATION SITE EMISSIONS</b>  <b>AE.307</b> <b>Material Management Units</b>  <b>AE.307.1.US.</b> Affected remediation material management units must meet specific emissions standards (40 CFR 63.7886) [Added April 2004; Revised January 2007].	<p>(NOTE: See checklist item AE.300.4.US for applicability information.)</p> <p>Verify that, for each affected remediation material management units (see the definition of Affected Site Remediation Sources) one of the following options are met:</p> <ul style="list-style-type: none"> <li>– HAP emissions from the affected remediation material management unit are control as follows, as applicable to the unit:             <ul style="list-style-type: none"> <li>– if unit is a tank, control HAP emissions according to the standards specified in 40 CFR 63.7895 through 63.7898</li> <li>– if the unit is a container, control HAP emissions according to the standards specified in 40 CFR 63.7900 through 63.7903</li> <li>– if the unit is a surface impoundment, control HAP emissions according to the standards specified in 40 CFR 63.7905 through 63.7908 (see checklist item AE.315.1.US through AE.315.4.US)</li> <li>– if the unit is a oil-water or organic-water separator, control HAP emissions according to the standards specified in 40 CFR 63.7910 through 63.7913 (see checklist item AE.317.1.US through AE.317.4.US)</li> <li>– if the unit is a transfer system, control HAP emissions according to the standards specified in 40 CFR 63.7915 through 63.7918 (see checklist item AE.319.1.US through AE.319.4.US)</li> </ul> </li> <li>– for the remediation material placed in the remediation material management unit that the average total VOHAP concentration of this material is less than 500 ppmw</li> <li>– if the remediation material management unit is also subject to another subpart under 40 CFR 61 or 40 CFR 63, control emissions of the HAP listed in Appendix 1-27 from the affected remediation material management unit in compliance with the standards specified in the applicable subpart</li> <li>– if the remediation material management unit is an open tank or surface impoundment used for a biological treatment process, meet the following requirements:             <ul style="list-style-type: none"> <li>– demonstrate that the biological treatment process conducted in the open tank or surface impoundment meets the performance levels specified in either 40 CFR 63.684(b)(4)(i) or (ii)</li> <li>– monitor the biological treatment process conducted in the open tank or surface impoundment according to the requirements in 40 CFR 63.684(e)(4).</li> </ul> </li> </ul> <p>(NOTE: The requirements in 40 CFR 63.7943 must be met to demonstrate that the VOHAP concentration of the remediation material is less than 500 ppmw.)</p>

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	<p>Verify that, once the VOHAP concentration for a remediation material has been determined to be less than 500 ppmw, all remediation material management units downstream from the point of determination managing this material meet the requirements of this checklist item unless a remediation process is used that concentrates all, or part of, the remediation material being managed in the unit such that the VOHAP concentration of the material could increase.</p> <p>(NOTE: Any free product returned to the manufacturing process (e.g., recovered oil returned to a storage tank at a refinery) is no longer subject to these requirements.)</p> <p>(NOTE: A remediation material management unit is exempted from these requirements if this unit is used for cleanup of radioactive mixed waste that is subject to applicable regulations, directives, and other requirements under the Atomic Energy Act, the Nuclear Waste Policy Act, or the Waste Isolation Pilot Plant Land <i>Withdrawal Act</i>.)</p> <p>(NOTE: One or a combination of remediation material management units may be exempted from these requirements provided that the total annual quantity of HAP listed in Appendix 1-27 contained in the remediation material placed in all of the exempted remediation material management units is less than 1 Mg/yr. For each remediation material management unit selected to be exempted under this provision, the following must be done:</p> <ul style="list-style-type: none"> <li>– designate each of the remediation material management units to be exempted by either submitting to the Administrator a written notification identifying the exempt units or permanently marking the exempt units at the facility site</li> <li>– prepare an initial determination of the total annual HAP quantity in the remediation material placed in the units exempted and perform a new determination whenever the extent of changes to the quantity or composition of the remediation material placed in the exempted units could cause the total annual HAP content in the remediation material to exceed 1 Mg/yr.)</li> </ul> <p>Verify that, for exempted units, documentation is maintained to support the most recent determination of the total annual HAP quantity, including the basis and data used for determining the organic HAP content of the remediation material.</p> <p>Verify that, for exempted units, if a written notification is prepared and submitted, the notification includes a site plan, process diagram, or other appropriate documentation identifying each of the exempt units.</p> <p>Verify that, for exempted units, if the exempt units are permanently marked, each exempt unit is marked so it can be readily identified as an exempt unit from the other remediation material management units located at the site.</p>

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<b>REMEDIATION SITE EMISSIONS</b>  <b>AE.309</b> <b>Equipment Leak Sources</b>  <b>AE.309.1.US.</b> Affected equipment leak sources at site remediations must meet specific emissions standards (40 CFR 63.7887) [ <b>Added April 2004; Revised January 2007</b> ].	<p>(NOTE: See checklist item AE.300.4.US for applicability information.)</p> <p>Verify that HAP emissions from equipment leaks from each equipment component that is part of the affected source is controlled by implementing leak detection and control measures according to the standards specified in 40 CFR 63.7920 through 63.7922 (see checklist items AE.321.1.US through AE.321.3.US) unless the facility meets the following requirements.</p> <p>Verify that, if the affected equipment leak source is also subject to another subpart in 40 CFR 61 or 40 CFR 63, the facility may control emissions of the HAP listed in Appendix 1-27 from the affected equipment leak source in compliance with the standards specified in the other applicable subpart.</p> <p>(NOTE: This means the facility is complying with all applicable emissions limitations and work practice standards under the other subpart (e.g., the facility implements leak detection and control measures to reduce HAP emissions as specified by the applicable subpart). This provision does not apply to any exemption of the affected source from the emissions limitations and work practice standards allowed by the other applicable subpart.)</p>



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<b>REMEDATION SITE EMISSIONS</b>  <b>AE.313 Containers</b>  <b>AE.313.1.US.</b> Affected containers at site remediations must meet specific emissions standards (40 CFR 63.7900) [Added April 2004].	<p>(NOTE: See checklist item AE.300.4.US for applicability information.)</p> <p>Verify that, for each container having a design capacity greater than 0.1 m3, one of the following requirements that apply to the container (except at the times the container is used for treatment of remediation material by a waste stabilization process) are met:</p> <ul style="list-style-type: none"> <li>– if the design capacity of the container is less than or equal to 0.46 m3, then use controls according to the standards for Container Level 1 controls as specified in 40 CFR 63.922 (NOTE: As an alternative, using controls according to either of the standards for Container Level 2 controls as specified in 40 CFR 63.923 is acceptable)</li> <li>– if the design capacity of the container is greater than 0.46 m3, then controls according to the standards for Container Level 2 controls as specified in 40 CFR 63.923 are used.</li> </ul> <p>(NOTE: As an alternative to meeting the above standards for containers with a capacity greater than 0.46 m3, if either of the following conditions apply to the remediation material placed in the container, controls according to the standards for Container Level 1 controls as specified in 40 CFR 63.922 may be used:</p> <ul style="list-style-type: none"> <li>– vapor pressure of every organic constituent in the remediation material placed in your container is less than 0.3 kPa at 20 °C</li> <li>– total concentration of the pure organic constituents having a vapor pressure greater than 0.3 kPa at 20 °C in the remediation material placed in your container is less than 20 percent by weight.)</li> </ul> <p>(NOTE: As an alternative to meeting these requirements, the facility may choose to use controls on the container according to the standards for Container Level 3 controls as specified in 40 CFR 63.924.)</p> <p>Verify that, at times when a container having a design capacity greater than 0.1 m3 is used for treatment of a remediation material by a waste stabilization process, air emissions from the container are controlled during the process whenever the remediation material in the container is exposed to the atmosphere according to the standards for Container Level 3 controls as specified in 40 CFR 63.924.</p> <p>Verify that the emissions limitations and work practice standards in 40 CFR 63.7925 (see checklist item AE.323.1.US) that apply to the closed vent system and control device are met.</p>

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<b>AE.313.2.US.</b> Affected containers at site remediations must demonstrate initial compliance (40 CFR 63.7901) [Added April 2004].	<p>(NOTE: The facility may request approval from the EPA to use an alternative to the work practice standards in this checklist item apply to their containers. If requesting permission to use an alternative to the work practice standards, the information described in 40 CFR 63.6(g)(2) must be submitted.)</p> <p>(NOTE: See checklist item AE.300.4.US for applicability information.)</p> <p>Verify that initial compliance is demonstrated by having submitted, as part of the notification of compliance status, a signed statement that the following requirements have been met:</p> <ul style="list-style-type: none"> <li>–the applicable container control levels specified in 40 CFR 63.7990 (see checklist item AE.323.2.US) have been determined for the containers to be used for site remediation</li> <li>–the maximum vapor pressure or total organic concentration has been determined and recorded for the remediation material placed in containers with a design capacity greater than 0.46 m3, and do not use Container Level 2 or Level 3 controls.</li> </ul> <p>Verify that initial compliance of each container determined to require Container Level 1 controls is demonstrated by submitting, as part of the notification of compliance status, specified in 40 CFR 63.7950, a signed statement that the following requirements have been met:</p> <ul style="list-style-type: none"> <li>–each container using Container Level 1 controls is one of the container specified in 40 CFR 63.922(b)</li> <li>–each container cover and closure device is operated according to the requirements in 40 CFR 63.922(d).</li> </ul> <p>Verify that initial compliance of each container determined to require Container Level 2 controls is demonstrated by submitting as part of the notification of compliance status, specified in 40 CFR 63.7950, a signed statement that the following requirements have been met:</p> <ul style="list-style-type: none"> <li>–each container using Container Level 2 controls is the container specified in 40 CFR 63.923(b)</li> <li>–remediation materials are transferred into and out of each container according to the procedures in 40 CFR 63.923(d)</li> <li>–the container covers and closure devices are operated and maintained according to the requirements in 40 CFR 63.923(d)</li> <li>–there are records that the container meets the applicable U.S. Department of Transportation regulations, or an initial test of each container has been conducted for no detectable organic emissions using the procedures in 40 CFR 63.925(a), and there are records documenting the test results, or it has been demonstrated within the last 12 mo that each container is vapor-tight according to the procedures in 40 CFR 63.925(a) and there are records documenting the test results.</li> </ul>

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<p><b>AE.313.3.US.</b> Affected containers at site remediations must be inspected and monitored according to specific parameters (40 CFR 63.7902) [Added April 2004].</p>	<p>Verify that initial compliance of each container requiring Container Level 3 controls is demonstrated by submitting as part of the notification of the compliance status, specified in 40 CFR 63.7950, a signed statement that the following have been met:</p> <ul style="list-style-type: none"> <li>– for each permanent total enclosure used to comply with 40 CFR 63.7900 (see checklist item AE.313.1.US), the verification procedure has been performed according to the requirements in 40 CFR 63.924(c)(1), and records prepared of the supporting calculations and measurements</li> <li>– each applicable requirement for demonstrating initial compliance with the emission limitations and work practice standards for a closed vent system and control device in 40 CFR 63.7926 (see checklist item AE.323.2.US) have been met.</li> </ul> <p>(NOTE: See checklist item AE.300.4.US for applicability information.)</p> <p>Verify that each container using Container Level 1 or Container Level 2 controls is inspected according to the requirements in 40 CFR 63.926(a).</p> <p>Verify that, if Container Level 3 controls are used, the following requirements are met as applicable to the site remediation:</p> <ul style="list-style-type: none"> <li>– the verification procedure for each permanent total enclosure is performed annually according to the requirements in 40 CFR 63.924(c)(1)</li> <li>– each closed vent system and control device is inspected and monitored according to the requirements in 40 CFR 63.7927 (see checklist item AE.323.3.US) that are applicable.</li> </ul>
<p><b>AE.313.4.US.</b> Affected containers at site remediations must demonstrate continuous compliance with emissions limitations and work practice standards (40 CFR 63.7903) [Added April 2004].</p>	<p>(NOTE: See checklist item AE.300.4.US for applicability information.)</p> <p>Verify that continuous compliance with the requirement to determine the applicable container control level specified in 40 CFR 63.7990(b) for each affected tank is demonstrated by meeting the following requirements:</p> <ul style="list-style-type: none"> <li>– keeping records of the quantity and design capacity for each type of container used for the site remediation and subject to 40 CFR 63.7886(b)(1)(ii) (see checklist item AE.307.1.US)</li> <li>– for containers subject to 40 CFR 63.7886(b)(1)(ii) (see checklist item AE.307.1.US) with a design capacity greater than 0.46 m<sup>3</sup> and not using Container Level 2 or Container Level 3 controls, meeting the following requirements: <ul style="list-style-type: none"> <li>– keeping records of the maximum vapor pressure or total organic concentration for the remediation material placed in the containers, as applicable to the conditions in 40 CFR 63.7900(b)(3)(i) or (ii) (see</li> </ul> </li> </ul>

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	<p>checklist item AE.313.1.US) for which the containers qualify to use Container Level 1 controls</p> <ul style="list-style-type: none"> <li>– performing a new determination whenever changes to the remediation material placed in the containers could potentially cause the maximum vapor pressure or total organic concentration to increase to a level that is equal to or greater than the conditions specified in 40 CFR 63.7900(b)(3)(i) or (ii) (see checklist item AE.313.1.US), as applicable to the containers and records of each determination are kept</li> <li>– keeping records to document compliance with the requirements according to the requirements in 40 CFR 63.7952 (see checklist item AE.300.12.US).</li> </ul> <p>Verify that continuous compliance is demonstrated for each container determined to require Container Level 1 controls by meeting the following requirements:</p> <ul style="list-style-type: none"> <li>– operating and maintaining covers for each container according to the requirements in 40 CFR 63.922(d)</li> <li>– inspecting each container annually according to the requirements in 40 CFR 63.926(a)(2)</li> <li>– emptying or repairing each container according to the requirements in 40 CFR 63.926(a)(3)</li> <li>– keeping records of an inspection that includes the following information: <ul style="list-style-type: none"> <li>– date of each inspection</li> <li>– if a defect is detected during an inspection, the location of the defect, a description of the defect, the date of detection, the corrective action taken to repair the defect, and if repair is delayed, the reason for any delay and the date completion of the repair is expected</li> </ul> </li> <li>– keeping records to document compliance with the requirements according to the requirements in 40 CFR 63.7952 (see checklist item AE.300.12.US).</li> </ul> <p>Verify that continuous compliance is demonstrated for each container determined to require Container Level 2 controls by meeting the following requirements:</p> <ul style="list-style-type: none"> <li>– transferring remediation material in and out of the container according to the requirements in 40 CFR 63.923(c)</li> <li>– operating and maintaining container covers according to the requirements in 40 CFR 63.923(d)</li> <li>– inspecting each container annually according to the requirements in 40 CFR 63.926(a)(2)</li> <li>– emptying or repairing containers according to the requirements in 40 CFR 63.926(a)(3)</li> <li>– keeping records of each inspection that include the following information: <ul style="list-style-type: none"> <li>– date of each inspection</li> <li>– if a defect is detected during an inspection, the location of the defect, a description of the defect, the date of detection, the corrective action taken to repair the defect, and if repair is delayed, the reason for any delay and the date completion of the repair is expected.</li> </ul> </li> </ul>

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	<p>– keeping records to document compliance with these requirements according to the requirements in 40 CFR 63.7952 (see checklist item AE.300.12.US).</p> <p>Verify that continuous compliance is demonstrated for each container determined to require Container Level 3 controls by meeting the following requirements:</p> <ul style="list-style-type: none"> <li>– performing the verification procedure for the enclosure annually according to the requirements in 40 CFR 63.685(i)</li> <li>– recording the information specified in 40 CFR 63.696(f)</li> <li>– meeting each applicable requirement for demonstrating continuous compliance with the emissions limitations and work practice standards for a closed vent system and control device in 40 CFR 63.7928 (see checklist AE.323.4.US)</li> <li>– keeping records to document compliance with the requirements according to the requirements in 40 CFR 63.7952 (see checklist item AE.300.12.US).</li> </ul>



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<p><b>REMEDIATION SITE EMISSIONS</b></p> <p><b>AE.315</b>  <b>Surface Impoundments</b></p> <p><b>AE.315.1.US.</b> Affected surface impoundments at site remediations must meet specific emissions standards and work practice standards (40 CFR 63.7905) [<b>Added April 2004</b>].</p> <p><b>AE.315.2.US.</b> Affected surface impoundments at site remediations must demonstrate initial compliance with emissions standards and work practice standards (40 CFR 63.7906) [<b>Added April 2004</b>].</p>	<p>(NOTE: See checklist item AE.300.4.US for applicability information.)</p> <p>Verify that HAP emissions from each new and existing surface impoundment subject to 40 CFR 63.7886(b)(1)(iii) (see checklist item AE.307.1.US) are controlled according to emissions limitations and work practice standards that apply to the affected surface impoundments.</p> <p>Verify that, for each affected surface impoundment, air pollution controls are installed and operated that meet either of the following options:</p> <ul style="list-style-type: none"> <li>– install and operate a floating membrane cover according to the requirements in 40 CFR 63.942</li> <li>– install and operate a cover vented through a closed vent system to a control device according to the requirements in 40 CFR 63.943 and meet the emissions limitations and work practice standards in 40 CFR 63.7925 (see checklist item AE.323.1.US) that apply to closed vent system and control device.</li> </ul> <p>(NOTE: As provided in 40 CFR 63.6(g), you may request approval from the EPA to use an alternative to the work practice standards that apply to the surface impoundments.)</p> <p>(NOTE: See checklist item AE.300.4.US for applicability information.)</p> <p>Verify that initial compliance is demonstrated for each surface impoundment using a floating membrane cover according to 40 CFR 63.7905(b)(1) (see checklist item AE.315.1.US) by submitting, as part of the notification of compliance status, specified in 40 CFR 63.7950, a signed statement that the following requirements have been met:</p> <ul style="list-style-type: none"> <li>– a floating membrane cover and closure devices that meet the requirements in 40 CFR 63.942(b) has been installed, and there are records documenting the design and installation</li> <li>– the cover and closure devices are operated according to the requirements in 40 CFR 63.942(c)</li> <li>– an initial visual inspection of each surface impoundment and closure devices is performed according to the requirements in 40 CFR 63.946(a), and there are records documenting the inspection results.</li> </ul> <p>Verify that initial compliance is demonstrated for each surface impoundment using a cover vented to a control device according to 40 CFR 63.7905(b)(2) (see checklist</p>

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	<p>item AE.315.1.US) by submitting, as part of the notification of compliance status, a signed statement that the following requirements have been met:</p> <ul style="list-style-type: none"> <li>– a cover and closure devices have been installed that meet the requirements in 40 CFR 63.943(b), and there are records documenting the design and installation</li> <li>– the cover and closure devices are operated according to the requirements in 40 CFR 63.943(c)</li> <li>– an initial visual inspection is performed of each cover and closure device according to the requirements in 40 CFR 63.946(b), and there are records documenting the inspection results</li> <li>– each applicable requirement for demonstrating initial compliance with the emission limitations and work practice standards for a closed vent system and control device in 40 CFR 63.7926 (see checklist item AE.323.2.US) has been met.</li> </ul>
<p><b>AE.315.3.US.</b> Affected surface impoundments at site remediations must meet inspection and monitoring requirements (40 CFR 63.7907) [Added April 2004].</p>	<p>(NOTE: See checklist item AE.300.4.US for applicability information.)</p> <p>Verify that, if a floating membrane cover is used according to 40 CFR 63.7905(b)(1) (see checklist item AE.315.1.US), the floating membrane cover and its closure devices are visually inspected at least annually according to the requirements in 40 CFR 63.946(a).</p> <p>Verify that, if a cover vented to a control device according to 40 CFR 63.7905(b)(2) (see checklist item AE.315.1.US) is used, the following requirements are used:</p> <ul style="list-style-type: none"> <li>– the cover and its closure devices are visually inspected for defects according to the requirements in 40 CFR 63.946(b)</li> <li>– the closed vent system and control device are inspected and monitored according to the requirements in 40 CFR 63.7927 (see checklist item AE.323.3.US) that apply.</li> </ul>
<p><b>AE.315.4.US.</b> Affected surface impoundments at site remediations must demonstrate continuous compliance with emissions limitations and work practice standards (40 CFR 63.7908) [Added April 2004].</p>	<p>(NOTE: See checklist item AE.300.4.US for applicability information.)</p> <p>Verify that continuous compliance is demonstrated for each surface impoundment using a floating membrane cover according to 40 CFR 63.7905(b)(1) (see checklist item AE.315.1.US) by meeting the following requirements:</p> <ul style="list-style-type: none"> <li>– operating and maintaining the floating membrane cover and closure devices according to the requirements in 40 CFR 63.942(c)</li> <li>– visually inspecting the floating membrane cover and closure devices for defects at least annually according to the requirements in 40 CFR 63.946(a)</li> <li>– repairing defects according to the requirements in 40 CFR 63.946(c)</li> <li>– recording the information specified in 40 CFR 63.947(a)(2) and 63.947(a)(3)</li> </ul>

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	<ul style="list-style-type: none"> <li>– keeping records to document compliance with the requirements according to the requirements in 40 CFR 63.7952 (see checklist item AE.300.12.US).</li> </ul> <p>Verify that continuous compliance is demonstrated for each surface impoundment using a cover vented to a control device according to 40 CFR 63.7905(b)(2) (see checklist item AE.315.1.US) by meeting the following requirements:</p> <ul style="list-style-type: none"> <li>– operating and maintaining the cover and its closure devices according to the requirements in 40 CFR 63.943(c)</li> <li>– visually inspecting the cover and its closure devices for defects at least annually according to the requirements in 40 CFR 63.946(b)</li> <li>– repairing defects according to the requirements in 40 CFR 63.946(c)</li> <li>– recording the information specified in 40 CFR 63.947(a)(2) and 63.947(a)(3)</li> <li>– meeting each applicable requirement for demonstrating continuous compliance with the emission limitations and work practice standards for a closed vent system and control device in 40 CFR 63.7928 (see checklist item AE.323.4.US)</li> <li>– keeping records to document compliance with the requirements according to the requirements in 40 CFR 63.7952 (see checklist item AE.300.12.US).</li> </ul>





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<p><b>AE.317.3.US.</b> Affected separators at site remediations must meet certain inspection and monitoring requirements (40 CFR 63.7912) [Added April 2004].</p>	<ul style="list-style-type: none"> <li>– an initial visual inspection of the floating roof and closure devices for defects has been performed according to the requirements in 40 CFR 63.1047(b)(2), and there are records documenting the inspection results.</li> </ul> <p>Verify that initial compliance of each separator using a fixed roof vented to a control device according to 40 CFR 63.7910(b)(2) (see checklist item AE.317.1.US) is demonstrated by submitting, as part of the notification of compliance status, a signed statement that the following requirements have been met:</p> <ul style="list-style-type: none"> <li>– a fixed roof and closure devices that meet the requirements in 40 CFR 63.1042(b) have been installed and there are records documenting the design and installation</li> <li>– the fixed roof and its closure devices are operated according to the requirements in 40 CFR 63.1042(c)</li> <li>– an initial visual inspection of the fixed roof and closure devices for defects has been performed according to the requirements in 40 CFR 63.1047(a)</li> <li>– each applicable requirement for demonstrating initial compliance with the emission limitations and work practice standards for a closed vent system and control device in 40 CFR 63.7926 (see checklist item AE.323.2.US) has been met.</li> </ul> <p>Verify that initial compliance of each pressurized separator that operates as a closed system according to 40 CFR 63.7910(b)(3) (see checklist item AE.317.1.US) is demonstrated by submitting, as part of the notification of compliance status, a signed statement that the following requirements have been met:</p> <ul style="list-style-type: none"> <li>– a pressurized separator that operates as a closed system has been installed according to the requirements in 40 CFR 63.1045(b)(1) and (b)(2), and there are records of the design and installation</li> <li>– the pressurized separator is operated as a closed system according to the requirements in 40 CFR 63.1045(b)(3).</li> </ul> <p>(NOTE: See checklist item AE.300.4.US for applicability information.)</p> <p>Verify that, if a floating roof is used according to 40 CFR 63.7910(b)(1) (see checklist item AE.317.1.US), the following requirements are met:</p> <ul style="list-style-type: none"> <li>– measure the seal gaps at least annually according to the requirements in 40 CFR 63.1047(b)(1)</li> <li>– visually inspect the floating roof at least annually according to the requirements in 40 CFR 63.1047(b)(2).</li> </ul> <p>Verify that, if a cover vented to a control device is used according to 40 CFR 63.7910(b)(1) or (2) (see checklist item AE.317.1.US), the following requirements are met:</p>

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<p><b>AE.317.4.US.</b> Affected separators at site remediations must demonstrate continuous compliance with emissions limitations and work practice standards (40 CFR 63.7913) [Added April 2004; Revised January 2007].</p>	<ul style="list-style-type: none"> <li>– visually inspect the cover and its closure devices for defects according to the requirements in 40 CFR 63.1047(c)</li> <li>– monitor and inspect the closed vent system and control device according to the applicable requirements in 40 CFR 63.792.</li> </ul> <p>Verify that, if a pressurized separator that operates as a closed system according to 40 CFR 63.7910(b)(3) (see checklist item AE.317.1.US) is used, each pressurized separator and closure device is visually inspected for defects at least annually to ensure they are operating according to the design requirements in 40 CFR 63.1045(b).</p> <p>(NOTE: See checklist item AE.300.4.US for applicability information.)</p> <p>Verify that continuous compliance is demonstrated for each separator using a floating roof according to 40 CFR 63.7910(b)(1) (see checklist item AE.317.1.US) by meeting the following requirements:</p> <ul style="list-style-type: none"> <li>– operating and maintaining the floating roof according to the requirements in 40 CFR 63.1043(b)</li> <li>– performing seal gap measurement inspections at least annually according to the requirements in 40 CFR 63.1047(b)(1)</li> <li>– visually inspecting the floating roof at least annually according to the requirements in 40 CFR 63.1047(b)(2)</li> <li>– repairing defects according to the requirements in 40 CFR 63.1047(d)</li> <li>– recording the information specified in 40 CFR 63.1048(a) and 63.1048(b)</li> <li>– keeping records to document compliance with the requirements according to the requirements in 40 CFR 63.7952 (see checklist item AE.300.12.US).</li> </ul> <p>Verify that continuous compliance is demonstrated f for each separator using a fixed roof vented through a closed vent system to a control device according to 40 CFR 63.7910(b)(2) (see checklist item AE.317.1.US) by meeting the following requirements:</p> <ul style="list-style-type: none"> <li>– operating and maintaining the fixed roof and its closure devices according to the requirements in 40 CFR 63.1042</li> <li>– performing visual inspections of the fixed roof and its closure devices for defects at least annually according to the requirements in 40 CFR 63.1047(a)</li> <li>– repairing defects according to the requirements in 40 CFR 63.1047(d)</li> <li>– recording the information specified in 40 CFR 63.1048(a)</li> <li>– meeting each applicable requirement for demonstrating continuous compliance with the emission limitations and work practice standards for a closed vent system and control device in 40 CFR 63.7928 (see checklist item AE.323.4.US)</li> <li>– keeping records to document compliance according to the requirements in 40 CFR 63.7952 (see checklist item AE.300.12.US).</li> </ul>

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	<p>Verify that continuous compliance is demonstrated for each pressurized separator operated as a closed system according to 40 CFR 63.7910(b)(3) (see checklist item AE.317.1.US) by meeting the following requirements:</p> <ul style="list-style-type: none"> <li>– operating the pressurized separator at all times according to the requirements in 40 CFR 63.1045</li> <li>– visually inspecting each pressurized tank and closure device for defects at least annually to ensure they are operating according to the design requirements in 40 CFR 63.1045(b), and recording the results of each inspection.</li> </ul>



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	<ul style="list-style-type: none"> <li>– air emission controls have been installed for each individual drain system and junction box according to the requirements in 40 CFR 63.962(a) and (b), and there are records documenting the installation and design</li> <li>– the air emission controls are operated according to the requirements in 40 CFR 63.962(b)(5)</li> <li>– an initial visual inspection of each individual drain system has been performed according to the requirements in 40 CFR 63.964(a), and there are records documenting the inspection results.</li> </ul> <p>Verify that initial compliance of each transfer system using covers according to 40 CFR 63.7915(c)(1) (see checklist item AE.319.1.US) is demonstrated by submitting, as part of the notification of compliance status, a signed statement that the following requirements have been met:</p> <ul style="list-style-type: none"> <li>– each transfer system is equipped with covers and closure devices according to the requirements in 40 CFR 63.689(d)(1) through (4), and there are records documenting the design and installation</li> <li>– an initial inspection of each cover and its closure devices for defects has been performed according to the requirements in 40 CFR 63.695(d)(1) through (5), and there are records documenting the inspection results.</li> <li>– each cover and its closure devices are operated according to the requirements in 40 CFR 63.689(5).</li> </ul> <p>Verify that initial compliance of each transfer system that consists of hard piping according to 40 CFR 63.7915(c)(2) (see checklist item AE.319.1.US) is demonstrated by submitting, as part of the notification of compliance status, a signed statement that the following requirements have been met:</p> <ul style="list-style-type: none"> <li>– a transfer system has been installed that consists entirely of hard piping and meets the requirements in 40 CFR 63.7915(c)(2) (see checklist item AE.319.1.US), and there are records documenting the design and installation</li> <li>– an initial inspection has been performed of the entire transfer system to verify that all joints or seams between the pipe sections are permanently or semi-permanently sealed (e.g., a welded joint between two sections of metal pipe or a bolted and gasketed flange), and there are records documenting the inspection results.</li> </ul> <p>Verify that initial compliance is demonstrated of each transfer system that is enclosed and vented to a control device according to 40 CFR 63.7915(e)(3) (see checklist item AE.319.1.US) by submitting, as part of the notification of compliance status, a signed statement that the following requirements are met:</p> <ul style="list-style-type: none"> <li>– a transfer system has been installed that is designed and operated such that an internal pressure in the vapor headspace in the enclosure is maintained at a level less than atmospheric pressure when the control device is operating, and there are records documenting the design and installation</li> </ul>

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<p><b>AE.319.3.US.</b> Affected transfer systems at site remediations must meet specific inspection and monitoring parameters (40 CFR 63.7917) [Added April 2004; Revised January 2007].</p>	<p>– each applicable requirement for demonstrating initial compliance with the emission limitations and work practice standards for a closed vent system and control device in 40 CFR 63.7926 (see checklist item AE.323.2.US) have been met.</p> <p>(NOTE: See checklist item AE.300.4.US for applicability information.)</p> <p>Verify that, if an individual drain system is operated as a transfer system according to 40 CFR 63.7915(b) (see checklist item AE.319.1.US), each individual drain system is visually inspected at least annually according to the requirements in 40 CFR 63.964(a).</p> <p>Verify that, if the facility operates a transfer system using covers according to 40 CFR 63.7915(c)(1) (see checklist item AE.319.1.US), each cover and its closure devices are inspected for defects according to the requirements in 40 CFR 63.695(d)(1) through 63.695(d)(5).</p> <p>Verify that, if the facility operates a transfer system consisting of hard piping according to 40 CFR 63.7915(c)(2) (see checklist item AE.319.1.US), the unburied portion of pipeline and all joints are inspected annually for leaks and other defects.</p> <p>Verify that, in the event that a defect is detected, the leak or defect is repaired.</p> <p>Verify that, if the facility operates a transfer system that is enclosed and vented to a control device according to 40 CFR 63.7915(c)(3) (see checklist item AE.319.1.US), the following requirements are met:</p> <ul style="list-style-type: none"> <li>– annually inspect all enclosure components (e.g., enclosure sections, closure devices, fans) for defects that would prevent an internal pressure in the vapor headspace in the enclosure from continuously being maintained at a level less than atmospheric pressure when the control device is operating</li> <li>– monitor and inspect the closed vent system and control device according to the requirements in 40 CFR 63.7927 (see checklist item AE.323.3.US) that are applicable.</li> </ul> <p>Verify that the first efforts at repair of a defect are made no later than 5 calendar days after detection, and repair is completed as soon as possible but no later than 45 calendar days after detection.</p> <p>(NOTE: Repair of a defect may be delayed beyond 45 calendar days if it is determined that repair of the defect requires emptying or temporary removal from service of the transfer system and no alternative transfer system is available at the site to accept the material normally handled by the system. In this case, repair the defect the next time the process or unit that is generating the material handled by the transfer system stops operation. Repair of the defect must be completed before the process or unit resumes operation.)</p>

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<p><b>AE.319.4.US.</b> Affected transfer systems at site remediations must demonstrate continuous compliance with emissions limitations and work practice standards (40 CFR 63.7918) [Added April 2004; Revised January 2007].</p>	<p>Verify that a record of the defect repair is maintained according to the requirements specified in 40 CFR 63.7952 (see checklist item AE.300.12.US).</p> <p>(NOTE: See checklist item AE.300.4.US for applicability information.)</p> <p>Verify that continuous compliance is demonstrated for each individual drain system using controls according to 40 CFR 63.7915(b) (see checklist item AE.319.1.US) by meeting the following requirements:</p> <ul style="list-style-type: none"> <li>– operating and maintaining the air emission controls for individual drain systems according to the requirements in 40 CFR 63.962</li> <li>– visually inspecting each individual drain system at least annually according to the requirements in 40 CFR 63.964(a)</li> <li>– repairing defects according to the requirements in 40 CFR 63.964(b)</li> <li>– recording the information specified in 40 CFR 63.965(a)</li> <li>– keeping records to document compliance according to the requirements in 40 CFR 63.7952 (see checklist item AE.300.12.US).</li> </ul> <p>Verify that continuous compliance is demonstrated for each transfer system using covers according to 40 CFR 63.7915(c)(1) (see checklist item AE.319.1.US) by meeting the following requirements:</p> <ul style="list-style-type: none"> <li>– operating and maintaining each cover and its closure devices according to the requirements in 40 CFR 63.689(d)(1) through 63.689(d)(5)</li> <li>– performing inspections of each cover and its closure devices for defects at least annually according to the requirements in 40 CFR 63.695(d)(1) through 63.695(d)(5)</li> <li>– repairing defects according to the requirements in 40 CFR 63.695(5)</li> <li>– keeping records to document compliance according to the requirements in 40 CFR 63.7952 (see checklist item AE.300.12.US).</li> </ul> <p>Verify that continuous compliance is demonstrated for each transfer system that consists of hard piping according to 40 CFR 63.7915(c)(2) (see checklist item AE.319.1.US) by meeting the following requirements:</p> <ul style="list-style-type: none"> <li>– operating and maintaining the pipeline to ensure that all joints or seams between the pipe sections remain permanently or semi-permanently sealed (e.g., a welded joint between two sections of metal pipe or a bolted and gasketed flange)</li> <li>– inspecting the pipeline for defects at least annually according to the requirements in 40 CFR 63.7917(c)</li> <li>– repairing defects according to the requirements in 40 CFR 63.7917(e)</li> <li>– keeping records to document compliance according to the requirements in 40 CFR 63.7952 (see checklist item AE.300.12.US).</li> </ul>

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	<p>Verify that continuous compliance is demonstrated for each transfer system that is enclosed and vented to a control device according to 40 CFR 63.7915(e)(3) (see checklist item AE.319.1.US) by meeting the following requirements:</p> <ul style="list-style-type: none"> <li>– operating and maintaining the enclosure to ensure that the internal pressure in the vapor headspace in the enclosure is maintained continuously at a level less than atmospheric pressure when the control device is operating</li> <li>– inspecting the enclosure and its closure devices for defects at least annually according to the requirements in 40 CFR 63.7918(d)</li> <li>– repairing defects according to the requirements in 40 CFR 63.7918(e)</li> <li>– meeting each applicable requirement for demonstrating continuous compliance with the emission limitations and work practice standards for a closed vent system and control device in 40 CFR 63.7928 (see checklist item AE.323.4.US)</li> <li>– keeping records to document compliance according to the requirements in 40 CFR 63.7952 (see checklist item AE.300.12.US).</li> </ul>





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<p><b>AE.321.3.US.</b> Affected equipment at site remediations must demonstrated continuous compliance with emissions limitations and work practice standards (40 CFR 63.7922) [Added April 2004].</p>	<p>– as part of the notification of compliance status, a signed statement was submitted stating that:</p> <ul style="list-style-type: none"> <li>– the facility will meet the requirements in 40 CFR 63.1021 through 63.1037 that apply to the affected equipment</li> <li>– the equipment subject to control according to the requirements in 40 CFR 63.1022 has been identified, including equipment designated as unsafe to monitor, and there are records supporting the determinations with a written plan for monitoring the equipment according to the requirements in 40 CFR 63.1022(c)(4).</li> </ul> <p>(NOTE: See checklist item AE.300.4.US for applicability information.)</p> <p>Verify that, if the facility controls equipment leaks according to the requirements under 40 CFR 63.7920(b)(1), continuous compliance is demonstrated by inspecting, monitoring, repairing, and maintaining records according to the requirements in 40 CFR 63.1002 through 63.1018 that apply to the affected equipment.</p> <p>Verify that, if the facility controls equipment leaks according to the requirements under 40 CFR 63.7920(b)(2), continuous compliance is demonstrated by inspecting, monitoring, repairing, and maintaining records according to the requirements in 40 CFR 63.1021 through 63.1039 that apply to the affected equipment.</p> <p>Verify that records to demonstrate compliance are kept in accordance with the requirements in 40 CFR 63.7952 (see checklist item AE.300.12.US).</p>

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<b>REMEDIATION SITE EMISSIONS</b>  <b>AE.323</b> <b>Closed Vent Systems and Control Devices</b>  <b>AE.323.1.US.</b> Affected closed vent systems and control devices at site remediations must meet certain emissions limitations and work practice standards (40 CFR 63.7925) [Added April 2004].	<p>(NOTE: See checklist item AE.300.4.US for applicability information.)</p> <p>Verify that, whenever gases or vapors containing HAP are vented through the closed-vent system to the control device, the control device is operating except at the following times:</p> <ul style="list-style-type: none"> <li>– the control device may be bypassed for the purpose of performing planned routine maintenance of the closed-vent system or control device in situations when the routine maintenance cannot be performed during periods that the emission point vented to the control device is shutdown</li> <li>– the control device may be bypassed for the purpose of correcting a malfunction of the closed-vent system or control device and the adjustments or repairs necessary to correct the malfunction are done as soon as practicable after the malfunction is detected.</li> </ul> <p>(NOTE: On an annual basis, the total time that the closed-vent system or control device is bypassed to perform routine maintenance must not exceed 240 h per each calendar year.)</p> <p>Verify that, for each closed vent system, the work practice standards in 40 CFR 63.693(c) are met.</p> <p>Verify that, for each control device other than a flare or a control device used to comply with the facility-wide process vent emission limits in 40 CFR 63.7890(b), HAP emissions are controlled to meet either of the following emissions limits:</p> <ul style="list-style-type: none"> <li>– reduce emissions of total HAP listed in Appendix 1-27 or TOC (minus methane and ethane) from each control device by 95 percent by weight</li> <li>– limit the concentration of total HAP listed in Appendix 1-27 or TOC (minus methane and ethane) from each combustion control device (a thermal incinerator, catalytic incinerator, boiler, or process heater) to 20 ppmv or less on a dry basis corrected to 3 percent oxygen.</li> </ul> <p>Verify that, if a flare is used for the control device, the requirements for flares in 40 CFR 63.11(b) are met.</p> <p>(NOTE: If using a process heater or boiler for the control device, then as an alternative to meeting the emissions limits, the facility may choose to comply with one of the following work practice standards:</p>

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	<ul style="list-style-type: none"> <li>– introduce the vent stream into the flame zone of the boiler or process heater and maintain the conditions in the combustion chamber at a residence time of 0.5 s or longer and at a temperature of 760 °C or higher</li> <li>– introduce the vent stream with the fuel that provides the predominate heat input to the boiler or process heater (i.e., the primary fuel)</li> <li>– introduce the vent stream to a boiler or process heater for which the facility either has been issued a final permit under 40 CFR 270 and complies with the requirements of 40 CFR 266, Subpart H: Hazardous Waste Burned in Boilers and Industrial Furnaces; or has certified compliance with the interim status requirements of 40 CFR 266, Subpart H.)</li> </ul> <p>Verify that, for each control device other than a flare, each of the following operating limits that applies are met:</p> <ul style="list-style-type: none"> <li>– if using a regenerable carbon adsorption system: <ul style="list-style-type: none"> <li>– maintain the hourly average total regeneration stream mass flow during the adsorption bed regeneration cycle greater than or equal to the stream mass flow established in the design evaluation or performance test</li> <li>– maintain the hourly average temperature of the adsorption bed during regeneration (except during the cooling cycle) greater than or equal to the temperature established during the design evaluation or performance test</li> <li>– maintain the hourly average temperature of the adsorption bed after regeneration (and within 15 min after completing any cooling cycle) less than or equal to the temperature established during the design evaluation</li> <li>– maintain the frequency of regeneration greater than or equal to the frequency established during the design evaluation</li> </ul> </li> <li>– if using a nonregenerable carbon adsorption system, maintain the hourly average temperature of the adsorption bed less than or equal to the temperature established during the design evaluation or performance test</li> <li>– if using a condenser, maintain the daily average condenser exit temperature less than or equal to the temperature established during the design evaluation or performance test</li> <li>– if using a thermal incinerator, maintain the daily average firebox temperature greater than or equal to the temperature established in the design evaluation or during the performance test</li> <li>– if using a catalytic incinerator, maintain the daily average temperature difference across the catalyst bed greater than or equal to the minimum temperature difference established during the performance test or design evaluation</li> <li>– if using a boiler or process heater to comply with an emission limit, maintain the daily average firebox temperature within the operating level established during the design evaluation or performance test.</li> </ul> <p>Verify that, if a carbon adsorption system is used as the control, the following work practice standards are met as they apply to the control device:</p>

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<p><b>AE.323.2.US.</b> Affected closed vent systems and control devices at site remediations must demonstrate initial compliance with limitations and work practice standards (40 CFR 63.7926) [Added April 2004].</p>	<ul style="list-style-type: none"> <li>– if using a regenerable carbon adsorption system:               <ul style="list-style-type: none"> <li>– replace the existing adsorbent in each segment of the bed with an adsorbent that meets the replacement specifications established during the design evaluation before the age of the adsorbent exceeds the maximum allowable age established during the design evaluation</li> <li>– follow the disposal requirements for spent carbon in 40 CFR 63.693(d)(4)</li> </ul> </li> <li>– if using a nonregenerable carbon adsorption system:               <ul style="list-style-type: none"> <li>– replace the existing adsorbent in each segment of the bed with an adsorbent that meets the replacement specifications established during the design evaluation before the age of the adsorbent exceeds the maximum allowable age established during the design evaluation.</li> <li>– meet the disposal requirements for spent carbon in 40 CFR 63.693(d)(4)(ii)</li> </ul> </li> </ul> <p>(NOTE: If using a nonregenerative carbon adsorption system, the facility may choose to comply with the following requirements as an alternative to the above requirements:</p> <ul style="list-style-type: none"> <li>– immediately replace the carbon canister or carbon in the control device when the monitoring device indicates breakthrough has occurred according to the requirements in 40 CFR 63.693(d)(4)(iii)(A), or replace the carbon canister or carbon in the control device at regular intervals according to the requirements in 40 CFR 63.693(d)(4)(iii)(B)</li> <li>– follow the disposal requirements for spent carbon in 40 CFR 63.693(d)(4)(ii).)</li> </ul> <p>Verify that, if the facility is using a catalytic incinerator, the existing catalyst bed is replaced with a bed that meets the replacement specifications before the age of the bed exceeds the maximum allowable age established in the design evaluation or during the performance test.</p> <p>(NOTE: The facility may request approval from the EPA to use an alternative to the work practice standards.)</p> <p>(NOTE: See checklist item AE.300.4.US for applicability information.)</p> <p>Verify that initial compliance with the closed vent system work practice standards in 40 CFR 63.7925(c) is demonstrated by submitting, as part of the notification of compliance status, a signed statement that the following requirements have been met:</p> <ul style="list-style-type: none"> <li>– a closed vent system has been installed that meets the requirements in 40 CFR 63.695(c)(1) and 63.695(c)(2), and there are records documenting the equipment design and installation</li> <li>– the initial inspection of the closed vent system has been performed according to the requirements in 40 CFR 63.695(c)(1)(i) or 63.695(c)(1)(ii), and there are records documenting the inspection results.</li> </ul>

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	<p>Verify that initial compliance of each control device subject to the emissions limits in 40 CFR 63.7925(d) with the applicable emissions limit in 40 CFR 63.7925(d) is demonstrated by submitting, as part of the notification of compliance status, a signed statement that the following requirements have been met as they apply:</p> <ul style="list-style-type: none"> <li>– for the emissions limit in 40 CFR 63.7925(d)(1), the emissions of total HAP listed in Appendix 1-27 or TOC (minus methane and ethane) from the control device, measured or determined according to the procedures for performance tests and design evaluations in 40 CFR 63.7941, are reduced by at least 95 percent by weight</li> <li>– for the emissions limit in 40 CFR 63.7925(d)(2), the concentration of total HAP listed in Appendix 1-27 or TOC (minus methane and ethane) from the combustion control device, measured by a performance test or determined by a design evaluation according to the procedures in 40 CFR 63.7941, do not exceed 20 ppmv on a dry basis corrected to 3 percent oxygen.</li> </ul> <p>Verify that initial compliance of each control device subject to operating limits in 40 CFR 63.7925(g) with the applicable limits is demonstrated by submitting, as part of the notification of compliance status, a signed statement that the following requirements are met:</p> <ul style="list-style-type: none"> <li>– an appropriate operating limit(s) has been established for each of the operating parameters applicable to the control device as specified in 40 CFR 63.7925(g)(1) through 63.7925(g)(6)</li> <li>– there is a record of the applicable operating parameter data during the performance test or design evaluation during which the emissions met the applicable limit.</li> </ul> <p>Verify that initial compliance with the spent carbon replacement and disposal work practice standards for carbon adsorption systems in 40 CFR 63.7925(h) is demonstrated by submitting, as part of the notification of compliance status, a signed statement that the facility will comply with each work practice standard that applies to the carbon adsorption system.</p> <p>Verify that initial compliance with the catalyst replacement work practice standards for catalytic incinerators in 40 CFR 63.7925(i) is demonstrated by submitting, as part of the notification of compliance status, a signed statement that the facility will comply with the specified work practice standard.</p> <p>Verify that initial compliance of each flare with the work practice standards in 40 CFR 63.7925(e) is demonstrated by submitting, as part of the notification of compliance status, a signed statement that the following requirements have been met:</p> <ul style="list-style-type: none"> <li>– each flare meets the requirements in 40 CFR 63.11(b)</li> </ul>

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<p><b>AE.323.3.US.</b> Affected closed vent systems and control devices at site remediations must meet specific inspection and monitoring requirements (40 CFR 63.7927) [<b>Added April 2004; Revised January 2007</b>].</p>	<ul style="list-style-type: none"> <li>– a visible emissions test has been performed which determined the net heating value of gas being combusted and determined the flare exit velocity as required in 40 CFR 63.693(h)(2)</li> <li>– each flare is operated according to the requirements in 40 CFR 63.11(b).</li> </ul> <p>Verify that initial compliance of each boiler or process heater with the work practice standards in 40 CFR 63.7925(f) is demonstrated by submitting, as part of the notification of compliance status, a signed statement that the following requirements have been met:</p> <ul style="list-style-type: none"> <li>– for the work practice standards in 40 CFR 63.7925(f)(1), there are records documenting that the boiler or process heater is designed to operate at a residence time of 0.5 s or greater and maintain the combustion zone temperature at 760 °C or greater</li> <li>– for the work practice standard in 40 CFR 63.7925(f)(2), there are records documenting that the vent stream is introduced with the fuel according to the requirements in 40 CFR 63.693(g)(1)(iv), or that the vent stream is introduced to a boiler or process heater that meets the requirements in 40 CFR 63.693(g)(1)(v).</li> <li>– for the work practice standard in 40 CFR 63.7925(f)(3), there are records documenting that the facility either has been issued a final permit under 40 CFR 270 and the boiler or process heater complies with the requirements of 40 CFR 266, Subpart H: Hazardous Waste Burned in Boilers and Industrial Furnaces; or has been certified in compliance with the interim status requirements of 40 CFR 266, Subpart H.</li> </ul> <p>(NOTE: See checklist item AE.300.4.US for applicability information.)</p> <p>Verify that each closed vent system is monitored and inspected according to one of the following requirements:</p> <ul style="list-style-type: none"> <li>– monitor, inspect, and repair defects according to the requirements in 40 CFR 63.695(c)(1)(ii) through 63.695(c)(3)</li> <li>– monitor and inspect the closed vent system according to the requirements in 40 CFR 63.172(f) through 63.172(j) and record the information in 40 CFR 63.181.</li> </ul> <p>Verify that, if the closed vent system includes a bypass device, one of the following requirements is met:</p> <ul style="list-style-type: none"> <li>– use a flow indicator to determine if the presence of flow according to the requirements in 40 CFR 63.693(c)(2)(i)</li> <li>– use a seal or locking device and make monthly inspections as required by 40 CFR 63.693(c)(2)(ii).</li> </ul>

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<p><b>AE.323.4.US.</b> Affected closed vent systems and control devices at site remediations must demonstrate continuous</p>	<p>Verify that, if the facility uses a regenerable carbon adsorption system, the following requirements are met:</p> <ul style="list-style-type: none"> <li>– use a CPMS to measure and record the hourly average total regeneration stream mass flow during each carbon adsorption cycle</li> <li>– use a CPMS to measure and record the hourly average temperature of the adsorption bed during regeneration (except during the cooling cycle)</li> <li>– use a CPMS to measure and record the hourly average temperature of the adsorption bed after regeneration (and within 15 min after completing any cooling cycle).</li> </ul> <p>Verify that, if the facility uses a nonregenerable carbon adsorption system, a CPMS is used to measure and record the hourly average temperature of the adsorption bed or the concentration of organic compounds in the exhaust vent stream is monitored according to the requirements in 40 CFR 63.693(d)(4)(iii)(A).</p> <p>Verify that, if the facility uses a condenser, a CPMS is used to measure and record the hourly average condenser exit temperature and determine and record the daily average condenser exit temperature.</p> <p>Verify that, if the facility uses a thermal incinerator, a CPMS is used to measure and record the hourly average firebox temperature and determine and record the daily average firebox temperature.</p> <p>Verify that, if the facility uses a catalytic incinerator, a CPMS with two temperature sensors is used to measure and record the hourly average temperature at the inlet of the catalyst bed, the hourly average temperature at the outlet of the catalyst bed, the hourly average temperature difference across the catalyst bed, and to determine and record the daily average temperature difference across the catalyst bed.</p> <p>Verify that, if the facility uses a boiler or process heater to meet an emission limitation, a CPMS is used to measure and record the hourly average firebox temperature and determine and record the daily average firebox temperature.</p> <p>Verify that, if the facility uses a flare, the operation of the flare is monitored using a heat sensing monitoring device according to the requirements in 40 CFR 63.693(h)(3).</p> <p>Verify that, if the vent stream is introduced into the flame zone of a boiler or process heater according to the requirements in 40 CFR 63.7925(f)(1), a CPMS is used to measure and record the combustion zone temperature.</p> <p>(NOTE: See checklist item AE.300.4.US for applicability information.)</p>

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<p>compliance with emission limitations and work practice standards (40 CFR 63.7928) [Added April 2004; Revised January 2007].</p>	<p>Verify that continuous compliance with the closed vent system work practice standards in 40 CFR 63.7925(c) is demonstrated by meeting the following requirements:</p> <ul style="list-style-type: none"> <li>– for a closed vent system designed to operate with no detectable organic emissions, visually inspecting the closed vent system at least annually, monitoring after a repair or replacement using the procedures in 40 CFR 63.694(k), and monitoring at least annually according to the requirements in 40 CFR 63.695(c)(1)(ii)</li> <li>– for a closed vent system designed to operate below atmospheric pressure, visually inspecting the closed vent system at least annually according to the requirements in 40 CFR 63.695(c)(2)(ii)</li> <li>– repairing defects according to the requirements in 40 CFR 63.695(c)(3)</li> <li>– keeping records of each inspection that include the following information: <ul style="list-style-type: none"> <li>– closed vent system identification number (or other unique identification description selected)</li> <li>– date of each inspection</li> <li>– if a defect is detected during an inspection, the location of the defect, a description of the defect, the date of detection, the corrective action taken to repair the defect, and if repair is delayed, the reason for any delay and the date completion of the repair is expected</li> </ul> </li> <li>– if electing to monitor the closed vent system according to the requirements in 40 CFR 63.172(f) through 63.172(j), recording the information in 40 CFR 63.181</li> <li>– if the closed vent system is equipped with a flow indicator, recording the information in 40 CFR 63.693(c)(2)(i)</li> <li>– if the closed vent system is equipped with a seal or locking device, visually inspecting the seal or closure mechanism at least monthly according to the requirements in 40 CFR 63.693(c)(2)(ii), and recording the results of each inspection.</li> </ul> <p>Verify that continuous compliance of each control device subject to the emissions limits in 40 CFR 63.7925(d) with the applicable emissions limit in 40 CFR 63.7925(d) is demonstrated by meeting the following requirements:</p> <ul style="list-style-type: none"> <li>– for the emission limit in 40 CFR 63.7925(d)(1), maintaining the reduction in emissions of total HAP listed in Appendix 1-27 or TOC (minus methane and ethane) from the control device at 95 percent by weight or greater</li> <li>– for the emission limit in 40 CFR 63.7925(d)(2), maintaining the concentration of total HAP listed in Appendix 1-27 or TOC (minus methane and ethane) from the control device at 20 ppmv or less.</li> </ul> <p>Verify that continuous compliance of each control device subject to operating limits in 40 CFR 63.7925(g) with the applicable limits is demonstrated by meeting the following requirements:</p>

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	<ul style="list-style-type: none"> <li>– maintaining each operating limit according to the requirements in 40 CFR 63.7925(g) as applicable to the control device</li> <li>– monitoring and inspecting each control device according to the requirements in 40 CFR 63.7927(b) through 63.7927(i) (see checklist item AE.323.3.US) as applicable to the control device</li> <li>– operating and maintaining each continuous monitoring system according to the requirements in 40 CFR 63.7945 (see checklist item AE.300.9.US), and collecting and reducing data according to the requirements in 40 CFR 63.7946 (see checklist item AE.300.9.US)</li> <li>– keeping records to document compliance according to the requirements in 40 CFR 63.7952 (see checklist item AE.300.12.US).</li> </ul> <p>Verify that continuous compliance with the spent carbon replacement and disposal work practice standards for regenerable carbon adsorption systems in 40 CFR 63.7925(h)(1) is demonstrated by meeting the following requirements:</p> <ul style="list-style-type: none"> <li>– replacing the adsorbent as required by 40 CFR 63.7925(h)(1)(i)</li> <li>– following the disposal requirements for spent carbon in 40 CFR 63.693(d)(4)(ii).</li> <li>– keeping records to document compliance with the requirements of the work practice standards.</li> </ul> <p>Verify that continuous compliance with the spent carbon replacement and disposal work practice standards for nonregenerable carbon adsorption systems in 40 CFR 63.7925(h)(2) is demonstrated by meeting the following requirements:</p> <ul style="list-style-type: none"> <li>– replacing the adsorbent as required by the work practice standards in 40 CFR 63.7925(h)(2)(i)</li> <li>– following the disposal requirements for spent carbon in 40 CFR 63.693(d)(4)(ii)</li> <li>– keeping records to document compliance with the requirements of the work practice standards.</li> </ul> <p>Verify that continuous compliance with the spent carbon replacement and disposal work practice standards for nonregenerable carbon adsorption systems in 40 CFR 63.7925(h)(3) is demonstrated by meeting the following requirements:</p> <ul style="list-style-type: none"> <li>– meeting one of the following: <ul style="list-style-type: none"> <li>– monitoring the concentration level of the organic compounds in the exhaust vent for the carbon adsorption system as required in 40 CFR 63.7927(c) (see checklist item AE.323.3.US), immediately replacing the carbon canister or carbon in the control device when breakthrough is indicated by the monitoring device, and recording the date of breakthrough and carbon replacement</li> <li>– replacing the carbon canister or carbon in the control device at regular intervals and recording the date of carbon replacement</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– following the disposal requirements for spent carbon in 40 CFR 63.693(d)(4)(ii)</li> <li>– keeping records to document compliance with the requirements of the work practice standards.</li> </ul> <p>Verify that continuous compliance with the catalyst replacement work practice standards for catalytic incinerators in 40 CFR 63.7925(i) is demonstrated by meeting the following requirements:</p> <ul style="list-style-type: none"> <li>– replacing the existing catalyst bed as required in 40 CFR 63.7925(i)</li> <li>– keeping records to document compliance with the requirements of the work practice standards.</li> </ul> <p>Verify that continuous compliance of each flare with the work practice standards in 40 CFR 63.7925(e) is demonstrated by meeting the following requirements:</p> <ul style="list-style-type: none"> <li>– operating the flare with no visible emissions except for up to 5 min in any 2 consecutive hours according to the requirements in 40 CFR 63.11(b)(4)</li> <li>– monitoring the presence of a pilot flare according to the requirements in 40 CFR 63.7927(h) (see checklist item AE.323.3.US) and maintaining a pilot flame and flare flame at all times that emissions are not vented to the flare according to the requirements in 40 CFR 63.11(b)(5)</li> <li>– operating the flare with an exit velocity according to the requirements in 40 CFR 63.11(b)(6) through 63.11(b)(8)</li> <li>– operating the flare with a net heating value of the gas being combusted according to the requirements in 40 CFR 63.11(b)(6)(ii)</li> <li>– keeping records to document compliance with the requirements of the work practice standards.</li> </ul> <p>Verify that continuous compliance of each boiler or process heater with the work practice standards in 40 CFR 63.7925(f) is demonstrated by meeting the following requirements:</p> <ul style="list-style-type: none"> <li>– for the work practice standards in 40 CFR 63.7925(f)(1), demonstrate continuous compliance by meeting the following requirements: <ul style="list-style-type: none"> <li>– maintaining conditions in the combustion chamber at a residence time of 0.5 s or longer and at a combustion zone temperature at 760 °C or greater whenever the vent stream is introduced to the flame zone of the boiler or process heater</li> <li>– monitoring each boiler or process heater according to the requirements in 40 CFR 63.7927(i) (see checklist item AE.323.3.US)</li> <li>– operating and maintaining each continuous monitoring system according to the requirements in 40 CFR 63.7945 (see checklist item AE.300.9.US), and collecting and reducing data according to the requirements in 40 CFR 63.7946 (see checklist item AE.300.9.US)</li> <li>– keeping records to document compliance with residence time design requirements</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– for the work practice standards in 40 CFR 63.7925(f)(2), maintain the boiler or process heater operations such that the vent stream is introduced with the fuel according to the requirements in 40 CFR 63.693(g)(1)(iv), or that the vent stream is introduced to a boiler or process heater that meets the requirements in 40 CFR 63.693(g)(1)(v)</li> <li>– for the work practice standard in 40 CFR 63.7925(f)(3), remain in compliance with all terms and conditions of the final permit under 40 CFR 270 and the boiler or process heater complies with the requirements of 40 CFR 266, Subpart H: Hazardous Waste Burned in Boilers and Industrial Furnaces; or in compliance with the interim status requirements of 40 CFR 266, Subpart H, as applicable to the boiler or process heater.</li> </ul>

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<p><b>AE.350</b></p> <p><b>RADIONUCLIDE EMISSIONS</b></p> <p><b>AE.350.1.US.</b> Radionuclide emissions from certain types of federal facilities must be limited (40 CFR 61.100 and 61.102) [Added July 2004].</p> <p><b>AE.350.2.US.</b> Compliance with limitations on radionuclide emissions from certain types of federal facilities is determined using specific methodology (40 CFR 61.100 and 61.103) [Added July 2004].</p> <p><b>AE.350.3.US.</b> Designated federal facilities with radionuclide emission must meet reporting requirements</p>	<p>(NOTE: This checklist item applies to facilities owned or operated by any Federal agency other than the Department of Energy and not licensed by the Nuclear Regulatory Commission, except that this does not apply to disposal at facilities regulated under 40 CFR 191, Subpart B, or to any uranium mill tailings pile after it has been disposed of under 40 CFR 192, or to low energy accelerators.)</p> <p>Verify that emissions of radionuclides, including iodine, to the ambient air from a regulated facility do not exceed those amounts that would cause any member of the public to receive in any year an effective dose equivalent of 10 mrem/yr.</p> <p>Verify that emissions of iodine to the ambient air from a regulated facility regulated do not exceed those amounts that would cause any member of the public to receive in any year an effective dose equivalent of 3 mrem/yr.</p> <p>Verify that compliance with the emission standards in AE.350.1.US are determined through the use of either the EPA computer code COMPLY or the alternative requirements of appendix E.</p> <p>(NOTE: Facilities emitting radionuclides not listed in COMPLY or appendix E shall contact EPA to receive the information needed to determine dose. The source terms to be used for input into COMPLY shall be determined through the use of the measurement procedures listed in 40 CFR 61.107 or the emission factors in appendix D or through alternative procedures for which EPA has granted prior approval.)</p> <p>(NOTE: Facilities may demonstrate compliance with the emission standard through the use of computer models that are equivalent to COMPLY, provided that the model has received prior approval from EPA headquarters.)</p> <p>Verify that any facility using a model other than COMPLY files an annual report.</p> <p>(NOTE: EPA may approve an alternative model in whole or in part and may limit its use to specific circumstances.)</p> <p>Verify that the owner or operator of a facility submits an annual report to the EPA covering the emissions of a calendar year by March 31 of the following year.</p> <p>Verify that the report or application for approval to construct or modify as required by 40 CFR 61, Subpart A and 40 CFR 61.106, provide the following information:</p>

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(40 CFR 61.100 and 61.104) [Added July 2004].	<ul style="list-style-type: none"> <li>– the name of the facility</li> <li>– the name of the person responsible for the operation of the facility and the name of the person preparing the report (if different)</li> <li>– the location of the facility, including suite and/or building number, street, city, county, state, and zip code</li> <li>– the mailing address of the facility, if different than the location</li> <li>– a list of the radioactive materials used at the facility</li> <li>– a description of the handling and processing that the radioactive materials undergo at the facility</li> <li>– a list of the stacks or vents or other points where radioactive materials are released to the atmosphere</li> <li>– a description of the effluent controls that are used on each stack, vent, or other release point and an estimate of the efficiency of each device</li> <li>– distances from the point of release to the nearest residence, school, business or office and the nearest farms producing vegetables, milk, and meat</li> <li>– the effective dose equivalent calculated using the compliance procedures in 40 CFR 61.103</li> <li>– the physical form and quantity of each radionuclide emitted from each stack, vent or other release point, and the method(s) by which these quantities were determined</li> <li>– the volumetric flow, diameter, effluent temperature, and release height for each stack, vent or other release point where radioactive materials are emitted, the method(s) by which these were determined</li> <li>– the height and width of each building from which radionuclides are emitted.</li> <li>– the values used for all other user-supplied input parameters (e.g., meteorological data) and the source of these data</li> <li>– a brief description of all construction and modifications which were completed in the calendar year for which the report is prepared, but for which the requirement to apply for approval to construct or modify was waived under 40 CFR 61.106, and associated documentation developed by the licensee to support the waiver (NOTE: EPA reserves the right to require that the licensee send to EPA all the information that normally would be required in an application to construct or modify, following receipt of the description and supporting documentation).</li> </ul> <p>Verify that each report is signed and dated by a corporate officer or public official in charge of the facility and contains the following declaration immediately above the signature line: “I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment. See 18 U.S.C. 1001.”</p> <p>(NOTE: Facilities emitting radionuclides in an amount that would cause less than 10% of the dose standard in 40 CFR 61.102 [see checklist item AE.350.1.US] as</p>

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<p><b>AE.350.4.US.</b> Designated federal facilities with radionuclide emission must meet recordkeeping requirements (40 CFR 61.100 and 61.105) [<b>Added July 2004</b>].</p> <p><b>AE.350.5.US.</b> Designated federal facilities with radionuclide emission must determine emissions (40 CFR 61.100 and 61.107) [<b>Added July 2004</b>].</p>	<p>determined by the compliance procedures from 40 CFR 61.103(a) [see checklist item AE.350.2.US], are exempt from the reporting requirements on this checklist item. Facilities shall annually make a new determination whether they are exempt from reporting.)</p> <p>Verify that, if the facility is not in compliance with the emission limits of 40 CFR 61.102 [see checklist item AE.350.1.US] in the calendar year covered by the report, the facility reports to the Administrator on a monthly basis the information listed above for the preceding month starting the month immediately following the submittal of the annual report for the year in noncompliance and is due 30 days following the end of each month.</p> <p>(NOTE: This increased level of reporting will continue until the Administrator has determined that the monthly reports are no longer necessary.)</p> <p>Verify that, in addition to the above required information, monthly reports also include the following information:</p> <ul style="list-style-type: none"> <li>– all controls or other changes in operation of the facility that will be or are being installed to bring the facility into compliance</li> <li>– if the facility is under a judicial or administrative enforcement decree the report will describe the facilities performance under the terms of the decree.</li> </ul> <p>Verify that the owner or operator of any facility maintains records documenting the source of input parameters including the results of all measurements upon which they are based, the calculations and/or analytical methods used to derive values for input parameters, and the procedure used to determine compliance.</p> <p>Verify that the documentation is sufficient to allow an independent auditor to verify the accuracy of the determination made concerning the facility's compliance with the standard, and, if claimed, qualification for exemption from reporting.</p> <p>Verify that these records are kept at the site of the facility for at least 5 yr and upon request be made available for inspection by the Administrator, or his authorized representative.</p> <p>(NOTE: Facility owners or operators may, in lieu of monitoring, estimate radionuclide emissions in accordance with appendix D, or other procedure for which EPA has granted prior approval.)</p> <p>Verify that radionuclide emission rates from existing point sources (stacks or vents) are measured in accordance with the following requirements or other procedures for which EPA has granted prior approval:</p>

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	<ul style="list-style-type: none"> <li>– effluent flow rate measurements are made using the following methods: <ul style="list-style-type: none"> <li>– Reference Method 2 of appendix A to 40 CFR 60 is used to determine velocity and volumetric flow rates for stacks and large vents</li> <li>– Reference Method 2A of appendix A to 40 CFR 60 is used to measure flow rates through pipes and small vents</li> <li>– the frequency of the flow rate measurements depends upon the variability of the effluent flow rate and for variable flow rates, continuous or frequent flow rate measurements are made (NOTE: For relatively constant flow rates only periodic measurements are necessary)</li> </ul> </li> <li>– radionuclides are directly monitored or extracted, collected, and measured using the following methods: <ul style="list-style-type: none"> <li>– Reference Method 1 of appendix A 40 CFR 60 is used to select monitoring or sampling sites</li> <li>– the effluent stream is directly monitored continuously using an in-line detector or representative samples of the effluent stream shall be withdrawn continuously from the sampling site following the guidance presented in ANSIN13.1-1969 “Guide to Sampling Airborne Radioactive Materials in Nuclear Facilities” (including the guidance presented in appendix A of ANSIN13.1) (NOTE: The requirements for continuous sampling are applicable to batch processes when the unit is in operation. Periodic sampling (grab samples) may be used only with EPA's prior approval. Such approval may be granted in cases where continuous sampling is not practical and radionuclide emission rates are relatively constant. In such cases, grab samples shall be collected with sufficient frequency so as to provide a representative sample of the emissions)</li> <li>– radionuclides are collected and measured using procedures based on the principles of measurement described in appendix B, Method 114</li> <li>– a quality assurance program is conducted that meets the performance requirements described in appendix B, Method 114.</li> </ul> </li> </ul> <p>(NOTE: When it is impractical to measure the effluent flow rate at an existing source in accordance with the requirements above or to monitor or sample an effluent stream at an existing source in accordance with the site selection and sample extraction requirements above, the facility owner or operator may use alternative effluent flow rate measurement procedures or site selection and sample extraction procedures provided that:</p> <ul style="list-style-type: none"> <li>– it can be shown that the requirements above are impractical for the effluent stream</li> <li>– the alternative procedure will not significantly underestimate the emissions</li> <li>– the alternative procedure is fully documented</li> <li>– the owner or operator has received prior approval from EPA.)</li> </ul> <p>Verify that direct monitoring or extraction, collection, and measurement of radionuclide emissions is done at all release points which have a potential to</p>

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	<p>discharge radionuclides into the air in quantities which could cause an effective dose equivalent in excess of 1% of the standard.</p> <p>Verify that all radionuclides which could contribute greater than 10% of the potential effective dose equivalent for a release point are measured and for other release points which have a potential to release radionuclides into the air, periodic confirmatory measurements are made to verify the low emissions.</p> <p>(NOTE: To determine whether a release point is subject to the emission measurement requirements, it is necessary to evaluate the potential for radionuclide emissions for that release point. In evaluating the potential of a release point to discharge radionuclides into the air, the estimated radionuclide release rates shall be based on the discharge of the uncontrolled effluent stream into the air.)</p> <p>(NOTE: Environmental measurements of radionuclide air concentrations at critical receptor locations may be used as an alternative to air dispersion calculations in demonstrating compliance with the standards if the owner or operator meets the following criteria:</p> <ul style="list-style-type: none"> <li>– the air at the point of measurement is continuously sampled for collection of radionuclides</li> <li>– those radionuclides released from the facility, which are the major contributors to the effective dose equivalent are collected and measured as part of the environmental measurements program</li> <li>– radionuclide concentrations which would cause an effective dose equivalent greater than or equal to 10% of the standard are readily detectable and distinguishable from background</li> <li>– net measured radionuclide concentrations are compared to the concentration levels in Table 2 of appendix E in 40 CFR 61 to determine compliance with the standard [NOTE: in the case of multiple radionuclides being released from a facility, compliance shall be demonstrated if the value for all radionuclides is less than the concentration level in Table 2 and the sum of the fractions that result when each measured concentration value is divided by the value in Table 2 for each radionuclide is less than 1]</li> <li>– a quality assurance program is conducted that meets the performance requirements described in appendix B, Method 114 of 40 CFR 61</li> <li>– use of environmental measurements to demonstrate compliance with the standard is subject to prior approval of EPA and applications for approval shall include a detailed description of the sampling and analytical methodology and show how the above criteria will be met.)</li> </ul> <p>Verify that uranium mills use either the methodologies and quality assurance programs or determine their emissions in conformance with the Nuclear Regulatory Commission's Regulatory Guide 4.14 dated April 1980 and they may conduct a quality assurance program as described in the Nuclear Regulatory Commission's Regulatory Guide 4.15 dated February 1979.</p>

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	<p>Verify that radionuclide emission rates from new point sources (stacks or vents) as defined in 40 CFR 61, Subpart A are measured in accordance with the following requirements, or other procedures for which EPA has granted prior approval:</p> <ul style="list-style-type: none"> <li>– effluent flow rate measurements are made using the following methods: <ul style="list-style-type: none"> <li>– ANSI/HPS N13.1-1999 “Sampling and Monitoring Releases of Airborne Radioactive Substances from the Stacks and Ducts of Nuclear Facilities” is used to determine velocity and volumetric flow rates for stacks and large vents</li> <li>– ANSI/HPS N13.1-1999 is used to measure flow rates through pipes and small vents</li> <li>– the frequency of the flow rate measurements depends upon variability of the effluent flow rate: for variable flow rates, continuous or frequent flow rate measurements shall be made, for relatively constant flow rates only periodic measurements are necessary</li> </ul> </li> <li>– radionuclide is directly monitored or extracted, collected and measured using the following methods: <ul style="list-style-type: none"> <li>– ANSI/HPS N13.1-1999 is used to select monitoring or sampling sites.</li> <li>– the effluent stream is directly monitored continuously with an in-line detector or representative samples of the effluent stream are withdrawn continuously from the sampling site following the guidance presented in ANSI/HPS N13.1-1999 (NOTE: The requirements for continuous sampling are applicable to batch processes when the unit is in operation. Periodic sampling (grab samples) may be used only with EPA’s prior approval. Such approval may be granted in cases where continuous sampling is not practical and radionuclide emission rates are relatively constant. In such cases, grab samples shall be collected with sufficient frequency so as to provide a representative sample of the emissions)</li> <li>– radionuclides are collected and measured using procedures based on the principles of measurement described in appendix B, Method 114 of 40 CFR 61 (NOTE: Use of methods based on principles of measurement different from those described in appendix B, Method 114 of this part must have prior approval from the Administrator. EPA reserves the right to approve measurement procedures)</li> <li>– a quality assurance program is conducted that meets the performance requirements described in ANSI/HPS N13.1-1999.</li> </ul> </li> </ul> <p>(NOTE: When it is impractical to measure the effluent flow rate at a source or to monitor or sample an effluent stream at a source in accordance with the site selection and sample extraction requirements, the facility owner or operator may use alternative effluent flow rate measurement procedures or site selection and sample extraction procedures provided that:</p> <ul style="list-style-type: none"> <li>– it can be shown that the requirements are impractical for the effluent stream.</li> <li>– the alternative procedure will not significantly underestimate the emissions.</li> <li>– the alternative procedure is fully documented.</li> <li>– the owner or operator has received prior approval from EPA.)</li> </ul>

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	<p>Verify that radionuclide emission measurements are made at all release points that have a potential to discharge radionuclides into the air in quantities that could cause an effective dose equivalent in excess of 1% of the standard.</p> <p>Verify that all radionuclides that could contribute greater than 10% of the potential effective dose equivalent for a release point are measured.</p> <p>(NOTE: With prior EPA approval, DOE may determine these emissions through alternative procedures.)</p> <p>Verify that for other release points that have a potential to release radionuclides into the air, periodic confirmatory measurements are made to verify the low emissions.</p> <p>(NOTE: To determine whether a release point is subject to the emission measurement requirements of this checklist item, it is necessary to evaluate the potential for radionuclide emissions for that release point. In evaluating the potential of a release point to discharge radionuclides into the air for the purposes of this section, the estimated radionuclide release rates shall be based on the discharge of the effluent stream that would result if all pollution control equipment did not exist, but the facilities operations were otherwise normal.)</p> <p>(NOTE: Environmental measurements of radionuclide air concentrations at critical receptor locations may be used as an alternative to air dispersion calculations in demonstrating compliance with the standard if the owner or operator meets the following criteria:</p> <ul style="list-style-type: none"> <li>– the air at the point of measurement is continuously sampled for collection of radionuclides</li> <li>– those radionuclides released from the facility that are the major contributors to the effective dose equivalent are collected and measured as part of the environmental measurement program</li> <li>– radionuclide concentrations that would cause an effective dose equivalent of 10% of the standard are readily detectable and distinguishable from background</li> <li>– net measured radionuclide concentrations are compared to the concentration levels in Table 2 of appendix E of 40 CFR 61 to determine compliance with the standard</li> <li>– a quality assurance program shall be conducted that meets the performance requirements described in appendix B, Method 114 of 40 CFR 61</li> <li>– use of environmental measurements to demonstrate compliance with the standard is subject to prior approval of EPA and applications for approval must include a detailed description of the sampling and analytical methodology and show how the above criteria will be met.</li> </ul> <p>In the case of multiple radionuclides being released from a facility, compliance shall be demonstrated if the value for all radionuclides is less than the concentration level in Table 2 of appendix E of 40 CFR 61, and the sum of the fractions that result when</p>

<p style="text-align: center;"><b>COMPLIANCE CATEGORY</b>  <b>AIR EMISSIONS MANAGEMENT</b>  <b>U.S. TEAM Guide</b></p>	
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<p><b>AE.350.6.US.</b> DOE facilities that emit any radionuclide other than radon-222 or radon-220 must meet certain emissions limitations (40 CFR 61.90, 61.92, and 61.94(a)) [Added July 2006].</p> <p><b>AE.350.7.US.</b> DOE facilities that emit any radionuclide other than radon-222 or radon-220 must meet certain monitoring and measuring requirements (40 CFR 61.90 and 61.93) [Added July 2006].</p> <p><b>AE.350.8.US.</b> DOE facilities that emit any radionuclide other than radon-222 or radon-220 must meet certain reporting and recordkeeping requirements (40 CFR 61.90, 61.94, 61.95, and 61.97) [Added July 2006].</p>	<p>each measured concentration value is divided by the value in Table 2 of appendix E of 40 CFR 61 for each radionuclide is less than 1.)</p> <p>(NOTE: This checklist item applies to operations at any facility owned or operated by the Department of Energy that emits any radionuclide other than radon-222 and radon-220 into the air, except that this checklist item does not apply to disposal at facilities subject to 40 CFR 191, Subpart B or 40 CFR 192.)</p> <p>Verify that emissions of radionuclides to the ambient air from DOE facilities do not exceed those amounts that would cause any member of the public to receive in any year an effective dose equivalent of 10 mrem/yr.</p> <p>(NOTE: Compliance with this standard shall be determined by calculating the highest effective dose equivalent to any member of the public at any offsite point where there is a residence, school, business or office.)</p> <p>(NOTE: This checklist item applies to operations at any facility owned or operated by the Department of Energy that emits any radionuclide other than radon-222 and radon-220 into the air, except that this checklist item does not apply to disposal at facilities subject to 40 CFR 191, Subpart B or 40 CFR 192.)</p> <p>Verify that the determination of compliance with radionuclide emissions limitations is determined and effective dose equivalent values to members of the public calculated using EPA approved sampling procedures, computer models CAP-88 or AIRDOS-PC, or other procedures for which EPA has granted prior approval.</p> <p>(NOTE: DOE facilities for which the maximally exposed individual lives within 3 kilometers of all sources of emissions in the facility, may use EPA's COMPLY model and associated procedures for determining dose for purposes of compliance.)</p> <p>(NOTE: See the text of 40 CFR 61.93(b) through 61.93(g) for detailed instructions on how to conduct required measurements and monitoring.)</p> <p>(NOTE: This checklist item applies to operations at any facility owned or operated by the Department of Energy that emits any radionuclide other than radon-222 and radon-220 into the air, except that this checklist item does not apply to disposal at facilities subject to 40 CFR 191, Subpart B or 40 CFR 192.)</p> <p>(NOTE: All facilities designated under this checklist item are exempt from the reporting requirements of 40 CFR 61.10.)</p> <p>Verify that the owners or operators of each facility submits an annual report to both EPA headquarters and the appropriate regional office by June 30 which includes</p>

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	<p>the results of the monitoring as recorded in DOE's Effluent Information System and the dose calculations required by 40 CFR 61.93(a) for the previous calendar year.</p> <p>Verify that, the annual report contains the following additional information as well:</p> <ul style="list-style-type: none"> <li>– the name and location of the facility</li> <li>– a list of the radioactive materials used at the facility</li> <li>– a description of the handling and processing that the radioactive materials undergo at the facility</li> <li>– a list of the stacks or vents or other points where radioactive materials are released to the atmosphere</li> <li>– a description of the effluent controls that are used on each stack, vent, or other release point and an estimate of the efficiency of each control device</li> <li>– distances from the points of release to the nearest residence, school, business or office and the nearest farms producing vegetables, milk, and meat</li> <li>– the values used for all other user-supplied input parameters for the computer models (e.g., meteorological data) and the source of these data</li> <li>– a brief description of all construction and modifications which were completed in the calendar year for which the report is prepared, but for which the requirement to apply for approval to construct or modify was waived under and associated documentation developed by DOE to support the waiver.</li> </ul> <p>(NOTE: EPA reserves the right to require that DOE send to EPA all the information that normally would be required in an application to construct or modify, following receipt of the description and supporting documentation.)</p> <p>Verify that each report is signed and dated by a corporate officer or public official in charge of the facility and contains the following declaration immediately above the signature line: "I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment. See, 18 U.S.C. 1001."</p> <p>Verify that, if the facility is not in compliance with the emission limits in the calendar year covered by the report, then the facility starts reporting to the Administrator on a monthly basis the above listed information for the preceding month.</p> <p>Verify that, if required, the monthly reports start the month immediately following the submittal of the annual report for the year in noncompliance and will be due 30 days following the end of each month.</p> <p>(NOTE: This increased level of reporting will continue until the Administrator has determined that the monthly reports are no longer necessary.)</p>

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	<p>Verify that monthly reports also include the following information:</p> <ul style="list-style-type: none"> <li>– all controls or other changes in operation of the facility that will be or are being installed to bring the facility into compliance</li> <li>– if the facility is under a judicial or administrative enforcement decree, the report will describe the facilities performance under the terms of the decree.</li> </ul> <p>(NOTE: In those instances where the information requested is classified, such information will be made available to EPA separate from the report and will be handled and controlled according to applicable security and classification regulations and requirements.</p> <p>Verify that the facility maintains records documenting the source of input parameters including the results of all measurements upon which they are based, the calculations and/or analytical methods used to derive values for input parameters, and the procedure used to determine effective dose equivalent.</p> <p>(NOTE: This documentation should be sufficient to allow an independent auditor to verify the accuracy of the determination made concerning the facility's compliance with the standard.)</p> <p>Verify that records are kept at the site of the facility for at least 5 yr and, upon request, are made available for inspection by the Administrator, or his authorized representative.</p>

## Appendix 1-1

### Reid Vapor Pressure for Installation Geographic Area (40 CFR 80.27) [Revised July 2001]

State	May	June	July	August	September
Alabama	19.0	7.8	7.8	7.8	7.8
Arizona	9.0	7.8	7.8	7.8	7.8
Arkansas	9.0	7.8	7.8	7.8	7.8
California	9.0	7.8	7.8	7.8	7.8
Colorado <sup>2</sup>	9.0	7.8	7.8	7.8	7.8
Connecticut	9.0	9.0	9.0	9.0	9.0
Delaware	9.0	9.0	9.0	9.0	9.0
District of Columbia	9.0	7.8	7.8	7.8	7.8
Florida	9.0	7.8	7.8	7.8	7.8
Georgia	9.0	7.8	7.8	7.8	7.8
Idaho	9.0	9.0	9.0	9.0	9.0
Illinois	9.0	9.0	9.0	9.0	9.0
Indiana	9.0	9.0	9.0	9.0	9.0
Iowa	9.0	9.0	9.0	9.0	9.0
Kansas	9.0	7.8	7.8	7.8	7.8
Kentucky	9.0	9.0	9.0	9.0	9.0
Louisiana	9.0	7.8	7.8	7.8	7.8
Maine	9.0	9.0	9.0	9.0	9.0
Maryland	9.0	7.8	7.8	7.8	7.8
Massachusetts	9.0	9.0	9.0	9.0	9.0
Michigan	9.0	9.0	9.0	9.0	9.0
Minnesota	9.0	9.0	9.0	9.0	9.0
Mississippi	9.0	7.8	7.8	7.8	7.8

State	May	June	July	August	September
Missouri	9.0	7.8	7.8	7.8	7.8
Montana	9.0	9.0	9.0	9.0	9.0
Nebraska	9.0	9.0	9.0	9.0	9.0
Nevada	9.0	7.8	7.8	7.8	7.8
New Hampshire	9.0	9.0	9.0	9.0	9.0
New Jersey	9.0	9.0	9.0	9.0	9.0
New Mexico	9.0	7.8	7.8	7.8	7.8
New York	9.0	9.0	9.0	9.0	9.0
North Carolina	9.0	7.8	7.8	7.8	7.8
North Dakota	9.0	9.0	9.0	9.0	9.0
Ohio	9.0	9.0	9.0	9.0	9.0
Oklahoma	9.0	7.8	7.8	7.8	7.8
Oregon	9.0	7.8	7.8	7.8	7.8
Pennsylvania	9.0	9.0	9.0	9.0	9.0
Rhode Island	9.0	9.0	9.0	9.0	9.0
South Carolina	9.0	7.8	7.8	7.8	7.8
South Dakota	9.0	9.0	9.0	9.0	9.0
Tennessee					
Knox County	9.0	9.0	9.0	9.0	9.0
All other volatility nonattainment areas	9.0	7.8	7.8	7.8	7.8
Texas	9.0	7.8	7.8	7.8	7.8
Utah	9.0	7.8	7.8	7.8	7.8
Vermont	9.0	9.0	9.0	9.0	9.0
Virginia	9.0	7.8	7.8	7.8	7.8
Washington	9.0	9.0	9.0	9.0	9.0
West Virginia	9.0	9.0	9.0	9.0	9.0
Wisconsin	9.0	9.0	9.0	9.0	9.0

State	May	June	July	August	September
Wyoming	9.0	9.0	9.0	9.0	9.0

1 Standards are expressed in psi.

2 The standard for 1992 through 2001 in the Denver-Boulder area designated nonattainment for the 1-hour ozone NAAQS in 1991 (see 40 CFR 81.306) will be 9.0 for June 1 through September 15.

## **Appendix 1-1a**

### **List of Regulated Substances In Relation to the RMP (40 CFR 68.130)**

**[Revised April 2000, Revised January 2014, Revised April 2017]**

Regulated toxic and flammable substances under section 112(r) of the Clean Air Act are the substances listed in Tables 1, 2, 3, and 4. Threshold quantities for listed toxic and flammable substances are specified in the tables.

The basis for placing toxic and flammable substances on the list of regulated substances are explained in the notes to the list.

**To see the most current version of these tables go to the electronic Code of Federal Regulations, 40 CFR Part 68, section 68.130.**

**<http://www.ecfr.gov>**



#### **Appendix 1-1b**

**This appendix on the contents of the RMP was deleted with the addition of new checklist items.**

**[Added July 1999, Deleted January 2014]**



## Appendix 1-2

### Emissions Limitations for Incinerators and Steam Generators of 73 MW (250 MMBtu/h) or Greater

Source Category	Fuel Type	Pollutant	Emission Level	Monitoring Requirement
<b>40 CFR 60.40 through 60.44</b>				
Steam generators >73 MW (250 MMBtu/h) constructed or modified after 17 August 1971	Solid fossil fuel	Particulate	43 ng/J (0.10 lb/MMBtu)	None
		Opacity	20%; 27% 6 min/h	Continuous
		SO <sub>2</sub>	520 ng/J (1.2 lb/MMBtu)	Continuous
		NO <sub>x</sub> (except lignite and coal refuse)	300 ng/J (0.70 lb/MMBtu)	Continuous
	Liquid fossil fuel	SO <sub>2</sub>	340 ng/J (0.80 lb/MMBtu)	Continuous
		NO <sub>x</sub>	129 ng/J (0.30 lb/MMBtu)	Continuous
	Gaseous fossil fuel	NO <sub>x</sub>	86 ng/J (0.20 lb/MMBtu)	Continuous
	Lignite	NO <sub>x</sub>	260 ng/J (0.60 lb/MMBtu)	Continuous
	Lignite mined in ND, SD, or MT burned in a cyclone fired unit	NO <sub>x</sub>	340 ng/J (0.80 lb/MMBtu)	Continuous
<b>40 CFR 60.50 through 60.54</b>				
Incinerators > 45 metric tons (50 tons/day) constructed or modified after 17 August 1971	Incinerators	Particulate	0.18 g/dscm (0.08 g/dscf) corrected to 12% CO <sub>2</sub>	Record of daily charging rates and hours of operation



## Appendix 1-2a

### Emission Limitations for Other Solid Waste Incineration (OSWI) Units (40 CFR 60, Subpart EEEE, Table 1) [Added January 2006; Revised January 2007]

For the air pollutant	You must meet this emission limitation <sup>a</sup>	Using this averaging time	And determining compliance using this method
1. Cadmium	18 micrograms per dry standard cubic meter (dscm)	3-run average (1 h minimum sample time per run).	Method 29 of 40 CFR 60, appendix A
2. Carbon monoxide	40 ppm by dry volume	3-run average (1 h minimum sample time per run during performance test), and 12-h rolling averages measured using CEMS. <sup>b</sup>	Method 10, 10A, or 10B of 40 CFR 60, appendix A and CEMS
3. Dioxins/furans (total basis)	33 nanograms per dscm.	3-run average (1 h minimum sample meter time per run).	Method 23 of 40 CFR 60, appendix A
4. Hydrogen chloride	15 ppm by dry volume	3-run average (1 h minimum sample time per run)	Method 26A of 40 CFR 60, appendix A
5. Lead	226 micrograms per dscm	3-run average (1 h minimum sample time per run)	Method 29 of 40 CFR 60, appendix A
6. Mercury	74 micrograms per dscm	3-run average (1 h minimum sample time per run)	Method 29 of 40 CFR 60, appendix A
7. Opacity	10 percent	6-min average (observe over three 1-h runs; i.e., 30 6-min averages)	Method 9 of 40 CFR 60, appendix A
8. Oxides of nitrogen	103 ppmdv	3-run average (1 h minimum sample time per run)	Method 7, 7A, 7C, 7D, or 7E of 40 CFR 60, appendix A of this part, or ANSI/ASME PTC 19.10-1981 (IBR, see 40 CFR 60.17(h)) in lieu of Methods 7 and 7C only.
9. Particulate matter	0.013 grains/dscf	3-run average (1 h minimum sample time per run)	Method 5 or 29 of 40 CFR 60, appendix A
10. Sulfur dioxide	3.1 ppmdv	3-run average (1 h minimum sample time per run)	Method 6 or 6C of 40 CFR 60, appendix A, or ANSI/ASME PTC 19.10-1981 (IBR, see 40 CFR 60.17(h)) in lieu of Method 6 only.

- <sup>a</sup> All emission limitations (except for opacity) are measured at 7 percent oxygen, dry basis at standard conditions.
- <sup>b</sup> Calculated each hour as the average of the previous 12 operating hours.

## Appendix 1-2b

### Operating Limits for Other Solid Waste Incineration (OSWI) Units (i.e., Incinerators and Wet Scrubbers) (40 CFR 60, Subpart EEEE, Table 2) [Added January 2006]

For these operating parameters	You must establish these operating limits	And monitoring using these minimum frequencies		
		Data measurement	Data recording	Averaging time
1. Charge rate	Maximum charge rate	Continuous	Every hour	Daily for batch units. 3-h rolling for continuous and intermittent units a.
2. Pressure drop across the wet scrubber or amperage to wet scrubber.	Minimum pressure drop or amperage	Continuous.	Every 15 min	3-h rolling a
3. Scrubber liquor flow rate	Minimum flow rate	Continuous	Every 15 min	3-h rolling a.
4. Scrubber liquor pH	Minimum pH	Continuous	Every 15 min	3-h rolling a.

<sup>a</sup> Calculated each hour as the average of the previous 3 operating hours.



**Appendix 1-2c**

**Requirements for CEMS for Other Solid Waste Incineration (OSWI)  
(40 CFR 60, Subpart EEEE, Table 3)  
[Added January 2006]**

<b>For the following pollutants</b>	<b>Use the following span values for your CEMS</b>	<b>Use the following performance specifications (P.S.) in appendix B of 40 CFR 60 for your CEMS</b>	<b>If needed to meet minimum data requirements, use the following alternate methods in appendix A of this part to collect data</b>
1. Carbon Monoxide	125 percent of the maximum hourly potential carbon monoxide emissions of the waste combustion unit.	P.S.4A	Method 10.
2. Oxygen	25 percent oxygen	P.S.3	Method 3A or 3B, or ANSI/ASME PTC 19.10-1981 (IBR, see 40 CFR 60.17(h)) in lieu of Method 3B only.



### Appendix 1-3

#### Formulas for Calculating Emissions Limitations (40 CFR 60.42b and 60.44b)

Steam-generating units that started construction, modification, or reconstruction after 19 June 1984 with a heat input capacity of greater than 29 MW (100 MBtu/h).

##### SO<sub>2</sub> From Facilities Combusting Coal or Oil.

$$E = \frac{K_a H_a + K_b H_b}{H_a + H_b}$$

where:

E = the SO<sub>2</sub> emission limit  
K<sub>a</sub> = 520 ng/J (1.2 lb/MMBtu)  
K<sub>b</sub> = 340 ng/J (0.80 lb/MMBtu)  
H<sub>a</sub> = the heat input from the combustion of coal  
H<sub>b</sub> = the heat input from the combustion of oil

##### SO<sub>2</sub> From Facilities Combusting Coal or Oil Alone or With Other Fuel While Using Emerging Technology.

$$E = \frac{K_c H_c + K_d H_d}{H_c + H_d}$$

where:

E<sub>s</sub> = the SO<sub>2</sub> emission limit (expressed in NO<sub>2</sub>), ng / J (lb /MBtu) heat input  
K<sub>c</sub> = 260 ng / J (0.60 lb/MMBtu)  
K<sub>d</sub> = 170 ng / J (0.40 lb/MMBtu)  
H<sub>c</sub> = the heat input from the combustion of coal, J (MBtu)  
H<sub>d</sub> = the heat input from the combustion of oil, J (Mbtu)

**NO<sub>x</sub> Emissions From Facilities Simultaneously Combusting Coal, Oil, or Natural Gas With By-products/Waste.**

$$E_n = \frac{[ \{EL_{go}H_{go}\} + (EL_{ro}H_{ro}) + \{EL_{c}H_{c}\} ]}{(H_{go} + H_{ro} + H_{c})}$$

where:

$E_n$  = the NO<sub>x</sub> emission limit (expressed as NO<sub>2</sub>), ng/J (lb/MMBtu)

$EL_{go}$  = the appropriate emission limit from paragraph (a)(1) for combustion of natural gas or distillate oil, ng/J (lb/MMBtu)

$H_{go}$  = the heat input from combustion of natural gas or distillate oil and gaseous by-product/waste, ng/J (lb/MMBtu)

$EL_{ro}$  = the appropriate emission limit from paragraph (a)(2) for combustion of residual oil, ng/J (lb/MMBtu)

$H_{ro}$  = the heat input from combustion of residual oil and/or liquid by-product/waste

$EL_{c}$  = the appropriate emission limit from paragraph (a)(3) for combustion of coal

$H_{c}$  = the heat input from combustion of coal.

**NO<sub>x</sub> Emissions From Facilities Simultaneously Combusting Mixtures of Coal, Oil, or Natural Gas.**

$$E_n = \frac{[ \{EL_{go}H_{go}\} + (EL_{ro}H_{ro}) + \{EL_{c}H_{c}\} ]}{(H_{go} + H_{ro} + H_{c})}$$

where:

$E_n$  = the NO<sub>x</sub> emission limit (expressed as NO<sub>2</sub>), ng/J (lb /MBtu)

$EL_{go}$  = the appropriate emission limit from paragraph (a)(1) for combustion of natural gas or distillate oil, ng/J (lb/MMBtu)

$H_{go}$  = the heat input from combustion of natural gas or distillate oil

$EL_{ro}$  = the appropriate emission limit from paragraph (a)(2) for combustion of residual oil

$H_{ro}$  = the heat input from combustion of residual oil

$EL_{c}$  = the appropriate emission limit from paragraph (a)(3) for combustion of coal

$H_{c}$  = the heat input from combustion of coal.

## Appendix 1-4

### Particulate Emission Standards (40 CFR 60.43b) [Revised April 2011]

Steam-generating units with a heat input capacity of greater than 29 MW (100 MBtu/h) that started construction, modification, or reconstruction after 19 June 1984.

Facility Type	Particulate Emissions
Combusts only coal or coal and other fuels with an annual capacity factor for the other fuels of 10 percent or less.	22 ng/J (0.05 lb/MMBtu) heat input
Combusts coal and other fuels and has an annual capacity factor greater than 10 percent and is subject to Federally enforceable requirements limiting operations to an annual capacity factor greater than 10 percent for fuels other than coal.	43 ng/J (0.10 lb/MMBtu) heat input
Combusts coal or coal and other fuels, was constructed after 19 June 1984 but before 25 November 1986, and has: a. an annual capacity factor for coal, and coal and other fuels, of 30 percent or less b. has a maximum heat input capacity of 73 MW (250 MMBtu/h) c. has a Federally enforceable requirement limiting operation of affected facility to an annual capacity factor of 30 percent or less for coal or coal and other solid fuels.	86 ng/J (0.20 lb/MMBtu) heat input
Combusts oil or mixture of oil and uses a conventional or emerging technology to reduce SO <sub>2</sub> emissions.	43 ng/J (0.10 lb/MMBtu) heat input
Combusts wood or wood with other fuels except coal and has an annual capacity factor greater than 30 percent for wood.	43 ng/J (0.10 lb/MMBtu) heat input
Combusts wood or wood with other fuels, except coal, with a maximum heat input capacity of 73 MW (250 MMBtu/h) and has an annual capacity factor of 30 percent or less for wood and is subject to a Federally enforceable requirement limiting operation to an annual capacity factor of 30 percent or less.	86 ng/J (0.20 lb/MMBtu) heat input
Combusts municipal-type solid waste or mixtures of municipal-type solid waste with other fuels with an annual capacity factor of 10 percent or less for other fuels.	43 ng/J (0.10 lb/MMBtu) heat input
Combusts municipal-type solid waste or mixtures of municipal-type solid waste with other fuels with an annual capacity factor of 30 percent or less for other fuels and has a maximum heat input capacity of 73 MW (250 MMBtu/h) or less, constructed between 19 June 1984 and 25 November 1986, with a Federally enforceable requirements limiting operating to an annual capacity factor of 30 percent.	86 ng/J (0.20 lb/MMBtu) heat input



## Appendix 1-5

### Emissions Standards For NO<sub>x</sub> (40 CFR 60.44b) [Revised July 2007]

Fuel burning sources greater than 29 MW (100 MBtu/h) heat input that started construction, modification, or reconstruction after 19 June 1984.

Fuel/Steam-Generating Unit Type	Nitrogen Oxide Emission Limit ng/J (lb/MMBtu) (Expressed as NO <sub>2</sub> ) Heat Input
1. Natural gas and distillate oil except for a duct burner used in combined cycle system – low heat release rate – high heat release rate	  43 (0.10) 86 (0.20)
2. Residual oil – low heat release rate – high heat release rate	 130 (0.30) 170 (0.40)
3. Coal – mass feed stoker – spreader-stoker and fluid bed combustion – pulverized coal – lignite, except lignite mined in ND, SD, or MT – lignite mined in ND, SD, or MT, and combusted in a slag tap furnace – coal-derived synthetic fuels	 210 (0.50) 260 (0.60) 300 (0.70) 260 (0.60) 340 (0.80) 210 (0.50)
4. Duct burner used in combined cycle system – natural gas and distillate oil – residual oil	 86 (0.20) 170 (0.40)



## Appendix 1-6

### Formula for Calculating SO<sub>2</sub> Emissions Limitations (40 CFR 60.42c(e)(2))

The following applies to steam-generating units for which construction, modification, or reconstruction started after 9 June 1989 with a maximum design heat input capacity of 29 MW (100 MBtu/h) or less, but greater than or equal to 2.9 MW (10 MMBtu/h).

$$E = \frac{K_a H_a + K_b H_b + K_c H_c}{(H_a + H_b + H_c)}$$

where:

E = the SO<sub>2</sub> emission limit expressed in ng/J or lb/MBtu heat input.

K<sub>a</sub> = 520 ng/J (1.2 lb/MMBtu).

K<sub>b</sub> = 260 ng/J (0.60 lb/MMBtu).

K<sub>c</sub> = 215 ng/J (0.50 lb/MMBtu).

H<sub>a</sub> = the heat input from the combustion of coal, except coal combusted in a facility that combusts only coal and uses emerging technology, in Joules (J) (MBtu).

H<sub>b</sub> = the heat input from the combustion of coal, except coal combusted in a facility that combusts only coal and uses emerging technology, in J (MBtu).

H<sub>c</sub> = the heat input from the combustion of oil, in J (MBtu).



**Appendix 1-6a**  
**[Added October 2004; Deleted April 2013]**

This Appendix was replaced by Appendix 1-42

**Appendix 1-6b**  
**[Added October 2004; Deleted April 2013]**

This Appendix was replaced by Appendix 1-42

**Appendix 1-6c**  
**(Deleted April 2013)**

This Appendix was replaced by Appendix 1-42

**Appendix 1-6d**  
**[Added October 2004; Deleted April 2013]**

This Appendix was replaced by Appendix 1-42

**Appendix 1-6e**

**Performance Testing Requirements for Existing, New, or Reconstructed Affected Sources**  
**(40 CFR 63, Subpart DDDDD, Table 5)**  
**[Added October 2004; Deleted April 2013]**

**Appendix 1-6f**

**Fuel Analysis Requirements**  
**(40 CFR 63, Subpart DDDDD, Table 6)**  
**[Added October 2004; Revised March 2007; Deleted April 2013]**

**Appendix 1-6g**

**Establishing Operating Limits**  
**(40 CFR 63, Subpart DDDDD, Table 7)**  
**[Added October 2004; Deleted April 2013]**

**Appendix 1-6h**

**Demonstrating Continuous Compliance**  
**(40 CFR 63, Subpart DDDDD, Table 8)**  
**[Added October 2004; Deleted April 2013]**



## Appendix 1-6i

### Reporting Requirements (40 CFR 63, Subpart DDDDD, Table 9) [Added October 2004; Revised April 2013; Revised January 2016]

You must submit a(n)	The report must contain.....	You must submit the report....
1. Compliance report.....	<p>a. Information required in 40 CFR 63.7550(c)(1) through (5); and</p> <p>b. If there are no deviations from any emission limitation (emission limit and operating limit) that applies to you and there are no deviations from the requirements for work practice standards for periods of startup and shutdown in Table 3 to this subpart that apply to you, a statement that there were no deviations from the emission limitations and work practice standards during the reporting period. If there were no periods during which the CMSs, including continuous emissions monitoring system, continuous opacity monitoring system, and operating parameter monitoring systems, were out-of-control as specified in 40 CFR 63.8(c)(7), a statement that there were no periods during which the CMSs were out-of control during the reporting period; and .....</p> <p>c. If you have a deviation from any emission limitation (emission limit and operating limit) where you are not using a CMS to comply with that emission limit or operating limit, or a deviation from a work practice standard for periods of startup and shutdown, during the reporting period, the report must contain the information in 40 CFR 63.7550(d); and</p>	Semiannually, annually, biennially, or every 5 yr according to the requirements in 40 CFR 63.7550(b).

## Appendix 1-7

### NO<sub>x</sub> Emissions From Stationary Gas Turbines (40 CFR 60.332(a)) [Revised October 2004]

Formula A:

$$\text{STD} = 0.0074 \times 14.4/Y + F$$

Formula B:

$$\text{STD} = 0.0150 \times 14.4/Y + F$$

Where:

**STD** = allowable ISO corrected (if required as given in 40 CFR 60.335(b)(1)) NO<sub>x</sub> emission concentration (percent by volume at 15 percent oxygen and on a dry basis).

**Y** = manufacturer's rated heat rate at manufacturer's rated load (kilojoules per watt hour) or, actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the facility. The value of Y shall not exceed 14.4 kilojoules per watt hour.

**F** = NO<sub>x</sub> emission allowance for fuel-bound nitrogen as defined below. (NOTE: The use of F is optional. That is, the owner or operator may choose to apply a NO<sub>x</sub> allowance for fuel-bound nitrogen and determine the appropriate F-value in accordance with the definition below, or may accept an F-value of zero.

If the owner or operator elects to apply a NO<sub>x</sub> emission allowance for fuel-bound nitrogen, F shall be defined according to the nitrogen content of the fuel during the most recent performance test required under 40 CFR 60.8 as follows:

Fuel-bound nitrogen (percent by weight)	F (NO <sub>x</sub> percent by volume)
N <= 0.015	0
0.015 < N <= 0.1	0.04(N)
0.1 < N <= 0.25	0.004+0.0067(N-0.1)
N > 0.25	0.005

Where:

**N** = the nitrogen content of the fuel (percent by weight).  
or:

Manufacturers may develop and submit to EPA custom fuel-bound nitrogen allowances for each gas turbine model they manufacture. These fuel-bound nitrogen allowances shall be substantiated with data and must be approved for use by the Administrator before the initial performance test required by 40 CFR 60.8. Notices of approval of custom fuel-bound nitrogen allowances will be published in the Federal Register.



## Appendix 1-7a

### Emissions Limitations for CISWI (40 CFR 62, Table 1 and Table 3 of Subpart III) [Added January 2004]

Air Pollutant	Emission Limitation*	Averaging Time	Methodology to Determine Compliance
Cadmium	0.004 milligrams/dscm	3-run average (1 h minimum sample time per run)	Performance test (Method 29 of Appendix A of 40 CFR 60)
Carbon Monoxide	157 ppm <sub>dv</sub>	3-run average (1 h minimum sample time per run)	Performance test (Methods 10, 10A, or 10B of Appendix A of 40 CFR 60)
Dioxins/furans (toxic equivalency basis)	0.41 nanograms/dscm	3-run average (4 h minimum sample time per run)	Performance test (Method 23 of Appendix A of 40 CFR 60)
Hydrogen chloride	62 ppm <sub>dv</sub>	3-run average (1 h minimum sample time per run)	Performance test (Method 26A of Appendix A of 40 CFR 60)
Lead	0.04 milligrams/dscm	3-run average (1 h minimum sample time per run)	Performance test (Method 29 of Appendix A of 40 CFR 60)
Mercury	0.47 milligrams/dscm	3-run average (1 h minimum sample time per run)	Performance test (Method 29 of Appendix A of 40 CFR 60)
Opacity	10 percent	6-min average	Performance test (Method 9 of Appendix A of 40 CFR 60)
Oxides of nitrogen	388 ppm <sub>dv</sub>	3-run average (1 h minimum sample time per run)	Performance test (Methods 7, 7A, 7C, 7D, or 7E of Appendix A of 40 CFR 60)
Particulate matter	70 milligrams/dscm	3-run average (1 h minimum sample time per run)	Performance test (Method 5 or 29 of Appendix A of 40 CFR 60)
Sulfur dioxide	20 ppm <sub>dv</sub>	3-run average (1 h minimum sample time per run)	Performance test (Method 6 or 6c of Appendix A of 40 CFR 60)

\* All emission limitations (except for opacity) are measured at 7 percent oxygen, dry basis at standard conditions.

### Toxic Equivalency Factors

<b>Dioxin/furan congener</b>	<b>Toxic Factor</b>	<b>Equivalency</b>
2,3,7,8-tetrachlorinated dibenzo-p-dioxin	1	
12,3,7,8-pentachlorinated dibenzo-p-dioxin	0.5	
1,2,3,4,7,8-hexachlorinated dibenzo-p-dioxin	0.1	
1,2,3,7,8,9-hexachlorinated dibenzo-p-dioxin	0.1	
12,3,6,7,8-hexachlorinated dibenzo-p-dioxin	0.1	
1,2,3,4,6,7,8-heptachlorinated dibenzo-p-dioxin	0.01	
octachlorinated dibenzo-p-dioxin	0.001	
2,3,7,8-tetrachlorinated dibenzofuran	0.1	
2,3,4,7,8-pentachlorinated dibenzofuran	0.5	
1,2,3,7,8-pentachlorinated dibenzofuran	0.05	
1,2,3,4,7,8-hexachlorinated dibenzofuran	0.1	
1,2,3,6,7,8-hexachlorinated dibenzofuran	0.1	
1,2,3,7,8,9-hexachlorinated dibenzofuran	0.1	
2,3,4,6,7,8-hexachlorinated dibenzofuran	0.1	
1,2,3,4,6,7,8-heptachlorinated dibenzofuran	0.01	
1,2,3,4,7,8,9-heptachlorinated dibenzofuran	0.01	
Octachlorinated dibenzofuran	0.001	

## Appendix 1-7b

### Operating Limits for Wet Scrubbers (40 CFR 62, Table 2 of Subpart III) [Added January 2004]

Operating Parameter	Operating Limits	Monitor Using These Minimum Frequencies		
		Data Measurement	Data Recording	Averaging Time
Charge rate	Maximum charge rate	Continuous	Every Hour	Daily (batch units) 3-h rolling (continuous and intermittent units)*
Pressure drop across the wet scrubber or amperage to wet scrubber	Minimum pressure drop of amperage	Continuous	Every 15 min	3-h rolling*
Scrubber liquor flow rate	Minimum flow rate	Continuous	Every 15 min	3-h rolling*
Scrubber liquor pH	Minimum pH	Continuous	Every 15 min	3-h rolling*

\* Calculated each hour as the average of the previous 3 operating hours.



## Appendix 1-7c

### Summary of Reporting Requirements for CISWI (40 CFR 62, Table 4 of Subpart III) [Added January 2004]

Report	Due Date	Contents	Reference
Waste Management Plan	No later than 5 April 2004.	Waste management plan	40 CFR 62.14715
Initial Test Report	No later than 60 days following the initial performance test.	<ol style="list-style-type: none"> <li>1. Complete test report for the initial performance test.</li> <li>2. The values for the site-specific operating limits.</li> <li>3. Installation of bag leak detection systems for fabric filters.</li> </ol>	40 CFR 62.14720
Annual Report	No later than 12 mo following the submission of the initial test report. Subsequent reports are to be submitted no more than 12 mo following the previous report.	<ol style="list-style-type: none"> <li>1. Name and address</li> <li>2. Statement and signature by responsible official</li> <li>3. Date of report</li> <li>4. Values for the operating limits</li> <li>5. If no deviations or malfunctions were reported, a statement that no deviations occurred during the reporting period</li> <li>6. Highest recorded 3-h average and the lowest 3-h average, as applicable, for each operating parameter recorded for the calendar year being reported</li> <li>7. Information for deviations or malfunctions recorded under 62.14700(b)(6) and 62.14700(c) through 62.14700(e)</li> <li>8. If a performance test was conducted during the reporting period, the results of the test</li> <li>9. If a performance test was not conducted during the reporting period, a statement that the requirements of 62.14680(a) or 62.14680(b) were met</li> </ol>	40 CFR 62.14725 and 62.14730. Subsequent reports are to be submitted no more than 12 mo following the previous report.

Report	Due Date	Contents	Reference
		10. Documentation of periods when all qualified CISWI unit operators were unavailable for more than 8 h but less than 2 weeks	
Emission Limitation or Operating Limit Deviation Report	By August 1 of that year for data collected during the first half of the calendar year.  By February 1 of the following year for data collected during the second half of the calendar year.	1. Dates and times of deviations 2. Averaged and recorded data for these dates 3. Duration and causes for each deviation and the corrective actions taken 4. Copy of operating limit monitoring data and test reports 5. Dates, times, and causes for monitor downtime incidents 6. Whether each deviation occurred during a period of startup, shutdown, or malfunction	40 CFR 62.14735 and 62.14740
Qualified Operator Deviation Notification	Within 10 days of deviation	1. Statement of cause of deviation 2. Description of efforts to have an accessible qualified operator 3. The date a qualified operator will be accessible	40 CFR 62.14745(a)(1)
Qualified Operator Deviation Status Report	Every 4 weeks following deviation	1. Description of efforts to have an accessible qualified operator. 2. The date a qualified operator will be accessible 3. Request for approval to continue operating	40 CFR 62.14745(a)(2)
Qualified Operator Deviation Notification of Resumed Operation	Prior to resuming operation	Notification that operation is resuming	40 CFR 62.14745(b)

# Appendix 1-7d

## Emission Limits for Small, Medium, and Large HMIWI (40 CFR 60, Subpart Ec, Table 1)

[Added December 1997, Revised July 2011]

Pollutant	Units (7 percent oxygen, dry basis)	Emission Limits		
		HMIWI size		
		Small	Medium	Large
Particulate matter	Milligrams per dry standard cubic meter (grains per dry standard cubic foot)	69 (0.03)	34 (0.015)	34 (0.015)
Carbon monoxide	Parts per million by volume	40	40	40
Dioxins/furans	Nanograms per dry standard cubic meter total dioxins/furans (grains per billion dry standard cubic feet) or nanograms per dry standard cubic meter total dioxins/furans TEQ (grains per billion dry standard cubic feet).	125 (55) or 2.3 (1.0)	25 (11) or 0.6 (0.26)	25 (11) or 0.6 (0.26)
Hydrogen chloride	Parts per million by volume or percent reduction	15 or 99%	15 or 99%	15 or 99%
Sulfur dioxide	Parts per million by volume	55	55	55
Nitrogen oxides	Parts per million by volume	250	250	250
Lead	Milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet) or percent reduction	1.2 (0.52) or 70%	0.07 (0.03) or 98%	0.07 (0.03) or 98%
Cadmium	Milligrams per dry standard cubic meter (grains per thousand per dry standard cubic feet) or percent reduction	0.16 (0.07) or 65%	0.04 (0.02) or 90%	0.04 (0.02) or 90%
Mercury	Milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet) or percent reduction.	0.55 (0.24) or 85%	0.55 (0.24) or 85%	0.55 (0.24) or 85%

## Appendix 1-7e

### Operating Parameters for HMIWIs To Be Monitored and Minimum Measurement and Recording Frequencies (40 CFR Subpart Ec, Table 3) [Added December 1997]

Operating parameters to be monitored	Minimum frequency		Control System		
	Data measurement	Data recording	Dry scrubber followed by fabric filter	Wet scrubber	Dry scrubber followed by fabric filter and wet scrubber
<i>Maximum operating parameters:</i>					
Maximum charge rate	Continuous	1xhour	x	x	x
Maximum fabric filter inlet temperature	Continuous	1xminute	x		x
Maximum flue gas temperature	Continuous	1xminute	x	x	
<i>Minimum operating parameter:</i>					
Minimum secondary chamber temp.	Continuous	1xminute	x	x	x
Minimum dioxin/furan sorbent flow rate	Hourly	1xhour	x		x
Minimum HCl sorbent flow rate	Hourly	1xhour	x		x
Minimum mercury (Hg) sorbent flow rate	Hourly	1xhour	x		x
Minimum pressure drop across the wet scrubber or minimum horsepower or amperage to wet scrubber	Continuous	1xminute		x	x
Minimum scrubber liquor flow rate	Continuous	1xminute		x	x
Minimum scrubber liquor pH	Continuous	1xminute		x	x



## Appendix 1-7f

### Exempted HMIWI (40 CFR 62.14400(b))

If you ...	And you...	And you...	Then you...
(1) Own or operate an HMIWI that combusts only pathological waste, low-level radioactive waste, and/or chemotherapeutic waste (all defined in 40 CFR 62.14490).	Notify the USEPA Administrator (or delegated enforcement authority) of an exemption claim.	Keep records on a calendar quarter basis of the periods of time when only pathological waste, low-level radioactive waste, and/or chemotherapeutic waste is combusted, and you submit such records to the USEPA Administrator (or delegated enforcement authority) upon request.	Are not subject to the other sections of this Subpart during periods when only pathological, low-level radioactive, and/or chemotherapeutic wastes are combusted.
(2) Own or operate a co-fired combustor (defined in 40 CFR 62.14490).	Notify the USEPA Administrator (or delegated enforcement authority) of an exemption claim and you provide an estimate of the relative weight of hospital waste, medical/infectious waste, and other fuels and/or wastes to be combusted.	Keep records on a calendar quarter basis of the weight of hospital waste and medical/infectious waste combusted as well as the weight of all other fuels and wastes combusted at the co-fired combustor, and these records reflect that the source continues to meet the definition of co-fired combustor in 40 CFR 62.14490, and you submit such records to the USEPA Administrator (or delegated enforcement authority) upon request.	Are not subject to the other sections of this Subpart.
(3) Own or operate a combustor that must have a permit under Section 3005 of the <i>Solid Waste Disposal Act</i> .	----- --	-----	Are not subject to this Subpart.
(4) Own or operate a combustor which meets the applicability requirements of 40 CFR 60, Subpart Cb [40 CFR 60.30b through 60.39b, see text of regulation],	----- --	-----	Are not subject to this Subpart.

If you ...	And you...	And you...	Then you...
Subpart Ea [40 CFR 60.50a through 60.59a, see checklist items AE.35.1.US through AE.35.3.US], or Subpart Eb [40 CFR 60.50b through 60.59b, see checklist items AE.36.1.US through AE.36.16.US] (standards or guidelines for certain municipal waste combustors).			
(5) Own or operate a pyrolysis unit (defined in 40 CFR 62.14490) processing hospital waste and/or medical/infectious waste.	----- --	-----	Are not subject to this Subpart.
(6) Own or operate a cement kiln firing hospital waste and/or medical/infectious waste.	----- --	-----	Are not subject to this Subpart.

**Appendix 1-7g**

**Emission Limits for Small Rural, Small, Medium, and Large HMIWI  
(Table 1 of 40 CFR 62, Subpart HHH)**

Pollutant	Units (7 percent oxygen dry basis at standard)	Emission limits			
		HMIWI size			
		Small Rural	Small	Medium	Large
Particulate matter	Milligrams/dscm (grains/dscf).	197 (0.086)	115 (0.05)	69 (0.03)	34 (0.015)
Carbon monoxide	ppmv	40	40	40	40
Dioxins/furans	Nanograms per dry standard cubic meter total dioxins/furans (grains per billion dry standard cubic feet) or nanograms per dry standard cubic meter TEQ (grains per billion dry standard cubic feet).	800 (350) or 15 (6.6)	125 (55) or 2.3 (1.0)	125 (55) or 2.3 (1.0)	125 (55) or 2.3 (1.0)
Hydrogen chloride	ppmv or percent reduction	3,100	100 or 93%	100 or 93%	100 or 93%
Sulfur Dioxide	ppmv	55	55	55	55
Nitrogen Oxides	Ppmv	250	250	250	250
Lead	Milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet) or percent reduction.	10 (4.4)	1.2 (0.52) or 70%	1.2 (0.52) or 70%	1.2 (0.52) or 70%
Cadmium	Milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet) or percent reduction.	4 (1.7)	0.16 (0.07) or 65%	0.16 (0.07) or 65%	0.16 (0.07) or 65%
Mercury	Milligrams per dry standard cubic meter (grains per thousand dry standard cubic	7.5 (3.3)	0.55 (0.24) or 85%	0.55 (0.24) or 85%	0.55 (0.24) or 85%

Pollutant	Units (7 percent oxygen dry basis at standard)	Emission limits			
		HMIWI size			
		Small Rural	Small	Medium	Large
	feet) or percent reduction.				



**Appendix 1-7h**

**Operating Parameters To Be Monitored and Minimum Measurement and Recording Frequencies  
(Table 3 40 CFR 62, Subpart HHH)**

Operating Parameters to be Monitored	Minimum Frequency		HMIWI			
	Data Measurement	Data Recording	Small Rural HMIWI	HMIWIs with dry scrubber followed by fabric filter	HMIWI- a with wet scrubber	HMIWIs with dry scrubber followed by fabric filter and wet scrubber
Maximum Operating Parameters						
Maximum Charge Rate	Once per charge	Once per charge	X	X	X	X
Maximum fabric filter inlet	Continuous	Once per minute		X		X
temperature						
Maximum flue gas	Continuous	Once per minute			X	X
temperatures						
Minimum Operating Parameters						
Minimum secondary	Continuous	Once per minute	X	X	X	X
chamber						
temperature						
Minimum dioxin/furan	Hourly	Once per hour		X		X
sorbent flow rate						
Minimum HCl sorbent	Hourly	Once per hour		X		X
flow						
rate						
Minimum mercury (Hg)	Hourly	Once per hour		X		X
sorbent flow rate						
Minimum pressure drop	Continuous	Once per minute			X	X
across the wet						
scrubber or						
minimum horsepower						
or						
amperage to wet						
scrubber						
Minimum scrubber liquor	Continuous	Once per minute			X	X
flow rate						
Minimum scrubber liquor	Continuous	Once per minute			X	X
pH						

a Does not include small rural HMIWI.



## Appendix 1-7i

### Parameter Limit Violations (40 CFR 62.14455)

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If the HMIWI is a small rural HMIWI:

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And your HMIWI . . .	Then you are in violation of:
Operates above the maximum charge rate (3-h rolling average for continuous and intermittent HMIWI, daily average for batch HMIWI) and below the minimum secondary chamber temperature (3-h rolling average) simultaneously.	The PM, CO, and dioxin/furan emission limits.

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If the HMIWI is equipped with a dry scrubber followed by a fabric filter:

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And your HMIWI . . .	Then you are in violation of:
Operates above the maximum charge rate (3-h rolling average for continuous and intermittent HMIWI, daily average for batch HMIWI) and below the minimum secondary chamber temperature (3-h rolling average) simultaneously.	The CO emission limit
Operates above the maximum fabric filter inlet temperature (3-h rolling average), above the maximum charge rate (3-h rolling average for continuous and intermittent HMIWI, daily average for batch HMIWI), and below the minimum dioxin/furan sorbent flow rate (3-h rolling average) simultaneously.	The dioxin/furan emission limit
Operates above the maximum charge rate (3-h rolling average for continuous and intermittent HMIWI, daily average for batch HMIWI) and below the minimum HCl sorbent flow rate (3-h rolling average) simultaneously.	The HCl emission limit
Operates above the maximum charge rate (3-h rolling average for continuous and intermittent HMIWI, daily average for batch HMIWI) and below the minimum Hg sorbent flow rate (3-h rolling average) simultaneously.	The Hg emission limit
Uses the bypass stack (except during startup, shutdown, or malfunction).	The PM, dioxin/ furan, HCl, Pb, Cd, and Hg emission limits.

---

If the HMIWI is equipped with a wet scrubber:

---

And your HMIWI . . .	Then you are in violation of:
Operates above the maximum charge rate (3-h rolling average for continuous and intermittent HMIWI, daily average for batch HMIWI) and below the minimum secondary chamber temperature (3-h rolling average) simultaneously.	The CO emission limit

Operates above the maximum charge rate (3-h rolling average for continuous and intermittent HMIWI, daily average for batch HMIWI) and below the minimum pressure drop across the wet scrubber (3-h rolling average) or below the minimum horsepower or amperage to the system (3-h rolling average) simultaneously.	The PM emission limit
Operates above the maximum charge rate (3-h rolling average for continuous and intermittent HMIWI, daily average for batch HMIWI), below the minimum secondary chamber temperature (3-h rolling average), and below the minimum scrubber liquor flow rate (3-h rolling average) simultaneously.	The dioxin/furan emission limit
Operates above the maximum charge rate (3-h rolling average for continuous and intermittent HMIWI, daily average for batch HMIWI) and below the minimum scrubber liquor pH (3-h rolling average) simultaneously.	The HCl emission limit
Operates above the maximum flue gas temperature (3-h rolling average) and above the maximum charge rate (3-h rolling average for continuous and intermittent HMIWI, daily average for batch HMIWI) simultaneously.	The Hg emission limit
Uses the bypass stack (except during startup, shutdown, or malfunction)	The PM, dioxin/ furan, HCl, Pb, Cd, and Hg emission limits.
<hr/> If the HMIWI is equipped with a dry scrubber followed by a fabric filter and a wet scrubber:	
And your HMIWI . . .	Then you are in violation of:
Operates above the maximum charge rate (3-h rolling average for continuous and intermittent HMIWI, daily average for batch HMIWI) and below the minimum secondary chamber temperature (3-h rolling average) simultaneously.	The CO emission limit
Operates above the maximum fabric filter inlet temperature (3-h rolling average), above the maximum charge rate (3-h rolling average for continuous and intermittent HMIWI, daily average for batch HMIWI), and below the minimum dioxin/ furan sorbent flow rate (3-h rolling average) simultaneously.	The dioxin/furan emission limit
Operates above the maximum charge rate (3-h rolling average for continuous and intermittent HMIWI, daily average for batch HMIWI) and below the minimum scrubber liquor pH (3-h rolling average) simultaneously.	The HCl emission limit
Operates above the maximum charge rate (3-h rolling average for continuous and intermittent HMIWI, daily average for batch	The Hg emission limit

HMIWI) and below the minimum Hg sorbent flow rate (3-h rolling average) simultaneously.

Uses the bypass stack (except during startup, shutdown, or malfunction).	The PM, dioxin/ furan, HCl, Pb, Cd, and Hg emission limits.
--	---

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(NOTE: A performance test may be repeated within 30 days of violation of applicable operating parameter(s) to demonstrate that the HMIWI is not in violation of the applicable emission limit(s). The facility must conduct repeat performance tests using the identical operating parameters that indicated a violation.)

(NOTE: If using a CEMS to demonstrate compliance with any of the emission limits in Appendix A of 40 CFR 62.14412, and the CEMS indicates compliance with an emission limit during periods when operating parameters indicate a violation of an emission limit, then the facility is considered to be in compliance with the emission limit. There is no need to conduct a repeat performance test to demonstrate compliance.)

(NOTE: The facility may conduct a repeat performance test in accordance with 40 CFR 62.14452 at any time to establish new values for the operating parameters.)



## Appendix 1-7j

### Standards for Stationary Combustion Turbines Located at Major Sources of HAP Emissions

(Tables 1 through 6 to Subpart YYYYY of 40 CFR 63)

[Added April 2004]

#### Table 1 to Subpart YYYYY of Part 63.--Emission Limitations

**For each new or reconstructed stationary combustion turbine described in 40 CFR 63.6100 which is:**      **You must meet the following emission limitations . . .**

1. a lean premix gas-fired stationary combustion turbine as defined in this subpart,      Limit the concentration of formaldehyde to 91 ppbvd or less at 15 percent O<sub>2</sub>.
- a lean premix oil-fired stationary combustion turbine as defined in this subpart,
- a diffusion flame gas-fired stationary combustion turbine as defined in this subpart, or
- a diffusion flame oil-fired stationary combustion turbine as defined in this subpart.

#### Table 2 to Subpart YYYYY of Part 63.--Operating Limitations

**For. .**

**You must . . .**

- |   |  |
|---|--|
| each stationary combustion turbine that is required to comply with the emission limitation for formaldehyde and is using an oxidation catalyst.     | maintain the 4-h rolling average of the catalyst inlet temperature within the range suggested by the catalyst manufacturer |
| each stationary combustion turbine that is required to comply with the emission limitation for formaldehyde and is not using an oxidation catalyst. | maintain any operating limitations approved by the Administrator.  |

**Table 3 to Subpart YYYYY of Part 63.--Requirements for Performance Tests and Initial Compliance Demonstrations**

<b>You must . . .</b>	<b>Using . . .</b>	<b>According to the following requirements . . .</b>
a. demonstrate formaldehyde emissions meet the emission limitations specified in Table 1 by a performance test initially and on an annual basis AND.	Test Method 320 of 40 CFR 63, appendix A; ASTM D6348-03 provided that %R as determined in Annex A5 of ASTM D6348-03 is equal or greater than 70% and less than or equal to 130%; or other methods approved by the Administrator.	Formaldehyde concentration must be corrected to 15 percent O <sub>2</sub> , dry basis. Results of this test consist of the average of the three 1 h runs. Test must be conducted within 10 percent of 100 percent load.
b. select the sampling port location and the number of traverse points AND.	Method 1 or 1A of 40 CFR 60, appendix A 40 CFR 63.7(d)(1)(i).	if using an air pollution control device, the sampling site must be located at the outlet of the air pollution control device.
c. determine the O <sub>2</sub> concentration at the sampling port location AND	Method 3A or 3B of 40 CFR 60, appendix A.	measurements to determine O <sub>2</sub> concentration must be made at the same time as the performance test.
d. determine the content at the sampling port location for the purposes of correcting the formaldehyde concentration to a dry basis.	Method 4 of 40 CFR 60, appendix A or Test Method 320 of 40 CFR 63, appendix A, or ASTM D6348-03.	measurements to determine moisture content must be made at the same time as the performance test.

**Table 4 to Subpart YYYYY of Part 63.--Initial Compliance With Emission Limitations**

<b>For the . . .</b>	<b>You have demonstrated initial compliance if . . .</b>
emission limitation for formaldehyde.	the average formaldehyde concentration meets the emission limitations specified in Table 1.

**Table 5 of Subpart YYYYY of Part 63: Continuous Compliance With Operating Limitations**

<b>For each stationary combustion turbine complying with the emission limitation for formaldehyde:</b>	<b>You must demonstrate continuous compliance by:</b>
1. with an oxidation	continuously monitoring the inlet temperature to the catalyst and maintaining the 4-h rolling average of the inlet temperature within the range suggested by the catalyst manufacturer.
2. without the use of an oxidation catalyst.....	continuously monitoring the operating limitations that have been approved in your petition to the Administrator.

**Table 6 of Subpart YYYYY of Part 63.--Requirements for Reports**

<b>If you own or operate a:</b>	<b>you must:</b>	<b>According to the following requirements:</b>
1. stationary combustion turbine which must comply with the formaldehyde emission limitation.	report your compliance status.	Semiannually, according to the requirements of 40 CFR 63.6150
2. stationary combustion turbine which fires landfill gas, digester gas or gasified MSW equivalent to 10 percent or more of the gross heat input on an annual basis.	report (1) the fuel flow rate of each fuel and the heating values that were used in your calculations, and you must demonstrate that the percentage of heat input provided by landfill gas, digester gas, or gasified MSW is equivalent to 10 percent or more of the gross heat input on an annual basis, (2) the operating limits provided in your federally enforceable permit, and any deviations from these limits, and (3) any problems or errors suspected with the meters.	annually, according to the requirements of 40 CFR 63.6150
3. a lean premix gas-fired stationary combustion turbine or a diffusion flame gas-fired stationary combustion turbine as defined by this subpart, and you use any quantity of distillate oil to fire any new or existing stationary	report (1) the number of hours distillate oil was fired by each new or existing stationary combustion turbine during the reporting period, (2) the operating limits provided in your federally enforceable permit, and any deviations from these limits,	annually, according to the requirements in 40 CFR 63.6150.

combustion turbine which is located and (3) any problems or errors  
at the same major source. suspected with the meters.

## Appendix 1-7k

### Nitrogen Oxide Emission Limits for New Stationary Combustion Turbines

(40 CFR 60, Subpart KKKK, Table 1)

[Added April 2009]

Combustion Turbine Type	Combustion Turbine Heat Input at Peak Load (HHV)	NOX Emission Standard
New turbine firing natural gas, electric generating.	$\leq 50$ MMBtu/h	42 ppm at 15 % O <sub>2</sub> or 290 ng/J of useful output (2.3 lb/MWh).
New turbine firing natural gas, mechanical drive	$\leq 50$ MMBtu/h	100 ppm at 15 % O <sub>2</sub> or 690 ng/J of useful output (5.5 lb/MWh).
New turbine firing natural gas	$> 50$ MMBtu/h and $\leq 850$ MMBtu/h	25 ppm at 15% O <sub>2</sub> or 150 ng/J of useful output (1.2 lb/MWh).
New, modified, or reconstructed turbine firing natural gas	$> 850$ MMBtu/h	15 ppm at 15% O <sub>2</sub> or 54 ng/J of useful output (0.43 lb/MWh).
New turbine firing fuels other than natural gas, electric generating	$\leq 50$ MMBtu/h	96 ppm at 15% O <sub>2</sub> or 700 ng/J of useful output (5.5 lb/MWh).
New turbine firing fuels other than natural gas, mechanical drive	$\leq 50$ MMBtu/h	150 ppm at 15% O <sub>2</sub> or 1,100 ng/J of useful output (8.7 lb/MWh).
New turbine firing fuels other than natural gas	$> 50$ MMBtu/h and $\leq 850$ MMBtu/h	74 ppm at 15% O <sub>2</sub> or 460 ng/J of useful output (3.6 lb/MWh).
New, modified, or reconstructed turbine firing fuels other than natural gas	$> 850$ MMBtu/h	42 ppm at 15% O <sub>2</sub> or 160 ng/J of useful output (1.3 lb/MWh).
Modified or reconstructed turbine	$< > 50$ MMBtu/h	150 ppm at 15% O <sub>2</sub> or 1,100 ng/J of useful output (8.7 lb/MWh).
Modified or reconstructed turbine firing natural gas	$> 50$ MMBtu/h and $\leq 850$ MMBtu/h	42 ppm at 15% O <sub>2</sub> or 250 ng/J of useful output (2.0 lb/MWh).
Modified or reconstructed turbine firing fuels other than natural gas	$> 50$ MMBtu/h and $\leq 850$ MMBtu/h	96 ppm at 15% O <sub>2</sub> or 2590 ng/J of useful output (4.7 lb/MWh).
Turbines located north of the Arctic Circle (latitude 66.5 degrees north), turbines operating at less than 75 % of peak load, modified and reconstructed offshore turbines, and turbine operating at temperatures less than 0° F	$\leq 30$ MW output	150 ppm at 15% O <sub>2</sub> or 1,100 ng/J of useful output (8.7 lb/MWh).
Turbines located north of the Arctic Circle (latitude 66.5 degrees north), turbines operating at less than 75 % of peak load, modified and reconstructed offshore turbines, and turbine operating at temperatures less than 0° F	$> 30$ MW output	96 ppm at 15% O <sub>2</sub> or 590 ng/J of useful output (4.7 lb/MWh).
Heat recovery units operating independent of the combustion turbine	All sizes	54 ppm at 15% O <sub>2</sub> or 110 ng/J of useful output (0.86 lb/MWh).

## Appendix 1-8

### Municipal Waste Combustor Operating Standards for CO (40 CFR 60.56a, Table I)

Municipal Waste Combustor Technology	CO emission limit (ppmv)
Mass burn waterwall	100
Mass burn refractory	100
Mass burn rotary waterwall	100
Modular starved air	50
Modular excess air	50
RDF stoker	150
Bubbling fluidized bed combustor	100
Circulating fluidized bed combustor	100
Coal/RDF mixed fuel fired combustor	150
Pulverized coal/RDF mixed fuel fired combustor	150
Spreader Stoker coal/RDF mixed fuel fired combustor	150



## Appendix 1-8a

### MWC Operating Standards (40 CFR 60.53b, Table 1) [Revised December 1997]

MWC Technology	CO Emission limit (ppmv)*	Averaging time (hours)**
Mass burn waterwall	100	4
Mass burn refractory	100	4
Mass burn rotary waterwall	100	24
Modular starved air	50	4
Modular excess air	50	4
Refuse-derived fuel stoker	150	24
Bubbling fluidized bed combustor	100	4
Circulating fluidized bed combustor	100	4
Pulverized coal/refuse-derived fuel mixed fuel fired combustor	150	4
Spreader Stoker coal/refuse-derived fuel mixed fuel fired combustor	150	24

\* Measured at the combustor outlet in conjunction with a measurement of oxygen concentration, corrected to 7 percent oxygen (dry basis). The averaging times are specified in greater detail in 40 CFR 60.58b(i).

\*\* Averaging times are 4--h or 24-h block averages.



## Appendix 1-8b

**Parameters of New Small Municipal Waste Combustion Units**  
**(40 CFR 60, Subpart AAAA [40 CFR 60.1000 through 60.1465,**  
**see checklist items AE.36.17.US through AE.36.28.US], Table 1 through Table 5)**  
**[Added April 2001]**

<b>Table 1</b> <b>Emission Limits for New Small Municipal Waste Combustion Units</b>			
<b>For the following pollutants:</b>	<b>You must meet the following emission limits<sup>a</sup></b>	<b>Use the following averaging times:</b>	<b>And determine compliance by the following methods:</b>
<b>1. Organics</b>			
<b>Dioxins/ Furans (total mass basis),</b>	<b>13 nanograms per dscm.</b>	3-run average (minimum run duration is 4 h).	<b>Stack test.</b>
<b>2. Metals</b>			
<b>Cadmium</b>	<b>0.020 milligrams per dscm.</b>	3-run average (run duration specified in test method).	<b>Stack test.</b>
<b>Lead</b>	<b>0.20 milligrams per dscm.</b>	3-run average (run duration specified in test method).	<b>Stack test.</b>
<b>Mercury</b>	<b>0.080 milligrams per dscm or 85 percent reduction of potential mercury emissions.</b>	3-run average (run duration specified in test method).	<b>Stack test.</b>
<b>Opacity</b>	<b>10-percent</b>	<b>Thirty 6-min averages</b>	<b>Stack test.</b>
<b>Particulate Matter</b>	<b>24 milligrams per dscm</b>	3-run average (run duration specified in test method).	<b>Stack test.</b>
<b>3. Acid Gases</b>			
<b>Hydrogen Chloride</b>	<b>25 ppmdv or 95 percent reduction of potential hydrogen chloride emissions</b>	3-run average (minimum run duration is 41h).	<b>Stack test.</b>
<b>Nitrogen Oxides (Class I Units)<sup>b</sup></b>	<b>150 (180 for 1st year of operation) ppmdv</b>	24-h daily block arithmetic average concentration	<b>Continuous emission monitoring system</b>
<b>Nitrogen Oxides (Class II Units)<sup>b</sup></b>	<b>500 ppmdv</b>	See footnote d	<b>See footnote d</b>

<b>Table 1</b> <b>Emission Limits for New Small Municipal Waste Combustion Units</b>			
<b>For the following pollutants:</b>	<b>You must meet the following emission limits<sup>a</sup></b>	<b>Use the following averaging times:</b>	<b>And determine compliance by the following methods:</b>
<b>Sulfur Dioxide</b>	<b>30 ppmdv or 80 percent reduction of potential sulfur dioxide emissions</b>	24-h daily block geometric average concentration or percent reduction	<b>Continuous emission monitoring system</b>
<b>4. Other</b>			
<b>Fugitive Ash</b>	<b>Visible emission for no more than 5 percent of hourly observation period</b>	Three 1-h observation periods	<b>Visible emission test</b>

- a All emission limits (except for opacity) are measured at 7 percent oxygen.
- b Class I units mean small municipal waste combustion units subject to this subpart that are located at municipal waste combustion plants with an aggregate plant combustion capacity more than 250 tons per day of municipal solid waste. See definitions section
- c Class II units mean small municipal waste combustion units subject to this subpart that are located at municipal waste combustion plants with an aggregate plant combustion capacity no more than 250 tons per day of municipal solid waste. See 40 definitions section.
- d No monitoring, testing, recordkeeping, or reporting is required to demonstrate compliance with the NO<sub>x</sub> limit for Class II units.

<b>Table 2</b> <b>Carbon Monoxide Emission Limits for New Small Municipal Waste Combustion Units</b>		
<b>For the following municipal waste combustion units:</b>	<b>You must meet the following carbon monoxide limits<sup>a</sup></b>	<b>Using the following averaging times <sup>b</sup></b>
<b>1. Fluidized bed</b>	<b>100 ppmdv</b>	<b>4 hour</b>
<b>2. Fluidized bed, mixed fuel, (wood/refuse derived fuel)</b>	<b>200 ppmdv</b>	<b>24 hour <sup>c</sup></b>
<b>3. Mass burn rotary refractory</b>	<b>100 ppmdv</b>	<b>4 hour</b>
<b>4. Mass burn rotary waterwall</b>	<b>100 ppmdv</b>	<b>24 hour</b>
<b>5. Mass burn rotary waterwall and refractory</b>	<b>100 ppmdv</b>	<b>4 hour</b>

<b>6. Mixed fuel-fired (pulverized coal/refuse-derived fuel)</b>	<b>150 ppmdv</b>	<b>4 hour</b>
<b>7. Modular starved-air and excess air</b>	<b>50 ppmdv</b>	<b>4 hour</b>
<b>8. Spreader stoker, mixed fuel-fired (coal/refuse-derived fuel)</b>	<b>150 ppmdv</b>	<b>24 hour daily</b>
<b>9. Stoker, refuse-derived fuel</b>	<b>150 ppmdv</b>	<b>24 hour daily</b>

- a All limits (except for opacity) are measured at 7 percent oxygen. Compliance is determined by continuous emission monitoring systems.
- b Block averages, arithmetic mean. See definitions section.
- c 24-hour block average, geometric mean. See definitions section.

<b>Table 3</b> <b>Requirements for Validating Continuous Emission Monitoring Systems (CEMS)</b>		
<b>For the following CEMS</b>	<b>Use the following methods in Appendix A of 40 CFR 60 to validate pollution concentration levels</b>	<b>Use the following methods in Appendix A of 40 CFR 60 to measure oxygen (or carbon dioxide)</b>
<b>1. Nitrogen Oxides (Class I units only) a</b>	<b>Method 7, 7A, 7B, 7C, 7D, or 7E</b>	<b>Method 3 or 3A</b>
<b>2. Sulfur Dioxide</b>	<b>Methods 6 or 6C</b>	<b>Method 3 or 3A</b>
<b>3. Carbon Monoxide</b>	<b>Method 10, 10A, or 10B</b>	<b>Method 3 or 3A</b>

- 
- a Class I units mean small municipal waste combustion units subject to this subpart that are located at municipal waste combustion plants with an aggregate plant combustion capacity more than 250 tons per day of municipal solid waste. See definitions section.
-

<b>Table 4</b> <b>Requirements for Continuous Emission Monitoring Systems (CEMS)</b>			
<b>For the following pollutants</b>	<b>Use the following span values for the CEMS</b>	<b>Use the following performance specifications in Appendix B or 40 CFR 60 for the CEMS</b>	<b>If needed to meet minimum data requirements, used the following alternate methods in Appendix A of 40 CFR 60 to collect data</b>
<b>1. Opacity</b>	<b>100 percent opacity</b>	<b>P.S. 1</b>	<b>Method 9</b>
<b>2. Nitrogen Oxides (Class I units only)<sup>a</sup></b>	Control device outlet: 125 percent of the maximum expected hourly potential nitrogen oxides emissions of the municipal waste combustion unit.	<b>P.S. 2</b>	<b>Method 7E</b>
<b>3. Sulfur Dioxide</b>	Inlet to control device: 125 percent of the maximum expected sulfur dioxide emissions of the municipal waste combustion unit. Control device outlet: 50 percent of the maximum expected hourly potential sulfur dioxide emissions of the municipal waste combustion unit.	<b>P.S. 2</b>	<b>Method 6C</b>
<b>4. Carbon Monoxide</b>	<b>125 percent of the maximum expected hourly potential carbon with monoxide emissions of the municipal waste combustion unit.</b>	<b>P.S. 4A</b>	<b>Method 10 alternative interference trap</b>
<b>5. Oxygen or Carbon Dioxide</b>	<b>25 percent oxygen or 25 percent carbon dioxide.</b>	<b>P.S. 3</b>	<b>Methods 3Z or 3B</b>

- a Class I units mean small municipal waste combustion units subject to this subpart that are located at municipal waste combustion plants with an aggregate plant combustion capacity more than 250 tons per day of municipal solid waste. See definitions section.

<b>Table 5</b> <b>Requirements for Stack Tests</b>			
<b>To measure the following pollutants</b>	<b>Use the following methods in Appendix A of 40 CFR 60 to determine the sampling location</b>	<b>Use the methods in Appendix A of 40 CFR 60 to measure pollutant concentration</b>	<b>Also note the following additional information</b>
<b>1. Organics</b>			

<b>Table 5</b> <b>Requirements for Stack Tests</b>			
<b>To measure the following pollutants</b>	<b>Use the following methods in Appendix A of 40 CFR 60 to determine the sampling location</b>	<b>Use the methods in Appendix A of 40 CFR 60 to measure pollutant concentration</b>	<b>Also note the following additional information</b>
<b>Dioxins/ Furans (total mass basis),</b>	<b>Method 1</b>	Method 23 a	<b>The minimum sampling time must be 4 hours per test run while the municipal waste combustion unit is operating at full load.</b>
<b>2. Metals</b>			
<b>Cadmium</b>	<b>Method 1</b>	Method 29 a	Compliance testing must be performed while the municipal waste combustion unit is operating at full load.
<b>Lead</b>	<b>Method 1</b>	Method 29 a	Compliance testing must be performed while the municipal waste combustion unit is operating at full load.
<b>Mercury</b>	<b>Method 1</b>	Method 29 a	Compliance testing must be performed while the municipal waste combustion unit is operating at full load.
<b>Opacity</b>	<b>Method 9</b>	<b>Method 9</b>	Use Method 9 to determine compliance with opacity limit. 3-h observation period (thirty 6-min averages).
<b>Particulate Matter</b>	<b>Method 1</b>	Method 5 a	The minimum sample Matter volume must be 1.0 cubic meters. The probe and filter holder heating systems in the sample train must be set to provide a gas temperature no greater than 160 plus or minus 14 deg. C. The minimum sampling time is 1 hour.
<b>3. Acid Gases</b>			
<b>Hydrogen Chloride</b>	<b>Method 1</b>	Method 26 or 26A a	Test runs must be at least 1 hour long while the

<b>Table 5</b> <b>Requirements for Stack Tests</b>			
<b>To measure the following pollutants</b>	<b>Use the following methods in Appendix A of 40 CFR 60 to determine the sampling location</b>	<b>Use the methods in Appendix A of 40 CFR 60 to measure pollutant concentration</b>	<b>Also note the following additional information</b>
			municipal waste combustion unit is operating at full load.
<b>4. Other</b>			
<b>Fugitive Ash</b>	<b>Not applicable</b>	Method 22 (visible emissions)	The three 1-hour observation period must include periods when the facility transfers fugitive ash from the municipal waste combustion unit to the area where the fugitive ash is stored or loaded into containers or trucks.

- a Must simultaneously measure oxygen (or carbon dioxide) using Method 3A or 3B in appendix A of this part.
- b Use CEMS to test sulfur dioxide, nitrogen oxide, and carbon monoxide. Stack tests are not required except for quality assurance requirements in Appendix F of this part.



## Appendix 1-9

### Lead Concentration in Sewage Sludge Fed to an Incinerator (40 CFR 503.43) [Revised October 1999]

#### Formula 1

$$0.1 \times \text{NAAQS} \times 86,400$$

$$C = \frac{\text{DF} \times (1 - \text{CE}) \times \text{SF}}{\text{DF} \times (1 - \text{CE}) \times \text{SF}}$$

$$\text{DF} \times (1 - \text{CE}) \times \text{SF}$$

Where:

C = Average daily concentration of lead in sewage sludge in mg/kg of total solids (dry weight basis).

NAAQS = National Ambient Air Quality Standard for lead in  $\mu\text{g}/\text{m}^3$ .

DF = Dispersion factor in micrograms per cubic meter per gram per second.

CE = Sewage sludge incinerator control efficiency for lead in hundredths.

SF = Sewage sludge feed rate in metric tons per day (dry weight basis).

(NOTE: When the sewage sludge stack height is 65 m or less, the actual sewage sludge incinerator stack height shall be used in an air dispersion model specified by the permitting authority to determine the dispersion factor (DF) in the above equation. When the sewage sludge incinerator stack height exceeds 65 m, the creditable stack height shall be determined in accordance with 40 CFR 51.100(ii) and the creditable stack height shall be used in an air dispersion model specified by the permitting authority to determine the DF in the above equation.)

#### Formula 2

$$\text{RSC} \times 86,400$$

$$C = \frac{\text{DF} \times (1 - \text{CE}) \times \text{SF}}{\text{DF} \times (1 - \text{CE}) \times \text{SF}}$$

$$\text{DF} \times (1 - \text{CE}) \times \text{SF}$$

Where:

C = Average daily concentration of arsenic, cadmium, chromium, or nickel in sewage sludge in mg/kg of total solids (dry weight basis).

CE = Sewage sludge incinerator control efficiency for arsenic, cadmium, chromium, or nickel in hundredths.

DF = Dispersion factor in micrograms per cubic meter per gram per second.

RSC = Risk-specific concentration for arsenic, cadmium, chromium, or nickel in  $\mu\text{g}/\text{m}^3$ .

SF = Sewage sludge feed rate in metric tons per day (dry weight basis).

(NOTE: The control efficiency (CE) in the above equation shall be determined from a performance test of the sewage sludge incinerator, as specified by the permitting authority.)

(NOTE: See the text of 40 CFR 503.43(d)(2) and 503.43(d)(3) for guidance on calculating the RSC.)

(NOTE: When the sewage sludge incinerator stack height is equal to or less than 65 m, the actual sewage sludge incinerator stack height shall be used in an air dispersion model, as specified by the permitting authority, to determine the DF in the above equation. When the sewage sludge incinerator stack height is greater than 65 m, the creditable stack height shall be determined in accordance with 40 CFR 51.100(ii) and the creditable stack height shall be used in an air dispersion model, as specified by the permitting authority, to determine the DF in the above equation. The CE in the above equation shall be determined from a performance test of the sewage sludge incinerator, as specified by the permitting authority.)

## Appendix 1-10

### Total Hydrocarbon Operational Standards (40 CFR 503.44)

#### Formula 1

$$\text{Corrective Factor (percent moisture)} = \frac{1}{(1-X)}$$

Where:

X - decimal fraction of the percent moisture in the sewage sludge incinerator exit gas in hundredths

#### Formula 2

$$\text{Corrective Factor (oxygen)} = \frac{14}{(21-Y)}$$

Where:

Y - percent oxygen concentration in the sewage sludge incinerator stack exit gas (dry volume/dry volume)



## Appendix 1-10a

### Applicability Criteria and Management Practices for Gasoline Dispensing Facilities and Gasoline Cargo Tanks (40 CFR 63, Subpart CCCCCC, Tables 1 and 2) [Added April 2008; Revised July 2008]

<p style="text-align: center;"><b>Table 1</b></p> <p style="text-align: center;">Applicability Criteria and Management Practices for Gasoline Dispensing Facilities With Monthly Throughput of 100,000 Gallons of Gasoline or More</p>	
If you own or operate:	Then you must:
<p>1. A new, reconstructed, or existing GDF subject to 40 CFR 63.11118.</p>	<p>Install and operate a vapor balance system on your gasoline storage tanks that meets the design criteria in paragraphs (a) through (h).</p> <p>(a) All vapor connections and lines on the storage tank shall be equipped with closures that seal upon disconnect.</p> <p>(b) The vapor line from the gasoline storage tank to the gasoline cargo tank shall be vapor-tight, as defined in 40 CFR 63.11132.</p> <p>(c) The vapor balance system shall be designed such that the pressure in the tank truck does not exceed 18 in water pressure or 5.9 in water vacuum during product transfer.</p> <p>(d) The vapor recovery and product adaptors, and the method of connection with the delivery elbow, shall be designed so as to prevent the over-tightening or loosening of fittings during normal delivery operations.</p> <p>(e) If a gauge well separate from the fill tube is used, it shall be provided with a submerged drop tube that extends the same distance from the bottom of the storage tank as specified in 40 CFR 63.11117(b).</p> <p>(f) Liquid fill connections for all systems shall be equipped with vapor-tight caps.</p> <p>(g) Pressure/vacuum (PV) vent valves shall be installed on the storage tank vent pipes. The pressure specifications for PV vent valves shall be: a positive pressure setting of 2.5 to 6.0 in of water and a negative pressure setting of 6.0 to 10.0 in of water. The total leak rate of all PV vent valves at an affected facility, including connections, shall not exceed 0.17 ft<sup>3</sup>/h at a pressure of 2.0 in of water and 0.63 ft<sup>3</sup>/h at a vacuum of 4 in of water.</p> <p>(h) The vapor balance system shall be capable of meeting the static pressure performance requirement of the following equation:</p> $Pf = 2e-500.887/v$ <p style="text-align: center;">Where:</p> <p>Pf = Minimum allowable final pressure, inches of water. v = Total ullage affected by the test, gallons.</p>

<b>Table 1</b> Applicability Criteria and Management Practices for Gasoline Dispensing Facilities With Monthly Throughput of 100,000 Gallons of Gasoline or More	
<b>If you own or operate:</b>	<b>Then you must:</b>
	$e$ = Dimensionless constant equal to approximately 2.718. $2$ = The initial pressure, inches water.
2. For new or reconstructed GDF, or new storage tank(s) at an existing affected facility subject to 40 CFR 63.11118.	Equip your gasoline storage tanks with a dual-point vapor balance system, as defined in 40 CFR 63.11132, and comply with the requirements of item 1 in this Table.

<b>Table 2</b> — Applicability Criteria and Management Practices for Gasoline Cargo Tanks Unloading at Gasoline Dispensing Facilities With Monthly Throughput of 100,000 Gallons of Gasoline or More	
<b>If you own or operate:</b>	<b>Then you must:</b>
1. A gasoline cargo tank	Not unload gasoline into a storage tank at a GDF subject to the control requirements in 40 CFR 63, Subpart CCCCCC unless the following conditions are met: All hoses in the vapor balance system are properly connected, The adapters or couplers that attach to the vapor line on the storage tank have closures that seal upon disconnect, All vapor return hoses, couplers, and adapters used in the gasoline delivery are vapor-tight, All tank truck vapor return equipment is compatible in size and forms a vapor-tight connection with the vapor balance equipment on the GDF storage tank, and All hatches on the tank truck are closed and securely fastened. The filling of storage tanks at GDF shall be limited to unloading by vapor-tight gasoline cargo tanks. Documentation that the cargo tank has met the specifications of EPA Method 27 shall be carried on the cargo tank.

## Appendix 1-11

### Frequency of Monitoring For Incineration (40 CFR 503.46, Table 1) [Revised October 1999]

Amount of sewage sludge* (metric tons/365 day period)	Frequency
Greater than zero but less than 290	Once per year
Equal to or greater than 290 but less than 1,500	Once per quarter (four times per year)
Equal to or greater than 1,500 but less than 15,000	Once per 60 days (six times per year)
Equal to or greater than 15,000	Once per month (12 times per year)

\* Either the amount of bulk sewage sludge applied to the land or the amount of sewage sludge received by a person who prepares sewage sludge that is sold or given away in a bag or other container for application to the land (dry weight basis).



## Appendix 1-11a

**Organic Hazardous Air Pollutants**  
**(Table 1 to Subpart EEEE of 40 CFR 63).**  
**[Added April 2004]**

Compound name	CAS No.1
2,4-D salts and esters	94-75-7
Acetaldehyde	75-07-0
Acetonitrile	75-05-8
Acetophenone	98-86-2
Acrolein	107-02-8
Acrylamide	79-06-1
Acrylic acid	79-10-7
Acrylonitrile	107-13-1
Allyl chloride	107-05-1
Aniline	62-53-3
Benzene	71-43-2
Biphenyl	92-52-4
Butadiene (1,3-)	106-99-0
Carbon tetrachloride	56-23-5
Chloroacetic acid	79-11-8
Chlorobenzene	108-90-7
2-Chloro-1,3-butadiene (Chloroprene)	126-99-8
Chloroform	67-66-3
m-Cresol	108-39-4
o-Cresol	95-48-7
p-Cresol	106-44-5
Cresols/cresylic acid	1319-77-3
Cumene	98-82-8
Dibenzofurans	132-64-9
Dibutylphthalate	84-74-2
Dichloroethane (1,2-) (Ethylene dichloride) (EDC)	107-06-2
Dichloropropene (1,3-)	542-75-6
Diethanolamine	111-42-2
Diethyl aniline (N,N-)	121-69-7
Diethylene glycol monobutyl ether	112-34-5
Diethylene glycol monomethyl ether	64-67-5
Dimethyl formamide	68-12-2
Dimethylhydrazine (1,1-)	57-14-7
Dioxane (1,4-) (1,4-Diethyleneoxide)	123-91-1
Epichlorohydrin (1-Chloro-2,3-epoxypropane)	106-89-8
Epoxybutane (1,2-)	106-88-7
Ethyl acrylate	140-88-5
Ethylbenzene	100-41-4
Ethyl chloride (Chloroethane)	75-00-3
Ethylene dibromide (Dibromomethane)	106-93-4
Ethylene glycol	107-21-1
Ethylene glycol dimethyl ether	110-71-4
Ethylene glycol monomethyl ether	109-86-4
Ethylene glycol monomethyl ether acetate	110-49-6
Ethylene glycol monophenyl ether	122-99-6

Compound name	CAS No.1
Ethylene oxide	75-21-8
Ethylidene dichloride (1,1-Dichloroethane)	75-34-3
Formaldehyde	50-00-0
Hexachloroethane	67-72-1
Hexane	110-54-3
Hydroquinone	123-31-9
Isophorone	78-59-1
Maleic anhydride	108-31-6
Methanol	67-56-1
Methyl chloride (Chloromethane)	74-87-3
Methylene chloride (Dichloromethane)	75-09-2
Methylenedianiline (4,4'-)	101-77-9
Methylene diphenyl diisocyanate	101-68-8
Methyl hydrazine	60-34-4
Methyl isobutyl ketone (Hexone) (MIBK)	108-10-1
Methyl methacrylate	80-62-6
Methyl tert-butyl ether (MTBE)	1634-04-4
Naphthalene	91-20-3
Nitrobenzene	98-95-3
Phenol	108-9-52
Phthalic anhydride.	85-44-9
Polycyclic organic matter	50-32-8
Propionaldehyde	123-38-6
Propylene dichloride (1,2-Dichloropropane)	78-87-5
Propylene oxide	75-56-9
Quinoline	91-22-5
Styrene	100-42-5
Styrene oxide	96-09-3
Tetrachloroethane (1,1,2,2-)	79-34-5
Tetrachloroethylene (Perchloroethylene)	127-18-4
Toluene	108-88-3
Toluene diisocyanate (2,4-)	584-84-9
o-Toluidine	95-53-4
Trichlorobenzene (1,2,4-)	120-82-1
Trichloroethane (1,1,1-) (Methyl chloroform)	71-55-6
Trichloroethane (1,1,2-) (Vinyl trichloride)	79-00-5
Trichloroethylene	79-01-6
Triethylamine	121-44-8
Trimethylpentane (2,2,4-)	540-84-1
Vinyl acetate	108-05-4
Vinyl chloride (Chloroethylene)	75-01-4
Vinylidene chloride (1,1-Dichloroethylene)	75-35-4
Xylene (m-)	108-38-3
Xylene (o-)	95-47-6
Xylene (p-)	106-42-3
Xylenes (isomers and mixtures)	1330-20-7

1 CAS numbers refer to the Chemical Abstracts Services registry number assigned to specific compounds, isomers, or mixtures of compounds.

## Appendix 1-11b

### Emission Limits at OLDs

(Table 2 to Subpart EEEE of 40 CFR 63).

[Added April 2004; Revised January 2007; Revised July 2008]

If you own or operate . . .	And if .	Then you must . . .
1. A storage tank at an existing affected source with a capacity greater than or equal to 18.9 m <sup>3</sup> (5,000 gal) and < 189.3 m <sup>3</sup> (50,000 gal)	a. The stored organic liquid is not crude oil and if the annual average true vapor pressure of the total Appendix 1-11a organic HAP in the stored organic liquid is $\geq$ 27.6 kPa (4.0 psia) and < 76.6 kPa (11.1 psia)	i. Reduce emissions of total organic HAP (or, upon approval, TOC) by at least 95 weight-percent or, as an option, to an exhaust concentration $\leq$ 20 ppmv, on a dry basis corrected to 3 percent oxygen for combustion devices using supplemental combustion air, by venting emissions through a closed vent system to any combination of control devices meeting the applicable requirements of 40 CFR Part 63, Subpart SS; OR  ii. Comply with the work practice standards specified in Appendix 1-11d, items 1.a, 1.b, or 1.c for tanks storing liquids described in that appendix.
	b. The stored organic liquid is crude oil.	i. See the requirement in item 1.a.i or 1.a.ii of this table.
2. A storage tank at an existing affected source with a capacity [ge] 189.3 m <sup>3</sup> (50,000 gal).	a. The stored organic liquid is not crude oil and if the annual average true vapor pressure of the total Appendix 1-11a organic HAP in the stored organic liquid is <76.6 kPa (11.1 psia).	i. See the requirement in item 1.a.i or 1.a.ii of this table.
	b. The stored organic liquid is crude oil.	i. See the requirement in item 1.a.i or 1.a.ii of this table.
3. A storage tank at a reconstructed or new affected source with a capacity [ge] 18.9 m <sup>3</sup> (5,000 gal) and < 37.9 m <sup>3</sup> (10,000 gal).	a. The stored organic liquid is not crude oil and if the annual average true vapor pressure of the total Appendix 1-11a organic HAP in the stored organic liquid is [ge] 27.6 kPa (4.0 psia) and < 76.6 kPa (11.1 psia).	i. See the requirement in item 1.a.i or 1.a.ii of this table.
	b. The stored organic liquid is crude oil.	i. See the requirement in item 1.a.i or 1.a.ii of this table.
4. A storage tank at a reconstructed or new affected source with a capacity [ge] 37.9 m <sup>3</sup> (10,000 gal)	a. The stored organic liquid is not crude oil and if the annual average true vapor pressure of the total Appendix 1-11a organic HAP in the	i. See the requirement in item 1.a.i or 1.a.ii of this table.

If you own or operate . . .	And if .	Then you must . . .
and <189.3 m <sup>3</sup> (50,000 gal).	stored organic liquid is [ge]0.7 kPa (0.1 psia) and <76.6 kPa (11.1 psia).	
	b. The stored organic liquid is crude oil.	i. See the requirement in item 1.a.i or 1.a.ii of this table.
5. A storage tank at a reconstructed or new affected source with a capacity [ge]189.3 m <sup>3</sup> (50,000 gal).	a. The stored organic liquid is not crude oil and if the annual average true vapor pressure of the total Appendix 1-11a organic HAP in the stored organic liquid is <76.6 kPa (11.1 psia).	i. See the requirement in item 1.a.i or 1.a.ii of this table.
	b. The stored organic liquid is crude oil.	i. See the requirement in item 1.a.i or 1.a.ii of this table.
6. A storage tank at an existing, reconstructed, or new affected source meeting the capacity criteria specified in Appendix 1-11b, items 1 through 5.	a. The stored organic liquid is not crude oil and if the annual average true vapor pressure of the total Appendix 1-11a organic HAP in the stored organic liquid is >= 76.6 kPa (11.1 psia).	<p>i. Reduce emissions of organic HAP (or, upon approval, TOC) by 95 weight-percent or, as an option, to an exhaust concentration &lt;= 20 ppmv, on a dry basis corrected to 3 percent oxygen for combustion devices using supplemental combustion air, by venting emissions through a closed vent system to any combination of control devices meeting the applicable requirements of 40 CFR 63, Subpart SS.</p> <p>ii. Comply with the work practice standards specified in Appendix 1-11d, item 2.a., for tanks storing liquids described in that appendix.</p>
7. A transfer rack at an existing facility where the total actual annual facility-level organic liquid loading volume through transfer racks out of the facility is >= 800,000 gal and < 10 million gal.	a. The total Appendix 1-11a HAP content of the organic liquid being loaded through one or more of the transfer rack's arms is at least 98% by weight and is being loaded into a transport vehicle.	<p>i. For all such loading arms at the rack, reduce emissions of total organic HAP (or, upon approval, TOC) from the loading of organic liquids either by venting the emissions that occur during loading to any combination of control devices meeting the applicable requirements of 40 CFR 63, Subpart SS, achieving at least 98 weight-percent HAP reduction, OR, as an option, to an exhaust concentration &lt;= 20 ppmv, on a dry basis corrected to 3 percent oxygen for combustion devices using supplement combustion air; OR</p> <p>ii. During the loading of organic liquids, comply with the work</p>

If you own or operate . . .	And if .	Then you must . . .
		practice standards specified in item 3 of Appendix 1-11d.
8. A transfer rack at an existing facility where the total actual annual facility-level organic liquid loading volume through transfer racks is $\geq$ 10 million gal.	a. One or more of the transfer rack's arms is loading an organic liquid into a transport vehicle.	i. See the requirements in items 7.a.i and 7.a.ii of this appendix.
9. A transfer rack at a new facility where the total actual annual facility-level organic liquid loading volume through transfer racks out of the facility is $<$ 800,000 gal.	a. The total Appendix 1-11a organic HAP content of the organic liquid being loaded through one or more of the transfer rack's arms is at least 25 percent by weight and is being loaded into a transport vehicle.	i. See the requirements in items 7.a.i and 7.a.ii of this appendix.
	b. One or more of the transfer rack's arms is filling a container with a capacity $\geq$ 55 gal.	i. For all such loading arms at the rack during the loading of organic liquids, comply with the provisions of 40 CFR 63.924 through 63.927 of 40 CFR 63, Subpart PP- <i>National Emission Standards for Containers</i> , Container Level 3 controls, OR  ii. During the loading of organic liquids, comply with the work practice standards specified in item 3.a. of Appendix 1-11d.
10. A transfer rack at a new facility where the total actual annual facility-level organic liquid loading volume through transfer racks is $\geq$ 800,000 gal.	a. One or more of the transfer rack's arms is loading an organic liquid into a transport vehicle.	i. See the requirements in items 7.a.i and 7.a.ii of this appendix.
	b. One or more of the transfer racks arms is filling a container with a capacity $\geq$ 55 gal.	i. For all such loading arms at the rack during the loading of organic liquids, comply with the provisions of 40 CFR 63.924 through 63.927 of 40 CFR 63, Subpart PP- <i>National Emission Standards for Containers</i> , Container Level 3 controls.  ii. During the loading of organic liquids, comply with the work practices specified in item 3.a of Appendix 1-11d.

#### Appendix 1-11c

### Operating Limits for High Throughput Transfer Racks

(Table 3 to Subpart EEEE of 40 CFR 63).

[Added April 2004; Revised January 2007]

As stated in 40 CFR 63.2346(e) (see checklist items AE.57.1.US and AE.57.2.US), the operating limits for existing, reconstructed, or new affected sources must be met as follows:

For each existing, each reconstructed, and each new affected source using . . .	You must . . .
1. A thermal oxidizer to comply with the emission limit in Appendix 1-11b.	Maintain the daily average fire box or combustion zone temperature greater than or equal to the reference temperature established during the design evaluation or performance test that demonstrated compliance with the emission limit.
2. A catalytic oxidizer to comply with an emission limit in Appendix 1-11b.	a. Replace the existing catalyst bed before the age of the bed exceeds the allowable age established during the design evaluation or performance test that demonstrated compliance with the emission limit; AND b. Maintain the daily average temperature at the inlet of the catalyst bed greater than or equal to the reference temperature established during the design evaluation or performance test that demonstrated compliance with the emission limit; AND c. Maintain the daily average temperature difference across the catalyst bed greater than or equal to the minimum temperature difference established during the design evaluation or performance test that demonstrated compliance with the emission limit.
3. An adsorber to comply with an emission limit in Appendix 1-11b.	a. Maintain the daily average concentration level of organic compounds in the absorber exhaust $\leq$ to the reference concentration established during the design evaluation or performance test that demonstrated compliance with the emission limit; OR b. Maintain the daily average scrubbing liquid temperature $\leq$ to the reference temperature established during the design evaluation or performance test that demonstrated compliance with the emission limit; AND Maintain the difference between the specific gravities of the saturated and fresh scrubbing fluids $\geq$ the difference established during the design evaluation or performance test that demonstrated compliance with the emission limit.
4. A condenser to comply with an emission limit in Appendix 1-11b.	a. Maintain the daily average concentration level of organic compounds at the condenser exit less than or equal to the reference concentration established during the design evaluation or performance test that demonstrated compliance with the emission limit; OR b. Maintain the daily average condenser exit temperature less than or equal to the reference temperature established during the design evaluation or performance test that demonstrated compliance with the emission limit.
5. An adsorption system with adsorbent regeneration to comply with an emission limit in Appendix 1-11b.	a. Maintain the daily average concentration level of organic compounds in the adsorber exhaust less than or equal to the reference concentration established during the design evaluation or performance test that demonstrated compliance with the emission limit; OR b. Maintain the total regeneration stream mass flow during the adsorption bed regeneration cycle $\geq$ the reference stream mass flow established during the design evaluation or performance test that demonstrated compliance with the emission limit; AND Before the adsorption cycle commences, achieve and

For each existing, each reconstructed, and each new affected source using . . .	You must . . .
	maintain the temperature of the adsorption bed after regeneration $\leq$ the reference temperature established during the design evaluation or performance test that demonstrated compliance with the emission limit; AND Achieve a pressure reduction during each adsorption bed regeneration cycle $\geq$ the pressure reduction established during the design evaluation or performance test that demonstrated compliance with the emission limit.
6. An adsorption system without adsorbent regeneration to comply with an emission limit in Appendix 1-11b.	<p>a. Maintain the daily average concentration level of organic compounds in the adsorber exhaust <math>\leq</math> the reference concentration established during the design evaluation or performance test that demonstrated compliance with the emission limit; OR</p> <p>b. Replace the existing adsorbent in each segment of the bed with an adsorbent that meets the replacement specifications established during the design evaluation or performance test before the age of the adsorbent exceeds the maximum allowable age established during the design evaluation or performance test that demonstrated compliance with the emission limit; AND Maintain the temperature of the adsorption bed <math>\leq</math> the reference temperature established during the design evaluation or performance test that demonstrated compliance with the emission limit.</p>
7. A flare to comply with an emission limit in Appendix 1-11b.	<p>a. Comply with the equipment and operating requirements in 40 CFR 63.987(a); AND</p> <p>b. Conduct an initial flare compliance assessment in accordance with 40 CFR 63.987(b); AND</p> <p>c. Install and operate monitoring equipment as specified in 40 CFR 63.987(c).</p>
8. Another type of control device to comply with an emission limit in Appendix 1-11b.	Submit a monitoring plan as specified in 40 CFR 63.995(c) and 63.2366(c), and monitor the control device in accordance with that plan.

## Appendix 1-11d

### Work Practice Standards at OLDs (Table 4 to Subpart EEEE of 40 CFR 63). [Added April 2004; Revised January 2007]

For each . . .	You must . . .
1. Storage tank at an existing, reconstructed, or new affected source meeting any set of tank capacity and organic HAP vapor pressure criteria specified in Appendix 1-11b, items 1 through 5.	<p>a. Comply with the requirements of 40 CFR 63, Subpart WW (control level 2) (40 CFR 63.1060 through 63.1067), if you elect to meet 40 CFR 63, subpart WW (control level 2) requirements as an alternative to the emission limit in Appendix 1-11b, items 1 through 5; OR</p> <p>b. Comply with the requirements of 40 CFR 63.984 in 40 CFR 63, Subpart SS (40 CFR 63.980 through 63.999), for routing emissions to a fuel gas system or back to the process.</p> <p>c. Comply with the requirements of 40 CFR 63.2346(a)(4) for vapor balancing emissions to the transport vehicle from which the storage tank is filled.</p>
2. Storage Tank at an existing, reconstructed, or new affected source meeting any set of tank capacity and organic HAP vapor pressure criteria specified in Appendix 1-11b, item 6.	<p>a. Comply with the requirements of 40 CFR 63.984 for routing emission to a fuel gas system, or back to a process; OR</p> <p>b. Comply with the requirements of 40 CFR 63.2346(a)(4) for vapor balancing emissions to the transport vehicle from which the storage tank is filled.</p>
3. Transfer rack subject to control based on the criteria specified in Appendix 1-11b, items 7 through 10, at an existing, reconstructed, or new source.	<p>a. If the option of a vapor balancing system is selected, install and, during the loading of organic liquids, operate a system that meets the requirements in Appendix 1-11e, item 3.b.i. and item 3.b.ii, as applicable; OR</p> <p>b. Comply with the requirements of 40 CFR 63.984 during the loading of organic liquids for routing emissions to a fuel gas system or back to a process.</p>
4. Pump, valve, and sampling connection that operates in organic liquids service at least 300 h/yr at an existing, reconstructed, or new affected source.	Comply with the requirements for pumps, valves, and sampling connections in 40 CFR 63, Subpart TT (control level 1), Subpart UU (control level 2), or Subpart H.
5. Transport vehicles equipped with vapor collection equipment that are loaded at transfer racks that are subject to control based on the criteria specified in Appendix 1-11b, items 7 through 10.	Follow the steps in 40 CFR 60.502(e) to ensure that organic liquids are loaded only into vapor-tight transport vehicles, and comply with the provisions in 40 CFR 60.502(f), 60.502(g), 60.502(h), and 60.502(i), except substitute the term transport vehicle at each occurrence of tank truck or gasoline tank truck in those paragraphs.
6. Transport vehicles without vapor collection equipment that are loaded at transfer racks that are subject to control based on the criteria specified in Appendix 1-11b, items 7 through 10.	Ensure that organic liquids are loaded only into transport vehicles that have a current certification in accordance with the U.S. DOT pressure test requirements in 49 CFR 180 (cargo tanks) or 49 CFR 173.31 (tank cars).



## Appendix 1-11e

### Initial Compliance With Work Practice Standards

(40 CFR 63, Subpart EEEE, Table 7)

[Added April 2004; Revised January 2007]

For each . . .	If you . . .	You have demonstrated initial compliance if . . .
1. Storage tank at an existing affected source meeting either set of tank capacity and liquid organic HAP vapor pressure criteria specified in Appendix 1-11b, items 1 or 2.	<p>a. Install a floating roof or equivalent control that meets the requirements in Appendix 1-11d, item 1.a.</p> <p>b. Route emissions to a fuel gas system or back to the process.</p> <p>c. Install and, during the filling of the storage tank with organic liquids, operate a vapor balancing system.</p>	<p>i. After emptying and degassing, visually inspect each internal floating roof before the refilling of the storage tank and perform seal gap inspections of the primary and secondary rim seals of each external floating roof within 90 days after the refilling of the storage tank.</p> <p>i. Meet the requirements in 40 CFR 63.984(b) and submit the statement of connection required by 40 CFR 63.984(c).</p> <p>i. Meet the requirements in 40 CFR 63.2346(a)(4) (see checklist item AE.57.1.US).</p>
2. Storage tank at a reconstructed or new affected source meeting any set of tank capacity and liquid organic HAP vapor pressure criteria specified in Appendix 1-11b, items 3 through 5.	<p>a. Install a floating roof or equivalent control that meets the requirements in Appendix 1-11d, item 1.a.</p> <p>b. Route emissions to a fuel gas system or back to the process.</p> <p>c. Install and, during the filling of the storage tank with organic liquids, operate a vapor balancing system.</p>	<p>i. Visually inspect each internal floating roof before the initial filling of the storage tank, and perform seal gap inspections of the primary and secondary rim seals of each external floating roof within 90 days after the initial filling of the storage tank.</p> <p>i. See item 1.b.i of this table.</p> <p>i. See item 1.c.i of this table.</p>
3. Transfer rack that is subject to control based on the criteria specified in Appendix 1-11b, items 7 through 10, at an existing, reconstructed, or new affected source.	<p>a. Load organic liquids only into transport vehicles having current vapor tightness certification as described in Appendix 1-11d, item 5 and item 6.</p> <p>b. Install and, during the loading of organic liquids, operate a vapor balancing system</p>	<p>i. Comply with the provisions specified in Appendix 1-11d, item 5 and item 6, as applicable.</p> <p>i. Design and operate the vapor balancing system to route organic HAP vapors displaced from loading of organic liquids into transport vehicles to the appropriate storage tank from which the liquid being loaded originated or to another</p>

For each . . .	If you . . .	You have demonstrated initial compliance if . . .
		storage tank connected to a common header.
	c. Route emissions to a fuel gas system or back to a process.	ii. Design and operate the vapor balancing system to route organic HAP vapors displaced from loading of organic liquids into containers directly (e.g., no intervening tank or containment area such as a room) to the storage tank from which the liquid being loaded originated or to another storage tank connected to a common header. See item 1.b.i. of this table.
4. Equipment leak component, as defined in 40 CFR 63.2406, that operates in organic liquids service $\geq$ 300 h/yr at an existing, reconstructed, or new affected source.	a. Carry out a leak detection and repair program or equivalent control according to one of the subparts listed in Appendix 1-11d, item 4.a.	i. Specify which one of the control programs listed in Appendix 1-11d you have selected, OR  ii. Provide written specifications for your equivalent control approach.

## Appendix 1-12

### Compliance and Exemptions to 40 CFR 63.320 through 63.325 Concerning Perchloroethylene Drycleaners (40 CFR 63.320)

[Revised October 2006; Revised April 2008; Revised July 2008]

Facility Type	Applicable Citation	Checklist Item Numbers	Date
Coin operated drycleaners.	None	None	None
Dry cleaning systems that started construction or reconstruction on or after 9 December 1991 and before 21 December 2005, except 40 CFR 63.322(o) beginning on 22 September 1993 or immediately upon startup, whichever is later, except for systems complying with Section 112(i)(2) of CAAA90.	63.320 through 63.325	AE.75.1.US. through AE.75.12.US.	22 September 1993 Compliance with 40 CFR 63.322(o) is required beginning on 28 July 2008, except as provided by 40 CFR 63.6(b)(4), as applicable.
Each dry cleaning system that commences construction or reconstruction on or after 21 December 2005 shall be in compliance, except with 40 CFR 63.322(o), immediately upon startup.	63.320 through 63.325	AE.75.1.US. through AE.75.12.US.	Compliance with 40 CFR 63.322(o) is required beginning on 27 July 2006 or immediately upon startup, whichever is later.
Dry cleaning systems that commences construction or reconstruction on or after 21 December 2005, but before 13 July 2006, and are located in a building with a residence, shall be in compliance, except 40 CFR 63.322(o), immediately upon startup;.	63.320 through 63.325	AE.75.1.US. through AE.75.12.US	Compliance with 40 CFR 63.322(o)(5)(ii) is required beginning on 27 July 2006. Compliance with 40 CFR 63.322(o)(5)(i) is required beginning on 27 July 2009.
Dry cleaning systems that started construction or reconstruction on or after 27 July 2006.	63.320 through 63.325	AE.75.1.US. through AE.75.12.US	Upon Startup
Dry cleaning systems that started construction or reconstruction before 9 December 1991, and each new transfer machine system and its ancillary equipment that started construction or reconstruction on or after 9 December 1991 and before 22 September 1993.	63.322(c), (d), (i), (j), (k), (l), (m), 63.323(d) and 63.324(a), (b), (d)(1), (d)(2), (d)(3), (d)(4), and (e)	AE.75.3.US, AE.75.5.US. through AE.75.12.US.	20 December 1993

Facility Type	Applicable Citation	Checklist Item Numbers	Date
	All other citations except 40 CFR 63.322(o)	AE.75.1.US, AE.75.2.US, AE.75.4.US, AE.75.7.US.	23 September 1996
	40 CFR 63.322(o)		28 July 2008
Existing dry-to-dry machines and ancillary equipment located in a dry cleaning facility that includes only a dry-to-dry machines, and each existing transfer machine system and its ancillary equipment, and each new transfer machine system and its new ancillary equipment installed between 9 December 1991 and 22 September 1993, as well as each existing dry-to-dry machine and its ancillary equipment, located in a dry cleaning facility that includes both transfer machine systems and dry-to-dry machines	40 CFR 63.322(c), (d), (i), (j), (k), (l), (m), (o)(1), (o)(4), (o)(5)(i); 63.323(d); and 63.324(a), (b), (d)(1), (d)(2), (d)(3), (d)(4), and (e)	AE.75.3.US, AE.75.5.US. through AE.75.12.US.	22 September 1993
Each existing dry-to-dry machine and its ancillary equipment located in a dry cleaning facility that includes only dry-to-dry machines, and each existing transfer machine system and its ancillary equipment, and each new transfer machine system and its ancillary equipment installed between 9 December 1991, and 22 September 1993, as well as each existing dry-to-dry machine and its ancillary equipment, located in a dry cleaning facility that includes both transfer machine system(s) and dry-to-dry machine(s) Consumption is determined according to 40 CFR 63.323(d).	40 CFR 63.322(c), (d), (i), (j), (k), (l), (m), (o)(1), (o)(3) and (o)(5)(i); 63.323(d); and 63.324(a), (b), (d)(1), (d)(2), (d)(3), (d)(4), and (e) if the total PCE consumption of the dry cleaning facility is less than 530 L/yr (140 gal/yr)	AE.75.3.US, AE.75.5.US. through AE.75.12.US.	22 September 1993

Facility Type	Applicable Citation	Checklist Item Numbers	Date
Each existing transfer machine system and its ancillary equipment, and each new transfer machine system and its ancillary equipment installed between December 9, 1991, and September 22, 1993, located in a dry cleaning facility that includes only transfer machine system(s), is exempt from	40 CFR 63.322(c), (d), (i), (j), (k), (l), (m), (o)(1), (o)(3), (o)(4); 63.323(d); and 63.324(a), (b), (d)(1), (d)(2), (d)(3), (d)(4), and (e) if the PCE consumption of the dry cleaning facility is less than 760 L/yr (200 gal/yr).	AE.75.1.US, AE.75.3.US. through AE.75.10.US.	22 September 1993
Existing transfer machine systems and ancillary equipment, and each new transfer machine system and its ancillary equipment installed between 9 December 1991 and 22 September 1993 located in a dry cleaning facility that includes only transfer machine systems with perchloroethylene consumption at the facility of less than 760 L/yr (200 gal/yr).	63.324(e)		22 September 1993
<b>(NOTE:</b> If the total yearly consumption of perchloroethylene at a dry cleaning facility is initially less than the amounts stipulated above, but later exceeds those amounts, the existing dry cleaning system and new transfer machine systems and its ancillary equipment installed between 9 December 1991 and 22 September 1993 in the facility are required to comply within 180 days of the date that the facility determined it exceeded the baseline amounts or by 23 September 1996, whichever is later.)			

**Appendix 1-13**  
**Class I and II Controlled Substances**  
(Appendix A and Appendix B to Subpart A of Part 82)  
**[Revised January 2015, Revised October 2016]**

**Class I Controlled Substances**

<b>Controlled substances</b>	<b>ODP</b>
<b>A. Group I:</b>	
CFCl <sub>3</sub> -Trichlorofluoromethane (CFC-II)	1.0
CF <sub>2</sub> Cl <sub>2</sub> -Dichlorodifluoromethane (CFC-12)	1.0
C <sub>2</sub> F <sub>3</sub> Cl <sub>3</sub> -Trichlorotrifluoroethane (CFC-113)	0.8
C <sub>2</sub> F <sub>4</sub> Cl <sub>2</sub> -Dichlorotetrafluoroethane (CFC-114)	1.0
C <sub>2</sub> F <sub>5</sub> Cl-Monochloropentafluoroethane (CFC-115)	0.6
All isomers of the above chemicals	
<b>B. Group II:</b>	
CF <sub>2</sub> ClBr-Bromochlorodifluoromethane (Halon-1211)	3.0
CF <sub>3</sub> Br-Bromotrifluoromethane (Halon-1301)	10.0
C <sub>2</sub> F <sub>4</sub> Br <sub>2</sub> -Dibromotetrafluoroethane (Halon-2402)	6.0
All isomers of the above chemicals	
<b>C. Group III:</b>	
CF <sub>3</sub> Cl-Chlorotrifluoromethane (CFC-13)	1.0
C <sub>2</sub> FCl <sub>5</sub> -(CFC-111)	1.0
C <sub>2</sub> F <sub>2</sub> Cl <sub>4</sub> -(CFC-112)	1.0
C <sub>3</sub> FCl <sub>7</sub> -(CFC-211)	1.0
C <sub>3</sub> F <sub>2</sub> Cl <sub>6</sub> -(CFC-212)	1.0
C <sub>3</sub> F <sub>3</sub> Cl <sub>5</sub> -(CFC-213)	1.0
C <sub>3</sub> F <sub>4</sub> Cl <sub>4</sub> -(CFC-214)	1.0
C <sub>3</sub> F <sub>5</sub> Cl <sub>3</sub> -(CFC-215)	1.0
C <sub>3</sub> F <sub>6</sub> Cl <sub>2</sub> -(CFC-216)	1.0
C <sub>3</sub> F <sub>7</sub> Cl-(CFC-217)	1.0
All isomers of the above chemicals	
D. Group IV: CCl <sub>4</sub> -Carbon Tetrachloride	1.1
<b>E. Group V:</b>	
C <sub>2</sub> H <sub>3</sub> Cl <sub>3</sub> -1,1,1 Trichloroethane (Methyl chloroform)	0.1

Controlled substances	ODP
All isomers of the above chemical except 1,1,2-trichloroethane	
F. Group VI: CH <sub>3</sub> Br—Bromomethane (Methyl Bromide)	0.7
G. Group VII:	
CHFBR <sub>2</sub>	1.00
CHF <sub>2</sub> Br (HBFC-2201)	0.74
CH <sub>2</sub> FBr	0.73
C <sub>2</sub> HFBr <sub>4</sub>	0.3-0.8
C <sub>2</sub> HF <sub>2</sub> Br <sub>3</sub>	0.5-1.8
C <sub>2</sub> HF <sub>3</sub> Br <sub>2</sub>	0.4-1.6
C <sub>2</sub> HF <sub>4</sub> Br	0.7-1.2
C <sub>2</sub> H <sub>2</sub> FBr <sub>3</sub>	0.1-1.1
C <sub>2</sub> H <sub>2</sub> F <sub>2</sub> Br <sub>2</sub>	0.2-1.5
C <sub>2</sub> H <sub>2</sub> F <sub>3</sub> Br	0.7-1.6
C <sub>2</sub> H <sub>2</sub> FBr <sub>2</sub>	0.1-1.7
C <sub>2</sub> H <sub>3</sub> F <sub>2</sub> Br	0.2-1.1
C <sub>2</sub> H <sub>4</sub> FBr	0.07-0.1
C <sub>3</sub> HFBr <sub>6</sub>	0.3-1.5
C <sub>3</sub> HF <sub>2</sub> Br <sub>5</sub>	0.2-1.9
C <sub>3</sub> HF <sub>3</sub> Br <sub>4</sub>	0.3-1.8
C <sub>3</sub> HF <sub>4</sub> Br <sub>3</sub>	0.5-2.2
C <sub>3</sub> HF <sub>5</sub> Br <sub>2</sub>	0.9-2.0
C <sub>3</sub> HF <sub>6</sub> Br	0.7-3.3
C <sub>3</sub> H <sub>2</sub> FBR <sub>5</sub>	0.1-1.9
C <sub>3</sub> H <sub>2</sub> F <sub>2</sub> BR <sub>4</sub>	0.2-2.1
C <sub>3</sub> H <sub>2</sub> F <sub>3</sub> Br <sub>3</sub>	0.2-5.6
C <sub>3</sub> H <sub>2</sub> F <sub>4</sub> Br <sub>2</sub>	0.3-7.5
C <sub>3</sub> H <sub>2</sub> F <sub>5</sub> BR	0.9-14
C <sub>3</sub> H <sub>3</sub> FBR <sub>4</sub>	0.08-1.9
C <sub>3</sub> H <sub>3</sub> F <sub>2</sub> Br <sub>3</sub>	0.1-3.1
C <sub>3</sub> H <sub>3</sub> F <sub>3</sub> Br <sub>2</sub>	0.1-2.5
C <sub>3</sub> H <sub>3</sub> F <sub>4</sub> Br	0.3-4.4

Controlled substances	ODP
C <sub>3</sub> H <sub>4</sub> FBr <sub>3</sub>	0.03-0.3
C <sub>3</sub> H <sub>4</sub> F <sub>2</sub> Br <sub>2</sub>	0.1-1.0
C <sub>3</sub> H <sub>4</sub> F <sub>3</sub> Br	0.07-0.8
C <sub>3</sub> H <sub>5</sub> FBr <sub>2</sub>	0.04-0.4
C <sub>3</sub> H <sub>5</sub> F <sub>2</sub> Br	0.07-0.8
C <sub>3</sub> H <sub>6</sub> FB	0.02-0.7
H. Group VIII:	
CH <sub>2</sub> BrCl (Chlorobromomethane)	0.12

### Class II Controlled Substances<sup>ab</sup>

Controlled substance	ODP
1. HCFC-21 (CHFCI <sub>2</sub> ) Dichlorofluoromethane.....	0.04
2. HCFC-22 (CHF <sub>2</sub> Cl) Monochlorodifluoromethane.....	0.055
3. HCFC-31 (CH <sub>2</sub> FCI) Monochlorofluoromethane.....	0.02
4. HCFC-121 (C <sub>2</sub> HFCI <sub>4</sub> ) Tetrachlorofluoroethane.....	0.01-0.04
5. HCFC-122 (C <sub>2</sub> HF <sub>2</sub> CI <sub>3</sub> ) Trichlorodifluoroethane.....	0.02-0.08
6. HCFC-123 (C <sub>2</sub> HF <sub>3</sub> CI <sub>2</sub> ) Dichlorotrifluoroethane.....	0.02
7. HCFC-124 (C <sub>2</sub> HF <sub>4</sub> Cl) Monochlorotetrafluoroethane.....	0.022
8. HCFC-131 (C <sub>2</sub> H <sub>2</sub> FCI <sub>3</sub> ) Trichlorofluoroethane.....	0.007-0.05
9. HCFC-132 (C <sub>2</sub> H <sub>2</sub> F <sub>2</sub> CI <sub>2</sub> ) Dichlorodifluoroethane.....	0.008-0.05
10. HCFC-133 (C <sub>2</sub> H <sub>2</sub> F <sub>3</sub> Cl) Monochlorotrifluoroethane.....	0.02-0.06
11. HCFC-141 (C <sub>2</sub> H <sub>3</sub> FCI <sub>2</sub> ) Dichlorofluoroethane.....	0.005-0.07
12. HCFC-141b (CH <sub>3</sub> CFCl <sub>2</sub> ) Dichlorofluoroethane.....	0.11
13. HCFC-142 (C <sub>2</sub> H <sub>3</sub> F <sub>2</sub> Cl) Chlorodifluoroethane.....	0.008-0.07
14. HCFC-142b (CH <sub>3</sub> CF <sub>2</sub> Cl) Monochlorodifluoroethane.....	0.065
15. HCFC-151 (C <sub>2</sub> H <sub>4</sub> FCI) Chlorofluoroethane.....	0.003-0.005
16. HCFC-221 (C <sub>3</sub> HFCI <sub>6</sub> ) Hexachlorofluoropropane.....	0.015-0.07
17. HCFC-222 (C <sub>3</sub> HF <sub>2</sub> CI <sub>5</sub> ) Pentachlorodifluoropropane.....	0.01-0.09
18. HCFC-223 (C <sub>3</sub> HF <sub>3</sub> CI <sub>4</sub> ) Tetrachlorotrifluoropropane.....	0.01-0.08
19. HCFC-224 (C <sub>3</sub> HF <sub>4</sub> CI <sub>3</sub> ) Trichlorotetrafluoropropane.....	0.01-0.09
20. HCFC-225 (C <sub>3</sub> HF <sub>5</sub> CI <sub>2</sub> ) Dichloropentafluoropropane.....	0.02-0.07
21. HCFC-225ca (CF <sub>3</sub> CF <sub>2</sub> CHCl <sub>2</sub> ) Dichloropentafluoropropane.	0.025
22. HCFC-225cb (CF <sub>2</sub> ClCF <sub>2</sub> CHClF)	0.033
Dichloropentafluoropropane.....	
23. HCFC-226 (C <sub>3</sub> HF <sub>6</sub> Cl) Monochlorohexafluoropropane.....	0.02-0.1
24. HCFC-231 (C <sub>3</sub> H <sub>2</sub> FCI <sub>5</sub> ) Pentachlorofluoropropane.....	0.05-0.09
25. HCFC-232 (C <sub>3</sub> H <sub>2</sub> F <sub>2</sub> CI <sub>4</sub> ) Tetrachlorodifluoropropane.....	0.008-0.1
26. HCFC-233 (C <sub>3</sub> H <sub>2</sub> F <sub>3</sub> CI <sub>3</sub> ) Trichlorotrifluoropropane.....	0.007-0.23
27. HCFC-234 (C <sub>3</sub> H <sub>2</sub> F <sub>4</sub> CI <sub>2</sub> ) Dichlorotetrafluoropropane.....	0.01-0.28
28. HCFC-235 (C <sub>3</sub> H <sub>2</sub> F <sub>5</sub> Cl) Monochloropentafluoropropane....	0.03-0.52
29. HCFC-241 (C <sub>3</sub> H <sub>3</sub> FCI <sub>4</sub> ) Tetrachlorofluoropropane.....	0.004-0.09

30. HCFC-242 (C3H3F2Cl3) Trichlorodifluoropropane.....	0.005-0.13
31. HCFC-243 (C3H3F3Cl2) Dichlorotrifluoropropane.....	0.007-0.12
32. HCFC-244 (C3H3F4Cl) Monochlorotetrafluoropropane....	0.009-0.14
33. HCFC-251 (C3H4FCI3) Monochlorotetrafluoropropane....	0.001-0.01
34. HCFC-252 (C3H4F2Cl2) Dichlorodifluoropropane.....	0.005-0.04
35. HCFC-253 (C3H4F3Cl) Monochlorotrifluoropropane.....	0.003-0.03
36. HCFC-261 (C3H5FCI2) Dichlorofluoropropane.....	0.002-0.02
37. HCFC-262 (C3H5F2Cl) Monochlorodifluoropropane.....	0.002-0.02
38. HCFC-271 (C3H6FCI) Monochlorofluoropropane.....	0.001-0.03

\a\ According to Annex C of the Montreal Protocol, "Where a range of ODPs is indicated, the highest value in that range shall be used for the purposes of the Protocol. The ODPs listed as single value have been determined from calculations based on laboratory measurements. Those listed as a range are based on estimates and are less certain. The range pertains to an isomeric group. The upper value is the estimate of the ODP of the isomer with the highest ODP, and the lower value is the estimate of the ODP of the isomer with the lowest ODP.

\b\ This table includes all isomers of the substances above, regardless of whether the isomer is explicitly listed on its own.

## Appendix 1-14

**Maximum Level of Contaminants Permissible in Refrigerant Processed Through  
Equipment Advertised as “Recycling” Equipment  
(40 CFR 82.160(n))  
[Added October 2003]**

<b>Contaminants</b>	<b>Low-pressure (R-11, R-123, R-113) Systems</b>	<b>R-12 Systems</b>	<b>All Other Systems</b>
<b>Acid Content (by wt.)</b>	1.0 PPM	1.0 PPM	1.0 PPM
<b>Moisture (by wt.)</b>	20 PPM	10 PPM	20 PPM
<b>Noncondensable Gas (by vol.)</b>	N/A	2.0%	2.0%
<b>High Boiling Residues (by vol.)</b>	1.0%	0.02%	0.02%
<b>Chlorides by Silver Nitrate Test</b>	No turbidity	No turbidity	No turbidity
<b>Particulates</b>	Visually clean	Visually clean	Visually clean



**Appendix 1-15**

**Unacceptable CFC and Halon Substitutes  
(40 CFR 82.170 through 82.194, Appendix A)  
[Deleted October 2003]**

**This list is in a constant state of change.  
Refer to the Code of Federal Regulations and the Federal Register for the most recent list.**



**Appendix 1-16**  
**Required Levels of Evacuation for Appliances**  
**(Except for small appliances, MVACS, and MVAC-like appliances)**  
**(40 CFR 82.156, Table 1)**  
**[Revised April 2004, Revised January 2017]**

Type of Appliance	Inches of Hg Vacuum (relative to standard atmospheric pressure of 29.9 inches Hg)	
	Using recovery or recycling equipment manufactured or imported before 15 November 1993	Using recovery and/or recycling equipment manufactured or imported on or after 15 November 1993
Very high-pressure appliance	0	0
High-pressure appliance, or isolated component of such appliance, with a full charge of less than 200 lbs of refrigerant.	0	0
High-pressure appliance, or isolated component of such appliance, with a full charge of 200 lbs or more of refrigerant.	4	10
Medium-pressure appliance, or isolated component of such appliance, with a full charge of less than 200 lbs of refrigerant.	4	10
Medium-pressure appliance, or isolated component of such appliance, with a full charge of 200 lbs or more of refrigerant.	4	15
Low-pressure appliance	25 mm Hg absolute	25 mm Hg absolute



## **Appendix 1-16a**

### **Definitions Applicable to 40 CFR 82.156(i) (40 CFR 82.156(j)) [Added January 2017]**

#### *Definitions for 40 CFR 82.156(i) Requirements*

Definitions for the leak repair provisions in 40 CFR 82.156(i). These definitions are not applicable to any other portion of subpart F other than 82.156(i). Along with paragraph (i) of this section, the definitions in this section apply only until January 1, 2019.

- (a) **Appliance** - for the purposes of 40 CFR 82.156(i), any device which contains and uses a refrigerant and which is used for household or commercial purposes, including any air conditioner, refrigerator, chiller, or freezer.
- (b) **Commercial refrigeration** - for the purposes of 40 CFR 82.156(i), the refrigeration appliances utilized in the retail food and cold storage warehouse sectors. Retail food includes the refrigeration equipment found in supermarkets, convenience stores, restaurants and other food service establishments. Cold storage includes the equipment used to store meat, produce, dairy products, and other perishable goods. All of the equipment contains large refrigerant charges, typically over 75 pounds.
- (c) **Critical component** - for the purposes of 40 CFR 82.156(i), a component without which industrial process refrigeration equipment will not function, will be unsafe in its intended environment, and/or will be subject to failures that would cause the industrial process served by the refrigeration appliance to be unsafe.
- (d) **Custom-built** means, for the purposes of paragraph (i) of this section, that the equipment or any of its critical components cannot be purchased and/or installed without being uniquely designed, fabricated and/or assembled to satisfy a specific set of industrial process conditions.
- (e) **Follow-up verification test** - for the purposes of 40 CFR 82.156(i), those tests that involve checking the repairs within 30 days of the appliance's returning to normal operating characteristics and conditions. Follow-up verification tests for appliances from which the refrigerant charge has been evacuated means a test conducted after the appliance or portion of the appliance has resumed operation at normal operating characteristics and conditions of temperature and pressure, except in cases where sound professional judgment dictates that these tests will be more meaningful if performed prior to the return to normal operating characteristics and conditions. A follow-up verification test with respect to repairs conducted without evacuation of the refrigerant charge means a reverification test conducted after the initial verification test and usually within 30 days of normal operating conditions. Where an appliance is not evacuated, it is only necessary to conclude any required changes in pressure, temperature or other conditions to return the appliance to normal operating characteristics and conditions.
- (f) **Full charge** - for the purposes of 40 CFR 82.156(i), the amount of refrigerant required for normal operating characteristics and conditions of the appliance as determined by using one or a combination of the following four methods:
  - 1. Use the equipment manufacturer's determination of the correct full charge for the equipment;
  - 2. Determine the full charge by making appropriate calculations based on component sizes, density of refrigerant, volume of piping, and other relevant considerations;
  - 3. Use actual measurements of the amount of refrigerant added or evacuated from the appliance; and/or
  - 4. Use an established range based on the best available data regarding the normal operating characteristics and conditions for the appliance, where the midpoint of the range will serve as the full charge, and where records are maintained in accordance with Sec. 82.166(q).
- (g) **Industrial process refrigeration** - for the purposes of 40 CFR 82.156(i), complex customized appliances used in the chemical, pharmaceutical, petrochemical and manufacturing industries. These appliances are directly linked to the industrial process. This sector also includes industrial ice machines, appliances used directly in the

generation of electricity, and ice rinks. Where one appliance is used for both industrial process refrigeration and other applications, it will be considered industrial process refrigeration equipment if 50 percent or more of its operating capacity is used for industrial process refrigeration.

- (h) Industrial process shutdown - for the purposes of 40 CFR 82.156(i), that an industrial process or facility temporarily ceases to operate or manufacture whatever is being produced at that facility.
- (i) Initial verification test - for the purposes of 40 CFR 82.156(i), those leak tests that are conducted as soon as practicable after the repair is completed. An initial verification test, with regard to the leak repairs that require the evacuation of the appliance or portion of the appliance, means a test conducted prior to the replacement of the full refrigerant charge and before the appliance or portion of the appliance has reached operation at normal operating characteristics and conditions of temperature and pressure. An initial verification test with regard to repairs conducted without the evacuation of the refrigerant charge means a test conducted as soon as practicable after the conclusion of the repair work.
- (j) Leak rate - for the purposes of 40 CFR 82.156(i), the rate at which an appliance is losing refrigerant, measured between refrigerant charges. The leak rate is expressed in terms of the percentage of the appliance's full charge that would be lost over a 12-month period if the current rate of loss were to continue over that period. The rate is calculated using only one of the following methods for all appliances located at an operating facility.

Method 1.

- (A) Step 1. Take the number of pounds of refrigerant added to the appliance to return it to a full charge and divide it by the number of pounds of refrigerant the appliance normally contains at full charge;
- (B) Step 2. Take the shorter of the number of days that have passed since the last day refrigerant was added or 365 days and divide that number by 365 days;
- (C) Step 3. Take the number calculated in Step 1. and divide it by the number calculated in Step 2.; and
- (D) Step 4. Multiply the number calculated in Step 3. by 100 to calculate a percentage. This method is summarized in the following formula: (see text of the regulation).

Method 2.

- (A) Step 1. Take the sum of the quantity of refrigerant added to the appliance over the previous 365-day period (or over the period that has passed since leaks in the appliance were last repaired, if that period is less than one year),
- (B) Step 2. Divide the result of Step 1. by the quantity (e.g., pounds) of refrigerant the appliance normally contains at full charge, and
- (C) Step 3. Multiply the result of Step 2. by 100 to obtain a percentage. This method is summarized in the following formula: (see text of the regulation).

- (k) Normal operating characteristics or conditions - for the purposes of 40 CFR 82.156(i), temperatures, pressures, fluid flows, speeds and other characteristics that would normally be expected for a given process load and ambient condition during operation. Normal operating characteristics and conditions are marked by the absence of atypical conditions affecting the operation of the refrigeration appliance.
- (l) Normally containing a quantity of refrigerant - for the purposes of 40 CFR 82.156(i), containing the quantity of refrigerant within the appliance or appliance component when the appliance is operating with a full charge of refrigerant.
- (m) Refrigerant - for the purposes of 40 CFR 82.156(i), any substance consisting in part or whole of a class I or class II ozone-depleting substance that is used for heat transfer purposes and provides a cooling effect.
- (n) Substitute - for the purposes of 40 CFR 82.156(i), any chemical or product, whether existing or new, that is used by any person as an EPA approved replacement for a class I or II ozone-depleting substance in a given refrigeration or air-conditioning end-use.

- (o) Suitable replacement refrigerant - for the purposes of 40 CFR 82.156(i), a refrigerant that is acceptable under section 612(c) of the Clean Air Act Amendments of 1990 and all regulations promulgated under that section, compatible with other materials with which it may come into contact, and able to achieve the temperatures required for the affected industrial process in a technically feasible manner.
- (p) System mothballing - for the purposes of 40 CFR 82.156(i), the intentional shutting down of a refrigeration appliance undertaken or an extended period of time by the owners or operators of that facility, where the refrigerant has been evacuated from the appliance or the affected isolated section of the appliance, at least to atmospheric pressure.



## Appendix 1-17

### Emission Limits for Cleaning Machines Without a Solvent/Air Interface (40 CFR 63.464(a)(2)(ii)(A))

#### Equation 1

$$EL = 330 * (Vol)^{0.6} \quad (1)$$

EL = the 3-mo rolling average monthly emissions limit (kg/mo)

Vol = the cleaning capacity of the solvent-cleaning machine (m<sup>3</sup>)

**Table 1**

Cleaning capacity (m <sup>3</sup> )	3-mo rolling average monthly emission limit (kg/mo)
0.00	0
0.05	55
0.10	83
0.15	106
0.20	126
0.25	144
0.30	160
0.35	176
0.40	190
0.45	204
0.50	218
0.55	231
0.60	243
0.65	255
0.70	266
0.75	278
0.80	289
0.85	299

<b>Cleaning capacity (m3)</b>	<b>3-mo rolling average monthly emission limit (kg/mo)</b>
0.90	310
0.95	320
1.00	330
1.05	340
1.10	349
1.15	359
1.20	368
1.25	377
1.30	386
1.35	395
1.40	404
1.45	412
1.50	421
1.55	429
1.60	438
1.65	446
1.70	454
1.75	462
1.80	470
1.85	477
1.90	485
1.95	493
2.00	500
2.05	508
2.10	515
2.15	522

<b>Cleaning capacity (m3)</b>	<b>3-mo rolling average monthly emission limit (kg/mo)</b>
2.20	530
2.25	537
2.30	544
2.35	551
2.40	558
2.45	565
2.50	572
2.55	579
2.60	585
2.65	592
2.70	599
2.75	605
2.80	612
2.85	619
2.90	625
2.95	632



## Appendix 1-18

### Speciality Coating Definitions (Appendix A to Subpart GG of 40 CFR 63) [Added January 1999; Revised January 2016]

- *Ablative Coating* - A coating that chars when exposed to open flame or extreme temperatures, as would occur during the failure of an engine casing or during aerodynamic heating. The ablative char surface serves as an insulative barrier, protecting adjacent components from the heat or open flame.
- *Adhesion Promoter* - A very thin coating applied to a substrate to promote wetting and form a chemical bond with the subsequently applied material.
- *Adhesive Bonding Primer* - A primer applied in a thin film to aerospace components for the purpose of corrosion inhibition and increased adhesive bond strength by attachment. There are two categories of adhesive bonding primers: primers with a design cure at 250 oF or below and primers with a design cure above 250 oF.
- *Aerosol Coating* - A hand-held, pressurized, nonrefillable container that expels an adhesive or a coating in a finely divided spray when a valve on the container is depressed.
- *Antichafe Coating* - A coating applied to areas of moving aerospace components that may rub during normal operations or installation.
- *Bearing Coating* - A coating applied to an antifriction bearing, a bearing housing, or the area adjacent to such a bearing in order to facilitate bearing function or to protect base material from excessive wear. A material shall not be classified as a bearing coating if it can also be classified as a dry lubricative material or a solid film lubricant.
- *Bonding Maskant* - A temporary coating used to protect selected areas of aerospace parts from strong acid or alkaline solutions during processing for bonding.
- *Caulking and Smoothing Compounds* - Semi-solid materials applied by hand application methods that are used to aerodynamically smooth exterior vehicle surfaces or fill cavities such as bolt hole accesses. A material shall not be classified as a caulking and smoothing compound if it can also be classified as a sealant.
- *Chemical Agent-Resistant Coating (CARC)* - An exterior topcoat designed to withstand exposure to chemical warfare agents or the decontaminants used on these agents.
- *Clear Coating* - A transparent coating usually applied over a colored opaque coating, metallic substrate, or placard to give improved gloss and protection to the color coat. In some cases, a clearcoat refers to any transparent coating without regard to substrate.
- *Commercial Exterior Aerodynamic Structure Primer* - A primer used on aerodynamic components and structures that protrude from the fuselage, such as wings and attached components, control surfaces, horizontal stabilizers, vertical fins, wing-to-body fairings, antennae, and landing gear and doors, for the purpose of extended corrosion protection and enhanced adhesion.
- *Commercial Interior Adhesive* - Materials used in the bonding of passenger cabin interior components. These components must meet the FAA fireworthiness requirements.
- *Compatible Substrate Primer* - Includes two categories: compatible epoxy primer and adhesive primer. Compatible epoxy primer is primer that is compatible with the filled elastomeric coating and is epoxy based. The compatible substrate primer is an epoxy-polyamide primer used to promote adhesion of elastomeric coatings such as impact-resistant coatings. Adhesive primer is a coating that (1) inhibits corrosion and serves as a primer applied

to bare metal surfaces or prior to adhesive application, or (2) is applied to surfaces that can be expected to contain fuel. Fuel tank coatings are excluded from this category.

- *Corrosion Prevention System* - A coating system that provides corrosion protection by displacing water and penetrating mating surfaces, forming a protective barrier between the metal surface and moisture. Coatings containing oils or waxes are excluded from this category.
- *Critical Use and Line Sealer Maskant* - A temporary coating, not covered under other maskant categories, used to protect selected areas of aerospace parts from strong acid or alkaline solutions such as those used in anodizing, plating, chemical milling and processing of magnesium, titanium, high-strength steel, high-precision aluminum chemical milling of deep cuts, and aluminum chemical milling of complex shapes. Materials used for repairs or to bridge gaps left by scribing operations (i.e. line sealer) are also included in this category.
- *Cryogenic Flexible Primer* - A primer designed to provide corrosion resistance, flexibility, and adhesion of subsequent coating systems when exposed to loads up to and surpassing the yield point of the substrate at cryogenic temperatures (-275 °F and below).
- *Cryoprotective Coating* - A coating that insulates cryogenic or subcooled surfaces to limit propellant boil-off, maintain structural integrity of metallic structures during ascent or re-entry, and prevent ice formation.
- *Cyanoacrylate Adhesive* - A fast-setting, single component adhesive that cures at room temperature. Also known as “super glue.”
- *Dry Lubricative Material* - A coating consisting of lauric acid, cetyl alcohol, waxes, or other non-cross linked or resin-bound materials that act as a dry lubricant.
- *Electric or Radiation-effect Coating* - A coating or coating system engineered to interact, through absorption or reflection, with specific regions of the electromagnetic energy spectrum, such as the ultraviolet, visible, infrared, or microwave regions. Uses include, but are not limited to, lightning strike protection, electromagnetic pulse (EMP) protection, and radar avoidance. Coatings that have been designated as “Classified National Security Information” by the DoD are exempt.
- *Electrostatic Discharge and Electromagnetic Interference (EMI) Coating* - A coating applied to aerospace vehicles and components to disperse static energy or reduce electromagnetic interference.
- *Elevated-temperature Skydrol-resistant Commercial Primer* - A primer applied primarily to commercial aircraft (or commercial aircraft adapted for military use) that must withstand immersion in phosphate-ester (PE) hydraulic fluid (Skydrol 500b or equivalent) at the elevated temperature of 150 °F for 1000 h.
- *Epoxy Polyamide Topcoat* - A coating used where harder films are required or in some areas where engraving is accomplished in camouflage colors.
- *Fire-resistant (Interior) Coating* - For civilian aircraft, fire-resistant interior coatings are used on passenger cabin interior parts that are subject to the FAA fireworthiness requirements. For military aircraft, fire-resistant interior coatings are used on parts subject to the flammability requirements of MIL-STD-1630A and MIL-A-87721. For space applications, these coatings are used on parts subject to the flammability requirements of SE-R-0006 and SSP 30233.
- *Flexible Primer* - A primer that meets flexibility requirements such as those needed for adhesive bond primed fastener heads or on surfaces expected to contain fuel. The flexible coating is required because it provides a compatible, flexible substrate over bonded sheet rubber and rubber-type coatings as well as a flexible bridge between the fasteners, skin, and skin-to-skin joints on outer aircraft skins. This flexible bridge allows more topcoat flexibility around fasteners and decreases the chance of the topcoat cracking around the fasteners. The result is better corrosion resistance.

- *Flight Test Coating* - A coating applied to aircraft other than missiles or single-use aircraft prior to flight testing to protect the aircraft from corrosion and to provide required marking during flight test evaluation.
- *Fuel Tank Adhesive* - An adhesive used to bond components exposed to fuel and that must be compatible with fuel tank coatings.
- *Fuel Tank Coating* - A coating applied to fuel tank components to inhibit corrosion and/or bacterial growth and to assure sealant adhesion in extreme environmental conditions.
- *High Temperature Coating* - A coating designed to withstand temperatures of more than 350 oF.
- *Insulation Covering* - Material that is applied to foam insulation to protect the insulation from mechanical or environmental damage.
- *Intermediate Release Coating* - A thin coating applied beneath topcoats to assist in removing the topcoat in repainting operations and generally to allow the use of less hazardous repainting methods.
- *Lacquer* - A clear or pigmented coating formulated with a nitrocellulose or synthetic resin to dry by evaporation without a chemical reaction. Lacquers are resolvable in their original solvent.
- *Metalized Epoxy Coating* - A coating that contains relatively large quantities of metallic pigmentation for appearance and/or added protection.
- *Mold Release* - A coating applied to a mold surface to prevent the molded piece from sticking to the mold as it is removed.
- *Nonstructural Adhesive* - An adhesive that bonds nonload bearing aerospace components in noncritical applications and is not covered in any other specialty adhesive categories.
- *Optical Anti-reflection Coating* - A coating with a low reflectance in the infrared and visible wavelength ranges, which is used for anti-reflection on or near optical and laser hardware.
- *Part Marking Coating* - Coatings or inks used to make identifying markings on materials, components, and/or assemblies. These markings may be either permanent or temporary.
- *Pretreatment Coating* - An organic coating that contains at least 0.5 percent acids by weight and is applied directly to metal or composite surfaces to provide surface etching, corrosion resistance, adhesion, and ease of stripping.
- *Rain Erosion-resistant Coating* - A coating or coating system used to protect the leading edges of parts such as flaps, stabilizers, radomes, engine inlet nacelles, etc. against erosion caused by rain impact during flight.
- *Rocket Motor Bonding Adhesive* - An adhesive used in rocket motor bonding applications.
- *Rocket Motor Nozzle Coating* - A catalyzed epoxy coating system used in elevated temperature applications on rocket motor nozzles.
- *Rubber-based Adhesive* - Quick setting contact cements that provide a strong, yet flexible, bond between two mating surfaces that may be of dissimilar materials.
- *Scale Inhibitor* - A coating that is applied to the surface of a part prior to thermal processing to inhibit the formation of scale.
- *Screen Print Ink* - Inks used in screen printing processes during fabrication of decorative laminates and decals.

- *Seal Coat Maskant* - An overcoat applied over a maskant to improve abrasion and chemical resistance during production operations.
- *Sealant* - A material used to prevent the intrusion of water, fuel, air, or other liquids or solids from certain areas of aerospace vehicles or components. There are two categories of sealants: extrudable/rollable/brushable sealants and sprayable sealants.
- *Silicone Insulation Material* - Insulating material applied to exterior metal surfaces for protection from high temperatures caused by atmospheric friction or engine exhaust. These materials differ from ablative coatings in that they are not “sacrificial.”
- *Solid Film Lubricant* - A very thin coating consisting of a binder system containing as its chief pigment material one or more of the following: molybdenum, graphite, polytetrafluoroethylene (PTFE), or other solids that act as a dry lubricant between faying surfaces.
- *Specialized Function Coatings* - Coatings that fulfill extremely specific engineering requirements that are limited in application and are characterized by low volume usage. This category excludes coatings covered in other Specialty Coating categories.
- *Structural Autoclavable Adhesive* - An adhesive used to bond load-carrying aerospace components that is cured by heat and pressure in an autoclave.
- *Structural Nonautoclavable Adhesive* - An adhesive cured under ambient conditions that is used to bond load-carrying aerospace components or for other critical functions, such as nonstructural bonding in the proximity of engines.
- *Temporary Protective Coating* - A coating applied to provide scratch or corrosion protection during manufacturing, storage, or transportation. Two types include peelable protective coatings and alkaline removable coatings. These materials are not intended to protect against strong acid or alkaline solutions. Coatings that provide this type of protection from chemical processing are not included in this category.
- *Thermal Control Coating* - Coatings formulated with specific thermal conductive or radiative properties to permit temperature control of the substrate.
- *Touch-up and Repair Coating* - A coating used to cover minor coating imperfections appearing after the main coating operation.
- *Wet Fastener Installation Coating* - A primer or sealant applied by dipping, brushing, or daubing to fasteners that are installed before the coating is cured.
- *Wing Coating* - A corrosion-resistant topcoat that is resilient enough to withstand the flexing of the wings.

## Appendix 1-19

### Composition Requirements for Approved Cleaning Solvents (40 CFR 63.744, Table 1) [Added January 1999]

Cleaning Solvent Type	Composition Requirements
<b>Aqueous</b>	Cleaning solvents in which water is the primary ingredient ( $\geq 80$ percent of cleaning solvent solution as applied must be water). Detergents, surfactants, and bioenzyme mixtures and nutrients may be combined with the water along with a variety of additives, such as organic solvents (e.g., high boiling point alcohols), builders, saponifiers, inhibitors, emulsifiers, pH buffers, and antifoaming agents. Aqueous solutions must have a flash point greater than 93 °C (200 °F) (as reported by the manufacturer), and the solution must be miscible with water.
<b>Hydrocarbon Based</b>	Cleaners that are composed of photochemically reactive hydrocarbons and oxygenated hydrocarbons and have a maximum vapor pressure of 7 mm Hg at 20 °C (3.75 in. H <sub>2</sub> O at 68 °F). These cleaners also contain no HAP.



## Appendix 19-a

### Specialty Coatings, HAP and VOC Content Limits (40 CFR 63.745, Table 1) [Added January 2016]

Coating Type	HAP Limit g/L (lb/gallon) <sup>1</sup>	VOC Limit g/L (lb/gallon) <sup>1</sup>
Ablative Coating	600 (5.0)	600 (5.0)
Adhesion Promoter	890 (7.4)	890 (7.4)
Adhesive Bonding Primers: Cured at 250°F or below	850 (7.1)	850 (7.1)
Adhesive Bonding Primers: Cured above 250°F	1030 (8.6)	1030 (8.6)
Commercial Interior Adhesive	760 (6.3)	760 (6.3)
Cyanoacrylate Adhesive	1,020 (8.5)	1,020 (8.5)
Fuel Tank Adhesive	620 (5.2)	620 (5.2)
Nonstructural Adhesive	360 (3.0)	360 (3.0)
Rocket Motor Bonding Adhesive	890 (7.4)	890 (7.4)
Rubber-based Adhesive	850 (7.1)	850 (7.1)
Structural Autoclavable Adhesive	60 (0.5)	60 (0.5)
Structural Nonautoclavable Adhesive	850 (7.1)	850 (7.1)
Antichafe Coating	660 (5.5)	660 (5.5)
Bearing Coating	620 (5.2)	620 (5.2)
Caulking and Smoothing Compounds	850 (7.1)	850 (7.1)
Chemical Agent-Resistant Coating	550 (4.6)	550 (4.6)
Clear Coating	720 (6.0)	720 (6.0)
Commercial Exterior Aerodynamic Structure Primer	650 (5.4)	650 (5.4)
Compatible Substrate Primer	780 (6.5)	780 (6.5)
Corrosion Prevention System	710 (5.9)	710 (5.9)
Cryogenic Flexible Primer	645 (5.4)	645 (5.4)
Cryoprotective Coating	600 (5.0)	600 (5.0)
Dry Lubricative Material	880 (7.3)	880 (7.3)
Electric or Radiation-Effect Coating	800 (6.7)	800 (6.7)
Electrostatic Discharge and Electromagnetic Interference (EMI) Coating	800 (6.7)	800 (6.7)
Elevated-Temperature Skydrol-Resistant Commercial Primer	740 (6.2)	740 (6.2)
Epoxy Polyamide Topcoat	660 (5.5)	660 (5.5)
Fire-Resistant (interior) Coating	800 (6.7)	800 (6.7)
Flexible Primer	640 (5.3)	640 (5.3)
Flight-Test Coatings: Missile or Single Use Aircraft	420 (3.5)	420 (3.5)
Flight-Test Coatings: All Other	840 (7.0)	840 (7.0)
Fuel-Tank Coating	720 (6.0)	720 (6.0)
High-Temperature Coating	850 (7.1)	850 (7.1)
Insulation Covering	740 (6.2)	740 (6.2)
Intermediate Release Coating	750 (6.3)	750 (6.3)
Lacquer	830 (6.9)	830 (6.9)
Bonding Maskant	1,230 (10.3)	1,230 (10.3)
Critical Use and Line Sealer Maskant	1,020 (8.5)	1,020 (8.5)
Seal Coat Maskant	1,230 (10.3)	1,230 (10.3)
Metallized Epoxy Coating	740 (6.2)	740 (6.2)
Mold Release	780 (6.5)	780 (6.5)
Optical Anti-Reflective Coating	750 (6.3)	750 (6.3)
Part Marking Coating	850 (7.1)	850 (7.1)
Pretreatment Coating	780 (6.5)	780 (6.5)

Rain Erosion-Resistant Coating	850 (7.1)	850 (7.1)
Rocket Motor Nozzle Coating	660 (5.5)	660 (5.5)
Scale Inhibitor	880 (7.3)	880 (7.3)
Screen Print Ink	840 (7.0)	840 (7.0)
Extrudable/Rollable/Brushable Sealant	280 (2.3)	280 (2.3)
Sprayable Sealant	600 (5.0)	600 (5.0)
Silicone Insulation Material	850 (7.1)	850 (7.1)
Solid Film Lubricant	880 (7.3)	880 (7.3)
Specialized Function Coating	890 (7.4)	890 (7.4)
Temporary Protective Coating	320 (2.7)	320 (2.7)
Thermal Control Coating	800 (6.7)	800 (6.7)
Wet Fastener Installation Coating	675 (5.6)	675 (5.6)
Wing Coating	850 (7.1)	850 (7.1)

<sup>1</sup> Coating limits for HAP are expressed in terms of mass (grams or pounds) of HAP per volume (liters or gallons) of coating less water.

## Appendix 1-20

### Air Stream Control Parameters (40 CFR 63.745(g)(2)) [Added January 1999]

Table 1.--Two-Stage Arrestor; Liquid Phase Challenge

Aerodynamic particle size

Filtration efficiency requirement, %	range, $\mu\text{m}$			
>90	>5.7	>50	>4.1	>10
	>2.2			

Table 2.--Two-Stage Arrestor; Solid Phase Challenge for Existing Sources

Aerodynamic particle size

Filtration efficiency requirement, %	range, $\mu\text{m}$			
>90	>8.1	>50	>5.0	>10
	>2.6			

Table 3.--Three-Stage Arrestor; Liquid Phase Challenge for New Sources

Aerodynamic particle size

Filtration efficiency requirement, %	range, $\mu\text{m}$			
>95	>2.0	>80		>1.0
>65	>0.42			

Table 4.--Three-Stage Arrestor; Solid Phase Challenge for New Sources

Aerodynamic particle size

Filtration efficiency requirement, %	range, $\mu\text{m}$			
>95	>2.5	>85		>1.1
>75	>0.70			



**Appendix 1-20c**

**HAP in POTW Influent  
(40 CFR 63, Subpart DD, Table 1)  
[Added January 2005]**

<b>CAS No.a</b>	<b>Chemical name</b>	<b>fm 305</b>
75-07-0	Acetaldehyde	1.000
75-05-8	Acetonitrile	0.989
98-86-2	Acetophenone	0.314
107-02-8	Acrolein	1.000
107-13-1	Acrylonitrile	0.999
107-05-1	Allyl chloride	1.000
71-43-2	Benzene (includes benzene in gasoline)	1.000
98-07-7	Benzotrichloride (isomers and mixture)	0.958
100-44-7	Benzyl chloride	1.000
92-52-4	Biphenyl	0.864
542-88-1	Bis(chloromethyl)ether b	0.999
75-25-2	Bromoform	0.998
106-99-0	1,3-Butadiene	1.000
75-15-0	Carbon disulfide	1.000
56-23-5	Carbon tetrachloride	1.000
43-58-1	Carbonyl sulfide	1.000
133-90-4	Chloramben	0.633
108-90-7	Chlorobenzene	1.000
67-66-3	Chloroform	1.000
107-30-2	Chloromethyl methyl ether b	1.000
126-99-8	Chloroprene	1.000
98-82-8	Cumene	1.000
94-75-7	2,4-D, salts and esters	0.167
334-88-3	Diazomethane c	0.999

CAS No.a	Chemical name	fm 305
132-64-9	Dibenzofurans	0.967
96-12-8	1,2-Dibromo-3-chloropropane	1.000
106-46-7	1,4-Dichlorobenzene(p)	1.000
107-06-2	Dichloroethane (Ethylene dichloride)	1.000
111-44-4	Dichloroethyl ether (Bis(2-chloroethyl ether)	0.757
542-75-6	1,3-Dichloropropene	1.000
79-44-7	Dimethyl carbamoyl chlorid ec	0.150
64-67-5	Diethyl sulfate	0.0025
77-78-1	Dimethyl sulfate	0.086
121-69-7	N,N-Dimethylaniline	0.0008
51-28-5	2,4-Dinitrophenol	0.0077
121-14-2	2,4-Dinitrotoluene	0.0848
123-91-1	1,4-Dioxane (1,4-Diethyleneoxide)	0.869
106-89-8	Epichlorohydrin (1-Chloro-2,3-epoxypropane)	0.939
106-88-7	1,2-Epoxybutane	1.000
140-88-5	Ethyl acrylate	1.000
100-41-4	Ethyl benzene	1.000
75-00-3	Ethyl chloride (Chloroethane)	1.000
106-93-4	Ethylene dibromide (Dibromoethane)	0.999
107-06-2	Ethylene dichloride (1,2-Dichloroethane)	1.000
151-56-4	Ethylene imine (Aziridine)	0.867
75-21-8	Ethylene oxide	1.000
75-34-3	Ethylidene dichloride (1,1-Dichloroethane) Glycol ethers d that have a Henry's Law (e) constant value equal to or greater than .1 Y/X (1.8x10 <sup>-6</sup> atm/gm-mole/m <sup>3</sup> ) at 25°C.	1.000
118-74-1	Hexachlorobenzene	0.97
87-68-3	Hexachlorobutadiene	0.88
67-72-1	Hexachloroethane	0.499

CAS No.a	Chemical name	fm 305
110-54-3	Hexane	1.000
78-59-1	Isophorone	0.506
58-89-9	Lindane (all isomers)	1.000
67-56-1	Methanol	0.855
74-83-9	Methyl bromide (Bromomethane)	1.000
74-87-3	Methyl chloride (Chloromethane)	1.000
71-55-6	Methyl chloroform (1,1,1-Trichloroethane)	1.000
78-93-3	Methyl ethyl ketone (2-Butanone)	0.990
74-88-4	Methyl iodide (Iodomethane)	1.0001
108-10-1	Methyl isobutyl ketone (Hexone)	0.9796
624-83-9	Methyl isocyanate	1.000
80-62-6	Methyl methacrylate	0.916
1634-04-4	Methyl tert butyl ether	1.000
75-09-2	Methylene chloride (Dichloromethane)	1.000
91-20-3	Naphthalene	0.994
98-95-3	Nitrobenzene	0.394
79-46-9	2-Nitropropane	0.989
82-68-8	Pentachloronitrobenzene (Quintobenzene)	0.839
87-86-5	Pentachlorophenol	0.0898
75-44-5	Phosgenec	1.000
123-38-6	Propionaldehyde	0.999
78-87-5	Propylene dichloride (1,2-Dichloropropane)	1.000
75-56-9	Propylene oxide	1.000
75-55-8	1,2-Propylenimine (2-Methyl aziridine)	0.945
100-42-5	Styrene	1.000
96-09-3	Styrene oxide	0.830
79-34-5	1,1,2,2-Tetrachloroethane	0.999

CAS No. <sup>a</sup>	Chemical name	fm 305
127-18-4	Tetrachloroethylene (Perchloroethylene)	1.000
108-88-3	Toluene	1.000
95-53-4	o-Toluidine	0.152
120-82-1	1,2,4-Trichlorobenzene	1.000
71-55-6	1,1,1-Trichloroethane (Methyl chlorform)	1.000
79-00-5	1,1,2-Trichloroethane (Vinyl trichloride)	1.000
79-01-6	Trichloroethylene	1.000
95-95-4	2,4,5-Trichlorophenol	0.108
88-06-2	2,4,6-Trichlorophenol	0.132
121-44-8	Triethylamine	1.000
540-84-1	2,2,4-Trimethylpentane	1.000
108-05-4	Vinyl acetate	1.000
593-60-2	Vinyl bromide	1.000
75-01-4	Vinyl chloride	1.000
75-35-4	Vinylidene chloride (1,1-Dichloroethylene)	1.000
1330-20-7	Xylenes (isomers and mixture)	1.000
95-47-6	o-Xylenes	1.000
108-38-3	m-Xylenes	1.000
106-42-3	p-Xylenes	1.000

Notes:

fm 305 = Method 305 fraction measure factor.

a. CAS numbers refer to the Chemical Abstracts Services registry number assigned to specific compounds, isomers, or mixtures of compounds.

b. Denotes a HAP that hydrolyzes quickly in water, but the hydrolysis products are also HAP chemicals.

c. Denotes a HAP that may react violently with water, exercise caustic is an expected analyte.

d. Denotes a HAP that hydrolyzes slowly in water.

e. The fm305 factors for some of the more common glycol ethers can be obtained by contacting the Waste and Chemical Processes Group, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711.

## Appendix 1-20d

### MSWLFs and Greenhouse Gas Calculations

(40 CFR 98, Tables HH-1 and HH-3)

[Added January 2010; Revised January 2011; Revised January 2014; Revised October 2017]

**Table HH-1: Emission Factors, Oxidation Factors, and Methods**

Factor	Default Value	Units
<b>DOC and k values – Bulk Waste Option</b>		
DOC (bulk waste)	0.20	Weight fraction, wet basis
k (precipitation plus recirculated leachate <sup>a</sup> < 20 in/yr)	0.02	yr <sup>-1</sup>
k (precipitation plus recirculated leachate <sup>a</sup> < 20 – 40 in/yr)	0.038	yr <sup>-1</sup>
k (precipitation plus recirculated leachate <sup>a</sup> > 40 in/yr)	0.057	yr <sup>-1</sup>
<b>DOC and k values – Modified bulk MSW option</b>		
DOC (bulk MSW, excluding inerts and C&D waste)	0.31	Weight fraction, wet basis
DOC (inerts, e.g., glass plastics, metal concrete)	0.00	Weight fraction, wet basis
DOC (C&D waste)	0.08	Weight fraction, wet basis
k (bulk MSW, excluding inerts and C&D waste)	0.02 to 0.057 <sup>b</sup>	yr <sup>-1</sup>
k (inerts, e.g., glass plastics, metal concrete)	0.00	yr <sup>-1</sup>
k (C&D waste)	0.02 to 0.04 <sup>b</sup>	yr <sup>-1</sup>
<b>DOC and k values –Waste Composition Option</b>		
DOC (food waste)	0.15	Weight fraction, wet basis
DOC (garden)	0.2	Weight fraction, wet basis
DOC (paper)	0.4	Weight fraction, wet basis
DOC (wood and straw)	0.43	Weight fraction, wet basis
DOC (textiles)	0.24	Weight fraction, wet basis

Factor	Default Value	Units
DOC (diapers)	0.24	Weight fraction, wet basis
DOC (sewage sludge)	0.05	Weight fraction, wet basis
DOC (inerts, e.g., glass, plastics, metal, cement)	0.00	Weight fraction, wet basis
k (food waste)	0.06 to 0.185 <sup>c</sup>	yr <sup>-1</sup>
k (garden)	0.05 to 0.10 <sup>c</sup>	yr <sup>-1</sup>
k (paper)	0.04 to 0.06 <sup>c</sup>	yr <sup>-1</sup>
k (wood and straw)	0.02 to 0.03 <sup>c</sup>	yr <sup>-1</sup>
k (textiles)	0.04 to 0.06 <sup>c</sup>	yr <sup>-1</sup>
k (diapers)	0.05 to 0.10 <sup>c</sup>	yr <sup>-1</sup>
k (sewage sludge)	0.06 to 0.185 <sup>c</sup>	yr <sup>-1</sup>
k (inerts, e.g., glass, plastics, metal, cement)	0.00	yr <sup>-1</sup>
<b>Other parameter – All MSW landfills</b>		
MCF	1.	
DOC <sub>f</sub>	0.5	
F	0.5	
OX	See text of Table HH-4	
DE	0.99	

<sup>a</sup> Recirculated leachate (in inches/year) is the total volume of leachate recirculated from company records or engineering estimates divided by the area of the portion of the landfill containing waste with appropriate unit conversions. Alternatively, landfills that use leachate recirculation can elect to use the k value of 0.057 rather than calculating the recirculated leachate rate.

<sup>b</sup> Use the lesser value when precipitation plus recirculated leachate is less than 20 in/yr. Use the greater value when precipitation plus recirculated leachate is greater than 40 in/yr. Use the average of the range of values when precipitation plus recirculated leachate is 20 to 40 in/yr (inclusive). Alternatively, landfills that use leachate recirculation can elect to use the greater value rather than calculating the recirculated leachate rate.

<sup>c</sup> Use the lesser value when the potential evapotranspiration rate exceeds the mean annual precipitation rate plus recirculated leachate. Use the greater value when the potential evapotranspiration rate does not exceed the mean annual precipitation rate plus recirculated leachate. Alternatively, landfills that use leachate recirculation can elect to use the greater value rather than assessing the potential evapotranspiration rate or recirculated leachate rate.

**Table HH-3: Landfill Gas Collection Efficiencies**

Description	Landfill Gas Collection Efficiency
A1: Area with no waste in-place	Not applicable; do not use this area in the calculation.
A2: Areas without active gas collection, regardless of cover type.	CE2: 0 percent
A3: Area with daily soil cover and active gas collection	CE3 = 60 percent
A4: Area with intermediate soil cover, or a final soil cover not meeting the criteria for A5 below, and active gas collection	CE4: 75 percent
A5: Area with a final soil cover of 3 ft or thicker and/or geomebrane cover system and active gas collection	CE5: 95 percent
Weighted average collection efficiency for landfills:	
Area weighted average collection efficiency for landfills	$CE_{ave1} = (A2*CE2 + A3*CE3 + A4*CE4 + A5*CE5) / (A2 + A3 + A4 + A5).$

## Appendix 1-20e

### Default CO<sub>2</sub> Emissions Factors and High Heat Values for Various Types of Fuel (40 CFR 98, Table C-1)

[Added January 2010; Revised January 2011; Revised January 2014; Revised January 2017]

Fuel Type	Default High Heat Value	Default CO <sub>2</sub> Emission Factor
<b>Coal and Coke</b>	<b>mmBtu/short ton</b>	<b>kg CO<sub>2</sub> /mmBtu</b>
Anthracite	25.09	103.69
Bituminous	24.93	93.28
Subbituminous	17.25	97.17
Lignite	14.21	97.72
Coke	24.80	113.67
Mixed (Commercial sector)	21.39	94.27
Mixed (Industrial coking)	26.28	93.90
Mixed (Industrial sector)	22.35	94.67
Mixed (Electric Power sector)	19.73	95.52
<b>Natural Gas</b>	<b>mmBtu/scf</b>	<b>kg CO<sub>2</sub> /mmBtu</b>
(Weighted U.S. Average)	1.028 x 10 <sup>-3</sup>	53.06
<b>Petroleum Products - Liquid</b>	<b>mmBtu/gallon</b>	<b>kg CO<sub>2</sub> /mmBtu</b>
Distillate Fuel Oil No. 1	0.139	73.25
Distillate Fuel Oil No. 2	0.138	73.96
Distillate Fuel Oil No. 4	0.146	75.04
Residual Fuel Oil No. 5	0.140	72.93
Residual Fuel Oil No. 6	0.150	75.10
Used Oil	0.138	74.00
Kerosene	0.135	75.20
Liquefied petroleum gases (LPG) <sup>1</sup>	0.092	61.71
Propane <sup>1</sup>	0.091	62.87
Propylene <sup>2</sup>	0.091	67.77
Ethane <sup>1</sup>	0.068	59.60
Ethanol	0.084	68.44
Ethylene <sup>2</sup>	0.058	65.96
Isobutane <sup>1</sup>	0.099	64.94
Isobutylene <sup>1</sup>	0.103	68.86
Butane <sup>1</sup>	0.103	64.77
Butylene <sup>1</sup>	0.105	68.72
Naphtha (<401 deg F)	0.125	68.02
Natural Gasoline	0.110	66.88
Other Oil (>401 deg F)	0.139	76.22
Pentanes Plus	0.110	70.02
Petrochemical Feedstocks	0.125	71.02
Special Naphtha	0.125	72.34
Unfinished Oils	0.139	74.54
Heavy Gas Oils	0.148	74.92
Lubricants	0.144	74.27

<b>Fuel Type</b>	<b>Default High Heat Value</b>	<b>Default CO<sub>2</sub> Emission Factor</b>
Motor Gasoline	0.125	70.22
Aviation Gasoline	0.120	69.25
Kerosene-Type Jet Fuel	0.135	72.22
Asphalt and Road Oil	0.158	75.36
Crude Oil	0.138	74.54
<b>Petroleum Products - Solid</b>	<b>mmBtu/short ton</b>	<b>kg CO<sub>2</sub> /mmBtu</b>
Petroleum coke	30	102.41
<b>Petroleum Products - Gaseous</b>	<b>mmBtu/scf</b>	<b>kg CO<sub>2</sub> /mmBtu</b>
<b>Petroleum Products - Liquid</b>	<b>mmBtu/gal</b>	<b>kg CO<sub>2</sub> /mmBtu</b>
Propane Gas	$2.516 \times 10^{-3}$	61.46
<b>Other Fuels-Solid</b>	<b>mmBtu/short ton</b>	<b>kg CO<sub>2</sub> /mmBtu</b>
Municipal Solid Waste	$9.95^3$	90.7
Tires	28.00	85.97
Plastics	38.00	75.00
<b>Other Fuels-Gaseous</b>	<b>mmBtu/scf</b>	<b>kg CO<sub>2</sub> /mmBtu</b>
Blast Furnace Gas	$0.092 \times 10^{-3}$	274.32
Coke Oven Gas	$0.599 \times 10^{-3}$	46.85
Fuel Gas <sup>4</sup>	$1.388 \times 10^{-3}$	59.00
<b>Biomass Fuels - Solid</b>	<b>mmBtu/short ton</b>	<b>kg CO<sub>2</sub> /mmBtu</b>
Wood and Wood Residuals (dry basis) <sup>5</sup>	17.48	93.80
Agricultural Byproducts	8.25	118.17
Peat	8.00	111.84
Solid Byproducts	10.39	105.51
<b>Biomass Fuels - Gaseous</b>	<b>mmBtu/scf</b>	<b>kg CO<sub>2</sub> /mmBtu</b>
Landfill Gas	$0.485 \times 10^{-3}$	52.07
Other Biomass Gases	$0.655 \times 10^{-3}$	52.07
<b>Biomass Fuels - Liquid</b>	<b>mmBtu/gallon</b>	<b>kg CO<sub>2</sub> /mmBtu</b>
Ethanol	0.084	68.44
Biodiesel (100%)	0.128	73.84
Rendered Animal Fat	0.125	71.06
Vegetable Oil	0.120	81.55

<sup>1</sup> The HHV for components of LPG determined at 60 °F and saturation pressure with the exception of ethylene.

<sup>2</sup> Ethylene HHV determined at 41 °F (5 °C) and saturation pressure.

<sup>3</sup> Use of this default HHV is allowed only for: (a) Units that combust MSW, do not generate steam, and are allowed to use Tier 1; (b) units that derive no more than 10 percent of their annual heat input from MSW and/or tires; and (c) small batch incinerators that combust no more than 1,000 tons of MSW per year.

<sup>4</sup> Reporters subject to subpart X of 40 CFR 98 that are complying with 40 CFR 98.243(d) or subpart Y of 40 CFR 98 may only use the default HHV and the default CO<sub>2</sub> emission factor for fuel gas combustion under the conditions prescribed in 40 CFR 98.243(d)(2)(i) and (d)(2)(ii) and 40 CFR 98.252(a)(1) and (a)(2), respectively. Otherwise, reporters subject to subpart X or subpart Y shall use either Tier 3(Equation C-5) or Tier 4.

<sup>5</sup> Use the following formula to calculate a wet basis HHV for use in Equation C-1:  $HHV_w = ((100 - M)/100) * HHV_d$  where  $HHV_w$  = wet basis HHV, M = moisture content (percent) and  $HHV_d$  = dry basis HHV from Table C-1.



## Appendix 1-21

### Engine Test Cell Emission Limitations (40 CFR 63, Subpart P, Table 1)

[Added July 2003]

<b>For each new or reconstructed affected source located at a major source facility that is used in whole or in part for testing . . .</b>	<b>You must meet one of the following emissions limitations:</b>
1. Internal combustion engines with rated power of 25 hp (19 kW) or more.	a. Limit the concentration of CO or THC to 20 ppmvd or less (corrected to 15 percent O <sub>2</sub> content); or b. Achieve a reduction in CO or THC of 96 percent or more between the inlet and outlet concentrations (corrected to 15 percent O <sub>2</sub> content) of the emission control device.



## Appendix 1-22

### Engine Test Cell Operating Limits (40 CFR 63, Subpart P, Table 2) [Added July 2003]

For the following device ...	You must meet the following operating limit ...	and you must demonstrate continuous compliance with the operating limit by .....
Thermal oxidizer.....	The average combustion temperature in any 3-h period must not fall below the combustion temperature limit established according to 40 CFR 63.9324(a).	Collecting the combustion temperature data according to 40 CFR 63.9306(c); Reducing the data to 3-h block averages; and Maintaining the 3-h average combustion temperature at or above the temperature limit.
Catalytic oxidizer.....	The average temperature measured just before the catalyst bed in any 3-h period must not fall below the limit established according to 40 CFR 63.9324(b).	Collecting the temperature data according to 40 CFR 63.9306(c); Reducing the data to 3-h block averages; and Maintaining the 3-h average temperature before the catalyst bed at or above the temperature limit.
	Either ensure that the average temperature difference across the catalyst bed in any 3-h period does not fall below the temperature difference limit established according to 40 CFR 63.9324(b)(2) or develop and implement an inspection and maintenance plan according to 40 CFR 63.9324(b)(3) and (4).	Either collecting the temperature data according to 40 CFR 63.9306(c), reducing the data to 3-h block averages, and maintaining the 3-h average temperature difference at or above the temperature difference limit; or Complying with the inspection and maintenance plan developed according to 40 CFR 63.9324(b)(3) and (4).
Emission capture system that is a PTE according to 40 CFR 63.9322(a).	The direction of the air flow at all times must be into the enclosure, and ...	Collecting the direction of air flow; and either the facial velocity of air through all natural draft openings according to 40 CFR 63.9306(d)(1) or the pressure drop across the enclosure according to 40 CFR 63.9306(d)(2); and Maintaining the facial velocity of air flow through all natural draft openings or the pressure drop at or above the facial velocity limit or pressure drop limit, and maintaining the

For the following device ...	You must meet the following operating limit ...	and you must demonstrate continuous compliance with the operating limit by .....
		direction of air flow into the enclosure at all times.
	The average facial velocity of air through all natural draft openings in the enclosure must be at least 200 ft/min; or	Follow the requirements in 3ai and 3aaii of this table.
	The pressure drop across the enclosure must be at least 0.007 in H <sub>2</sub> O as established in Method 204 of Appendix M of 40 CFR 51.	Follow the requirements in 3ai and 3aaii of this table.
Emission capture system that is not a PTE according to 40 CFR 63.9322(a).	The average gas volumetric flow rate or duct static pressure in each duct between a capture device and add-on control device inlet in any 3-h period must not fall below the average volumetric flow rate or duct static pressure limit established for that capture device according to 40 CFR 63.9306(d).	Collecting the gas volumetric flow rate or duct static pressure for each capture device according to 40 CFR 63.9306(d); Reducing the data to 3-h block averages; and Maintaining the 3-h average gas volumetric flow rate or duct static pressure for each capture device at or above the gas volumetric flow rate or duct static pressure limit.

## Appendix 1-23

### Engine Test Cell Requirements for Initial Compliance Demonstration (40 CFR 63, Subpart P P P P P, Table 3) [Added July 2003]

For each new or reconstructed affected source complying with . . .	You must . . .	Using . . .	According to the following requirements
1. The CO or THC outlet concentration emission limitation.	a. Demonstrate CO or THC emissions are 20 ppmvd or less.	i. EPA Methods 3A and 10 of appendix A to 40 CFR 60 for CO measurement or EPA Method 25A of appendix A to 40 CFR 60 for THC measurement; or	You must demonstrate that the outlet concentration of CO or THC emissions from the test cell/stand or emission control device is 20 ppmvd or less, corrected to 15 percent O <sub>2</sub> content, using the first 4-hour rolling average after a successful performance evaluation.
		ii. A CEMS for CO or THC and O <sub>2</sub> at the outlet of the engine test cell/stand or emission control device.	This demonstration is conducted immediately following a successful performance evaluation of the CEMS as required in 40 CFR 63.9320(b). The demonstration consists of the first 4-h rolling average of measurements. The CO or THC concentration must be corrected to 15 percent O <sub>2</sub> content, dry basis using Equation 1 in 40 CFR 63.9320.
2. The CO or THC percent reduction emission limitation.	a. Demonstrate a reduction in CO or THC of 96 percent or more.	i. You must conduct an initial performance test to determine the capture and control efficiencies of the equipment and to establish operating	You must demonstrate that the reduction in CO or THC emissions is at least 96 percent using the first 4-h rolling average after a

For each new or reconstructed affected source complying with . . .	You must . . .	Using . . .	According to the following requirements
		limits to be achieved on a continuous basis; or	successful performance evaluation. Your inlet and outlet measurements must be on a dry basis and corrected to 15 percent O <sub>2</sub> content.
		ii. A CEMS for CO or THC and O <sub>2</sub> at both the inlet and outlet of the emission control device.	This demonstration is conducted immediately following a successful performance evaluation of the CEMS as required in 40 CFR 63.9320(b). The demonstration consists of the first 4-h rolling average of measurements. The inlet and outlet CO or THC concentrations must be corrected to 15 percent O <sub>2</sub> content using Equation 1 in 40 CFR 63.9320. The reduction in CO or THC is calculated using Equation 2 in 40 CFR 63.9320.

## Appendix 1-24

### Engine Test Cell Continuous Compliance With Emissions Limitations (40 CFR 63, Subpart P, Table 5) [Added July 2003]

For the . . .	You must ...	By ...
1. CO or THC concentration emission limitation	a. Demonstrate CO or THC emissions are 20 ppmvd or less over each 4-h rolling averaging period.	i. Collecting the CPMS data according to 40 CFR 63.9306(a), reducing the measurements to 1-h averages; or ii. Collecting the CEMS data according to 40 CFR 63.9307(a), reducing the measurements to 1-h averages, correcting them to 15 percent O <sub>2</sub> content, dry basis, according to 40 CFR 63.9320;
2. CO or THC percent reduction emission limitation.	a. Demonstrate a reduction in CO or THC of 96 percent or more over each 4-h rolling averaging period.	i. Collecting the CPMS data according to 40 CFR 63.9306(a), reducing the measurements to 1-h averages; or ii. Collecting the CEMS data according to 40 CFR 63.9307(b), reducing the measurements to 1-h averages, correcting them to 15 percent O <sub>2</sub> content, dry basis, calculating the CO or THC percent reduction according to 40 CFR 63.9320.



## Appendix 1-25

### Engine Test Cell Requirements for Reports (40 CFR 63, Subpart P, Table 6) [Added July 2003]

If you own or operate a new or reconstructed affected source that must comply with emission	The report must contain . . .	You must submit the report . . .
<p>1. Compliance report .....</p>	<p>a. If there are no deviations from the emission limitations that apply to you, a statement that there were no deviations from the emission limitations during the reporting period.</p> <p>b. If there were no periods during which the CEMS or CPMS were out of control as specified in 40 CFR 63.8(c)(7), a statement that there were no periods during which the CEMS or CPMS was out of control during the reporting period.</p> <p>c. If you have a deviation from any emission limitation during the reporting period, the report must contain the information in 40 CFR 63.9350(c).</p> <p>d. If there were periods during which the CEMS or CPMS were out of control, as specified in 40 CFR 63.8(c)(7), that report must contain the information in 40 CFR 63.9350(d).</p> <p>e. If you had an SSM of a control device or associated monitoring equipment during the reporting period, the report must include the information in 40 CFR 63.10(d)(5)(i).</p>	<p>Semiannually, according to the requirements in 40 CFR 63.9350.</p> <p>Semiannually, according to the requirements in 40 CFR 63.9350.</p> <p>Semiannually, according to the requirements in 40 CFR 63.9350.</p> <p>Semiannually, according to the requirements in 40 CFR 63.9350.</p> <p>Semiannually, according to the requirements in 40 CFR 63.9350.</p>



## Appendix 1-26

### Compliance Schedule for Site Remediation Emission Limitations (40 CFR 63.7883) [Added April 2004]

Facility Type	Requirements	Compliance Date
Existing Affected Source*	Emission limitation, work practice standard, and operation and maintenance requirements.	9 October 2006
New affected sources that manage remediation material other than a radioactive mixed waste with an initial startup date on or before 8 October 2003.	Emission limitation, work practice standard, and operation and maintenance requirements.	8 October 2003
New affected sources that manages remediation material other than a radioactive mixed waste with an initial startup date after 8 October 2003.	Emission limitation, work practice standard, and operation and maintenance requirements.	Upon Initial Startup
New affected sources that manages remediation material that is a radioactive mixed waste with an initial startup date is on or before 8 October 2003	Emission limitation, work practice standard, and operation and maintenance requirements.	9 October 2006
New affected sources that manages remediation material that is a radioactive mixed waste with an initial startup date after 8 October 2003.	Emission limitation, work practice standard, and operation and maintenance requirements.	Upon Initial Startup
The facility is an area source that increases its emissions or its potential to emit such that it becomes a major source of HAP, for each source at the facility that is a new affected source.	Emission limitation, work practice standard, and operation and maintenance requirements.	Upon Initial Startup
The facility is an area source that increases its emissions or its potential to emit such that it becomes a major source of HAP, for all other affected sources.	Emission limitation, work practice standard, and operation and maintenance requirements.	No later than 3 yr after the facility becomes a major source.

- Affected Site Remediation Sources are:

1. Process vents. The affected source is the entire group of process vents associated with the in-situ and ex-situ remediation processes used at your site to remove, destroy, degrade, transform, or immobilize hazardous substances in the remediation material subject to remediation. Examples of such in-situ

remediation processes include, but are not limited to, soil vapor extraction and bioremediation processes. Examples of such ex-situ remediation processes include but are not limited to, thermal desorption, bioremediation, and air stripping processes.

2. Remediation material management units. Remediation material management unit means a tank, surface impoundment, container, oil-water separator, organic-water separator, or transfer system, as defined in 40 CFR 63.7957(see definitions) and is used at the site to manage remediation material. The affected source is the entire group of remediation material management units used for the site remediations at the site. For the purpose of 40 CFR 63, Subpart GGGGG [40 CFR 63.7880 through 63.7957, see checklist items AE.300.1.US through AE.300.12.US], a tank or container that is also equipped with a vent that serves as a process vent, as defined in 40 CFR 63.7957, is not a remediation material management unit, but instead this unit is considered to be a process vent affected source under paragraph 1.
3. Equipment leaks. The affected source is the entire group of equipment components (pumps, valves, etc.) used to manage remediation materials and meeting both of the following conditions. If either of these conditions do not apply to an equipment component, then that component is not part of the affected source for equipment leaks.
  - a. The equipment component contains or contacts remediation material having a concentration of total HAP listed in Table 1 of this 40 CFR 63, Subpart GGGG (Appendix 1-27) equal to or greater than 10 percent by weight.
  - b. The equipment component is intended to operate for 300 h or more during a calendar year in remediation material service, as defined in 40 CFR 63.7957.

## Appendix 1-27

### List of Hazardous Air Pollutants (40 CFR 63, Table 1 to Subpart GGGGG) [Added April 2004; Revised January 2007]

CA NO. a	Compound Name	fm305
75070	Acetaldehyde	1.000
75058	Acetonitrile	0.989
98862	Acetophenone	0.314
107028	Acrolein	1.000
107131	Acrylonitrile	0.999
107051	Allyl chloride	1.000
71432	Benzene (includes benzene in gasoline)	1.000
98077	Benzotrichloride (isomers and mixture)	0.958
100447	Benzyl chloride	1.000
92524	Biphenyl	0.864
542881	Bis(chloromethyl)ether b	0.999
75252	Bromoform	0.998
106990	1,3-Butadiene	1.000
75150	Carbon disulfide	1.000
56235	Carbon Tetrachloride	1.000
43581	Carbonyl sulfide	1.000
133904	Chloramben	0.633
108907	Chlorobenzene	1.000
67663	Chloroform	1.000
107302	Chloromethyl methyl ether b	1.000
126998	Chloroprene	1.000
98828	Cumene	1.000
94757	2,4-D, salts and esters	0.167
334883	Diazomethane c	0.999

CA NO. a	Compound Name	fm305
132649	Dibenzofurans	0.967
96128	B1,2-Dibromo-3-chloropropane	1.000
106467	1,4-Dichlorobenzene(p)	1.000
107062	Dichloroethane (Ethylene dichloride)	1.000
111444	Dichloroethyl ether (Bis(2-chloroethylether)).	0.757
542756	1,3-Dichloropropene	1.000
79447	Dimethyl carbamoyl chloridec	0.150
77781	Dimethyl sulfate	0.086
121697	N,N-Dimethylaniline	0.0008
51285	2,4-Dinitrophenol	0.0077
121142	2,4-Dinitrotoluene	0.0848
121142	2,4-Dinitrotoluene	0.0848
123911	1,4-Dioxane (1,4-Diethyleneoxide)	0.869
106898	Epichlorohydrin (1-Chloro-2,3-epoxypropane)	0.939
106887	1,2-Epoxybutane	1.000
140885	Ethyl acrylate	1.000
100414	Ethyl benzene	1.000
75003	Ethyl chloride (Chloroethane)	1.000
106934	Ethylene dibromide (Dibromoethane)	0.999
107062	Ethylene dichloride (1,2-Dichloroethane)	1.000
151564	Ethylene imine (Aziridine)	0.867
75218	Ethylene oxide	1.000
75343	Ethylidene dichloride (1,1-Dichloroethane). Glycol ethersd that have a Henry's Law (e) constant value equal to or greater than 0.1 Y/X(1.8 x 10 <sup>-6</sup> atm/gm-mole/m <sup>3</sup> ) at 25 °C.	1.000
118741	Hexachlorobenzene	0.97
87683	Hexachlorobutadiene	0.88
67721	Hexachloroethane	0.499

CA NO. a	Compound Name	fm305
110543	Hexane	1.000
78591	Isophorone	0.506
58899	Lindane (all isomers)	1.000
67561	Methanol	0.855
74839	Methyl bromide (Bromomethane)	1.000
74873	Methyl chloride (Chloromethane)	1.000
71556	Methyl chloroform (1,1,1-Trichloroethane)	1.000
78933	Methyl ethyl ketone (2-Butanone)	0.990
74884	Methyl iodide (Iodomethane)	1.000
108101	Methyl isobutyl ketone (Hexone)	0.979
624839	Methyl isocyanate	1.000
80626	Methyl methacrylate	0.999
1634044	Methyl tert butyl ether	1.000
75092	Methylene chloride (Dichloromethane)	1.000
91203	Naphthalene	0.994
98953	Nitrobenzene	0.394
79469	2-Nitropropane	0.989
82688	Pentachloronitrobenzene (Quintobenzene)	0.839
87865	Pentachlorophenol	0.0898
75445	Phosgenec	1.000
123386	Propionaldehyde	0.999
78875	Propylene dichloride (1,2-Dichloropropane)	1.000
75569	Propylene oxide	1.000
75558	1,2-Propylenimine (2-Methyl aziridine)	0.945
100425	Styrene	1.000
96093	Styrene oxide	0.830
79345	1,1,2,2-Tetrachloroethane	0.999

CA NO. a	Compound Name	fm305
127184	Tetrachloroethylene (Perchloroethylene)	1.000
108883	Toluene	1.000
95534	o-Toluidine	0.152
120821	1,2,4-Trichlorobenzene	1.000
71556	1,1,1-Trichloroethane (Methyl chloroform)	1.000
79005	1,1,2-Trichloroethane (Vinyl trichloride)	1.000
79016	Trichloroethylene	1.000
95954	2,4,5-Trichlorophenol	0.0108
88062	2,4,6-Trichlorophenol	0.0132
121448	Triethylamine	1.000
540841	2,2,4-Trimethylpentane	1.000
108054	Vinyl acetate	1.000
593602	Vinyl bromide	1.000
75014	Vinyl chloride	1.000
75354	Vinylidene chloride (1,1-Dichloroethylene)	1.000
1330207	Xylenes (isomers and mixture)	1.000
95476	o-Xylenes	1.000
108383	m-Xylenes	1.000
106423	p-Xylenes	1.000

1. fm305 = Fraction measure factor in Method 305, 40 CFR 63, appendix A.

a CAS numbers refer to the Chemical Abstracts Services registry number assigned to specific compounds, isomers, or mixtures of compounds.

b Denotes a HAP that hydrolyzes quickly in water, but the hydrolysis products are also HAP chemicals.

c Denotes a HAP that may react violently with water.

d Denotes a HAP that hydrolyzes slowly in water.

e The fm305 factors for some of the more common glycol ethers can be obtained by contacting the Waste and Chemical Processes Group, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711.

## Appendix 1-28

### Emission and Operating Limitations for Existing, New, and Reconstructed Spark Ignition, 4SRB Stationary RICE >500 HP Located at a Major Source of HAP Emissions (40 CFR 63, Table 1a and 1b to Subpart ZZZZ)

[Added July 2004; Revised April 2008, Revised April 2010, Revised October 2010, Revised April 2011;  
Revised April 2013]

**Table 1a**

Owners/operators must comply with the following emission limitations at 100 percent load plus or minus 10 percent for existing, new and reconstructed 4SRB stationary RICE > 500 HP located at a major source of HAP emissions:

For each:	You must meet one of the following emission limitations:	During periods of startup you must
1. 4SRB RICE	a. Reduce formaldehyde emissions by 76 percent or more. If construction or reconstruction started between 19 December 2002 and 15 June 2004, you may reduce formaldehyde emissions by 75 percent or more until June 15, 2007, or	Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 min, after which time the non-startup emission limitations apply. <sup>1</sup>
	b. Limit the concentration of formaldehyde in the stationary RICE exhaust to 350 ppbvd or less at 15 percent O <sub>2</sub> .	

<sup>1</sup> Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.6(g) for alternative work practices.

**Table 1b**

Owners/operators must comply with the following operating limitations for existing, new, and reconstructed 4SRB stationary RICE > 500 HP located at a major source of HAP emissions.

For each:	Meet one of the following operating limitations:
1. existing, new, and reconstructed 4SRB stationary RICE > 500 HAP located at a major source of HAP emissions complying with the requirement to reduce formaldehyde emissions by 76 percent or more (or by 75 percent or more, if applicable) and using NSCR; or existing, new, and reconstructed 4SRB stationary RICE > 500 HAP located at a major source of HAP emissions complying with the requirement to limit the concentration of formaldehyde in the stationary RICE exhaust to 350 ppbvd or less at 15 percent O <sub>2</sub> and using NSCR;	<p>a. Maintain the catalyst so that the pressure drop across the catalyst does not change by more than 2 in of water at 100 percent load plus or minus 10 percent from the pressure drop across the catalyst measured during the initial performance test; and</p> <p>b. Maintain the temperature of the stationary RICE exhaust so the catalyst inlet temperature is greater than or equal to 750° F and less than or equal to 1250° F.<sup>1</sup></p>

<p>2. existing, new, and reconstructed 4SRB stationary RICE &gt; 500 HAP located at a major source of HAP emissions complying with the requirement to reduce formaldehyde emissions by 76 percent or more (or by 75 percent if applicable) and not using NSCR; or</p> <p>existing, new, and reconstructed 4SRB stationary RICE &gt; 500 HAP located at a major source of HAP emissions complying with the requirement to limit the concentration of formaldehyde in the stationary RICE exhaust to 350 ppbvd or less at 15 percent O<sub>2</sub> and not using NSCR.</p>	<p>Comply with any operating limitations approved by the Administrator.</p>
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<sup>1</sup> Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.8(f) for a different temperature range.

## Appendix 1-29

### Emission and Operating Limitations for New and Reconstructed 2SLB and Compression Ignition Stationary RICE >500 HP and 4SLB Stationary RICE >=250 HP Located at a Major Source of HAP Emissions (40 CFR 63, Table 2a and 2b to Subpart ZZZZ)

[Added July 2004; Revised April 2008; Revised April 2010, Revised October 2010, Revised April 2011;  
Revised April 2013]

**Table 2a**

Owners/operators must comply with the following emission limitations for new and reconstructed lean burn and new and reconstructed compression ignition stationary RICE at 100 percent load plus or minus 10 percent:

For each:	Meet one of the following emission limitations:	During periods of startup you must
1. 2SLB stationary RICE	a. Reduce CO emissions by 58 percent or more; or b. Limit concentration of formaldehyde in the stationary RICE exhaust to 12 ppmvd or less at 15 percent O <sub>2</sub> . If construction or reconstruction started between 19 December 2002 and 15 June 2004, the concentration of formaldehyde may be limited to 17 ppmvd or less at 15 percent O <sub>2</sub> until 15 June 2007.	Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 min, after which time the non-startup emission limitations apply. <sup>1</sup>
2. 4SLB stationary RICE	a. Reduce CO emissions by 93 percent or more; or b. Limit concentration of formaldehyde in the stationary RICE exhaust to 14 ppmvd or less at 15 percent O <sub>2</sub> .	
3. CI stationary RICE	a. Reduce CO emissions by 70 percent or more; or b. Limit concentration of formaldehyde in the stationary RICE exhaust to 580 ppbvd or less at 15 percent O <sub>2</sub> .	

<sup>1</sup> Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.6(g) for alternative work practices.

**Table 2b**

Owners/operators must comply with the following operating limitations for new and reconstructed 2SLB and compression ignition (CI) stationary RICE > 500 located at a major source of HAP emissions; new and reconstructed 4SLB stationary RICE  $\geq$  250 HP located at a major source of HAP emissions; existing CI stationary RICE > 500 HP:

<b>For each:</b>	<b>Meet one of the following emission limitations:</b>
<p>1. New and reconstructed 2SLB and CI stationary RICE &gt;500 HP located at a major source of HAP emissions and new and reconstructed 4SLB stationary RICE <math>\geq</math>250 HP located at a major source of HAP emissions complying with the requirement to reduce CO emissions and using an oxidation catalyst; and</p> <p>New and reconstructed 2SLB and CI stationary RICE &gt;500 HP located at a major source of HAP emissions and new and reconstructed 4SLB stationary RICE <math>\geq</math>250 HP located at a major source of HAP emissions complying with requirement to limit the concentration of formaldehyde in the stationary RICE exhaust and using an oxidation catalyst.</p>	<p>a. Maintain the catalyst so that the pressure drop across the catalyst does not change by more than 2 in of water at 100 percent load plus or minus 10 percent from the pressure drop across the catalyst that was measured during the initial performance test; and</p> <p>b. Maintain the temperature of the stationary RICE exhaust so that the catalyst inlet temperature is greater than or equal to 450°F and less than or equal to 1350°F.<sup>1</sup></p>
<p>2. Existing stationary RICE &gt; 500 HP complying with the requirement to limit or reduce the concentration of CO in the stationary RICE exhaust and using an oxidation catalyst.</p>	<p>a. Maintain the catalyst so that the pressure drop across the catalyst does not change by more than 2 in of water at 100 percent load plus or minus 10 percent from the pressure drop across the catalyst that was measured during the initial performance test; and</p> <p>b. Maintain the temperature of the stationary RICE exhaust so that the catalyst inlet temperature is greater than or equal to 450°F and less than or equal to 1350°F.</p>
<p>3. New and reconstructed 2SLB CI stationary RICE &gt; 500 HP located at a major source of HAP emissions and new and reconstructed 2SLB stationary RICE <math>\geq</math> 250 HP located at a major source of HAP emissions complying with the requirement to reduce CO emissions and not using an oxidation catalyst; or</p> <p>New and reconstructed 2SLB CI stationary RICE &gt; 500 HP located at a major source of HAP emissions and new and reconstructed 2SLB stationary RICE <math>\geq</math> 250 HP located at a major source of HAP emissions complying with the requirement to limit the concentration of formaldehyde in the</p>	<p>Comply with any operating limitations approved by the Administrator.</p>

<p>stationary RICE exhaust and not using an oxidation catalyst; and</p> <p>Existing CI stationary RICE &gt; 500 HP complying with the requirement to limit the concentration of CO in the stationary RICE exhaust and not using an oxidation catalyst.</p>	
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<sup>1</sup> Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.6(g) for alternative work practices.



## Appendix 1-29a

### Emission and Operating Limits for Existing Compression Ignition (CI) Stationary RICE Located at Major Sources of HAP Emissions

(40 CFR 63, Table 2c and 2d to Subpart ZZZZ)

[Added April 2010, Revised October 2010; Revised April 2013]

**Table 2c: Requirements for Existing Compression Ignition Stationary RICE Located at a Major Source of HAP Emissions and Existing Spark Ignition Stationary RICE  $\leq$  500 HP Located at a Major Source of HAP Emissions**

For each:	Meet one of the following emission limitations:	During periods of startup you must
1. Emergency stationary CI RICE and black start stationary CI RICE <sup>1</sup>	a. Change oil and filter every 500 h of operation or annually, whichever comes first; <sup>2</sup> b. Inspect air cleaner every 1,000 h of operation or annually, whichever comes first, and replace as necessary c. Inspect all hoses and belts every 500 h of operation or annually, whichever comes first, and replace as necessary. <sup>3</sup>	Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 min, after which time the non-startup emission limitations apply. <sup>3</sup>
2. Non-emergency, non-black start stationary CI RICE $< 100$ HP	a. Change oil and filter every 1,000 h of operation or annually, whichever comes first; <sup>2</sup> b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary. <sup>3</sup>	
3. Non-emergency, non-black start CI stationary RICE 100 $\leq$ HP $\leq$ 300 HP	Limit concentration of CO in the stationary RICE exhaust to 230 ppmvd or less at 15 percent O <sub>2</sub> .	
4. Non-emergency, non-black start CI stationary RICE 300	a. Limit concentration of CO in the stationary RICE exhaust to 49 ppmvd or less at 15 percent O <sub>2</sub> . b. Reduce CO emissions by 70 percent or more.	
5. Non-Emergency. Non-black start stationary CI RICE $> 500$ HP	a. Limit concentration of CO in the stationary RICE exhaust to 23 ppmvd or less at 15 percent O <sub>2</sub> . b. Reduce CO emissions by 70 percent or more.	
6. Emergency stationary SI RICE and black start stationary SI RICE <sup>1</sup>	a. Change oil and filter every 500 hours of operation or annually, whichever comes first; <sup>2</sup> b. Inspect spark plugs every 1,000 hours of operation or annually, whichever comes first, and replace as necessary	

For each:	Meet one of the following emission limitations:	During periods of startup you must
	Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary. <sup>3</sup>	
7. Non-Emergency, non-black start stationary SI RICE < 100 HP that are not 2SLB stationary RICE.	a. Change oil and filter every 1,440 h of operation or annually, whichever comes first; <sup>2</sup>	
	b. Inspect spark plugs every 1,440 h of operation or annually, whichever comes first, and replace as necessary	
	c. Inspect all hoses and belts every 1,440 h of operation or annually, whichever comes first, and replace as necessary. <sup>3</sup>	
8. Non-Emergency, non-black start 2SLB stationary SI RICE < 100 HP.	a. Change oil and filter every 4,320 h of operation or annually, whichever comes first; <sup>2</sup>	
	b. Inspect spark plugs every 4,320 h of operation or annually, whichever comes first, and replace as necessary	
	c. Inspect all hoses and belts every 4,320 hours of operation or annually, whichever comes first, and replace as necessary. <sup>3</sup>	
9. Non-emergency, non-black start 2SLB stationary RICE 100 <= HP <=500.	Limit concentration of CO in the stationary RICE exhaust to 225 ppmvd or less at 15 percent O <sub>2</sub> .	
10. Non-emergency, non-black start 4SLB stationary RICE 100 <= HP <= 500.	Limit concentration of CO in the stationary RICE exhaust to 47 ppmvd or less at 15 percent O <sub>2</sub> .	
11. Non-emergency, non-black start 4SRB stationary RICE 100 <= HP <= 500	Limit concentration of formaldehyde in the stationary RICE exhaust to 10.3 ppmvd or less at 15 percent O <sub>2</sub> .	
12. Non-emergency, non-black start stationary RICE 100 <= HP <= 500 which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis.	Limit concentration of CO in the stationary RICE exhaust to 177 ppmvd or less at 15 percent O <sub>2</sub> .	

<sup>1</sup> If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the work practice requirements on the schedule required in Table 2c of 40 CFR 63, Subpart ZZZZ, or if

performing the work practice on the required schedule would otherwise pose an unacceptable risk under Federal, State, or local law, the work practice can be delayed until the emergency is over or the unacceptable risk under Federal, State, or local law has abated. The work practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under Federal, State, or local law has abated. Sources must report any failure to perform the work practice on the schedule required and the Federal, State or local law under which the risk was deemed unacceptable.

<sup>2</sup> Sources have the option to utilize an oil analysis program as described in 40 CFR 63.6625(i) in order to extend the specified oil change requirement in Table 2c.

<sup>3</sup> Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.6(g) for alternative work practices.

**Table 2d**

For each:	Meet one of the following emission limitations:	During periods of startup you must
1. Non-emergency, non-black start CI stationary RICE $\leq$ 300 HP	a. Change oil and filter every 1000 h of operation or annually, whichever comes first; <sup>1</sup> b. Inspect air cleaner every 1000 h of operation or annually, whichever comes first, and replace as necessary c. Inspect all hoses and belts every 500 h of operation or annually whichever comes first, and replace as necessary.	Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 min, after which time the non-startup emission limitations apply.
2. Non-emergency, non-black start CI stationary RICE 300 < HP $\leq$ 500	a. Limit concentration of CO in the stationary RICE exhaust to 23 ppmvd at 15 percent O <sub>2</sub> ; or b. Reduce CO emissions by 70 percent or more.	
3. Non-emergency, non-black start CI stationary RICE > 500 HP	a. Limit concentration of CO in the stationary RICE exhaust to 23 ppmvd at 15 percent O <sub>2</sub> ; or b. Reduce CO emissions by 70 percent or more.	
4. Emergency stationary CI RICE and black start stationary CI RICE. <sup>2</sup>	a. Change oil and filter every 500 h of operation or annually, whichever comes first; <sup>1</sup> b. Inspect air cleaner every 1,000 h of operation or annually, whichever comes first, and replace as necessary; c. Inspect all hoses and belts every 500 h of operation or annually, whichever comes first, and replace as necessary.	
5. Emergency stationary SI RICE; black start stationary SI RICE; non-emergency, non-black start 4SLB stationary RICE > 500 HP that operate 24 h or less per calendar year; non-emergency, non-black start 4SRB stationary RICE > 500 HP that operate 24 h or less per calendar year. <sup>2</sup>	a. Change oil and filter every 500 h of operation or annually, whichever comes first; <sup>1</sup> b. Inspect spark plugs every 1,000 h of operation or annually, whichever comes first, and replace as necessary; c. Inspect all hoses and belts every 500 h of operation or annually, whichever comes first, and replace as necessary.	

For each:	Meet one of the following emission limitations:	During periods of startup you must
6. Non-emergency, non-black start 2SLB stationary RICE	a. Change oil and filter every 4,320 h of operation or annually, whichever comes first; <sup>1</sup> b. Inspect spark plugs every 4,320 h of operation or annually, whichever comes first, and replace as necessary c. Inspect all hoses and belts every 4,320 h of operation or annually, whichever comes first, and replace as necessary.	
7. Non-emergency, non-black start 4SLB stationary <= 500 HP	a. Change oil and filter every 1,440 h of operation or annually, whichever comes first; <sup>1</sup> b. Inspect spark plugs every 1,440 h of operation or annually, whichever comes first, and replace as necessary; c. Inspect all hoses and belts every 1,440 h of operation or annually, whichever comes first, and replace as necessary.	
8. Non-emergency, non-black start 4SLB remote stationary RICE > 500 HP	a. Change oil and filter every 2,160 h of operation or annually, whichever comes first; <sup>1</sup> b. Inspect spark plugs every 2,160 h of operation or annually, whichever comes first, and replace as necessary; c. Inspect all hoses and belts every 2,160 h of operation or annually, whichever comes first, and replace as necessary.	
9. Non-emergency, non-black start 4SLB stationary RICE > 500 HP that are not remote stationary RICE and that operate more than 24 h per calendar year	Install an oxidation catalyst to reduce HAP emissions from the stationary RICE	
10. Non-emergency, non-black start 4SRB stationary RICE <= 500 HP.	a. Change oil and filter every 1,440 h of operation or annually, whichever comes first; <sup>1</sup> b. Inspect spark plugs every 1,440 h of operation or annually, whichever comes first, and replace as necessary c. Inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first, and replace as necessary.	
11. Non-emergency, non-black start 4SRB remote stationary RICE > 500 HP	a. Change oil and filter every 2,160 h of operation or annually, whichever comes first; <sup>1</sup> b. Inspect spark plugs every 2,160 h of operation or annually, whichever comes first; and c. Inspect all hoses and belts every 2,160 hours of operation or annually, whichever comes first, and replace as necessary.	

For each:	Meet one of the following emission limitations:	During periods of startup you must
12. Non-emergency, non-black start 4SRB stationary RICE > 500 HP that are not remote stationary RICE and that operate more than 24 h per calendar year.	Install NSCR to reduce HAP emission from the stationary RICE.	
13. Non-emergency, non-black start stationary RICE which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis.	a. Change oil and filter every 1,440 h of operation or annually, whichever comes first; <sup>1</sup>	
	b. Inspect spark plugs every 1,440 h of operation or annually, whichever comes first, and replace as necessary	
	c. Inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first, and replace as necessary.	

<sup>1</sup> Sources have the option to utilize an oil analysis program as described in 40 CFR 63.6625(i) in order to extend the specified oil change requirement in Table 2d above.

<sup>2</sup> If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the management practice requirements on the schedule required in Table 2d above, or if performing the management practice on the required schedule would otherwise pose an unacceptable risk under Federal, State, or local law, the management practice can be delayed until the emergency is over or the unacceptable risk under Federal, State, or local law has abated. The management practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under Federal, State, or local law has abated. Sources must report any failure to perform the management practice on the schedule required and the Federal, State or local law under which the risk was deemed unacceptable.



## Appendix 1-30

### Requirements for Performance Tests (40 CFR 63, Subpart ZZZZ, Table 4)

[Added July 2004; Revised April 2008; Revised April 2010, Revised October 2010; Revised April 2013]

For each. .	Complying with the requirement to...	You must. . .	Using . . .	According to the following requirements . . .
1. 2SLB, 4SLB, and CI RICE.	a. Reduce CO emissions	i. Measure the O <sub>2</sub> at the inlet and outlet of the control device; and	(1) Method 3 or 3A of 40 CFR 60, appendix A or ASTM D6522-00 (Reapproved 2005) <sup>a, c</sup>	(a) Measurements to determine O <sub>2</sub> concentration must be made at the same time as the measurements for CO concentration.
		ii. Measure the CO at the inlet and the outlet of the control device.	(1) ASTM D6522-00 (Reapproved 2005) <sup>a, b, c</sup> or Method 10 of 40 CFR 60, appendix A	(a) The CO concentration must be at 15 percent O <sub>2</sub> , dry basis.
2. 4SRB stationary RICE	a. Reduce formaldehyde emissions.	i. Select sampling port location and the number of traverse points, and	(1) Method 1 or 1A of 40 CFR 60 appendix A, 40 CFR 63.7(d)(1)(i).	(a) Sampling sites must be located at the inlet and outlet of the control device.
		ii. Measure O <sub>2</sub> at the inlet and outlet of the control device; and	(1) Method 3 or 3A or 3B of 40 CFR 60, appendix A of ASTM Method D6522-00 (Reapproved 2005). <sup>a</sup>	(a) Measurements to determine O <sub>2</sub> concentration must be made at the same time as the measurements for formaldehyde or THC concentration.
		iii. Measure moisture content at the inlet and outlet of the control device; and	(1) Method 4 of 40 CFR 60, appendix A, or Test Method 320 of 40 CFR 63, appendix A or ASTM D 6348-03. <sup>a</sup>	(a) Measurements to determine moisture content must be made at the same time and location as the measurements for formaldehyde or THC concentration.

For each. .	Complying with the requirement to...	You must. . .	Using . . .	According to the following requirements . . .
		iv. If demonstrating compliance with the formaldehyde percent reduction requirement, measure formaldehyde at the inlet and the outlet of the control device.	(1) Method 320 or 323 of 40 CFR 63, appendix A; or ASTM D6348-03 <sup>a</sup> , provided in ASTM D6348-03 Annex A5 (Analyte Spiking Technique), the percent R must be $\geq 70$ and $\leq 130$ .	(a) Formaldehyde concentration must be at 15 percent O <sub>2</sub> , dry basis. Results of this test consist of the average of the 3, 1-h or longer runs.
		v. If demonstrating compliance with the THC percent reduction requirement, measure THC at the inlet and the outlet of the control device.	(1) Method 25A, reported as propane, of 40 CFR 60, appendix A	(a) THC concentration must be at 15 percent O <sub>2</sub> , dry basis. Results of this test consist of the average of the three 1-h or longer runs.
3. Stationary RICE	a. Limit the concentration of formaldehyde or CO in the stationary RICE exhaust.	i. Select the sampling port location and the number of traverse points; and	(1) Method 1 or 1A of 40 CFR 60, appendix A 40 CFR 63.7(d)(1)(i).	(a) If using a control device, the sampling site must be located at the outlet of the control device.
		ii. Determine the O <sub>2</sub> concentration of the stationary RICE exhaust at the sampling port location; and	(1) Method 3 or 3A or 3B of 40 CFR 60, appendix A, or ASTM Method D6522-00 (Reapproved 2005) <sup>a</sup> .	(a) Measurements to determine O <sub>2</sub> concentration must be made at the same time and location as the measurements for formaldehyde or CO concentration
		iii. Measure moisture content of the stationary RICE exhaust at the sampling port location; and	(1) Method 4 of 40 CFR 60, appendix A, or Test Method 320 of 40 CFR 63, appendix A or ASTM D 6348-03. <sup>a</sup>	(a) Measurements to determine moisture content must be made at the same time and location as the measurements for formaldehyde or CO concentration.
		iv. Measure formaldehyde at the exhaust of the stationary RICE; or	(1) Method 320 or 323 of 40 CFR 63, appendix A; or ASTM D6348-03 <sup>a</sup> , provided in	(a) Formaldehyde concentration must be at 15 percent O <sub>2</sub> , dry basis. Results of this test consist of the

For each. .	Complying with the requirement to...	You must. . .	Using . . .	According to the following requirements . . .
			ASTM D6348-03 Annex A5 (Analyte Spiking Technique), the percent R must be $\geq$ to 70 and $\leq$ to 130.	average of the 3, 1-h or longer runs.
		v. Measure CO at the exhaust of the stationary RICE.	Method 10 of 40 CFR 60, appendix A. ASTM Method D6522-00 (2005) <sup>a</sup> , Method 320 of 40 CFR 63, appendix A, or ASTM D6348-03 <sup>a</sup> .	CO concentration must be at 15 percent O <sub>2</sub> , dry basis. Results of this test consist of the average of the 3, 1-h longer runs.

<sup>a</sup> Incorporated by reference, see 40 CFR 63.14.

<sup>b</sup> You may also use Method 320 of 40 CFR part 63, appendix A, or ASTM D6348-03.

<sup>c</sup> ASTM-D6522-00 (2005) may be used to test both CI and SI stationary RICE.



## Appendix 1-31

### Subsequent Performance Tests (40 CFR 63, Subpart ZZZZ Table 3)

[Added July 2004; Revised April 2010, Revised October 2010; Revised April 2013]

For Each.....	Complying with the Requirement To...	The Facility Must . . .
1. New or reconstructed 2SLB stationary RICE > 500 HP located at major sources; new or reconstructed 4SLB stationary RICE $\geq$ 250 HP located at major sources; and new or reconstructed CI stationary RICE > 500 HP located at major sources.	Reduce CO emissions and not using a CEMS.	Conduct subsequent performance tests semiannually. <sup>1</sup>
2. 4SRB stationary RICE $\geq$ 5,000 HP located at major sources.	Reduce formaldehyde emissions.	Conduct subsequent performance tests semiannually. <sup>1</sup>
3. Stationary RICE > 500 HP located at major sources and new or reconstructed 4SLB stationary RICE 250 $\leq$ HP $\leq$ 500 located at a major source.	Limit the concentration of formaldehyde in the stationary RICE exhaust.	Conduct subsequent performance tests semiannually. <sup>1</sup>
4. Existing non-emergency, non-black start CI stationary RICE > 500 HP that are not limited use stationary RICE.	Limit or reduce CO or formaldehyde emissions	Conduct subsequent performance tests every 8,760 h or every 3 yr, whichever comes first.
5. Existing non-emergency, non-black start CI stationary RICE > 500 HP that are limited use stationary RICE.	Limit or reduce CO or formaldehyde emission.	Conduct subsequent performance tests every 8,760 h or every 5 yr, whichever comes first.

<sup>1</sup> After demonstrating compliance for two consecutive tests, the facility may reduce the frequency of subsequent performance tests to annually. If the results of any subsequent annual performance test indicate the stationary RICE is not in compliance with the CO or formaldehyde emission limitation, or the facility deviates from any of the operating limitations, semiannual performance tests must be resumed.



## Appendix 1-32

### Requirements for Reports (40 CFR 63, Subpart ZZZZ, Table 7)

[Added July 2004; Revised April 2010, Revised October 2010; Revised April 2013]

For each:	You must submit a(n)	The report must contain. .	You must submit the report . . .
1. Existing non-emergency, non-black start stationary RICE $\leq$ 100 $\leq$ HP $\leq$ 500 located at a major source of HAP; existing non-emergency, non-black start stationary CI RICE $>$ 500 HP located at a major source of HAP; existing non-emergency, 4SRB stationary RICE $>$ 500 HP located at a major source of HAP; existing non-emergency, non black start stationary CI RICE $>$ 300 HP located at an area source of HAP; new or reconstructed non-emergency stationary RICE $>$ 500 HP located at a major source of HAP; and new or reconstructed non-emergency 4SLB stationary RICE $250 \leq$ HP $\leq$ 500 located at a major source of HAP.	Compliance report	<p>a. If there are no deviations from any emission limitations or operating limitations that apply to you, a statement that there were no deviations from the emission limitations or operating limitations during the reporting period. If there were no periods during which the CMS, including CEMS and CPMS, was out-of-control, as specified in 40 CFR 63.8(c)(7), a statement that there were not periods during which the CMS was out-of-control during the reporting period; or</p> <p>b. If you had a deviation from any emission limitation or operating limitation during the reporting period, the information in 40 CFR 63.6650(d). If there were periods during which the CMS, including CEMS and CPMS, was out-of-control, as specified in 40 CFR 63.8(c)(7), the information in 40 CFR 63.6650(e); or</p> <p>c. If you had a malfunction during the reporting period, the information in 40 CFR 63.6650(c)(4).</p>	<p>i. Semiannually according to the requirements in 40 CFR 63.6650(b)(1) – (5) for engines that are not limited use stationary CI RICE subject to numerical emission limitations; and</p> <p>ii. Annually according to the requirements in 40 CFR 63.6650(b)(6)-(9) for engines that are limited use stationary RICE subject to numerical emissions limitations</p> <p>i. Semiannually according to the requirements in 40 CFR 63.6650(b).</p> <p>i. Semiannually according to the requirements in 40 CFR 63.6650(b).</p>
2. New or reconstructed non-emergency stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis.	Report	a. The fuel flow rate of each fuel and the heating values that were used in your calculations, and you must demonstrate that the percentage of heat input provided by landfill gas or digester gas, is equivalent to 10 percent or more of the gross heat input on an annual basis; and	i. Annually according to the requirements in 40 CFR 63.6650.

For each:	You must submit a(n)	The report must contain. .	You must submit the report . . .
		<ul style="list-style-type: none"> <li>b. The operating limits provided in your federally enforceable permit, and any deviations from these limits; and</li> <li>c. Any problems or errors suspected with the meters</li> </ul>	<ul style="list-style-type: none"> <li>i. See item 2.a.i.</li> <li>i. See item 2.a.i.</li> </ul>
3. Existing non-emergency, non-black start 4SLB and 4SRB stationary RICE > 500 HP located at an area source of HAP that are not remote stationary RICE and are operated more than 24 h per calendar year.	Compliance Report	<ul style="list-style-type: none"> <li>a. The results of the annual compliance demonstration, if conducted during the reporting period.</li> </ul>	<ul style="list-style-type: none"> <li>i. Semiannually according to the requirements in 40 CFR 63.6650(b)(1) – (5)</li> </ul>
4. Emergency stationary RICE that operate or are contractually obligated to be available for more than 15 h per year for the purposes specified in 40 CFR 63.6640(f)(2)(ii) and (iii) or that operate for the purposes specified in 63.6640(f)(4)(ii).	Report	<ul style="list-style-type: none"> <li>a. The information in 40 CFR 63.6650(h)(1)</li> </ul>	<ul style="list-style-type: none"> <li>i. Annually according to the requirements in 40 CFR 63.6650(h)(2) – (3).</li> </ul>

## Appendix 1-33

### Initial Compliance With Emission Limitations and Operating Limitations (40 CFR 63, Subpart ZZZZ, Table 5)

[Added July 2004; Revised April 2010, Revised October 2010, Revised April 2011; Revised April 2013]

For each.. .	Complying with the requirement to...	You have demonstrated initial compliance if...
1. New or reconstructed non-emergency 2SLB stationary RICE > 500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE $\geq$ 250 HP located at a major source of HP, non-emergency stationary CI RICE > 500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE > 500 HP located at an area source of HAP.	a. Reduce CO emissions and using oxidation catalyst, and using a CPMS.	i. the average reduction of emissions of CO determined from the initial performance test achieves the required CO percent reduction; and ii. the facility has installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in 40 CFR 63.6625(b); and iii. You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.
2. Non-emergency stationary CI RICE > 500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE > 500 HP located at an area source of HAP.	a. Limit the concentration of CO, using oxidation catalyst, and using a CPMS.	i. the average CO concentration determined from the initial performance test is $\leq$ the CO emission limitation; and ii. the facility has installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in 40 CFR 63.6625(b); and iii. the facility has recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.
3. New or reconstructed non-emergency 2SLB stationary RICE > 500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE $\geq$ 250 HP located at a major source of HAP, non-emergency stationary CI RICE > 500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE > 500 HP located at an area source of HAP.	a. Reduce CO emissions and not using oxidation catalyst	i. the average reduction of emissions of CO determined from the initial performance test achieves the required CO percent reduction; and ii. the facility has installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in 40 CFR 63.6625(b); and iii. the facility has recorded the approved operating parameters (if any) during the initial performance test.

For each.. .	Complying with the requirement to...	You have demonstrated initial compliance if...
4. Non-emergency stationary CI RICE > 500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE > 500 HP located at an area source of HAP.	a. Limit the concentration of CO, and not using oxidation catalyst	i. the average reduction of emissions of CO determined from the initial performance test achieves the required CO percent reduction; and ii. the facility has installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in 40 CFR 63.6625(b); and iii. the facility has recorded the approved operating parameters (if any) during the initial performance test.
5. New or reconstructed non-emergency 2SLB stationary RICE > 500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE >= 250 HP located at a major source of HAP, non-emergency stationary CI RICE > 500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE > 500 HP located at an area source of HAP.	a. Reduce CO emissions, and using a CEMS.	i. the facility has installed a CEMS to continuously monitor CO and either O <sub>2</sub> or CO <sub>2</sub> at both the inlet and the outlet of the oxidation catalyst according to the requirements of 40 CFR 63.6625(a); and ii. the facility has conducted a performance evaluation of their CEMS using PS 3 and 4A of 40 CFR 60, Appendix B; and iii. the average reduction of CO calculated using 40 CFR 63.6620 equals or exceeds the required percent reduction. The initial test comprises the first 4-h period after successful validation of the CEMS. Compliance is based on the average percent reduction achieved during the 4-h period.
6. Non-emergency stationary CI RICE > 500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE > 500 HP located at an area source of the HAP.	a. Limit the concentration of CO, and using a CEMS.	i. the facility has installed a CEMS to continuously monitor CO and either O <sub>2</sub> or CO <sub>2</sub> at both the inlet and the outlet of the oxidation catalyst according to the requirements of 40 CFR 63.6625(a); and ii. the facility has conducted a performance evaluation of their CEMS using PS 3 and 4A of 40 CFR 60, Appendix B; and iii. the average reduction of CO calculated using 40 CFR 63.6620 equals or exceeds the required percent reduction. The initial test comprises the first 4-h period after

For each.. .	Complying with the requirement to...	You have demonstrated initial compliance if...
		successful validation of the CEMS. Compliance is based on the average percent reduction achieved during the 4-h period.
7. Non-emergency 4SRB stationary RICE > 500 HP located at a major source of HAP.	a. Reduce formaldehyde emissions and using NSCR.	<p>i. The average reduction of emissions of formaldehyde determined from the initial performance test is equal to or greater than the required formaldehyde percent reduction, or the average reduction of emissions of THC determined from the initial performance test is equal to or greater than 30 percent; and</p> <p>ii. the facility has installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in 40 CFR 63.6625(b); and</p> <p>iii. The facility has recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.</p>
8. Non-emergency 4SRB stationary RICE > 500 HP located at a major source of HAP.	a. Reduce formaldehyde emissions and not using NSCR.	<p>i. The average reduction of emissions of formaldehyde determined from the initial performance test is equal to or greater than the required formaldehyde percent reduction or the average reduction of emissions of THC determined from the initial performance test is equal to or greater than 30 percent, and</p> <p>ii. the facility has installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in 40 CFR 63.6625(b); and</p> <p>iii. the facility has recorded the approved operating parameters (if any) during the initial performance test.</p>
9. New or reconstructed non-emergency stationary RICE > 500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE 250 </- HP </+ 500 located at a	a. Limit the concentration of formaldehyde in the stationary RICE exhaust and using oxidation catalyst or NSCR	i. the average formaldehyde concentration, corrected to 15 percent O <sub>2</sub> , dry basis, from the 3 test runs is less than or equal to the formaldehyde emission limitation; and

For each.. .	Complying with the requirement to...	You have demonstrated initial compliance if...
major source of HAP, and existing non-emergency 4SRB stationary RICE > 500 HP located at a major source of HAP.		<ul style="list-style-type: none"> <li>ii. the facility has installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in 40 CFR 63.6625(b); and</li> <li>iii. the facility has recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.</li> </ul>
10. New or reconstructed non-emergency stationary RICE > 500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE 250 <= HP <= 500 located at a major source of HAP, and existing non-emergency 4SRB stationary RICE > 500 HP located at a major source of HAP.	a. Limit the concentration of formaldehyde in the stationary RICE exhaust and not using oxidation catalyst or NSCR.	<ul style="list-style-type: none"> <li>i. The average formaldehyde concentration, corrected to 15 percent O<sub>2</sub>, dry basis, from the three test runs is &lt;= the formaldehyde emission limitation; and</li> <li>ii. the facility has installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in 40 CFR 63.6625(b); and</li> <li>iii. the facility has recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.</li> </ul>
11. Existing non-emergency stationary RICE 100 <= HP <= 500 located at a major source of HAP, and existing non-emergency stationary CI RICE 300 <= HP <= 500 located at an area source of HAP.	a. Reduce CO emissions	i. The average reduction of emissions of CO or formaldehyde, as applicable determined from the initial performance test is >= the required CO or formaldehyde, as applicable, percent reduction.
12. Existing non-emergency stationary RICE 100 <= HP <= 500 located at a major source of HAP, and existing non-emergency stationary CI RICE 300 < HP <= 500 located at an area source of HAP.	a. Limit the concentration of CO or formaldehyde in the stationary RICE exhaust.	i. The average formaldehyde or CO concentration, as applicable corrected to 15 percent O <sub>2</sub> , dry basis, from the three test runs is less than or equal to the formaldehyde or CO emission limitation, as applicable.
13. Existing non-emergency 4SLB stationary RICE > 500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 h per calendar year.	a. Install an oxidation catalyst	i. The facility has conducted an initial compliance demonstration as specified in 40 CFR 63.6630(e) to show the average reduction of emissions of CO is 93 percent or more, or the average CO concentration is less than or equal to 47 ppmvd at 15 percent O <sub>2</sub> ;

For each.. .	Complying with the requirement to...	You have demonstrated initial compliance if...
<p>14. Existing non-emergency 4SRB stationary RICE &gt; 500 HP located at an area source or HAP that are not remote stationary RICE and that are operated more than 14 h per calendar year.</p>	<p>a. Install NSCR</p>	<p>ii. the facility has installed a CPMS to continuously monitor catalyst inlet temperature according to 40 CFR 63.5525(b), or the facility has installed equipment to automatically shut down the engine if the catalyst inlet temperature exceeds 1350 °F.</p> <p>i. The facility has conducted an initial compliance demonstration as specified in 40 CFR 63.6630(e) to show the average reduction of emissions of CO is 75 percent or more, or the average CO concentration is less than or equal to 270 ppmvd at 15 percent O<sub>2</sub>, or the average reduction of THC is 30 percent or more;</p> <p>ii. the facility has installed a CPMS to continuously monitor catalyst inlet temperature according to 40 CFR 63.5525(b), or the facility has installed equipment to automatically shut down the engine if the catalyst inlet temperature exceeds 1250 °F.</p>



## Appendix 1-34

### Continuous Compliance With Emission Limitations and Operating Limitations, Work Practices, and Management Practices

(40 CFR 63, Subpart ZZZZ, Table 6)

[Added July 2004; Revised April 2010, Revised October 2010, Revised April 2011; Revised April 2013]

For each.. .	Complying with the requirement to...	You must demonstrate continuous compliance by...
1. New or reconstructed non-emergency 2SLB stationary RICE > 500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE >= 250 HP located at a major source of HAP, and new or reconstructed non-emergency CI stationary RICE > 500 HP located at a major source of HAP.	a. Reduce CO emissions and using an oxidation catalyst, and using a CPMS.	i. Conducting semiannual performance tests for CO to demonstrate that the required CO percent reduction is achieved; <sup>1</sup> and ii. Collecting the catalyst inlet temperature data according to 40 CFR 63.6625(b); and iii. Reducing these data to 4-h rolling averages; and iv. Maintaining the 4-h rolling averages within the operating limitations for the catalyst inlet temperature; and v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
2. New or reconstructed non-emergency 2SLB stationary RICE > 500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE >= 250 HP located at a major source of HAP, and new or reconstructed non-emergency CI stationary RICE > 500 HP located at a major source of HAP.	a. Reduce CO emissions and not using an oxidation catalyst, and using a CPMS.	i. Conducting semiannual performance tests for CO to demonstrate that the required CO percent reduction is achieved; <sup>1</sup> and ii. Collecting the approved operating parameter (if any) data according to 40 CFR 63.6625(b); and iii. Reducing these data to 4-h rolling averages; and iv. Maintaining the 4-h rolling averages within the operating limitations for the operating parameters established during the performance test.
3. New or reconstructed non-emergency 2SLB stationary RICE > 500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE >= 250 HP located at a major source of	a. Reduce CO emissions or limit the concentration of CO in the stationary RICE exhaust, and using a CEMS.	i. Collecting the monitoring data according to 40 CFR 63.6625(a), reducing the measurements to 1-h averages, calculating the percent reduction of CO emissions according to 40 CFR 63.6620; and

For each.. .	Complying with the requirement to...	You must demonstrate continuous compliance by...
HAP, new or reconstructed non-emergency stationary CI RICE > 500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE > 500 HP.		<ul style="list-style-type: none"> <li>ii. Demonstrating that the catalyst achieves the required percent reduction of CO emissions over the 4-h averaging period, or that the emission remain at or below the CO concentration limit; and</li> <li>iii. Conducting an annual RATA of the CEMS using PS 3 and 4A of 40 CFR 60, appendix B, as well as daily and periodic data quality checks in accordance with 40 CFR 60, appendix F, procedure 1.</li> </ul>
4. Non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP.	a. Reduce formaldehyde emissions and using NSCR.	<ul style="list-style-type: none"> <li>i. Collecting the catalyst inlet temperature data according to 40 CFR 63.6625(b); and</li> <li>ii. Reducing these data to 4-h rolling averages; and</li> <li>iii. Maintaining the 4-h rolling averages within the operating limitations for the catalyst inlet temperature; and</li> <li>iv. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.</li> </ul>
5. Non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP.	a. Reduce formaldehyde emissions and not using NSCR.	<ul style="list-style-type: none"> <li>i. Collecting the approved operating parameter (if any) data according to 40 CFR 63.6625(b); and</li> <li>ii. Reducing these data to 4-h rolling averages; and</li> <li>iii. Maintaining the 4-h rolling averages within the operating limitations for the operating parameters established during the performance test.</li> </ul>
6. Non-emergency 4SRB stationary RICE with a brake HP >= 5,000 located at a major source of HAP.	a. Reduce formaldehyde emissions.	<ul style="list-style-type: none"> <li>i. Conducting semiannual performance tests for formaldehyde to demonstrate that the required formaldehyde percent reduction is achieved, or to demonstrate that the average reduction of emissions of THC determined from the performance test is equal to or greater than 30 percent.<sup>1</sup></li> </ul>

For each.. .	Complying with the requirement to...	You must demonstrate continuous compliance by...
7. New or reconstructed non-emergency stationary RICE >500 HP located at a major source of HAP and new or reconstructed non-emergency 4SLB stationary RICE 250 <= HP <= 500 located at a major source of HAP.	a. Limit the concentration of formaldehyde in the stationary RICE exhaust and using oxidation catalyst or NSCR.	<ul style="list-style-type: none"> <li>i. Conducting semiannual performance tests for formaldehyde to demonstrate that the emissions remain at or below the formaldehyde concentration limit;<sup>1</sup> and</li> <li>ii. Collecting the catalyst inlet temperature data according to 40 CFR 63.6625(b); and</li> <li>iii. Reducing these data to 4-h rolling averages; and</li> <li>iv. Maintaining the 4-h rolling averages within the operating limitations for the catalyst inlet temperature; and</li> <li>v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.</li> </ul>
8. New or reconstructed non-emergency stationary RICE > 500 HP located at a major source of HAP and new or reconstructed non-emergency 4SLB stationary RICE 250 <= HP <= 500 located at a major source of HAP.	a. Limit the concentration of formaldehyde in the stationary RICE exhaust and not using oxidation catalyst or NSCR.	<ul style="list-style-type: none"> <li>i. Conducting semiannual performance tests for formaldehyde to demonstrate that the emissions remain at or below the formaldehyde concentration limit;<sup>1</sup> and</li> <li>ii. Collecting the approved operating parameter (if any) data according to 40 CFR 63.6625(b); and</li> <li>iii. Reducing these data to 4-h rolling averages; and</li> <li>iv. Maintaining the 4-h rolling averages within the operating limitations for the operating parameters established during the performance test.</li> </ul>
9. Existing emergency and black start stationary RICE <= 500 HP located at a major source of HAP, existing non-emergency stationary RICE < 100 HP located at a major source of HAP, existing emergency and black start stationary RICE located at an area source of HAP, existing non-emergency stationary CI RICE <= 300 HP located at an area source of	a. Work or management practices.	<ul style="list-style-type: none"> <li>i. Operating and maintaining the stationary RICE according to manufacturer's emission-related operation and maintenance instructions; or</li> <li>ii. Develop and follow a facility maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution</li> </ul>

For each.. .	Complying with the requirement to...	You must demonstrate continuous compliance by...
HAP, existing non-emergency 2SLB stationary RICE located at an area source of HAP, existing non-emergency stationary SI RICE located at an area source of HAP which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, existing non-emergency 4SLB and 4SRB stationary RICE $\leq$ 500 HP located at an area source of HAP, existing non-emergency 4SLB and 4SRB stationary RICE $>$ 500 HP located at an area source of HAP that operate 24 h or less per calendar year, and existing non-emergency 4SLB and 4SRB stationary RICE $>$ 500 HP located at an area source of HAP that are remote stationary RICE.		control practice for minimizing emissions.
10. Existing stationary CI RICE $>$ 500 HP that are not limited use stationary RICE.	a. Reduce CO emissions, or limit the concentration of CO in the stationary RICE exhaust, and using oxidation catalyst or NSCR.	i. Conducting performance test every 8,760 h or 3 yr, whichever comes first, for CO or formaldehyde, as appropriate, to demonstrate that the required CO or formaldehyde, as appropriate, percent reduction is achieved or that facility emissions remain at or below the CO or formaldehyde concentration limit; ii. Collecting the catalyst inlet temperature data according to 40 CFR 63.6625(b); and iii. Reducing these data to 4-h rolling averages; and iv. Maintaining the 4-h rolling averages within the operating limitations for the catalyst inlet temperature; and v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
11. Existing stationary CI RICE $>$ 500 HP that are not limited use stationary RICE.	a. Reduce CO emissions, or limit the concentration of CO in the stationary RICE exhaust, and not using oxidation catalyst.	i. Conducting performance test every 8,760 h or 3 yr, whichever comes first, for CO or formaldehyde, as appropriate, to

For each.. .	Complying with the requirement to...	You must demonstrate continuous compliance by...
12. Existing limited use CI stationary RICE > 500 HP.	a. Reduce CO emissions or limit the concentration of CO in the stationary RICE exhaust, and using an oxidation catalyst.	<p>demonstrate that the required CO or formaldehyde, as appropriate, percent reduction is achieved or that facility emissions remain at or below the CO or formaldehyde concentration limit; and</p> <p>ii. Collecting the approved operating parameter (if any) data according to 40 CFR 63.6625(b); and</p> <p>iii. Reducing these data to 4-h rolling averages; and</p> <p>iv. Maintaining the 4-h rolling averages within the operating limitations for the operating parameters established during the performance test.</p> <p>i. Conducting performance test every 8,760 h or 5 yr, whichever comes first, for CO or formaldehyde, as appropriate, to demonstrate that the required CO or formaldehyde, as appropriate, percent reduction is achieved or that facility emissions remain at or below the CO or formaldehyde concentration limit; and</p> <p>ii. Collecting the catalyst inlet temperature data according to 40 CFR 63.6625(b); and</p> <p>iii. Reducing these data to 4-h rolling averages within the operating limitations for the catalyst inlet temperature; and</p> <p>iv. Maintaining the 4-h rolling averages within the operating limitations for the catalyst inlet temperature; and</p> <p>v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.</p>
13. Existing limited use CI stationary RICE > 500 HP.	a. Reduce CO emissions or limit the concentration of CO in the stationary RICE exhaust, and using an oxidation catalyst.	i. Conducting performance test every 8,760 h or 5 yr, whichever comes first, for CO or formaldehyde, as appropriate, to demonstrate that the required CO or formaldehyde, as appropriate,

For each.. .	Complying with the requirement to...	You must demonstrate continuous compliance by...
14. Existing non-emergency 4SLB stationary RICE > 500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 h per calendar year.	a. Install an oxidation catalyst	<p>percent reduction is achieved or that facility emissions remain at or below the CO or formaldehyde concentration limit; and</p> <p>ii. Collecting the approved operating parameter (if any) data according to 40 CFR 63.6625(b); and</p> <p>iii. Reducing these data to 4-h rolling averages; and</p> <p>iv. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.</p> <p>i. Conducting annual compliance demonstrations as specified in 40 CFR 63.6630(c) to show that the average CO concentration is less than or equal to 47 ppmvd at 15 percent O<sub>2</sub>, and either</p> <p>ii. Collecting the catalyst inlet temperature data according to 40 CFR 63.6625(b), reducing these data to 4-hour rolling averages; and maintaining the 4-h rolling averages within the limitation of greater than 450 °F and less than or equal to 1350 °F for the catalyst inlet temperature; or</p> <p>iii. Immediately shutting down the engine if the catalyst inlet temperature exceeds the 1350 °F.</p>
15. Existing non-emergency 4SRB stationary RICE > 500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 h per calendar year.	a. Install NSCR	<p>i. Conducting annual compliance demonstrations as specified in 40 CFR 63.6640(c) to show that the average reduction of emissions of CO is 75 percent or more, the average CO concentration is less than or equal to 270 ppmvd at 15 percent O<sub>2</sub>, or the average reduction of emissions of THC is 30 percent or more; and either</p> <p>ii. Collecting the catalyst inlet temperature data according to 40 CFR 63.6625(b), reducing these data to 4-h rolling averages; and maintaining the 4-h rolling averages within the limitation of greater than or equal to 750 °F and</p>

For each.. .	Complying with the requirement to...	You must demonstrate continuous compliance by...
		less than or equal to 1250 °F for the catalyst inlet temperature; or iii. Immediately shutting down the engine if the catalyst inlet temperature exceeds 1250 °F.

<sup>1</sup> After the facility has demonstrated compliance for two consecutive tests, the facility may reduce the frequency of subsequent performance tests to annually. If the results of any subsequent annual performance test indicate the stationary RICE is not in compliance with the CO or formaldehyde emission limitation, or the facility deviates from any of its' operating limitations, semiannual performance tests must be resumed.



## Appendix 1-35

### Emission Standards for Stationary Pre-2007 Model Year Engines and 2007-2010 Model Year Engines (40 CFR 60, Subpart IIII, Table 1) [Added October 2006]

Maximum Engine Power	Emission standards for stationary pre-2007 model year engines with a displacement of < 10 L per cylinder and 2007-2010 model year engines >2,237 KW (3,000 HP) and with a displacement of < 10 L per cylinder in g/KW-hr (g/HP-hr)				
	NMHC + NO <sub>x</sub>	HC	NO <sub>x</sub>	CO	PM
KW < 8 (HP < 11)	10.5 (7.8)	-----	-----	8.0 (6.0)	1.0 (0.75)
8 < =KW < 19 (11 < =HP < 25)	9.5 (7.1)	-----	-----	6.6 (4.9)	0.80 (0.60)
19 < =KW < 37 (25 < =HP < 50)	9.5 (7.1)	-----	-----	5.5 (4.1)	0.80 (0.60)
37 < =KW < 56 (50 < =HP < 75)	----- -	-----	9.2 (6.9)	-----	-----
56 < =KW < 75 (75 < =HP < 100)	----- -	-----	9.2 (6.9)	-----	-----
75 < =KW < 130 (100 < =HP < 175)	-----	-----	9.2 (6.9)	-----	-----
130 < =KW < 225 (175 < =HP < 300)	-----	1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)
225 < =KW < 450 (300 < =HP < 600)	-----	1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)
450 < =KW < =560 (600 < =HP < =750)	-----	1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)
KW > 560 (HP > 750)	-----	1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)



## Appendix 1-36

### Certification Requirements for Stationary Fire Pump Engines (40 CFR 60, Subpart IIII, Table 3) [Added October 2006; Revised July 2011]

New stationary fire pump engines must be certified beginning with the following model years.

Engine Power	Starting model year engine manufacturers must certify new stationary fire pump engines according to 40 CFR 60.4204(d) <sup>1</sup>
KW < 75 (HP < 100)	2011
75 <= KW < 130 (100 <= HP < 175)	2010
130 <= KW <= 560 (175 <= HP <= 750)	2009
KW > 560 (HP > 750)	2008

<sup>1</sup> Manufacturers of fire pump stationary CI ICE with a maximum engine power greater than or equal to 37 kW (50 HP) and less than 450 KW (600 HP) and a rated speed of greater than 2,650 revolutions per minute (rpm) are not required to certify such engines until three model years following the model year indicated in this Table 3 for engines in the applicable engine power category.



## Appendix 1-37

### Emission Standards for Stationary Fire Pump Engines (40 CFR 60, Subpart IIII, Table 4) [Added October 2006]

Maximum engine power	Model year(s)	NMHC + NO <sub>x</sub>	CO	PM
KW < 8 (HP < 11)	2010 and earlier	10.5 (7.8)	8.0 (6.0)	1.0 (0.75)
	2011+	7.5 (5.6)	-----	0.40 (0.30)
8 < =KW < 19 (11 < =HP < 25)	2010 and earlier	9.5 (7.1)	6.6 (4.9)	0.80 (0.60)
	2011+	7.5 (5.6)		0.40 (0.30)
19 < =KW < 37 (25 < =HP < 50)	2010 and earlier	9.5 (7.1)	5.5 (4.1)	0.80 (0.60)
	2011+	7.5 (5.6)		0.30 (0.22)
37 < =KW < 56 (50 < =HP < 75)	2010 and earlier	10.5 (7.8)	5.0 (3.7)	0.80 (0.60)
	2011+ 1	4.7 (3.5)		0.40 (0.30)
56 < =KW < 75 (75 < =HP < 100)	2010 and earlier	10.5 (7.8)	5.0 (3.7)	0.80 (0.60)
	2011+ 1	4.7 (3.5)		0.40 (0.30)
75 < =KW < 130 (100 < =HP < 175)	2009 and earlier	10.5 (7.8)	5.0 (3.7)	0.80 (0.60)
	2010+ 2	4.0 (3.0)		0.30 (0.22)
130 < =KW < 225 (175 < =HP < 300)	2008 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2009+ 3	4.0 (3.0)		0.20 (0.15)
225 < =KW < 450 (300 < =HP < 600)	2008 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2009+ 3	4.0 (3.0)		0.20 (0.15)
450 < =KW < =560 (600 < =HP < =750)	2008 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2009+	4.0 (3.0)		0.20 (0.15)
KW > 560 (HP > 750)	2007 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2008+	6.4 (4.8)		0.20 (0.15)

- 1 For model years 2011-2013, manufacturers, owners and operators of fire pump stationary CI ICE in this engine power category with a rated speed of greater than 2,650 revolutions per minute (rpm) may comply with the emission limitations for 2010 model year engines.
- 2 For model years 2010-2012, manufacturers, owners and operators of fire pump stationary CI ICE in this engine power category with a rated speed of greater than 2,650 rpm may comply with the emission limitations for 2009 model year engines.
- 3 In model years 2009-2011, manufacturers of fire pump stationary CI ICE in this engine power category with a rated speed of greater than 2,650 rpm may comply with the emission limitations for 2008 model year engines.



## Appendix 1-38

### Labeling and Recordkeeping Requirements for New Stationary Emergency Engines (40 CFR 60, Subpart IIII, Table 5) [Added October 2006]

Owners and operators must comply with the labeling requirements in 40 CFR 60.4210(f) and the recordkeeping requirements in 40 CFR 60.4214(b) for new emergency stationary CI ICE beginning in the following model years:

Engine Power	Starting model year
19< =KW< 56 (25< =HP< 75)	2013
56< =KW< 130 (75< =HP< 175)	2012
KW>=130 (HP>=175)	2011



## Appendix 1-39

**NO<sub>x</sub>, CO, and VOC Emission Standards for Stationary Non-Emergency SI Engine  $\geq$  100 HP  
(Except Gasoline and Rich Burn LPG), Stationary SI Landfill/Digester Gas Engines, and Stationary  
Emergency Engines  $>25$  HP)  
(40 CFR 60, Subpart JJJJ, Table 1)  
[Added April 2008; Revised July 2011]**

Engine Type and Fuel	Maximum Engine Power	Manu- facture Date	Emission Standards a					
			g/HP-hr			ppmvd at 15% O <sub>2</sub>		
			NO <sub>x</sub>	CO	VOC <sup>d</sup>	NO <sub>x</sub>	CO	VOC <sup>d</sup>
Non-Emergency SI Natural Gas <sup>b</sup> and Non-Emergency SI Lean Burn LPG <sup>b</sup>	100 $\leq$ HP < 500	7/1/2008	2.0	4.0	1.0	160	540	86
		1/1/2011	1.0	2.0	0.7	82	270	60
Non-Emergency SI Lean Burn Natural Gas and LPG	500 $\leq$ HP < 1350	1/1/2008	2.0	4.0	1.0	160	540	86
		7/1/2010	1.0	2.0	0.7	82	270	60
Non-Emergency SI Natural Gas and Non-Emergency SI Lean Burn LPG (except lean burn 500 $\leq$ HP < 1350).	HP $\geq$ 500	7/1/2007	2.0	4.0	1.0	160	540	86
	HP $\geq$ 500	7/1/2010	1.0	2.0	0.7	82	270	60
Landfill/Digester Gas (except lean burn 500 $\leq$ HP < 1350).	HP < 500	7/1/2008	3.0	5.0	1.0	220	610	80
		1/1/2011	2.0	5.0	1.0	150	610	80
	HP $\geq$ 500	7/1/2007	3.0	5.0	1.0	220	610	80
		7/1/2010	2.0	5.0	1.0	150	610	80
Landfill/Digester Gas Lean Burn	500 $\leq$ HP < 1350	1/1/2008	3.0	5.0	1.0	220	610	80
		7/1/2010	2.0	5.0	1.0	150	610	80
Emergency	25 < HP < 130	1/1/2009	<sup>c</sup> 10	387	NA	NA	NA	NA
	HP $\geq$ 130	.....	2.0	4.0	1.0	160	540	86

<sup>a</sup> Owners and operators of stationary non-certified SI engines may choose to comply with the emission standards in units of either g/HP-hr or ppmvd at 15 percent O<sub>2</sub>.

<sup>b</sup> Owners and operators of new or reconstructed non-emergency lean burn SI stationary engines with a site rating of greater than or equal to 250 brake HP located at a major source that are meeting the requirements of 40 CFR 63, subpart ZZZZ, Table 2a do not have to comply with the CO emission standards of Table 1 of 40 CFR 60, Subpart JJJJ.

<sup>c</sup> The emission standards applicable to emergency engines between 25 HP and 130 HP are in terms of NO<sub>x</sub> + HC.

<sup>d</sup> For purposes of this 40 CFR 60, Subpart JJJJ, when calculating emissions of volatile organic compounds, emissions of formaldehyde should not be included.



## Appendix 1-40

### Greenhouse Gas Reporting Source Categories (40 CFR 98, Tables A-1, A-3, A-4, and A-5)

[Added July 2010; Revised January 2011; Revised January 2012; Revised January 2014; Revised January 2017; Revised October 2017]

**TABLE A-1: GLOBAL WARMING POTENTIALS [100-Year Time Horizon]**

Name	CAS No.	Chemical formula	Global warming potential (100 yr.)
Carbon dioxide	124-38-9	CO <sub>2</sub>	1
Methane	74-82-8	CH <sub>4</sub>	\a\ 25
Nitrous oxide	10024-97-2	N <sub>2</sub> O	\a\ 298
HFC-23	75-46-7	CHF <sub>3</sub>	\a\ 14,800
HFC-32	75-10-5	CH <sub>2</sub> F <sub>2</sub>	\a\ 675
HFC-41	593-53-3	CH <sub>3</sub> F	\a\ 92
HFC-125	354-33-6	C <sub>2</sub> HF <sub>5</sub>	\a\ 3,500
HFC-134	359-35-3	C <sub>2</sub> H <sub>2</sub> F <sub>4</sub>	\a\ 1,100
HFC-134a	811-97-2	CH <sub>2</sub> FCF <sub>3</sub>	\a\ 1.430
HFC-143	430-66-0	C <sub>2</sub> H <sub>3</sub> F <sub>3</sub>	\a\ 353
HFC-143a	420-46-2	C <sub>2</sub> H <sub>3</sub> F <sub>3</sub>	\a\ 4,470
HFC-152	624-72-6	CH <sub>2</sub> FCH <sub>2</sub> F	53
HFC-152a	75-37-6	CH <sub>3</sub> CHF <sub>2</sub>	\a\ 124
HFC-161	353-36-6	CH <sub>3</sub> CH <sub>2</sub> F	12
HFC-227ea	431-89-0	C <sub>3</sub> HF <sub>7</sub>	\a\ 3,220
HFC-236cb	677-56-5	CH <sub>2</sub> FCF <sub>2</sub> CF <sub>3</sub>	1,340
HFC-236ea	431-63-0	CHF <sub>2</sub> CHFCF <sub>3</sub>	1,370
HFC-236fa	690-39-1	C <sub>3</sub> H <sub>2</sub> F <sub>6</sub>	\a\ 9,810
HFC-245ca	679-86-7	C <sub>3</sub> H <sub>3</sub> F <sub>5</sub>	\a\ 693
HFC-245fa	460-73-1	CHF <sub>2</sub> CH <sub>2</sub> CF <sub>3</sub>	1,030
HFC-365mfc	406-58-6	CH <sub>3</sub> CF <sub>2</sub> CH <sub>2</sub> CF <sub>3</sub>	794
HFC-43-10mee	138495-42-8	CF <sub>3</sub> CFHCFHCF <sub>2</sub> CF <sub>3</sub>	\a\ 1,640
Sulfur hexafluoride	2551-62-4	SF <sub>6</sub>	\a\ 22,800
Trifluoromethyl sulphur pentafluoride	373-80-8	SF <sub>5</sub> CF <sub>3</sub>	17,700
Nitrogen trifluoride	7783-54-2	NF <sub>3</sub>	17,200
PFC-14 (Perfluoromethane)	75-73-0	CF <sub>4</sub>	\a\ 7,390

PFC-116 (Perfluoroethane)	76-16-4	C <sub>2</sub> F <sub>6</sub>	\a\ 12,200
PFC-218 (Perfluoropropane)	76-19-7	C <sub>3</sub> F <sub>8</sub>	\a\ 8,830
Perfluorocyclopropane	931-91-9	C-C <sub>3</sub> F <sub>6</sub>	17,340
PFC-3-1-10 (Perfluorobutane)	355-25-9	C <sub>4</sub> F <sub>10</sub>	\a\ 8.860
PFC 318 (Perfluorocyclobutane)	115-25-3	C-C <sub>4</sub> F <sub>8</sub>	\a\ 10,300
PFC-4-1-12 (Perfluoropentane)	678-26-2	C <sub>5</sub> F <sub>12</sub>	\a\ 9,160
PFC-5-1-14 (Perfluorohexane)	355-42-0	C <sub>6</sub> F <sub>14</sub>	\a\ 9,300
PFC-9-1-18	306-94-5	C <sub>10</sub> F <sub>18</sub>	7,500
HCFE-235da2 (Isoflurane)	26675-46-7	CHF <sub>2</sub> OCHClCF <sub>3</sub>	350
HFE-43-10pccc (H-Galden 1040x)	E1730133	CHF <sub>2</sub> OCF <sub>2</sub> OC <sub>2</sub> F <sub>4</sub> OCHF <sub>2</sub>	1,870
HFE-125	3822-68-2	CHF <sub>2</sub> OCF <sub>3</sub>	14,900
HFE-134	1691-17-4	CHF <sub>2</sub> OCHF <sub>2</sub>	6,320
HFE-143a	421-14-7	CH <sub>3</sub> OCF <sub>3</sub>	756
HFE-227ea	2356-62-9	CF <sub>3</sub> CHFOCF <sub>3</sub>	1,540
HFE-236ca12 (HG-10)	78522-47-1	CHF <sub>2</sub> OCF <sub>2</sub> OCHF <sub>2</sub>	2,800
HFE-236ea2 (Desflurane)	57041-67-5	CHF <sub>2</sub> OCHF <sub>2</sub> CF <sub>3</sub>	989
HFE-236fa	20193-67-3	CF <sub>3</sub> CH <sub>2</sub> OCF <sub>3</sub>	487
HFE-245cb2	22410-44-2	CH <sub>3</sub> OCF <sub>2</sub> CF <sub>3</sub>	708
HFE-245fa1	84011-15-4	CHF <sub>2</sub> CH <sub>2</sub> OCF <sub>3</sub>	286
HFE-245fa2	1885-48-9	CHF <sub>2</sub> OCH <sub>2</sub> CF <sub>3</sub>	659
HFE-254cb2	425-88-7	CH <sub>3</sub> OCF <sub>2</sub> CHF <sub>2</sub>	359
HFE-263fb2	460-43-5	CF <sub>3</sub> CH <sub>2</sub> OCH <sub>3</sub>	11
HFE-329mcc2	67490-36-2	CF <sub>3</sub> CF <sub>2</sub> OCF <sub>2</sub> CHF <sub>2</sub>	919
HFE-338mcf2	156053-88-2	CF <sub>3</sub> CF <sub>2</sub> OCH <sub>2</sub> CF <sub>3</sub>	552
HFE-338pcc13 (HG-01)	188690-78-0	CHF <sub>2</sub> OCF <sub>2</sub> CF <sub>2</sub> OCHF <sub>2</sub>	1,500
HFE-347mcc3	28523-86-6	CH <sub>3</sub> OCF <sub>2</sub> CF <sub>2</sub> CF <sub>3</sub>	575
HFE-347mcf2	E1730135	CF <sub>3</sub> CF <sub>2</sub> OCH <sub>2</sub> CHF <sub>2</sub>	374
HFE-347pcf2	406-78-0	CHF <sub>2</sub> CF <sub>2</sub> OCH <sub>2</sub> CF <sub>3</sub>	580
HFE-356mec3	382-34-3	CH <sub>3</sub> OCF <sub>2</sub> CHF <sub>2</sub> CF <sub>3</sub>	101
HFE-356pcc3	160620-20-2	CH <sub>3</sub> OCF <sub>2</sub> CF <sub>2</sub> CHF <sub>2</sub>	110
HFE-356pcf2	E1730137	CHF <sub>2</sub> CH <sub>2</sub> OCF <sub>2</sub> CHF <sub>2</sub>	265
HFE-356pcf3	35042-99-0	CHF <sub>2</sub> OCH <sub>2</sub> CF <sub>2</sub> CHF <sub>2</sub>	502
HFE-365mcf3	378-16-5	CF <sub>3</sub> CF <sub>2</sub> CH <sub>2</sub> OCH <sub>3</sub>	11
HFE-374pc2	512-51-6	CH <sub>3</sub> CH <sub>2</sub> OCF <sub>2</sub> CHF <sub>2</sub>	557

HFE-449sl (HFE-7100) Chemical blend	163702-07-6 163702-08-7	C <sub>4</sub> F <sub>9</sub> OCH <sub>3</sub> (CF <sub>3</sub> ) <sub>2</sub> CFCF <sub>2</sub> OCH <sub>3</sub>	297
HFE-569sf2 (HFE-7200) Chemical blend	163702-05-4 163702-06-5	C <sub>4</sub> F <sub>9</sub> OC <sub>2</sub> H <sub>5</sub> (CF <sub>3</sub> ) <sub>2</sub> CFCF <sub>2</sub> OC <sub>2</sub> H <sub>5</sub>	59
Sevoflurane	28523-86-6	CH <sub>2</sub> FOCH(CF <sub>3</sub> ) <sub>2</sub>	345
HFE-356mm1	13171-18-1	(CF <sub>3</sub> ) <sub>2</sub> CHOCH <sub>3</sub>	27
HFE-338mmz1	26103-08-2	CHF <sub>2</sub> OCH(CF <sub>3</sub> ) <sub>2</sub>	380
(Octafluorotetramethyl- ene)hydroxymethyl group	NA	X-(CF <sub>2</sub> ) <sub>4</sub> CH(OH)-X	73
HFE-347mmy1	22052-84-2	CH <sub>3</sub> OCF(CF <sub>3</sub> ) <sub>2</sub>	343
Bis(trifluoromethyl)-methanol	920-66-1	(CF <sub>3</sub> ) <sub>2</sub> CHOH	195
2,2,3,3,3-pentafluoropropanol	422-05-9	CF <sub>3</sub> CF <sub>2</sub> CH <sub>2</sub> OH	42
PFPME	NA	CF <sub>3</sub> OCF(CF <sub>3</sub> )CF <sub>2</sub> OCF <sub>2</sub> OCF <sub>3</sub>	10,300

<sup>a</sup> The GWP for this compound is different than the GWP in the version of Table A-1 published on 30 October 2009.

**Table A-3, Source Category list for 40 CFR 98.2(a)(1)**

Source Categories <sup>a</sup> List Applicable in Reporting Year 2010 and Future Years

- Electricity generation units that report CO<sub>2</sub> mass emissions year round through 40 CFR 75 (subpart D).
- Adipic acid production (subpart E).
- Aluminum production (subpart F).
- Ammonia manufacturing (subpart G).
- Cement production (subpart H).
- HCFC-22 production (subpart O).
- HFC-23 destruction processes that are not collocated with a HCFC-22 production facility and that destroy more than 2.14 metric tons of HFC-23 per year (subpart O).
- Lime manufacturing (subpart S).
- Nitric acid production (subpart V).
- Petrochemical production (subpart X).
- Petroleum refineries (subpart Y).
- Phosphoric acid production (subpart Z).
- Silicon carbide production (subpart BB).
- Soda ash production (subpart CC).
- Titanium dioxide production (subpart EE).
- Municipal solid waste landfills that generate CH<sub>4</sub> in amounts equivalent to 25,000 metric tons CO<sub>2</sub>e or more per year, as determined according to subpart HH of 40 CFR 98.
- Manure management systems with combined CH<sub>4</sub> and N<sub>2</sub>O emissions in amounts equivalent to 25,000 metric tons CO<sub>2</sub>e or more per year, as determined according to subpart JJ of 40 CFR 98.

Additional Source Categories <sup>a</sup> Applicable in Reporting Year 2011 and Future Years

- Electrical transmission and distribution equipment use at facilities where the total nameplate capacity of SF<sub>6</sub> and PFC containing equipment exceeds 17,820 pounds, as determined under 40 CFR 98.301 (subpart DD).
- Underground coal mines liberating 36,500,000 actual cubic feet of CH<sub>4</sub> or more per year (subpart FF).
- Geologic sequestration of carbon dioxide (subpart RR).
- Electrical transmission and distribution equipment manufacture or refurbishment (subpart SS).
- Injection of carbon dioxide (subpart UU).

<sup>a</sup> Source categories are defined in each applicable subpart.

**Table A-4, Source Category list for 40 CFR 98.2(a)(2)**

Source Categories <sup>a</sup> List Applicable in Reporting Year 2010 and Future Years

- Ferroalloy production (subpart K).
- Glass production (subpart N).
- Hydrogen production (subpart P).
- Iron and steel production (subpart Q).
- Lead production (subpart R).
- Pulp and paper manufacturing (subpart AA).
- Zinc production (subpart GG).

Additional Source Categories <sup>a</sup> Applicable in Reporting Year 2011 and Future Years

- Electronics manufacturing (subpart I)
- Fluorinated gas production (subpart L)
- Magnesium production (subpart T).
- Petroleum and Natural Gas Systems (subpart W)
- Industrial wastewater treatment (subpart II).
- Industrial waste landfills (subpart TT).

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<sup>a</sup> Source categories are defined in each applicable subpart.

**Table A-5, Supplier Category list for 40 CFR 98.2(a)(4)**

Supplier Categories <sup>a</sup> List Applicable in Reporting Year 2010 and Future Years

- Coal-to-liquids suppliers (subpart LL):
  - (A) All producers of coal-to-liquid products.
  - (B) Importers of an annual quantity of coal-to-liquid products that is equivalent to 25,000 metric tons CO<sub>2</sub>e or more.
  - (C) Exporters of an annual quantity of coal-to-liquid products that is equivalent to 25,000 metric tons CO<sub>2</sub>e or more.
- Petroleum product suppliers (subpart MM):
  - (A) All petroleum refineries that distill crude oil.
  - (B) Importers of an annual quantity of petroleum products that is equivalent to 25,000 metric tons CO<sub>2</sub>e or more.
  - (C) Exporters of an annual quantity of petroleum products that is equivalent to 25,000 metric tons CO<sub>2</sub>e or more.
- Natural gas and natural gas liquids suppliers (subpart NN):
  - (A) All fractionators.
  - (B) Local natural gas distribution companies that deliver 460,000 thousand standard cubic feet or more of natural gas per year.
- Industrial greenhouse gas suppliers (subpart OO):
  - (A) All producers of industrial greenhouse gases.
  - (B) Importers of industrial greenhouse gases with annual bulk imports of N<sub>2</sub>O, fluorinated GHG, and CO<sub>2</sub> that in combination are equivalent to 25,000 metric tons CO<sub>2</sub>e or more.
  - (C) Exporters of industrial greenhouse gases with annual bulk exports of N<sub>2</sub>O, fluorinated GHG, and CO<sub>2</sub> that in combination are equivalent to 25,000 metric tons CO<sub>2</sub>e or more.
  - (D) Starting with reporting year 2018, all producers of fluorinated heat transfer fluids.
  - (E) Starting with reporting year 2018, importers of fluorinated heat transfer fluids with annual bulk imports of N<sub>2</sub>O, fluorinated GHG, fluorinated heat transfer fluids, and CO<sub>2</sub> that in combination are equivalent to 25,000 metric tons CO<sub>2</sub>e or more.

- (F) Starting with reporting year 2018, exporters of fluorinated heat transfer fluids with annual bulk exports of N<sub>2</sub>O, fluorinated GHG, fluorinated heat transfer fluids, and CO<sub>2</sub> that in combination are equivalent to 25,000 metric tons CO<sub>2</sub>e or more.
- (G) Starting with reporting year 2018, facilities that destroy 25,000 mtCO<sub>2</sub>e or more of fluorinated GHGs or fluorinated heat transfer fluids annually.

- Carbon dioxide suppliers (subpart PP):
  - (A) All producers of CO<sub>2</sub>.
  - (B) Importers of CO<sub>2</sub> with annual bulk imports of N<sub>2</sub>O, fluorinated GHG, and CO<sub>2</sub> that in combination are equivalent to 25,000 metric tons CO<sub>2</sub>e or more.
  - (C) Exporters of CO<sub>2</sub> with annual bulk exports of N<sub>2</sub>O, fluorinated GHG, and CO<sub>2</sub> that in combination are equivalent to 25,000 metric tons CO<sub>2</sub>e or more.

Additional Supplier Categories Applicable <sup>a</sup> in Reporting Year 2011 and Future Years

- Importers and exporters of fluorinated greenhouse gases contained in pre-charged equipment or closed-cell foams (subpart QQ):
  - (A) Importers of an annual quantity of fluorinated greenhouse gases contained in pre-charged equipment or closed-cell foams that is equivalent to 25,000 metric tons CO<sub>2</sub>e or more.
  - (B) Exporters of an annual quantity of fluorinated greenhouse gases contained in pre-charged equipment or closed-cell foams that is equivalent to 25,000 metric tons CO<sub>2</sub>e or more.

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<sup>a</sup> Suppliers are defined in each applicable subpart.



## Appendix 1-41

### Emission and Operating Limitations for New Sewage Sludge Incineration Units (40 CFR 60, Table 1 and 2 to Subpart LLLL) [Added April 2011]

**Table 1:** Emission Limits and Standards for New Fluidized Bed Sewage Sludge Incineration Units.

For the air pollutant	Meet this emission limit <sup>a</sup>	Using these averaging methods and minimum sampling volumes or durations	And determining compliance using this method
Carbon monoxide	27 ppm by dry volume	24-h block average (using 1-h averages of data). For determining compliance with the CO concentration limit using CO CEMS, the correction to 7 percent oxygen does not apply during periods of startup or shutdown. Use the measured CO concentration without correcting for oxygen concentration in averaging with other CO concentrations (corrected to 7 percent oxygen) to determine the 24-h average value.	Continuous emissions monitoring system. (Performance Specification 4B of 40 CFR 60, using a low-range span of 100 ppm and a high-range span of 1000 ppm, and a RA of 0.5 ppm instead of 5 ppm specified in section 13.2. For the cylinder gas audit of Procedure 1, +/- 15 percent or 0.5 whichever is greater.
Dioxins/Furans (total mass basis); or  Dioxins/furans (toxic equivalency basis) <sup>b</sup>	0.013 nanograms/dscm (total mass basis); or  0.0044 nanograms/dscm (toxic equivalency basis)	3-run average (collect a minimum volume of 3 dscm per run)	Performance test (Method 23 at 40 CFR 60, Appendix A-7).
Mercury	0.0010 mg/dscm	3-run average (For Method 29 and ASTM D6784-02 [Reapproved 2008] <sup>c</sup> , collect a minimum volume of 3 dscm per run. For Method 30b, collect a minimum sample as specified in Method 30b at 40 CFR 60, Appendix A-8).	Performance test (Method 29 at 40 CFR 60, Appendix A-8; Method 30B at 30 CFR 60, Appendix A-8; or ASTM D6784-02 [reapproved 2008]) <sup>c</sup> .

<b>For the air pollutant</b>	<b>Meet this emission limit<sup>a</sup></b>	<b>Using these averaging methods and minimum sampling volumes or durations</b>	<b>And determining compliance using this method</b>
Oxides of nitrogen	30 ppm by dry volume	3-run average (Collect sample for a minimum duration of 1 hour per run).	Performance test (Method 7 or 7E at 40 CFR 60, Appendix A-4).
Sulfur dioxide	5.3 ppm by dry volume	3-run average (For Method 6, collect a minimum volume of 100 liters per run. For Method 6C, sample for a minimum duration of one hour per run).	Performance test (Method 6 or 6C at 40 CFR 60, Appendix A-4; or ANSI/ASME PTC 19.10-1981. <sup>c</sup> )
Cadmium	0.0011 mg/dscm	3-run average (collect a minimum volume of 1 dscm per run).	Performance test (Method 29 at 40 CFR 60, Appendix A-8). Use GFAAS or ICP/MS for the analytical finish.
Lead	0.00062 mg/dscm	3-run average (collect a minimum volume of 3 dscm per run).	Performance test (Method 29 at 40 CFR 60, Appendix A-8). Use GFAAS or ICP/MS for the analytical finish.
Fugitive emissions from ash handling.	Visible emissions of combustion ash from an ash conveying system (including conveyor transfer points) for no more than 5 percent of the hourly observation period.	Three 1-h observation periods.	Visible emission test (Method 22 of 40 CFR 60, Appendix A-7)

<sup>a</sup> All emission limits are measured at 7 percent oxygen, dry basis at standard conditions.

<sup>b</sup> The facility has the option to comply with either the dioxin/furan emission limit on a total mass basis or the dioxin/furan emission limit on a toxic equivalency basis.

<sup>c</sup> Incorporated by reference, see 40 CFR 60.17.

Table 2: Emission Limits and Standards for New Multiple Hearth Sewage Sludge Incineration Units

<b>For the air pollutant</b>	<b>Meet this emission limit<sup>a</sup></b>	<b>Using these averaging methods and minimum sampling volumes or durations</b>	<b>And determining compliance using this method</b>
Particulate Matter	60 mg/dscm	3-run average (collect a minimum volume of 0.75dscm per run)	Performance test (Method 5 at 40 CFR 60, Appendix A-3; Method 26A or Method

For the air pollutant	Meet this emission limit <sup>a</sup>	Using these averaging methods and minimum sampling volumes or durations	And determining compliance using this method
			19 at 40 CFR 60, Appendix A-8).
Hydrogen chloride	1.2 ppm by dry volume	3-run average (For Method 26, collect a minimum volume of 200 liters per run. For Method 26A, collect a minimum volume of 1 dscm per run).	Performance test (Method 26 or 26A at 40 CFR 60, Appendix A-8).
Carbon monoxide	52 ppm by dry volume	24-h block average (using 1-h averages of data).	Continuous emissions monitoring system. (Performance Specification 4B of 40 CFR 60, using a low-range span of 100 ppm and a high-range span of 1000 ppm, and a relative accuracy of 0.5 ppm specified in section 13.2. For the cylinder gas audit of Procedure 1, +/- 15 percent or 0.5 whichever is greater).
Dioxins/furans (total mass basis); or  Dioxins/furans (toxic equivalency basis) <sup>b</sup>	0.045 nanograms per dry standard cubic meter (total mass basis); or  0.0022 nanograms per dry standard cubic meter (toxic equivalency basis).	3-run average (collect a minimum volume of 3 dry standard cubic meters per run).	Performance test (Method 23 at 40 CFR 60, Appendix A-7).
Mercury	0.15 mg/dscm	3-run average (For Method 29 and ASTM D6784-02 [Reapproved 2008], <sup>c</sup> collect a minimum volume of 1 dscm per run. For Method 30C, collect a minimum sample as specified in Method 30B at 40 CFR 60, Appendix A-8).	Performance test (Method 29 at 40 CFR 60, Appendix A-8; Method 30B at 40 CFR 60, Appendix A-8; or ASTM D6784-02 [Reapproved 2008]. <sup>c</sup> ).
Oxides of nitrogen	210 ppm by dry volume	3-run average (Collect samples for a minimum duration of 1 h per run)	Performance test (Method 7 or 7E at 40 CFR 60, Appendix A-4).

<b>For the air pollutant</b>	<b>Meet this emission limit<sup>a</sup></b>	<b>Using these averaging methods and minimum sampling volumes or durations</b>	<b>And determining compliance using this method</b>
Sulfur dioxide	26 ppm by dry volume	3-run average (For Method 6, collect a minimum volume of 200 L per run. For Method 6C, collect sample for a minimum duration of 1 h per run.	Performance test (Method 6 or 6C at 40 CFR 60, Appendix A-4; or ANSI/ASME PTC 19.10-1981 <sup>c</sup> ).
Cadmium	0.0024 mg/dscm	3-run average (collect a minimum volume of 1 dscm per run).	Performance test (Method 29 at 40 CFR 60, Appendix A-8). Use GFAAS or ICP/ MS for the analytical finish.
Lead	0.0035 mg/dscm	3-run average (collect a minimum volume of 1 dscm per run).	Performance test (Method 29 at 40 CFR 60, Appendix A-8). Use GFAAS or ICP/ MS for the analytical finish.
Fugitive emissions from ash handling	Visible emissions of combustion ash from an ash conveying system (including conveyor transfer points) for no more than 5 percent of the hourly observation period.	Three 1-h observation periods.	Visible emission test (Method 22 of 40 CFR 60, Appendix A-7).

<sup>a</sup> All emission limits are measured at 7 percent oxygen, dry basis at standard conditions.

<sup>b</sup> The facility has the option to comply with either the dioxin/furan emission limit on a total mass basis or the dioxin/furan emission limit on a toxic equivalency basis.

<sup>c</sup> Incorporated by reference, see 40 CFR 60.17.

## Appendix 1-42

### Emission and Operating Limitations for Industrial, Commercial, and Institutional Boilers and Process Heaters At a Major Source of HAP

(40 CFR 63, Table 1, Table 2, Table 3, and Table 4 to Subpart DDDDD)

[Added April 2011; Revised April 2013; Revised January 2016]

**Table 1: Emission Limits for New or Reconstructed Boilers and Process Heaters <sup>a</sup> (Units with heat input capacity of 10 million Btu per hour or greater)**

If the boiler or process heater is in this subcategory:	For the following pollutants:	The emissions must not exceed the following emission limits, except during periods of startup and shutdown	Or the emissions must not exceed the following output-based limits (lb/MMBtu of steam output)	Using this specified sampling volume or test run duration
1. Units in all subcategories designed to burn solid fuel.	a. Hydrogen Chloride	2.2E-02 lb/MMBtu of heat input.	2.5E-02 lb/MMBtu of steam output or 0.28 lb/MWh.	For M26A, collect a minimum of 1 dscm per run; for M26 collect a minimum of 120 L per run.
	b. Mercury	8.0E-07 <sup>a</sup> lb/MMBtu of heat input.	8.7E-07 <sup>a</sup> lb/MMBtu of steam output or 1.1E-05 <sup>a</sup> lb/MWh	For M29, collect a minimum of 4 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 <sup>b</sup> collect a minimum of 4 dscm.
2. Units designed to burn coal/solid fossil fuel.	a. Filterable PM (or TSM)	1.1E-03 lb/MMBtu of heat input; or (2.3E-05 lb/≤Btu of heat input)	1.1E-03 lb/MMBtu of steam output or 1.4E-02 lb/MWh; or (2.7E-05 lb/MMBtu of steam output or 2.9E-04 lb/MWh).	Collect a minimum of 3 dscm per run.
3. Pulverized coal boilers designed to burn coal/solid fossil fuel.	a. Carbon monoxide (CO) (or CEMS)	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (320 ppm by volume on a dry basis corrected to 3 percent oxygen, <sup>d</sup> 30-day rolling average).	0.11 lb/MMBtu of steam output or 1.4 lb/MWh; 3-run average.	1 h minimum sampling time.

<b>If the boiler or process heater is in this subcategory:</b>	<b>For the following pollutants:</b>	<b>The emissions must not exceed the following emission limits, except during periods of startup and shutdown</b>	<b>Or the emissions must not exceed the following output-based limits (lb/MMBtu of steam output)</b>	<b>Using this specified sampling volume or test run duration</b>
4. Stokers designed to burn coal/solid fossil fuel	a. CO (or CEMS)	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (340 ppm by volume on a dry basis corrected to 3 percent oxygen, <sup>d</sup> 30-day rolling average).	0.12 lb/MMBtu of steam output or 1.4 lb/MWh; 3-run average.	1 h minimum sampling time.
5. Fluidized bed units designed to burn coal/solid fossil fuel.	a. CO (or CEMS)	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (230 ppm by volume on a dry basis corrected to 3 percent oxygen, <sup>d</sup> 30-day rolling average).	0.11 lb/MMBtu of steam output or 1.4 lb/MWh; 3-run average.	1 h minimum sampling time.
6. Fluidized bed units with an integrated heat exchanger designed to burn coal/solid fossil fuel.	a. CO (or CEMS)	140 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (150 ppm by volume on a dry basis corrected to 3 percent oxygen, <sup>d</sup> 30-day rolling average).	1.2E-01 lb/MMBtu of steam output or 1.5 lb/MWh; 3 run average	1 h minimum sampling time.
7. Stokers/sloped grate/others designed to burn wet biomass fuel.	a. CO (or CEMS)	620 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (390 ppm by volume on a dry basis corrected to 3 percent oxygen, <sup>d</sup> 30-day rolling average).	5.8E-01 lb/MMBtu of steam output or 6.8 lb/MWh; 3 run average	1 h minimum sampling time.

<b>If the boiler or process heater is in this subcategory:</b>	<b>For the following pollutants:</b>	<b>The emissions must not exceed the following emission limits, except during periods of startup and shutdown</b>	<b>Or the emissions must not exceed the following output-based limits (lb/MMBtu of steam output)</b>	<b>Using this specified sampling volume or test run duration</b>
	b. Filterable PM (or TSM)	3.0E-02 lb/MMBtu of heat input; or (2.6E-05 lb/MMBtu of heat input)	3.5E-02 lb/MMBtu of steam output or 4.2E-01 lb/MWh; or (2.7E-05 lb/MMBtu of steam output or 3.7E-04 lb/MWh).	Collect a minimum of 2 dscm per run.
8. Stokers/sloped grate/others designed to burn kiln-dried biomass fuel.	a. CO	460 ppm by volume on a dry basis corrected to 3 percent oxygen.	4.2E-01 lb/MMBtu of steam output or 5.1 lb/MWh	1 h minimum sampling time
	b. Filterable PM (or TSM)	3.0E-02 lb/MMBtu of heat input; or (4.0E-03 lb/MMBtu of heat input)	3.5E-02 lb/MMBtu of steam output or 4.2E-01 lb/MWh; or (4.2E-03 lb/MMBtu of steam output or 5.6E-02 lb/MWh).	Collect a minimum of 2 dscm per run.
9. Fluidized bed units designed to burn biomass/ biobased solids.	a. CO (or CEMS)	230 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (310 ppm by volume on a dry basis corrected to 3 percent oxygen, <sup>d</sup> 30-day rolling average).	2.2E-01 lb/MMBtu of steam output or 2.6 lb/MWh; 3 run average	1 h minimum sampling time
	b. Filterable PM (or TSM)	9.8E-03 lb/MMBtu of heat input; or (8.5E-05 <sup>a</sup> lb/MMBtu of heat input)	1.2E-02 lb/MMBtu of steam output or 0.14 lb/MWh; or (1.1E-04 <sup>a</sup> lb/MMBtu of steam output or 1.2E-03 <sup>a</sup> lb/MWh)	Collect a minimum of 3 dscm per run.
10. Suspension burners designed to burn biomass/biobased solids	a. CO (or CEMS)	2,400 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (2,000 ppm by	1.9 lb/MMBtu of steam output or 27 lb/MWh; 3-run average	1 h minimum sampling time.

<b>If the boiler or process heater is in this subcategory:</b>	<b>For the following pollutants:</b>	<b>The emissions must not exceed the following emission limits, except during periods of startup and shutdown</b>	<b>Or the emissions must not exceed the following output-based limits (lb/MMBtu of steam output)</b>	<b>Using this specified sampling volume or test run duration</b>
		volume on a dry basis corrected to 3 percent oxygen, <sup>d</sup> 10-day rolling average).		
	b. Filterable PM (or TSM)	3.0E-02 lb/MMBtu of heat input; or (6.5E-03 lb/MMBtu of heat input)	3.1E-02 lb/MMBtu of steam output or 4.2E-01 lb/MWh; or (6.6E-03 lb/MMBtu of steam output or 9.1E-02 lb/MWh)	Collect a minimum of 2 dscm per run.
11. Dutch Ovens/Pile burners designed to burn biomass/ biobased solids	c. CO (or CEMS)	330 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (520 ppm by volume on a dry basis corrected to 3 percent oxygen, <sup>d</sup> 10-day rolling average).	3.5E-01 lb/MMBtu of steam output or 3.6 lb/MWh; 3-run average	1 h minimum sampling time.
	d. Filterable PM (or TSM)	3.2E-03 lb/MMBtu of heat input; or (3.9E-05 lb/MMBtu of heat input)	4.3E-03 lb/MMBtu of steam output or 4.5E-02 lb/MWh; or (5.2E-05 lb/MMBtu of steam output or 5.5E-04 lb/MWh)	Collect a minimum of 3 dscm per run.
12. Fuel cell units designed to burn biomass/ biobased solids	a. CO	910 ppm by volume on a dry basis corrected to 3 percent oxygen.	1.1 lb/MMBtu of steam output or 1.0E+01 lb/MWh	1 h minimum sampling time.
	b. Filterable PM (or TSM)	2.0E-02 lb/MMBtu of heat input; or (2.9E-05 <sup>a</sup> lb/MMBtu of heat input)	3.0E-02 lb/MMBtu of steam output or 2.8E-01 lb/MWh; or (5.1E-05 lb/MMBtu of steam output or 4.1E-04 lb/MWh)	Collect a minimum of 2 dscm per run.

<b>If the boiler or process heater is in this subcategory:</b>	<b>For the following pollutants:</b>	<b>The emissions must not exceed the following emission limits, except during periods of startup and shutdown</b>	<b>Or the emissions must not exceed the following output-based limits (lb/MMBtu of steam output)</b>	<b>Using this specified sampling volume or test run duration</b>
13. Hybrid suspension grate boiler designed to burn biomass/biobased solids.	a. CO (or CEMS)	1,100 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (900 ppm by volume on a dry basis corrected to 3 percent oxygen, <sup>d</sup> 30-0day rolling average).	1.4 lb/MMBtu of steam output or 12 lb/MWh; 3-run average.	1 h minimum sampling time, use a span value of 3000 ppmv.
	b. Filterable PM (or TSM)	2.6E-02 lb/MMBtu of heat input; or (4.4E-04 lb/MMBtu of heat input)	3.3E-02 lb/MMBtu of steam output or 3.7E-01 lb/MWh; or (5.5E-04 lb/MMBtu of steam output or 6.2E-03 lb/MWh)	Collect a minimum of 3 dscm per run.
14. Units designed to burn liquid fuel.	a. Hydrogen Chloride	4.4E-04 lb/MMBtu of heat input.	4.8E-04 lb/MMBtu of steam output or 6.1E-03 lb/MWh	For M26A, collect a minimum of 2 dscm per run; for M26 collect a minimum of 240 L per run.
	b. Mercury	4.8E-07 <sup>a</sup> lb per MMBtu of heat input.	5.3E-07 <sup>a</sup> lb/MMBtu of steam output or 6.7E-06 <sup>a</sup> lb/MWh	For M29, collect a minimum of 4 dscm per run, for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 <sup>b</sup> collect a minimum of 4 dscm.
15. Units designed to burn heavy liquid fuel.	a. CO	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average.	0.13 lb/MMBtu of steam output or 1.4 lb/MWh; 3-run average.	1 h minimum sampling time.
	b. Filterable PM (or TSM)	1.3E-02 lb/MMBtu of heat input; or (7.5E-05	1.5E-02 lb/MMBtu of steam output or	Collect a minimum of 3 dscm per run

<b>If the boiler or process heater is in this subcategory:</b>	<b>For the following pollutants:</b>	<b>The emissions must not exceed the following emission limits, except during periods of startup and shutdown</b>	<b>Or the emissions must not exceed the following output-based limits (lb/MMBtu of steam output)</b>	<b>Using this specified sampling volume or test run duration</b>
		lb/MMBtu of heat input).	1.8E-01 lb/MWh; or (8.2E-05 lb/MMBtu or steam output or 1.1E-03 lb/MWh).	
16. Units designed to burn light liquid fuel	a. CO	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average.	0.13 lb/MMBtu of steam output or 1.4 lb/MWh; 3-run average.	1 h minimum sampling time.
	c. Filterable PM (or TSM)	1.1E-03 <sup>a</sup> lb/MMBtu of heat input; or (2.9E-05 lb/MMBtu of heat input).	1.2E-03 <sup>a</sup> lb/MMBtu of steam output or 1.6E-02 <sup>a</sup> lb/MWh; or (3.2E-05 lb/MMBtu or steam output or 4.0E-04 lb/MWh).	Collect a minimum of 3 dscm per run
17. Units designed to burn liquid fuel that are non-continental units.	a. CO	130 ppmv on a dry basis corrected to 3 percent oxygen, 3-run average based on stack test.	0.13 lb/MMBtu of steam output or 1.4 lb/MWh; 3-run average.	1 hour minimum sampling time.
	b. Filterable PM (or TSM)	2.3E-02 lb/MMBtu of heat input; or (8.6E-04 lb/MMBtu of heat input).	2.5E-02 lb/MMBtu of steam output or 3.2E-01 lb/MWh; or (9.4E-04 lb/MMBtu or steam output or 1.2E-02 lb/MWh).	Collect a minimum of 4 dscm per run.
a. Units designed to burn gas 2 (other) gases.	a. CO	130 ppmv on a dry basis corrected to 3 percent oxygen.	0.16 lb/MMBTU of steam output or 1.0 lb/MWh	1 h minimum sampling time.
	b. Hydrogen Chloride	1.7E-03 lb/MMBtu of heat input.	2.9E-03 lb/MMBtu of steam output or 1.8E-02 lb/MWh	For M26A, collect a minimum of 2 dscm per run; for M26 collect a minimum of 240 L per run.

<b>If the boiler or process heater is in this subcategory:</b>	<b>For the following pollutants:</b>	<b>The emissions must not exceed the following emission limits, except during periods of startup and shutdown</b>	<b>Or the emissions must not exceed the following output-based limits (lb/MMBtu of steam output)</b>	<b>Using this specified sampling volume or test run duration</b>
	c. Mercury	7.9E-06 lb/MMBtu of heat input	1.4E-05 lb/MMBtu of steam output or 8.3E-05 lb/MWh.	For M29, collect a minimum of 3 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 <sup>b</sup> collect a minimum of 3 dscm.
	d. Filterable PM (or TSM)	6.7E-03 lb/MMBtu of heat input; or (2.1E-04 lb/MMBtu of heat input).	1.2E-02 lb/MMBtu of steam output or 7.0E-02 lb/MWh; or (3.5E-04 lb/MMBtu of steam output or 2.2E-03 lb/MWh).	Collect a minimum of 3 dscm per run.

<sup>a</sup> If the facility is conducting stack tests to demonstrate compliance and the performance tests for this pollutant for at least 2 consecutive years show that the emissions are at or below this limit, the facility can skip testing according to 40 CFR 63.7515 if all of the other provisions of 40 CFR 63.7515 are met. For all other pollutants that do not contain a footnote "a", the performance tests for this pollutant for at least 2 consecutive years must show that the emissions are at or below 75 percent of this limit in order to qualify for skip testing.

<sup>b</sup> Incorporated by reference.

<sup>c</sup> If your affected source is a new or reconstructed affected source that commenced construction or reconstruction after 4 June 2010, and before 1 April 2013, you may comply with the emission limits in Tables 11, 12 or 13 to 40 CFR 63, Subpart DDDDD until 31 January 2016. On and after 31 January 2016, you must comply with the emission limits in Table 1 to 40 CFR 62, Subpart DDDDD.

<sup>d</sup> An owner or operator may request an alternative test method under § 63.7 of this chapter, in order that compliance with the carbon monoxide emissions limit be determined using carbon dioxide as a diluent correction in place of oxygen at 3%. EPA Method 19 F-factors and EPA Method 19 equations must be used to generate the appropriate CO<sub>2</sub> correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The alternative test method request must account for any CO<sub>2</sub> being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc.

**Table 2: Emission Limits for Existing Boilers and Process Heaters (Units with heat input capacity of 10 million Btu per hour or greater)**

<b>If the boiler or process heater is in this subcategory:</b>	<b>For the following pollutants:</b>	<b>The emissions must not exceed the following emission limits, except during periods of startup and shutdown</b>	<b>Or the emissions must not exceed the following output-based limits (lb/MMBtu of steam output)</b>	<b>Using this specified sampling volume or test run duration</b>
1. Units in all subcategories designed to burn solid fuel.	a. Hydrogen Chloride	2.2E-02 lb/MMBtu of heat input.	2.5E-02 lb/MMBtu of steam output or 0.27 lb/MWh	For M26A, collect a minimum of 1 dscm per run; for M26 collect a minimum of 120 L per run.
	b. Mercury	4.7E-06 lb/MMBtu of heat input.	6.4E-06 lb/MMBtu of steam output or 7.3E-05 lb/MWh	For M29, collect a minimum of 3 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 <sup>b</sup> collect a minimum of 3 dscm.
2. Units designed to burn coal/solid fossil fuel.	a. Filterable PM (or TSM)	4.0E-02 lb/MMBtu of heat input; or (5.3E-05 lb/MMBtu or heat input)	4.2E-02 lb/MMBtu of steam output or 4.9E-01 lb/MWh; or (5.6E-05 lb/MMBtu of steam output or 6.5E-04 lb/MWh).	Collect a minimum of 2 dscm per run.
3. Pulverized coal boilers designed to burn coal/solid fossil fuel.	a. CO (or CEMS)	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (320 ppm by volume on a dry basis corrected to 3 percent oxygen, <sup>c</sup> 30-day rolling average).	0.11 lb/MMBtu of steam output or 1.4 lb/MWh; 3-run average	1 h minimum sampling time.

<b>If the boiler or process heater is in this subcategory:</b>	<b>For the following pollutants:</b>	<b>The emissions must not exceed the following emission limits, except during periods of startup and shutdown</b>	<b>Or the emissions must not exceed the following output-based limits (lb/MMBtu of steam output)</b>	<b>Using this specified sampling volume or test run duration</b>
4. Stokers designed to burn coal/solid fossil fuel	a. CO (or CEMS)	160 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (340 ppm by volume on a dry basis corrected to 3 percent oxygen, <sup>c</sup> 30-day rolling average).	0.14 lb/MMBtu of steam output or 1.7 lb/MWh; 3-run average	1 h minimum sampling time.
5. Fluidized bed units designed to burn coal/solid fossil fuel.	a. CO (or CEMS)	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (230 ppm by volume on a dry basis corrected to 3 percent oxygen, <sup>c</sup> 30-day rolling average).	0.12 lb/MMBtu of steam output or 1.4 lb/MWh; 3-run average	1 h minimum sampling time.
6. Fluidized bed units with an integrated heat exchanger designed to burn coal/solid fossil fuel.	a. CO (or CEMS)	140 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (150 ppm by volume on a dry basis corrected to 3 percent oxygen, <sup>c</sup> 30-day rolling average).	1.3E-01 lb/MMBtu of steam output or 1.5 lb/MWh; 3-run average	1 h minimum sampling time.
7. Stokers/sloped grate/others designed to burn wet biomass fuel.	a. CO (or CEMS)	1,500 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (720 ppm by volume on a dry basis corrected to 3 percent oxygen, <sup>c</sup> 30-day rolling average).	1.4 lb/MMBtu of steam output or 17 lb/MWh; 3-run average	1 h minimum sampling time.

<b>If the boiler or process heater is in this subcategory:</b>	<b>For the following pollutants:</b>	<b>The emissions must not exceed the following emission limits, except during periods of startup and shutdown</b>	<b>Or the emissions must not exceed the following output-based limits (lb/MMBtu of steam output)</b>	<b>Using this specified sampling volume or test run duration</b>
	b. Filterable PM (or TSM)	3.7E-02 lb/MMBtu of heat input; or (2.4E-04 lb/MMBtu of heat input).	4.3E-02 lb/MMBtu of steam output or 5.2E-02 lb/MWh; or (2.8E-04 lb/MMBtu of steam output or 3.4E-04 lb/MWh).	Collect a minimum of 2 dscm per run.
8. Stokers/sloped grate/others designed to burn kiln-dried biomass fuel..	a. CO	460 ppm by volume on a dry basis corrected to 3 percent oxygen.	4.2E-01 lb/MMBtu of steam output or 5.1E-02 lb/MWh	1 h minimum sampling time.
	b. Filterable PM (or TSM)	3.2E-01 lb/MMBtu of heat input; or (4.0E-03 lb/MMBtu of heat input).	3.7E-01 lb/MMBtu of steam output or 4.5 lb/MWh; or (4.6E-03 lb/MMBtu of steam output or 5.6E-02 lb/MWh).	Collect a minimum of 1 dscm per run.
9. Fluidized bed units designed to burn biomass/ biobased solids.	a. CO (or CEMS)	470 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (310 ppm by volume on a dry basis corrected to 3 percent oxygen, <sup>c</sup> 30-day rolling average).	4.6E-01 lb/MMBtu of steam output or 5.2 lb/MWh; 3-run average	1 h minimum sampling time.
	b. Filterable PM (or TSM)	1.1E-01 lb/MMBtu of heat input; or (1.2E-03 lb/MMBtu of heat input).	1.4E-01 lb/MMBtu of steam output or 1.6 lb/MWh; or (1.5E-03 lb/MMBtu of steam output or 1.7E-02 lb/MWh).	Collect a minimum of 1 dscm per run.
10. Suspension burners designed to burn biomass/ biobased solids	a. CO (or CEMS)	2,400 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (2,000 ppm by volume on a dry basis corrected to 3	1.9 lb/MMBtu of steam output or 27 lb/MWh; 3-run average	1 h minimum sampling time.

<b>If the boiler or process heater is in this subcategory:</b>	<b>For the following pollutants:</b>	<b>The emissions must not exceed the following emission limits, except during periods of startup and shutdown</b>	<b>Or the emissions must not exceed the following output-based limits (lb/MMBtu of steam output)</b>	<b>Using this specified sampling volume or test run duration</b>
		percent oxygen, <sup>c</sup> 10-day rolling average).		
	b. Filterable PM (or TSM)	5.1E-02 lb/MMBtu of heat input; or (6.5E-03 lb/MMBtu of heat input).	5.2E-02 lb/MMBtu of steam output or 7.1E-01 lb/MWh; or (6.6E-03 lb/MMBtu of steam output or 9.1E-02 lb/MWh).	Collect a minimum of 2 dscm per run.
11. Dutch Ovens/Pile burners designed to burn biomass/bio-based solid.	a. CO (or CEMS)	770 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (520 ppm by volume on a dry basis corrected to 3 percent oxygen, <sup>c</sup> 10-day rolling average).	8.4E-01 lb/MMBtu of steam output or 8.4 lb/MWh; 3-run average	1 h minimum sampling time.
	b. Filterable PM (or TSM)	2.8E-01 lb/MMBtu of heat input; or (2.0E-03 lb/MMBtu of heat input).	3.9E-01 lb/MMBtu of steam output or 3.9 lb/MWh; or (2.8E-03 lb/MMBtu of steam output or 2.8E-02 lb/MWh).	Collect a minimum of 1 dscm per run.
12. Fuel cell units designed to burn biomass/biobased solids	a. CO	1,100 ppm by volume on a dry basis corrected to 3 percent oxygen.	2.4 lb/MMBtu of steam output or 12 lb/MWh	1 h minimum sampling time.
	b. Filterable PM (or TSM)	2.0E-02 lb/MMBtu of heat input; or (5.8E-03 lb/MMBtu of heat input).	5.5E-02 lb/MMBtu of steam output or 2.8E-01 lb/MWh; or (1.6E-02 lb/MMBtu of steam output or 8.1E-02 lb/MWh).	Collect a minimum of 2 dscm per run.
13. Hybrid suspension/grate units	a. CO	3,500 ppm by volume on a dry basis corrected to 3	3.5 lb/MMBtu of steam output or 39	1 h minimum sampling time.

If the boiler or process heater is in this subcategory:	For the following pollutants:	The emissions must not exceed the following emission limits, except during periods of startup and shutdown	Or the emissions must not exceed the following output-based limits (lb/MMBtu of steam output)	Using this specified sampling volume or test run duration
designed to burn biomass/biobased solids.		percent oxygen, 3-run average; or (900 ppm by volume on a dry basis corrected to 3 percent oxygen, <sup>c</sup> 30-day rolling average).	lb/MWh; 3-run average	
	b. Filterable PM (or TSM)	4.4E-01 lb/MMBtu of heat input; or (4.5E-04 lb/MMBtu of heat input).	5.5E-01 lb/MMBtu of steam output or 6.2 lb/MWh; or (5.7E-04 lb/MMBtu of steam output or 6.3E-03 lb/MWh).	Collect a minimum of 1 dscm per run.
14. Units designed to burn liquid fuel.	a. Hydrogen Chloride	2.0E-06 <sup>a</sup> lb/MMBtu of heat input.	2.0E-06 <sup>a</sup> lb/MMBtu of steam output or 2.8E-05 lb/MWh.	For M29, collect a minimum of 3 dscm per run; for M30 or M30b collect a minimum sample as specified in the method, for ASTM D6784, <sup>b</sup> collect a minimum of 2 dscm.
	b. Mercury	2.0E-06 lb per MMBtu of heat input.	2.5E-06 lb/MMBtu of steam output or 2.8E-05 lb/MWh	For M29, collect a minimum of 3 dscm per run; for M30A or M30B collect a minimum sample as specified in the method, for ASTM D6784 <sup>b</sup> collect a minimum of 2 dscm.
15. Units designed to burn heavy liquid fuel.	a. CO	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average.	0.13 lb/MMBtu of steam output or 1.4 lb/MWh; 3-run average.	1 h minimum sampling time.
	b. Filterable PM (or TSM)	6.2E-02 lb/MMBtu of heat input; or (2.0E-04	7.5E-02 lb/MMBtu of steam output or	Collect a minimum of 1 dscm per run.

If the boiler or process heater is in this subcategory:	For the following pollutants:	The emissions must not exceed the following emission limits, except during periods of startup and shutdown	Or the emissions must not exceed the following output-based limits (lb/MMBtu of steam output)	Using this specified sampling volume or test run duration
		lb/MMBtu of heat input).	8.6E-01 lb/MWh; or (2.5E-04 lb/MMBtu of steam output or 2.8E-03 lb/MWh).	
16. Units designed to burn light liquid fuel	a. CO	130 ppm by volume on a dry basis corrected to 3 percent oxygen.	0.13 lb/MMBtu of steam output or 1.4 lb/MWh.	1 h minimum sampling time.
	b. Filterable PM (or TSM)	7.9E-03 <sup>a</sup> lb/MMBtu of heat input; or (6.2E-05 lb/MMBtu of heat input).	9.6E-03 <sup>a</sup> lb/MMBtu of steam output or 1.1E-01 <sup>a</sup> lb/MWh; or (7.5E-05 lb/MMBtu of steam output or 8.6E-04 lb/MWh).	Collect a minimum of 3 dscm per run.
17. Units designed to burn liquid fuel that are non-continental units.	a. CO	130 ppmv on a dry basis corrected to 3 percent oxygen, 3-run average based on stack test.	0.13 lb/MMBtu of steam output or 1.4 lb/MWh; 3-run average.	1 hour minimum sampling time.
	b. Filterable PM (or TSM)	2.7E-01 lb/MMBtu of heat input; or (8.6E-04 lb/MMBtu of heat input).	3.3E-01 lb/MMBtu of steam output or 3.8 lb/MWh; or (1.1E-03 lb/MMBtu of steam output or 1.2E-02 lb/MWh).	Collect a minimum of 2 dscm per run.
c. Units designed to burn gas 2 (other) gases.	a. CO	130 ppm by volume on a dry basis corrected to 3 percent oxygen.	0.16 lb/MMBtu of steam output or 1.8E-02 lb/MWh.	1 h minimum sampling time.
	b. Hydrogen Chloride	1.7E-03 lb/MMBtu of heat input.	2.9E-03 lb/MMBtu of steam output or 1.8E-02 lb/MWh	For M26A, collect a minimum of 2 dscm per run; for M26 collect a minimum of 240 L per run.
	c. Mercury	7.9E-06 lb/MMBtu of heat input.	1.4E-05 lb/MMBtu of	For M29, collect a minimum of 3 dscm per run; for

If the boiler or process heater is in this subcategory:	For the following pollutants:	The emissions must not exceed the following emission limits, except during periods of startup and shutdown	Or the emissions must not exceed the following output-based limits (lb/MMBtu of steam output)	Using this specified sampling volume or test run duration
			steam output or 8.3E-05 lb/MWh	M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 <sup>b</sup> collect a minimum of 2 dscm.
	d. Filterable PM (or TSM)	6.7E-03 lb/MMBtu of heat input or (2.1E-04 lb/MMBtu of heat input).	1.2E-02 lb/MMBtu of steam output or 7.0E-02 lb/MWh; or (3.5E-04 lb/MMBtu of steam output or 2.2E-03 lb/MWh.	Collect a minimum of 3 dscm per run.

<sup>a</sup> If the facility is conducting stack tests to demonstrate compliance and the performance tests for this pollutant for at least 2 consecutive years show that emissions are at or below this limit, the facility can skip testing according to 40 CFR 63.7515 if all of the other provisions of 40 CFR 63.7515 are met. For all other pollutants that do not contain a footnote a, the performance tests for this pollutant for at least 2 consecutive years must show that emissions are at or below 75 percent of this limit in order to qualify for skip testing.

<sup>b</sup> Incorporated by reference.

<sup>c</sup> An owner or operator may request an alternative test method under § 63.7 of this chapter, in order that compliance with the carbon monoxide emissions limit be determined using carbon dioxide as a diluent correction in place of oxygen at 3%. EPA Method 19 F-factors and EPA Method 19 equations must be used to generate the appropriate CO<sub>2</sub> correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The alternative test method request must account for any CO<sub>2</sub> being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc.

**Table 3: Work Practice Standards**

If the unit is.....	The facility must meet the following...
1. A new or existing boiler or process heater with a continuous oxygen trim system that maintains an optimum air to fuel ratio, or a heat input capacity of less than or equal to 5 million Btu per hour in any of the following subcategories: unit designed to burn gas 1; unit designed to burn gas 2 (other); or unit designed to burn light liquid, or a limited use boiler or process heater.	Conduct a tune-up of the boiler or process heater every 5 yr as specified in 40 CFR 63.7540.

If the unit is....	The facility must meet the following...
<p>2. A new or existing boiler or process heater without a continuous oxygen trim system and with heat input capacity of less than 10 million Btu per hour in the unit designed to burn heavy liquid or unit designed to burn solid fuel subcategories; or a new or existing boiler or process heater with heat input capacity of less than 10 million Btu per hour, but greater than 5 million Btu per hour, in any of the following subcategories: unit designed to burn gas 1; unit designed to burn gas 2 (other); or unit designed to burn light liquid.</p>	<p>Conduct a tune up of the boiler or process heater biennially as specified in 40 CFR 63.7540.</p>
<p>3. A new or existing boiler or process heater without a continuous oxygen trim system and with heat input capacity of 10 million Btu per hour or greater.</p>	<p>Conduct a tune-up of the boiler or process heater annually as specified in 40 CFR 63.7540. Units in either the Gas 1 or Metal Process Furnace subcategories will conduct this tune-up as a work practice for all regulated emissions under 40 CFR 63, subpart DDDDD. Units in all other subcategories will conduct this tune-up as a work practice for dioxins/furans.</p>
<p>4. An existing boiler or process heater located at a major source facility, not including limited use units.</p>	<p>Must have a one-time energy assessment performed by qualified energy assessor. An energy assessment completed on or after 1 January 2008 that meets or is amended to meet the energy assessment requirements in this table, satisfies the energy assessment requirement. A facility that operates under an energy management program developed according to the ENERGYSTAR guidelines for energy management or compatible with ISO 50001 for at least 1 year between 1 Jan 2008 and the compliance date specified in 40 CFR 63.7495 that includes the affected units also satisfies the energy assessment requirement. The energy assessment must include the following with extent of the evaluation for items a to e. appropriate for the onsite technical hours listed in 40 CFR 63.7575:</p> <ul style="list-style-type: none"> <li>a. A visual inspection of the boiler or process heater system.</li> <li>b. An evaluation of operating characteristics of the boiler or process heater systems, specifications of energy using systems, operating and maintenance procedures, and unusual operating constraints.</li> <li>c. An inventory of major energy use systems consuming energy from affected boilers and process heaters and which are under the control of the boiler/process heater owner/operator.</li> <li>d. A review of available architectural and engineering plans, facility operation and maintenance procedures and logs, and fuel usage.</li> </ul>

If the unit is.....	The facility must meet the following...
	<ul style="list-style-type: none"> <li>e. A review of the facility's energy management practices and provide recommendations for improvements consistent with the definition of energy management program, if identified.</li> <li>f. A list of cost-effective energy conservation measures that are within the facility's control.</li> <li>g. A list of the energy savings potential of the energy conservation measures identified, and</li> <li>h. A comprehensive report detailing the ways to improve efficiency, the cost of specific improvements, benefits, and the time frame for recouping those investments.</li> </ul>
<p>5. An existing or new boiler or process heater subject to the emission limits in Tables 1, 2, or 11 through 13 of 40 CFR 63, Subpart DDDDD during startup.</p>	<ul style="list-style-type: none"> <li>a. The facility must operate all CMS during startup.</li> <li>b. For startup of a boiler or process heater, the facility must use one or a combination of the following clean fuels: natural gas, synthetic natural gas, propane, other Gas 1 fuels, distillate oil, syngas, ultra-low sulfur diesel, fuel oil-soaked rags, kerosene, hydrogen, paper, cardboard, refinery gas, liquefied petroleum gas, clean dry biomass, and any fuels meeting the appropriate HCl, mercury and TSM emission standards by fuel analysis.</li> <li>c. The facility has the option of complying using either of the following work practices: <ul style="list-style-type: none"> <li>(1) If you choose to comply using definition (1) of "startup" in § 63.7575, once you start firing fuels that are not clean fuels, you must vent emissions to the main stack(s) and engage all of the applicable control devices except limestone injection in fluidized bed combustion (FBC) boilers, dry scrubber, fabric filter, and selective catalytic reduction (SCR). You must start your limestone injection in FBC boilers, dry scrubber, fabric filter, and SCR systems as expeditiously as possible. Startup ends when steam or heat is supplied for any purpose, OR</li> <li>(2) If you choose to comply using definition (2) of "startup" in 40 CFR 63.7575, once you start to feed fuels that are not clean fuels, vent emissions to the main stack(s) and engage all of the applicable control devices so as to comply with the emission limits within 4 h of start of supplying useful thermal energy. You must engage and operate PM control within one hour of first feeding fuels that</li> </ul> </li> </ul>

If the unit is.....	The facility must meet the following...
	<p>are not clean fuels<sup>a</sup>. Start all applicable control devices as expeditiously as possible, but, in any case, when necessary to comply with other standards applicable to the source by a permit limit or a rule other than this subpart that require operation of the control devices. Develop and implement a written startup and shutdown plan, as specified in 40 CFR 63.7505(e).</p> <p>d. The facility must comply with all applicable emission limits at all times except during startup or shutdown periods at which time the facility meets this work practice. The facility must collect monitoring data during periods of startup, as specified in 40 CFR 63.7535(b). The facility must keep records during periods of startup. The facility must provide reports concerning activities and periods of startup, as specified in 40 CFR 63.7555.</p>
<p>6. An existing or new boiler or process heater subject to the emission limits in Tables 1 or 2 or 11 through 13 of 40 CFR 63, Subpart DDDDD during shutdown.</p>	<p>The facility must operate all CMS during shutdown.</p> <p>While firing fuels that are not clean fuels during shutdown, you must vent emissions to the main stack(s) and operate all applicable control devices, except limestone injection in FBC boilers, dry scrubber, fabric filter, and SCR but, in any case, when necessary to comply with other standards applicable to the source that require operation of the control device.</p> <p>If, in addition to the fuel used prior to initiation of shutdown, another fuel must be used to support the shutdown process, that additional fuel must be one or a combination of the following clean fuels: Natural gas, synthetic natural gas, propane, other Gas 1 fuels, distillate oil, syngas, ultra-low sulfur diesel, refinery gas, and liquefied petroleum gas.</p> <p>The facility must comply with all applicable emissions limits at all times except for startup or shutdown periods conforming with this work practice. The facility must collect monitoring data during periods of shutdown, as specified in 40 CFR 63.7535(b). The facility must keep records during periods of shutdown. The facility must provide reports concerning activities and periods of shutdown, as specified in 40 CFR 63.7555.</p>

**Table 4: Operating Limits for Boilers and Process Heaters**

If the facility demonstrates compliance with...	The facility must meet these operating limits...
1. Wet PM scrubber control on a boiler not using a PM CPMS.	Maintain the 30-day rolling average pressure drop and the 30-day rolling average liquid flow rate at or above the lowest one-hour average pressure drop and the lowest one-hour average liquid flow rate, respectively, measured during the performance test demonstrating compliance with the PM emission limitation according to 40 CFR 63.7530(b) and Table 7 to 40 CFR 63, subpart DDDDD.
2. Wet acid gas (HCl) scrubber <sup>a</sup> control on a boiler or process heater not using a HCl CEMS.	Maintain the 30-day rolling average effluent pH at or above the lowest 1-h average pH and the 30-day rolling average liquid flow rate at or above the lowest 1-h average liquid flow rate measured during the performance test demonstrating compliance with the HCl emission limitation according to 40 CFR 63.7530(b) and Table 7 to 40 CFR 63, subpart DDDDD.
3. Fabric filter control on a boiler or process heater using a PM CPMS.	<p>a. Maintain opacity to less than or equal to 10 percent opacity or the highest hourly average opacity reading measured during the performance test run demonstrating compliance with the PM (or TSM) emission limitation (daily block average) ; or</p> <p>b. Install and operate a bag leak detection system according to 40 CFR 63.7525 and operate the fabric filter such that the bag leak detection system alert is not activated more than 5 percent of the operating time during each 6-mo period.</p>
4. Electrostatic precipitator control on a boiler or process heater not using a PM CPMS.	<p>a. This option is for boilers and process heaters that operate dry control systems (i.e., an ESP without a wet scrubber). Existing and new boilers and process heaters must maintain opacity to less than or equal to 10 percent opacity or the highest hourly average opacity reading measured during the performance test run demonstrating compliance with the PM (or TSM) emission limitation (daily block average); or</p> <p>b. This option is only for boilers and process heaters not subject to PM CPMS or continuous compliance with an opacity limit (i.e., dry ESP). Maintain the 30-day rolling average total secondary electric power input of the electrostatic precipitator at or above the operating limits established during the performance test according to 40 CFR 63.7530(b) and Table 7 to 40 CFR 63, Subpart DDDDD.</p>

<b>If the facility demonstrates compliance with...</b>	<b>The facility must meet these operating limits...</b>
5. Dry scrubber or carbon injection control on a boiler or process heater not using a mercury CEMS	Maintain the minimum sorbent or carbon injection rate as defined in 40 CFR 63.7575, Subpart DDDDD.
6. Any other add-on air pollution control type on a boiler or process heater not using PM CPMS.	This option is for boilers and process heaters that operate dry control systems. Existing and new boilers and process heaters must maintain opacity to less than or equal to 10 percent opacity or the highest hourly average opacity reading measured during the performance test run demonstrating compliance with the PM (or TSM) emission limitation (daily block average).
7. Fuel Analysis	Maintain the fuel type or fuel mixture such that the applicable emission rates calculated according to 40 CFR 63.7530(c)(1), (2) and/or (3) is less than the applicable emission limits.
8. Performance testing	For boilers and process heaters that demonstrate compliance with a performance test, maintain the 30-day rolling average operating load of each unit such that it does not exceed 110 percent of the highest hourly average operating load recorded during the most recent performance test.
9. Oxygen Analyzer System	For boilers and process heaters subject to a CO emission limit that demonstrate compliance with an O <sub>2</sub> analyzer system as specified in 40 CFR 63.7525(a), maintain the 30-day rolling average oxygen content at or above the lowest hourly average oxygen concentration measured during the most recent CO performance test, as specified in Table 8. This requirement does not apply to units that install an oxygen trim system since these units will set the trim system to the level specified in 40 CFR 63.7525(a).
10. SO <sub>2</sub> CEMS	For boilers or process heaters subject to an HCl emission limit that demonstrate compliance with an SO <sub>2</sub> CEMS, maintain the 30-day rolling average SO <sub>2</sub> emission rate at or below the highest hourly average SO <sub>2</sub> concentration measured during the most recent HCl performance test, as specified in Table 8.

<sup>A</sup> As specified in 40 CFR 63.7555(d)(13), the source may request an alternative timeframe with the PM controls requirement to the permitting authority (state, local, or tribal agency) that has been delegated authority for this subpart by EPA. The source must provide evidence that (1) it is unable to safely engage and operate the PM control(s) to meet the “fuel firing + 1 hour” requirement and (2) the PM control device is appropriately designed and sized to meet the filterable PM emission limit. It is acknowledged that there may be another control device that has been installed other than ESP that provides additional PM control (e.g., scrubber).

## Appendix 1-43

### Emission and Operating Limitations for Industrial, Commercial, and Institutional Boilers At An Area Source of HAP (40 CFR 63, Table 1, Table 2, Table 3, to Subpart JJJJJ) [Added April 2011; Revised April 2013]

**Table 1: Emission Limits**

<b>If the facility boiler is in this subcategory:</b>	<b>For the following pollutants:</b>	<b>The facility must achieve &lt;= the following emission limits, except during periods of startup and shutdown...</b>
1. New coal-fired boilers with heat input capacity of 30 MMBtu/h or greater that do not meet the definitions of limited-use boiler.	PM (Filterable)	3.0E-02 lb/MMBtu of heat input.
	Mercury	2.2E-05 lb/MMBtu of heat input
	Carbon Monoxide	420 ppm by volume on a dry basis corrected to 3 percent oxygen (3-run average or 10-day rolling average)
2. New coal-fired boilers with heat input capacity of between 10 and 30 MMBtu/h that do not meet the definition of limited-use boiler.	PM (Filterable)	4.2E-01 lb/MMBtu of heat input.
	Mercury	2.2E-05 lb/MMBtu of heat input
	Carbon Monoxide	420 ppm by volume on a dry basis corrected to 3 percent oxygen (3-run average or 10-day rolling average)
3. New biomass-fired boilers with heat input capacity of 30 MMBtu/h or greater that do not meet the definition of seasonal boiler or limited-use boiler.	PM (Filterable)	3.0E-02 lb/MMBtu of heat input.
4. New biomass-fired boilers with heat input capacity between 10 and 30 MMBtu/h that do not meet the definition of seasonal boiler or limited-use boiler.	PM (Filterable)	7.0E-02 lb/MMBtu of heat input.
5. New oil-fired boilers with a heat input capacity of 10 MMBtu pr hour or greater that do not meet the definition of seasonal boiler or limited-use boiler.	PM (Filterable)	3.0E-02 lb/MMBtu of heat input.

<b>If the facility boiler is in this subcategory:</b>	<b>For the following pollutants:</b>	<b>The facility must achieve &lt;= the following emission limits, except during periods of startup and shutdown...</b>
6. Existing coal-fired boilers with heat input capacity of 10 MMBtu/h or greater that do not meet the definition of limited-use boiler.	Mercury	2.2E-05 lb/MMBtu of heat input
	Carbon Monoxide	420 ppm by volume on a dry basis corrected to 3 percent oxygen.

**Table 2: Work Practice Standards, Emission Reduction Measures, and Management Practices**

<b>If the facility boiler is in this subcategory:</b>	<b>The facility must meet the following:</b>
1. Existing or new coal, new biomass-fired, or new oil-fired boilers (units with heat input capacity of 10 MMBtu/h or greater).	Minimize the boiler's startup and shutdown periods and conduct startups and shutdowns according to the manufacturer's recommended procedures. If manufacturer's recommended procedures are not available, the facility must follow recommended procedures for a unit of similar design for which manufacturer's recommended procedures are available.
2. Existing coal-fired boilers with heat input capacity of less than 10 MMBtu/h that do not meet the definition of limited-use boiler, or use an oxygen trim system that maintains an optimum air-to-fuel ration.	Conduct an initial tune-up as specified in 40 CFR 63.11214, and conduct a tune-up of the boiler biennially as specified in 40 CFR 63.11223.
3. New coal-fired boilers with heat input capacity of less than 10 MMBtu/hr that do not meet the definition of limited-use boiler, or use an oxygen trim system that maintains an optimum air-to-fuel ratio.	Conduct a tune-up of the boiler biennially as specified in 40 CFR 63.11223.
4. Existing oil-fired boilers with heat input capacity greater than 5 MMBtu/hr that do not meet the definition of seasonal boiler or limited-use boiler, or use an oxygen trim system that maintains an optimum air-to-fuel ratio.	Conduct an initial tune-up as specified in 40 CFR 63.11214, and conduct a tune-up of the boiler biennially as specified in 40 CFR 63.11223.
5. New oil-fired boilers with heat input capacity greater than 5 MMBtu/hr that do not meet the definition of seasonal boiler or limited-use boiler, or use an oxygen trim system that maintains an optimum air-to-fuel ratio.	Conduct a tune-up of the boiler biennially as specified in 40 CFR 63.11223.

<b>If the facility boiler is in this subcategory:</b>	<b>The facility must meet the following:</b>
6. Existing biomass-fired boilers that do not meet the definition of seasonal boiler or limited-use boiler, or use an oxygen trim system that maintains an optimum air-to-fuel ratio.	Conduct an initial tune-up as specified in 40 CFR 63.11214, and conduct a tune-up of the boiler biennially as specified in 40 CFR 63.11223.
7. New biomass-fired boilers that do not meet the definition of seasonal boiler or limited-use boiler, or use an oxygen trim system that maintains an optimum air-to-fuel ratio.	Conduct a tune-up of the boiler biennially as specified in 40 CFR 63.11223.
8. Existing seasonal boilers	Conduct an initial tune-up as specified in 40 CFR 63.11214, and conduct a tune-up of the boiler every 5 yr as specified in 40 CFR 63.11223.
9. New seasonal boilers	Conduct a tune-up of the boiler every 5 yr as specified in 40 CFR 63.11223.
10. Existing limited-use boilers	Conduct an initial tune-up as specified in 40 CFR 63.11214, and conduct a tune-up of the boiler every 5 yr as specified in 40 CFR 63.11223.
11. New limited-use boilers	Conduct a tune-up of the boiler every 5 yr as specified in 40 CFR 63.11223.
12. Existing oil-fired boilers with heat input capacity of equal to or less than 5 MMBtu/h	Conduct an initial tune-up as specified in 40 CFR 63.11214, and conduct a tune-up of the boiler every 5 yr as specified in 40 CFR 63.11223.
13. New oil-fired boilers with heat input capacity of equal to or less than 5 MMBtu/h	Conduct a tune-up of the boiler every 5 yr as specified in 40 CFR 63.11223.
14. Existing coal-fired, biomass-fired, or oil-fired boilers with an oxygen trim system that maintains an optimum air-to-fuel ratio that would otherwise be subject to a biennial tune-up.	Conduct an initial tune-up as specified in 40 CFR 63.11214, and conduct a tune-up of the boiler every 5 yr as specified in 40 CFR 63.11223.
15. New coal-fired, biomass-fired, or oil-fired boilers with an oxygen trim system that maintains an optimum air-to-fuel ratio that would otherwise be subject to a biennial tune-up.	Conduct a tune-up of the boiler every 5 yr as specified in 40 CFR 63.11223.

If the facility boiler is in this subcategory:	The facility must meet the following:
<p>16. Existing coal-fired, biomass-fired, or oil-fired boilers (units with heat input capacity of 10 MMBtu/h and greater), not including limited-use boilers.</p>	<p>Must have a one-time energy assessment performed by a qualified energy assessor. An energy assessment completed on or after 1 January 2008, that meets or is amended to meet the energy assessment requirements in this table satisfies the energy assessment requirement. Energy assessor approval and qualification requirements are waived in instances where past or amended energy assessments are used to meet the energy assessment requirements. A facility that operates under an energy management program compatible with ISO 50001 that includes the affected units also satisfies the energy assessment requirement. The energy assessment must include the following with extent of the evaluation for items (1) to (4) appropriate for the on-site technical hours listed in 40 CFR 63.11237:</p> <ol style="list-style-type: none"> <li>(1) A visual inspection of the boiler system,</li> <li>(2) An evaluation of operating characteristics of the affected boiler systems, specifications of energy use systems, operating and maintenance procedures, and unusual operating constraints,</li> <li>(3) An inventory of major energy use systems consuming energy from affected boiler(s) and which are under control of the boiler owner or operator,</li> <li>(4) A review of available architectural and engineering plans, facility operation and maintenance procedures and logs, and fuel usage,</li> <li>(5) A list of major energy conservation measures that are within the facility's control,</li> <li>(6) A list of the energy savings potential of the energy conservation measures identified, and</li> <li>(7) A comprehensive report detailing the ways to improve efficiency, the cost of specific improvements, benefits, and the time frame for recouping those investments.</li> </ol>

**Table 3: Operating Limits for Boilers with Emission Limits**

If the facility demonstrates compliance with applicable emission limits using.....	You must meet these operating limits.....
<p>1. Fabric filter control...</p>	<ul style="list-style-type: none"> <li>• Maintain opacity to less than or equal to 10 percent opacity (daily block average); OR</li> <li>• Install and operate a bag leak detection system according to 40 CFR 63.11224 and operate the fabric filter such that the bag leak</li> </ul>

	detection system alarm does not sound more than 5 percent of the operating time during each 6-mo period.
2. Electrostatic precipitator control	<ul style="list-style-type: none"> <li>• Maintain opacity to less than or equal to 10 percent opacity (daily block average); OR</li> <li>• Maintain the 30-day rolling average total secondary electric power of the electrostatic precipitator at or above the minimum total secondary electric power as defined in 40 CFR 63.11237.</li> </ul>
3. Wet scrubber control	<ul style="list-style-type: none"> <li>• Maintain the 30-day rolling average pressure drop across the wet scrubber at or above the minimum scrubber pressure drop as defined in 40 CFR 63.11237 and the 30-day rolling average liquid flow rate at or above the minimum scrubber liquid flow rate as defined in 40 CFR 63.11237.</li> </ul>
4. Dry sorbent or carbon injection control	<ul style="list-style-type: none"> <li>• Maintain the 30-day rolling average sorbent or activated carbon injection rate at or above the minimum sorbent injection rate or minimum activated carbon injection rate as defined in 40 CFR 63.11237. When your boiler operates at lower loads, multiply your sorbent or activated carbon injection rate by the load fraction (e.g., actual heat input divided by the heat input during the performance stack test; for 50 percent load, multiply the injection rate operating limit by 0.5).</li> </ul>
5. Any other add-on air pollution control type...	<ul style="list-style-type: none"> <li>• This option is for boilers that operate dry control systems. Boilers must maintain opacity to less than or equal to 10 percent opacity (daily block average).</li> </ul>
6. Fuel analysis	<ul style="list-style-type: none"> <li>• Maintain the fuel type or fuel mixture (annual average) such that the mercury emission rates calculated according to 40 CFR 63.11211(c) are less than the applicable emission limits for mercury.</li> </ul>
7. Performance stack testing	<ul style="list-style-type: none"> <li>• For boilers that demonstrate compliance with a performance stack test, maintain the operating load of each unit such that it does not exceed 110 percent of the average operating load recorded during the most recent performance stack test.</li> </ul>
8. Oxygen analyzer system	<ul style="list-style-type: none"> <li>• For boilers subject to a CO emission limit that demonstrate compliance with an oxygen analyzer system as specified in 40 CFR 63.11224(a), maintain the 30-day rolling average oxygen level at or above the minimum oxygen level as defined in 40 CFR 63.11237. This requirement does not apply to units that install an oxygen trim system since these units will set the trim system to the level specified in 40 CFR 63.11224(a)(7).</li> </ul>

## SECTION 2

### CULTURAL RESOURCES MANAGEMENT

U.S. TEAM Guide, December 2018

#### A. Applicability

This section applies to any facility or activity with cultural and historic resources. Plans and programs for protection and management of cultural resources, which include historic and prehistoric properties are included in this section.

Assessors are required to review state and local regulations and, if applicable, the appropriate Agency Supplement, to perform a comprehensive assessment.

#### B. Federal Regulations

- *Antiquities Act* of 1906. Within this act, 16 U.S. Code (USC) 431-433, the President of the United States is authorized to declare historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest, that are situated upon the lands owned or controlled by the Federal Government, to be national monuments (16 USC 431). Permits for the examination of ruins, the excavation of archaeological sites, and the gathering of objects of antiquity upon the lands under their respective jurisdictions, may be granted by the Secretaries of the Interior (SOI), Agriculture, and Army to institutions they may deem properly qualified to conduct such examination, excavation, or gathering, subject to such rules and regulations as they may prescribe (16 USC 432).
- *Historic Sites Act* of 1935. This act, Public Law (PL) 74-292 (16 USC 470-470w-6), authorizes the designation of national historic sites and landmarks, authorizes interagency efforts to preserve historic resources, and establishes a maximum fine of \$500 for violations of the act.
- *National Historic Preservation Act* (NHPA) of 1966. This act, 16 USC 470-470w-6, last amended in August 1992, addresses the issue of preserving our national history. The Congress declares that the historical and cultural foundations of the nation should be preserved as a living part of our community life and development; and that the preservation of this irreplaceable heritage is in the public interest so its vital legacy of cultural, educational, aesthetic, inspirational, economic, and energy benefits will be maintained and enriched for future generations of Americans (16 USC 470(b)(2)(4)). The policy of the Federal Government is to:
  1. use measures, including financial and technical assistance, to foster conditions under which our modern society and our prehistoric and historic resources can exist in productive harmony and fulfill the social, economic, and other requirements of present and future generations
  2. provide leadership in the preservation of the prehistoric and historic resources of the United States and of the international community of nations
  3. administer Federally owned, administered, or controlled prehistoric and historic resources in a spirit of stewardship for the inspiration and benefit of present and future generations
  4. contribute to the preservation of non-Federally owned prehistoric and historic resources and give maximum encouragement to organizations and individuals undertaking preservation by private means
  5. encourage the public and private preservation and utilization of all usable elements of the nation's historic built environment
  6. assist state and local governments and the National Trust for Historic Preservation in the United States to expand and accelerate their historic preservation programs and activities (16 USC 470-1).
- *The National Environmental Policy Act* (NEPA). The purpose of this act, 42 USC 4321-4370c, as last amended in November 1990, was to declare a national policy to encourage productive and enjoyable harmony between man and his environment. Additionally, it provides for the promotion of efforts that will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man (42 USC 4321).

- *Archeological and Historic Preservation Act* of 1974. This act, PL 93-291 (amends PL 86-523); (16 USC 469-469c), directs Federal agencies to notify the SOI when they find that any Federal construction project or Federally licensed activity or program may cause irreparable loss or destruction of significant scientific, prehistoric, historical, or archaeological data. It also provides criteria for funding historical and archaeological protection for such projects.
- *Public Buildings Cooperative Use Act* of 1976. This act, 40 USC 490, 601 note, et seq, was last amended in November 1988. Under this act, the Administrator of General Services must, among other duties, acquire and use space in suitable buildings of historic, architectural, or cultural significance, unless use of such space would not prove feasible and prudent compared with available alternatives (40 USC 601a(a)(1)).
- *American Indian Religious Freedom Act* of 1978. This act, PL 95-341 (42 USC 1996), states the policy of the United States to protect and preserve for American Indians their inherent rights of freedom to believe, express, and exercise the traditional religions of the American Indian, Eskimo, Aleut, and native Hawaiians. These rights include, but are not limited to, access to sites, use and possession of sacred objects, and the freedom to worship through ceremony and traditional rites. The act was amended in 1994 **[Revised July 2003]**.
- *Archaeological Resources Protection Act (ARPA)* of 1979. This act, 16 USC 470aa-470mm, was last amended in October 1988. The purpose of this act is to secure, for the present and future benefit of the American people, the protection of archaeological resources and sites which are on public lands and Indian lands, and to foster increased cooperation and exchange of information between governmental authorities, the professional archaeological community, and private individuals having collections of archaeological resources and data which were obtained before 1 October 1979 (16 USC 470aa(b)).
- *Native American Graves Protection and Repatriation Act (NAGPRA)* of October 1990. This act, 25 USC 3001-3013, permits the intentional removal from or excavation of Native American cultural items from Federal or tribal lands for purposes of discovery, study, or removal of such items only if:
  1. such items are excavated or removed pursuant to a permit issued which must be consistent with this act
  2. such items are excavated or removed after consultation with or, in the case of tribal lands, consent of the appropriate (if any) Indian tribe or Native Hawaiian organization
  3. the ownership and right of control of the disposition of such items must be as provided in subsections (a) and (b) of this section
  4. proof of consultation or consent is shown (25 USC 3002(c)).

Each Federal agency and museum which has possession or control over holdings or collections of Native American human remains and associated funerary objects must compile an inventory of such items and, to the extent possible based on information processed by such museum or Federal agency, identify the geographical and cultural affiliation of such item (25 USC 3003(a)). Each Federal agency or museum that has possession or control over holdings or objects of Native American unassociated funerary objects, sacred objects, or objects of cultural patrimony must provide a written summary of such objects based on available information held by such agency or museum. The summary must describe the scope of the collection, kinds of objects included, reference to geographical location, means and period of acquisition and cultural affiliation, where readily ascertainable.
- *Abandoned Shipwreck Act of 1987*. This act, PL 100-298, defines and clarifies access and ownership rights and directs the Director of the National Park Service to prepare guidelines, in consultation with appropriate public and private section interests, to administer and manage underwater resources.
- *National Historic Lighthouse Preservation Act of 2000*. This Act, 16 U.S.C. § 470w-7, is an amendment to the *National Historic Preservation Act* of 1966, as amended, and provides a mechanism for the disposal of federally-owned historic light stations **[Added January 2005]**.
- Executive Order (EO) 13006, *Locating Federal Facilities on Historic Properties in Our Nation's Central Cities*. This EO, dated 21 May 1996, states that the Federal Government shall utilize and maintain, wherever operationally appropriate and economically prudent, historic properties and districts, especially those located in central business areas.

- EO 13007, *Indian Sacred Sites*. This EO, dated 24 May 1996, addresses the accommodation of sacred sites. Each executive branch agency with statutory or administrative responsibility for the management of Federal lands is required, to the extent practicable, permitted by law, and not clearly inconsistent with agency functions, accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners. They shall also avoid adversely affecting the physical integrity of the sacred sites. Where appropriate, agencies will maintain the confidentiality of sacred sites.
- EO 13287, *Preserve America*. This EO, dated 3 March 2003, states that it is the policy of the Federal Government to provide leadership in preserving America's heritage by actively advancing the protection, enhancement, and contemporary use of the historic properties owned by the Federal Government, and by promoting intergovernmental cooperation and partnerships for the preservation and use of historic properties. The EO directs Federal agencies to **[Added April 2003]**:
  - seek partnerships with State and local governments, Indian tribes, and the private sector to promote local economic development and vitality through the use of historic properties in a manner that contributes to the long-term preservation and productive use of those properties.
  - agencies with real property management responsibilities shall prepare an assessment of the current status of its inventory of historic properties required by section 110(a)(2) of the NHPA (16 U.S.C. 470h-2(a)(2)), the general condition and management needs of such properties, and the steps underway or planned to meet those management needs
  - report on its progress in identifying, protecting, and using historic properties in its ownership and make the report available to the Council and the Secretary.
- Executive Order 13327, *Federal Real Property Asset Management*. This EO, dated 4 February 2004, establishes the Federal Real Property Council (Council) to develop guidance for, and facilitate the success of, each agency's asset management plan. The Council is to be composed exclusively of all agency Senior Real Property Officers, the Controller of the Office of Management and Budget, the Administrator of General Services, and any other full-time or permanent part-time Federal officials or employees as deemed necessary by the Chairman of the Council. The Senior Real Property Officer is designated by the head of a department of agency. The Senior Real Property Officer is required to develop and implement an agency asset management planning process that meets the form, content, and other requirements established by the Federal Real Property Council. In relation to cultural resources, the Senior Property Officer shall incorporate planning and management requirements for historic property under Executive Order 13287 of 3 March 2003, and for environmental management under Executive Order 13148 of 21 April 2000.
- Under EO 13327, para 2(a) "federal real property" is defined as any real property owned, leased, or otherwise managed by the Federal Government, both within and outside the United States, and improvements on Federal lands. For the purpose of this order, Federal real property shall exclude: interests in real property assets that have been disposed of for public benefit purposes pursuant to section 484 of title 40, United States Code, and are now held in private ownership; land easements or rights-of-way held by the Federal Government; public domain land (including lands withdrawn for military purposes) or land reserved or dedicated for national forest, national park, or national wildlife refuge purposes except for improvements on those lands; land held in trust or restricted fee status for individual Indians or Indian tribes; and land and interests in land that are withheld from the scope of this order by agency heads for reasons of national security, foreign policy, or public safety **[Added April 2004]**.

### C. State/Local Regulations

For information on regulations in specific states, see the State Supplements to TEAM Guide.

At the state level, the State Historic Preservation Officer (SHPO) provides assistance in determining cultural significance and eligibility for the National Register but may also nominate properties, irrespective of ownership. The SHPO must be consulted whenever there is a Federal undertaking, and for development of cultural resources plans.

States may also issue regulations designating state historical sites.

#### D. Key Compliance Requirements

- **Historical Properties** - All Federal agencies are required to establish a program to locate, inventory, and nominate to the SOI all properties under the agency's control that qualify for inclusion on the National Register of Historic Places. Historic properties held in fee by the Federal Government and under the jurisdiction of the Agency are required to be protected and managed and have damage mitigated. These requirements also apply to property held in less than fee by the Federal Government whenever activities have an adverse impact on the property. The effects of a new undertaking on property in the National Register must be considered before beginning an undertaking. The SHPO must be consulted during identification, location, and evaluation of historic properties and in assessing the effect of an undertaking on historic property. The SHPO also needs to be notified where there is no adverse effect, or when there are no historic properties in the area of potential effect. The Advisory Council needs to be notified when there is an adverse effect and no adverse effect. (36 CFR 60.9(7)(f), 60.13, 800.1, 800.4, and 800.5; 32 CFR 229.4(a) and 229.5(b)).
- **Archaeological Requirements** - When unrecorded historic property is discovered during construction or other undertakings, work is required to halt until the situation is properly evaluated. Archaeological resources on either public or Indian lands cannot be excavated, removed, damaged, or otherwise altered without permit. A permit for excavation is not required if the excavation is being done on Federal land under contract to the Federal Agency, and the contractor meets the SOI standards (32 CFR 229.4(a) and 229.5(b)).
- **Native American Graves and Artifacts** - Federal law protects Native American graves and objects of cultural patrimony, funerary, and sacred objects. Measures must be taken to identify and protect them and cooperate with Native American groups in returning them to their rightful owners (43 CFR 10.1 through 10.17 and PL 101-601, Section 3d, Section 5, and Section 6).
- **Collection Management and Curation** - Archaeological and historic collections owned or controlled by Federal facilities are required to be assessed and evaluated. Federal facilities responsible for long-term management and preservation of collections are covered by regulations dealing with curation, recordkeeping, long-term curatorial services, repository security, curatorial staff qualifications, use of collections, and conduct of inspections and inventories of the collections. Collection management centers also are required to write annual reports updating the status of their collections (36 CFR 79).

#### E. Key Compliance Definitions

- **Act** - the National Historic Preservation Act of 1966, as amended, 16 U.S.C. 470-470w-6 (36 CFR 800.16) **[Added October 1999]**.
- **Advisory Council on Historic Preservation (ACHP)** - the ACHP was established by Title II of the NHPA to advise the President and Congress, to encourage private and public interest in cultural preservation, and to comment on Federal agency action under Section 106 of the NHPA (36 CFR 65.3).
- **Agency** - agency as defined in 5 U.S.C. 551 (36 CFR 800.16) **[Added October 1999]**.
- **Approval of the Expenditure of Funds** - any final agency decision authorizing or permitting the expenditure of Federal funds or financial assistance on an undertaking, including any agency decision that may be subject to an administrative appeal (36 CFR 800.16) **[Added October 1999]**.
- **Archaeological Resource** - any material remains of prehistoric or historic human life or activities. Such resources include, but are not limited to: pottery, basketry, bottles, weapons, weapon projectiles, tools, structures or portions of structures, pit houses, rock paintings, rock carvings, intaglios, graves, human skeletal materials, or any portion or piece of any of the foregoing items (16 USC 470bb).
- **Area of Potential Effects** - the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if any such properties exist. The area of potential

effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking (36 CFR 800.16) **[Added October 1999]**.

- *Associated Funerary Objects* - those funerary objects for which the human remains with which they were placed intentionally are also in the possession or control of a museum or Federal agency. This also means those funerary objects that were made exclusively for burial purposes or to contain human remains (43 CFR 10.2(d)(2)(i)).
- *Associated Records* - original records, or copies thereof, that are prepared or assembled, and document efforts to locate, evaluate, record, study, preserve, or recover a prehistoric or historic resource (36 CFR 79.4).
- *Building* - a structure created to shelter any form of human activity, such as a house, barn, church, hotel, or similar structure. Building may refer to a historically related complex such as a courthouse and jail, or a house and barn (36 CFR 60.3).
- *Burial Site* - any natural or prepared physical location, whether originally below, on, or above the surface of the earth, into which, as a part of the death rite or ceremony of a culture, individual human remains are deposited. This includes rock cairns or pyres which do not fall within the ordinary definition of grave site (43 CFR 10.2(d)(2)).
- *Collection* - material remains that are excavated or removed during a survey, excavation, or other study of a prehistoric or historic resource, and associated records that are prepared or assembled in connection with the survey, excavation, or other study (36 CFR 79.4).
- *Comment* - the findings and recommendations of the Council formally provided in writing to the head of a Federal agency under Section 106 (36 CFR 800.16) **[Added October 1999]**.
- *Consultation* - the process of seeking, discussing, and considering the views of other participants, and, where feasible, seeking agreement with them regarding matters arising in the Section 106 process. The Secretary's "Standards and Guidelines for Federal Agency Preservation Programs pursuant to the National Historic Preservation Act" provide further guidance on consultation (36 CFR 800.16) **[Added October 1999]**.
- *Council* - the Advisory Council on Historic Preservation or a Council member or employee designated to act for the Council (36 CFR 800.16) **[Added October 1999]**.
- *Cultural Affiliation* - a relationship of shared group identity which can be reasonably traced historically or prehistorically between a present day Indian tribe or Native Hawaiian organization and an identifiable earlier group (43 CFR 10.2(e)).
- *Cultural Items* - associated and unassociated funerary objects, sacred objects, and cultural patrimony (PL 101-106, Section 2(3)(a-d)).
- *Cultural Patrimony* - an object having ongoing historical, traditional, or cultural importance central to the Native American group or culture itself, rather than property owned by an individual Native American, and which, therefore, cannot be alienated, appropriated, or conveyed by any individual regardless of whether or not the individual is a member of the Indian tribe or Native Hawaiian organization (PL 101-601, Section 2).
- *Curatorial Services* - managing and preserving a collection according to professional museum and archival practices (36 CFR 79.4).
- *Determination of Eligibility* - a decision by the Department of the Interior (DOI) that a district, site, building, structure, or object meets the National Register criteria for evaluation, although the property is not formally listed in the National Register (36 CFR 60.3).

- *District* - a geographically definable area, urban or rural, that possesses a significant concentration, linkage, or continuity of sites, structures, buildings, or objects united by past events or aesthetically by plan or physical development. A district also may comprise individual elements separated geographically but linked by association or history (36 CFR 60.3).
- *Effect* - alteration to the characteristics of a historic property qualifying it for inclusion in or eligibility for the National Register (36 CFR 800.16) **[Added October 1999]**.
- *Effect* - direct effects are caused by the undertaking and occur at the place and time of the undertaking. Indirect effects are those caused by the undertaking that are later in time or further removed in distance, but are still reasonably foreseeable (40 CFR 1508.8).
- *Endangered Property* - a historic property that is, or is about to be, subjected to a major impact that will destroy or seriously damage the qualities of significance that make it eligible for National Historic Landmark or National Register of Historic Places designation (36 CFR 65.3).
- *Federal Agency* - any department, agency, or instrumentality of the United States. Such term does not include the Smithsonian Institute (43 CFR 10.2(a)(1)).
- *Federal Agency Official* - any officer, employer, or agent officially representing the secretary of the department or the head of any other agency or instrumentality of the United States having primary management authority over a collection that is subject to 36 CFR 79 (36 CFR 79.4).
- *Federal Agency Official* - any individual authorized by delegation of authority within a Federal agency to perform the duties related to the regulations in 43 CFR 10.1 through 10.17 (43 CFR 10.2).
- *Federal Lands* - any land other than tribal lands that are controlled or owned by the United States, including lands selected by, but not yet conveyed to, Alaska Native Corporations and groups pursuant to the *Alaska Native Claims Settlement Act* (43 CFR 102(f)(1)).
- *Federal Preservation Officer* - the person who is responsible for coordinating the agency's activities under the NHPA and EO 11593, including nominating properties under the agency's ownership or control to the National Register (36 CFR 60.3).
- *Foreclosure* - an action taken by an Agency Official that effectively precludes the Council from providing comments which the Agency Official can meaningfully consider prior to the approval of the undertaking (36 CFR 800.16) **[Added October 1999]**.
- *Funerary Objects* - items that, as a part of the death rite or ceremony of a culture, are reasonably believed to have been placed intentionally at the time of death or later with or near individual human remains (43 CFR 10.2(d)(2)).
- *Head of the Agency* - the chief official of the Federal agency responsible for all aspects of the agency's actions. If a state, local, or tribal government has assumed or has been delegated responsibility for Section 106 compliance; the head of that unit of government shall be considered the head of the agency (36 CFR 800.16) **[Added October 1999]**.
- *Historic Preservation* - identification, evaluation, documentation, curation, acquisition, protection, rehabilitation, restoration, management, stabilization, maintenance, recording, and reconstruction of cultural resources, and any combination of the foregoing (16 USC 470w(8)).
- *Historic Property* - any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and

that meet the National Register criteria. The term eligible for inclusion in the National Register includes both properties formally determined as such in accordance with regulations of the Secretary of the Interior and all other properties that meet the National Register criteria (36 CFR 800.16) **[Added October 1999]**.

- *Historic Property or Resource* - any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion on, the National Register; such term includes artifacts, records, and remains that are related to such a district, site, building, structure, or object (16 USC 470W).
- *Human Remains* - the physical remains of a human body of a person of Native American ancestry. This term does not include remains or portions of remains that may reasonably be determined to have been freely given or naturally shed by the individual from whose body they were obtained, such as hair made into ropes or nets. For the purposes of determining cultural affiliation, human remains incorporated into a funerary object, sacred object, or object of cultural patrimony must be considered a part of the item (43 CFR 10.2(d)(1)).
- *Inadvertent Discovery* - the unanticipated encounter or detection of human remains, funerary objects, sacred objects, or objects of cultural patrimony found under or on the surface of Federal or tribal lands pursuant to section 3(d) of the act (43 CFR 10.2(g)(4)).
- *Indian Tribe* - an Indian tribe, band, nation, or other organized group or community, including a Native village, Regional Corporation or Village Corporation, as those terms are defined in section 3 of the Alaska Native Claims Settlement Act (43 U.S.C. 1602), which is recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians (36 CFR 800.16) **[Added October 1999]**.
- *Indian Tribe or Tribe* - an Indian tribe, band, nation, or other organized group or community including a native village, Regional Corporation, or Village Corporation as those terms are defined in section 3 of the *Alaska Native Claims Settlement Act* (42 USC 1602), which is recognized as eligible for the special programs and services provided by the United State to Indians because of their status as Indians (NHPA, Section 301(4)).
- *Intentional Excavation* - the planned archaeological removal of human remains, funerary objects, sacred objects, or objects of cultural patrimony found under or on the surface of Federal or tribal lands pursuant to section 3(d) of the act (43 CFR 10.2(g)(3)).
- *Inventory* - an item by item description of human remains and associated funerary objects (43 CFR 10.2(g)(2)).
- *Landmark* - a National Historic Landmark is a district, site, building, structure, or object, in public or private ownership, judged by the SOI to possess national significance in American history, archaeology, architecture, engineering, and culture, and is so designated by the SOI (36 CFR 65.3).
- *Lineal Descendant* - an individual tracing his or her ancestry directly and without interruption by means of the traditional kinship system of the appropriate Indian tribe or Native Hawaiian organization or by the common law system of descendants to a known Native American individual whose remains, funerary objects, or sacred objects are being claimed under 43 CFR 10 (43 CFR 10.2(b)(1)).
- *Local Government* - a city, county, parish, township, municipality, borough, or other general purpose political subdivision of a state (36 CFR 800.16) **[Added October 1999]**.
- *Management Practice (MP)* - practices that, although not mandated by law, are encouraged to promote safe operating procedures.
- *Material Remains* - artifacts, objects, specimens, and other physical evidence that are excavated or removed in connection with efforts to locate, evaluate, document, study, preserve or recover a prehistoric or historic resource. Classes of material remains that may be in a collection include, but are not limited to (36 CFR 79.4):
  1. components of structures and features (such as houses, mills, piers, fortifications, earthworks, and mounds)
  2. intact or fragmentary artifacts of human manufacture
  3. intact or fragmentary natural objects used by humans (such as rock crystals, feathers, and pigments)

4. by-products, waste products, or debris resulting from manufacture or use of manmade or natural materials
  5. organic materials (such as vegetable and animal remains)
  6. human remains
  7. components of petroglyphs, pictographs, intaglios, or other works of artistic or symbolic representation
  8. components of shipwrecks
  9. environmental and chronometric specimens
  10. paleontological specimens that are found in direct physical relationship with a prehistoric or historic resource.
- *Memorandum of Agreement (MOA)* - the document that records the terms and conditions agreed upon to resolve the adverse effects of an undertaking upon historic properties (36 CFR 800.16) [**Added October 1999**].
  - *Museum* - any institution or state or local government agency (including any institution of higher learning) that receives Federal funds and has possession of, or control over, Native American cultural items. Such term does not include the Smithsonian Institute or any other Federal agency (PL 101-601, Section 2).
  - *National Historic Landmark* - a historic property that the Secretary of the Interior has designated a National Historic Landmark (36 CFR 800.16) [**Added October 1999**].
  - *National Historic Landmarks Program* - the program that identifies, designates, recognizes, lists, and monitors National Historic Landmarks, conducted by the Secretary through the National Park Service (36 CFR 65.3).
  - *National Park Service* - the bureau of the DOI to which the SOI has delegated the authority and responsibility for administering the National Register program (36 CFR 60.3(h)).
  - *National Register* - the National Register of Historic Places maintained by the Secretary of the Interior (36 CFR 800.16) [**Added October 1999**].
  - *National Register Criteria* - the criteria established by the Secretary of the Interior for use in evaluating the eligibility of properties for the National Register (36 CFR 800.16) [**Added October 1999**].
  - *National Register of Historic Places (National Register)* - the listing of districts, sites, buildings, structures, and objects of national, state, or local significance in American history, architecture, archaeology, or culture that is maintained by the SOI (Keeper of the Register) (36 CFR 65.3).
  - *Native American* - of, or relating to, a tribe, people, or culture that is indigenous to the United States (PL 101-106, Section 2).
  - *Native Hawaiian* - any individual who is a descendent of the aboriginal people who, prior to 1778, occupied and exercised sovereignty in the area that now constitutes the State of Hawaii (43 CFR 10.2(b)(3)(ii)).
  - *Native Hawaiian Organization* - any organization which serves and represents the interests of Native Hawaiians; has as a primary and stated purpose the provision of services to Native Hawaiians; and has demonstrated expertise in aspects of historic preservation that are significant to Native Hawaiians. Native Hawaiian means any individual who is a descendant of the aboriginal people who, prior to 1778, occupied and exercised sovereignty in the area that now constitutes the State of Hawaii (36 CFR 800.16) [**Added October 1999**].
  - *Native Hawaiian Organization* - any organization that services and represents the interests of Native Hawaiians, has as a primary and stated purpose the provision of services to Native Hawaiians, and has expertise in Native Hawaiian affairs (43 CFR 10.2(b)(3)(i)).
  - *Nominate* - to complete and submit a National Register of Historic Places form proposing that a resource be included in the National Register. Nominations can be made for individual resources, multiple resources, or thematic groups (36 CFR 60.4).

- *Possession* - having physical custody of human remains, funerary objects, sacred objects, or objects of cultural patrimony with a sufficient legal interest to legally treat the objects as part of its collection for the purposes of 43 CFR 10.1 through 10.17. Generally, a museum or Federal agency would not be consider to have possession of human remains, funerary objects, sacred objects, or objects of cultural patrimony on loan from another individual, museums, or Federal agency (43 CFR 10.2((a)(3)(i)).
- *Preservation* - identification, evaluation, recordation, documentation, curation, acquisition, protection management, rehabilitation, restoration, stabilization, maintenance, and reconstruction of any constituents of the foregoing activities (16 USC 470W).
- *Programmatic Agreement* - a document that records the terms and conditions agreed upon to resolve the potential adverse effects of a Federal agency program, complex undertaking or other situations in accordance with 36 CFR 800.14(b) (36 CFR 800.16) **[Added October 1999]**.
- *Property* - a site, building, object, structure, or a collection that forms a district (36 CFR 65.3).
- *Public Lands* - lands owned and administered by the United States, including the National Park System, National Wildlife Refuge System, and National Forest System. Additional public lands are those whose fee title is held by the United States, the Outer Continental Shelf, and lands under the jurisdiction of the Smithsonian Institute (PL 96-95, Section 3(3)).
- *Qualified Museum Professional* - a person who possesses knowledge, experience, and demonstrable competence in museum methods and techniques appropriate to the nature and content of the collection under the person's management and care, and commensurate with the person's duties and responsibilities (36 CFR 79.4).
- *Religious Remains* - material remains that the Federal agency official (FAO) has determined are of traditional, religious, or sacred importance to an Indian tribe or other group because of customary use in religious rituals or spiritual activities. This determination is made in consultation with appropriate Indian tribes or other groups (36 CFR 79.4).
- *Repository* - a facility such as a museum, archaeological center, laboratory, or storage facility managed by a university, college, museum, other educational or scientific institution, a Federal, state, or local government agency or Indian tribe that can provide professional, systematic, and accountable curatorial services on a long-term basis (36 CFR 79.4).
- *Restoration* - the act or process of accurately recovering the form and details of property and its setting as it appeared at a particular period of time by means of the removal of later work or by the replacement of missing earlier work (36 CFR 68.2).
- *Sacred Objects* - specific ceremonial objects that are needed by traditional Native American religious leaders for the practice of their traditional Native American religions by their present day adherents (43 CFR 10.2(d)(3)).
- *Secretary* - the Secretary of the Interior acting through the Director of the National Park Service except where otherwise specified (36 CFR 800.16) **[Added October 1999]**.
- *Section 106 Consultation* - a compliance procedure in which an agency requests the concurrence of the SHPO and/or the ACHP when there is a Federal undertaking that may affect a property on, or eligible for, the National Register (36 CFR 800.3 through 800.9).
- *State Historic Preservation Officer (SHPO)* - the official appointed or designated pursuant to section 101(b)(1) of the Act to administer the state historic preservation program or a representative designated to act for the SHPO (36 CFR 800.16) **[Added October 1999]**.

- *State Historic Preservation Officer (SHPO)* - the official, who is responsible for administering the NHPA within the state of jurisdiction, or a designated representative authorized to act for the SHPO (36 CFR 60.3).
- *Summary* - the written description of collections that may contain unassociated funerary objects, sacred objects, and objects of cultural patrimony required by 43 CFR 10.8 (43 CFR 10.2(g)(1)).
- *Traditional Religious Leader* - a person which is recognized by members of an Indian tribe or Native Hawaiian organization as either (43 CFR 10.2(d)(3):
  1. being responsible for performing cultural duties relating to the ceremonial or religious traditions of that Indian tribe or Native Hawaiian organization;
  2. exercising a leadership role in an Indian tribe or Native Hawaiian organization based on the tribe or organizations cultural, ceremonial, or religious practices.
- *Tribal Historic Preservation Officer (THPO)* - the tribal official appointed by the tribe's chief governing authority or designated by a tribal ordinance or preservation program who has assumed the responsibilities of the SHPO for purposes of Section 106 compliance on tribal lands in accordance with section 101(d)(2) of the Act. For the purposes of subpart B of this part, the term also includes the designated representative of an Indian tribe that has not formally assumed the SHPO's responsibilities when an undertaking occurs on or affects historic properties on the tribal lands of the Indian tribe. (See 36 CFR 800.2(c)(2)) (36 CFR 800.16) [**Added October 1999**].
- *Tribal Lands* - all lands within the exterior boundaries of any Indian reservation and all dependent Indian communities (36 CFR 800.16) [**Added October 1999**].
- *Tribal Official* - the chief executive officer or any officer, employee, or agent officially representing an Indian tribe (36 CFR 79.4).
- *Unassociated Funerary Objects* - those funerary objects for which the human remains with which they were placed intentionally are not in the possession or control of a museum or Federal agency. Objects that were displayed with individual human remains as a part of a death rite or ceremony of a culture and subsequently returned or distributed according to traditional custom to living descendants or other individual are not considered unassociated funerary objects (43 CFR 10.2(d)(2)(ii)).
- *Undertaking* - a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including those carried out by or on behalf of a Federal agency; those carried out with Federal financial assistance; and those requiring a Federal permit, license or approval (36 CFR 800.16(y)) [**Added October 1999; Revised April 2005**].
- *Undertaking* - a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including (NHPA 301(7)):
  1. those carried out by or on behalf of the agency
  2. those carried out with Federal financial assistance
  3. those requiring a Federal permit, license, or approval
  4. those subject to state or local regulation administered pursuant to a delegation of approval by a Federal agency.

## F. Records To Review

- For construction activities: documentation of finding of no adverse effect, finding of adverse effect, or memorandum of agreement (MOA) with the SHPO or requests for comment when there is no agreement on historic properties.
- Cultural Resources Inventory/Survey
- Land Use Plans
- Environmental Assessments
- Environmental Impact Statements

- Curation Agreements
- Programmatic Agreements

#### **G. Physical Features To Inspect**

- Sites of historic, archaeological, or Native American interest (designation, protection, and interpretation)
- Buildings and structures of potential historical significance (national, state, or local)
- Archeological collection/curation facilities

#### **H. Guidance for Cultural Resources Management Checklist Users**

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	<b>REFER TO CHECKLIST ITEMS:</b>
All Facilities	CR.1.1.US
Missing, Risk Management, and Positive Checklist Items	CR.2.1.US through CR.2.3.US
Historic Properties	CR.5.1.US through CR.5.4.US
Religious/Heritage Access	CR.10.1.US
Archaeological/Indian Sites	CR.15.1.US through CR.15.11.US
Collection Management and Curation	CR.20.1.US through CR.20.9.US
<hr/> <i>Appendix 2-1, Future NAGPRA Applicability Guidance</i> <hr/>	



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<b>CR.1</b>  <b>ALL FACILITIES</b>  <b>CR.1.1.US.</b> The current status of any ongoing or unresolved consent orders, compliance agreements, notices of violation (NOVs), interagency agreements, or equivalent state enforcement actions is required to be examined (a finding under this checklist item will have the enforcement action/ identifying information as the citation).	Determine if noncompliance issues have been resolved by reviewing a copy of the previous report, consent orders, compliance agreements, NOVs, interagency agreements, programmatic agreements executed with the SHPO, NEPA documents with specific mitigation requirements, management plans, litigation settlement agreements, court imposed injunctions, or equivalent state enforcement actions.



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<p><b>CR.2</b></p> <p><b>MISSING, RISK MANAGEMENT, AND POSITIVE CHECKLIST ITEMS</b></p> <p><b>CR.2.1.US.</b> Facilities are required to comply with all applicable Federal regulatory requirements not contained in this checklist (a finding under this check list item will have the citation of the applied regulation as a basis of finding).</p> <p><b>CR.2.2.US.</b> Risk management techniques should be promoted in environmental efforts (MP) [Added April 2002].</p> <p><b>CR.2.3.US.</b> Facilities should go above and beyond statutory and regulatory compliance (MP) [Added April 2002].</p>	<p>Determine if any new regulations concerning cultural resources management have been issued since the finalization of the manual.</p> <p>Determine if the facility has activities or facilities that are regulated but not addressed in this checklist.</p> <p>Verify that the facility is in compliance with all applicable and newly issued regulations.</p> <p>Determine if risk management techniques are promoted in environmental efforts.</p> <p>Determine if the facility has gone above and beyond simply complying with environmental requirements.</p>



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<p><b>CR.5</b></p> <p><b>HISTORIC PROPERTIES</b></p> <p><b>CR.5.1.US.</b> All Federal agencies are required to establish a program to locate, inventory, and nominate to the SOI all properties under the agency's ownership or control that appear to qualify for inclusion on the National Register of Historic Places (36 CFR 60.9) [Revised July 2011].</p>	<p>Determine if there is a program to locate, inventory, and nominate properties that includes the following:</p> <ul style="list-style-type: none"> <li>– assignment of responsibility for recognizing and maintaining cultural resources</li> <li>– an inventory and evaluation of all known cultural resources</li> <li>– identification of the likelihood (based on scientific study) of the presence of other significant cultural resources</li> <li>– description of strategies for maintaining cultural resources and the methods used for compliance with this regulation</li> <li>– clear identification of the impact on historic resources of ongoing projects and the resolutions to those impacts.</li> </ul> <p>Determine if the SHPO is given the opportunity to review and comment on all aspects of the program.</p> <p>Verify that known historic properties have been nominated.</p> <p>(NOTE: To be eligible for the National Register of Historic Places the property must meet the <i>National Register Criteria for Evaluation</i> as follows.</p> <p>The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and fall under one or more of the following categories:</p> <ul style="list-style-type: none"> <li>– that are associated with events that have made a significant contribution to the broad patterns of our history</li> <li>– that are associated with the lives of significant persons in or past</li> <li>– that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction</li> <li>– that have yielded or may be likely to yield, information important in history or prehistory.</li> </ul> <p>Ordinarily cemeteries, birthplaces, graves of historical figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original locations, reconstructed historic buildings, properties primarily commemorative in nature, and properties that have achieved significance within the past 50 yr shall not be considered eligible for the National Register. However, such properties <i>will qualify</i> if they are integral parts of districts that do meet the criteria or if they fall within any the following categories:</p> <ul style="list-style-type: none"> <li>– a religious property deriving primary significance from architectural or artistic distinction or historical importance</li> </ul>

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<p><b>CR.5.2.US.</b> Prior to the start of a new undertaking, Federal agencies are required to take into account the effects of the undertaking on historic properties (36 CFR 800.1(a), 800.1(c), 800.2(a)(4), 200.2(c), 800.2(d), 800.3, 800.4(b) through 800.4(d), 800.5, and 800.6) [Revised October 1999; Revised April 2005].</p>	<ul style="list-style-type: none"> <li>– a building or structure removed from its original location but which is primarily significant for architectural value, or which is the surviving structure most importantly associated with a historic person or event</li> <li>– a birthplace or grave of a historical figure of outstanding importance if there is no appropriate site or building associated with his or her productive life; or</li> <li>– a cemetery that derives its primary importance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events</li> <li>– a reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived</li> <li>– a property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own exceptional significance</li> <li>– a property achieving significance within the past 50 yr if it is of exceptional importance. )</li> </ul> <p>Verify that an agency official determines whether the proposed Federal action is an undertaking and, if so, whether it is a type of activity that has the potential to cause effects on historic properties.</p> <p>(NOTE: If the undertaking is a type of activity that does not have the potential to cause effects on historic properties, assuming such historic properties were present, the agency official has no further obligations under section 106 or 36 CFR 800.)</p> <p>Verify that, prior to the start of a new undertaking; the impact of that undertaking on a historic property has been investigated through the Section 106 process of consultation and documentation.</p> <p>Verify that the section 106 process is done prior to the approval of the expenditure of any Federal funds on the undertaking or prior to the issuance of any license.</p> <p>(NOTE: Agency officials may conduct or authorize nondestructive project planning activities before completing compliance with section 106, provided that such actions do not restrict the subsequent consideration of alternatives to avoid, minimize or mitigate the undertaking's adverse effects on historic properties.)</p> <p>Verify that the Section 106 process was initiated early in the undertakings planning so that a broad range of alternative could be considered during the planning process for the undertaking.</p> <p>Verify that the following parties are consulted as appropriate:</p> <ul style="list-style-type: none"> <li>– State historic preservation officer (SHPO)</li> <li>– Indian tribes and Native Hawaiian organizations</li> <li>– representatives of local governments</li> <li>– applicants for Federal assistance, permits, licenses, and other approvals</li> </ul>

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	<p>– individuals and organizations with a demonstrated interest in the undertaking.</p> <p>Verify that the Advisory Council on Historic Preservation (ACHP) has been afforded a reasonable opportunity to comment on the undertaking.</p> <p>Verify that the steps of the Section 106 process, as appropriate, are coordinated with the overall planning schedule for the undertaking and with any reviews required under other authorities such as NEPA, NAGPRA, the <i>American Indian Religious Freedom Act</i>, ARPA, and agency-specific legislation, such as section 4(f) of the <i>Department of Transportation Act</i>.</p> <p>Verify that it is determined whether the undertaking may occur on or affect historic properties on any tribal lands and, if so, whether a Tribal Historic Preservation Officer (THPO) has assumed the duties of the SHPO.</p> <p>(NOTE: If the SHPO/THPO fails to respond within 30 days of receipt of a request for review of a finding or determination, the Agency Official may either proceed to the next step in the process based on the finding or determination or consult with the ACHP in lieu of the SHPO/THPO. If the SHPO/THPO re-enters the Section 106 process, the Agency Official shall continue the consultation without being required to reconsider previous findings or determinations.)</p> <p>Verify that public participation is a part of the Section 106 process and the agency official has, except where appropriate to protect confidentiality concerns of affected parties, provided the public with information about an undertaking and its effects on historic properties and seeks public comment and input.</p> <p>Verify that, in consultation with the SHPO/THPO, the agency official:</p> <ul style="list-style-type: none"> <li>– determines and documents the area of potential effects</li> <li>– reviews existing information on historic properties within the area of potential effects, including any data concerning possible historic properties not yet identified</li> <li>– seeks information, as appropriate, from consulting parties, and other individuals and organizations likely to have knowledge of, or concerns with, historic properties in the area, and identify issues relating to the undertaking's potential effects on historic properties</li> <li>– gathers information from any Indian tribe or Native Hawaiian organization to assist in identifying properties, including those located off tribal lands, which may be of religious and cultural significance to them and may be eligible for the National Register, recognizing that an Indian tribe or Native Hawaiian organization may be reluctant to divulge specific information regarding the location, nature, and activities associated with such sites.</li> </ul> <p>Verify that, based on the information gathered, and in consultation with the SHPO/THPO and any Indian tribe or Native Hawaiian organization that might attach religious and cultural significance to properties within the area of potential</p>

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	<p>effects, the agency official takes the steps necessary to identify historic properties within the area of potential effects, including:</p> <ul style="list-style-type: none"> <li>– making a reasonable and good faith effort to carry out appropriate identification efforts by performing the following as appropriate: <ul style="list-style-type: none"> <li>– background research, consultation, oral history interviews, sample field investigation, and field survey</li> <li>– taking into account past planning, research and</li> <li>– studies, the magnitude and nature of the undertaking and the degree of Federal involvement, the nature and extent of potential effects on historic properties, and the likely nature and location of historic properties within the area of potential effects</li> <li>– the DOI Secretary's standards and guidelines for identification provide guidance on this subject</li> <li>– other applicable professional, State, tribal, and local laws, standards, and guidelines</li> </ul> </li> <li>– taking into account any confidentiality concerns raised by Indian tribes or Native Hawaiian organizations during the identification process</li> <li>– using a phased process to conduct identification and evaluation efforts where alternatives under consideration consist of corridors or large land areas, or where access to properties is restricted.</li> </ul> <p>(NOTE: The agency official may defer final identification and evaluation of historic properties if deferment is specifically provided for in a memorandum of agreement, a programmatic agreement, or the documents used by an agency official to comply with NEPA. The process should establish the likely presence of historic properties within the area of potential effects for each alternative or inaccessible area through background research, consultation and an appropriate level of field investigation, taking into account the number of alternatives under consideration, the magnitude of the undertaking and its likely effects, and the views of the SHPO/THPO and any other consulting parties. As specific aspects or locations of an alternative are refined or access is gained, the agency official shall proceed with the identification and evaluation of historic properties.)</p> <p>Verify that, in consultation with the SHPO/THPO and any Indian tribe or Native Hawaiian organization that attaches religious and cultural significance to identified properties and guided by the Secretary's standards and guidelines for evaluation, the National Register criteria (36 CFR 63) are applied to properties identified within the area of potential effects that have not been previously evaluated for National Register eligibility.</p> <p>Verify that, if the agency official determines any of the National Register criteria are met and the SHPO/THPO agrees, the property is considered eligible for the National Register for section 106 purposes.</p> <p>(NOTE: If the agency official determines the criteria are not met and the SHPO/THPO agrees, the property shall be considered not eligible. If the agency</p>

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	<p>official and the SHPO/THPO do not agree, or if the Council or the Secretary so request, the agency official shall obtain a determination of eligibility from the Secretary pursuant to 36 CFR 63. If an Indian tribe or Native Hawaiian organization that attaches religious and cultural significance to a property off tribal lands does not agree, it may ask the Council to request the agency official to obtain a determination of eligibility.)</p> <p>Verify that, if the agency official finds that either there are no historic properties present or there are historic properties present but the undertaking will have no effect upon them:</p> <ul style="list-style-type: none"> <li>– documentation of this finding is provided to the SHPO/THPO</li> <li>– all consulting parties, including Indian tribes and Native Hawaiian organizations are notified</li> <li>– the documentation is made available for public inspection prior to approving the undertaking.</li> </ul> <p>(NOTE: If the SHPO/THPO, or the Council if it has entered the section 106 process, does not object within 30 days of receipt of an adequately documented finding, the agency official's responsibilities under section 106 are fulfilled.)</p> <p>Verify that, if the SHPO/THPO objects within 30 days of receipt of an adequately documented finding, the agency official either consults with the objecting party to resolve the disagreement, or forwards the finding and supporting documentation to the Council and request that the Council review the finding and concurrently notify all consulting parties that such a request has been made and make the request documentation available to the public.</p> <p>Verify that, if the agency official finds that there are historic properties which may be affected by the undertaking, the agency official notifies all consulting parties, including Indian tribes or Native Hawaiian organizations, and invite their views on the effects and assess adverse effects.</p> <p>Verify that, in consultation with the SHPO/THPO and any Indian tribe or Native Hawaiian organization that attaches religious and cultural significance to identified historic properties, the agency official applies the criteria of adverse effect to historic properties within the area of potential effects and considers any views concerning such effects which have been provided by consulting parties and the public.</p> <p>(NOTE: An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the National Register. Adverse</p>

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<p><b>CR.5.3.US.</b> The SHPO and designated others must be consulted in association with the identification of historic properties (36 CFR 800.2(c), 800.4(a)) [<b>Revised October 1999; Revised April 2005</b>].</p>	<p>effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative.)</p> <p>Verify that, if the agency official proposes a finding of no adverse effect, the agency official notifies all consulting parties of the finding and provide them with the documentation.</p> <p>(NOTE: The SHPO/THPO shall have 30 days from receipt to review the finding. Unless the Council is reviewing the finding, the agency official may proceed after the close of the 30 day review period if the SHPO/THPO has agreed with the finding or has not provided a response, and no consulting party has objected.)</p> <p>Determine if a programmatic agreement has been implemented controlling Section 106 compliance.</p> <p>Determine if an MOA has been prepared to address adverse effects to historic properties.</p> <p>Determine if an MOA has been drafted and review a copy for compliance.</p> <p>Verify that the MOA was reviewed and signed by the SHPO and the ACHP, if required.</p> <p>(NOTE: Nondestructive project planning can be conducted prior to completing the Section 106 process if it does not restrict the subsequent consideration of alternatives to avoid, minimize, or mitigate the undertakings adverse effects on historic properties.)</p> <p>Verify that the SHPO is consulted to:</p> <ul style="list-style-type: none"> <li>– determine and document the area of potential effects (see definitions)</li> <li>– review existing information on historic properties within the area of potential effects, including any data concerning possible historic properties not yet identified</li> <li>– seek information, as appropriate, from consulting parties, and other individuals and organizations likely to have knowledge of, or concerns with, historic properties in the area, and identify issues relating to the undertaking's potential effects on historic properties</li> <li>– gather information from any Indian tribe or Native Hawaiian organization to assist in identifying properties, including those located off tribal lands, which may be of religious and cultural significance to them and may be eligible for the National Register, recognizing that an Indian tribe or native Hawaiian organization may be reluctant to divulge specific information regarding the location, nature, and activities associated with such sites.</li> </ul>

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<p><b>CR.5.4.US.</b> Certain reporting and documentation must be maintained by Federal agencies in relation to the Section 106 process (36 CFR 800.4(d) and 800.11) [Added October 1999].</p>	<p>Verify that, if an Indian tribe has assumed the functions of the SHPO in the section 106 process for undertakings on tribal lands, the SHPO participates as a consulting party if the undertaking takes place on tribal lands but affects historic properties off tribal lands.</p> <p>Verify that, in relation to Indian tribes and Native Hawaiian organizations, a tribe that has assumed the responsibilities of the SHPO for section 106 on tribal lands, the tribal historic preservation officer (THPO) is the official representative for the purposes of section 106.</p> <p>Verify that, when an Indian tribe has not assumed the responsibilities of the SHPO for section 106 on tribal lands, the agency official consults with a representative designated by such Indian tribe in addition to the SHPO regarding undertakings occurring on or affecting historic properties on its tribal lands.</p> <p>(NOTE: Such Indian tribes have the same rights of consultation and concurrence that the THPOs are given throughout subpart B of this part, except that the consultations are in addition to and on the same basis as consultation with the SHPO.)</p> <p>Verify that Agency officials consult with any Indian tribe or Native Hawaiian organization that attaches religious and cultural significance to historic properties that may be affected by an undertaking, regardless of the location of the historic property.</p> <p>Verify that, if there is a “finding of no significant historic properties affected”, documentation of this finding as set forth in 36 CFR 800.11(d) is provided to the SHPO/THPO.</p> <p>Verify that all consulting parties, including Indian tribes and Native Hawaiian organizations, are notified and the documentation is made available for public inspection prior to approving the undertaking.</p> <p>(NOTE: If the SHPO/THPO does not object within 30 days of receipt of an adequately documented finding, the Agency Official's responsibilities under Section 106 are fulfilled. If the Council has entered the Section 106 process, it may also object.)</p> <p>Verify that, if there are historic properties which may be affected by the undertaking or the SHPO/THPO or the Council objects to the Agency Official's finding, the Agency Official notifies all consulting parties, including Indian tribes or Native Hawaiian organizations and invites their views on the effects.</p>

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	<p>Verify that a determination, finding, or agreement under the Section 106 process is supported by sufficient documentation to enable any reviewing parties to understand its basis.</p> <p>Verify that the documentation for a finding of no historic properties affected includes:</p> <ul style="list-style-type: none"> <li>– a description of the undertaking, specifying the Federal involvement, and its area of potential effects, including photographs, maps, drawings, as necessary</li> <li>– a description of the steps taken to identify historic properties, including, as appropriate, efforts to seek information</li> <li>– the basis for determining that no historic properties are present or affected.</li> </ul> <p>Verify that, for a finding of no adverse effect or adverse effect, the documentation includes:</p> <ul style="list-style-type: none"> <li>– a description of the undertaking, specifying the Federal involvement, and its area of potential effects, including photographs, maps, and drawings, as necessary</li> <li>– a description of the steps taken to identify historic properties</li> <li>– a description of the affected historic properties, including information on the characteristics that qualify them for the National Register</li> <li>– a description of the undertaking's effects on historic properties</li> <li>– an explanation of why the criteria of adverse effect were found applicable or inapplicable, including any conditions or future actions to avoid, minimize, or mitigate adverse effects</li> <li>– copies or summaries of any views provided by consulting parties and the public.</li> </ul> <p>Verify that, when an MOA is filed with the Council, the documentation includes any substantive revisions or additions to the documentation provided the Council, an evaluation of any measures considered to avoid or minimize the undertaking's adverse effects and a summary of the views of consulting parties and the public.</p> <p>Verify that requests for comment without an MOA documentation includes:</p> <ul style="list-style-type: none"> <li>– a description and evaluation of any alternatives or mitigation measures that the Agency Official proposes to resolve the undertaking's adverse effects</li> <li>– a description of any reasonable alternatives or mitigation measures that were considered but not chosen, and the reasons for their rejection</li> <li>– copies or summaries of any views submitted to the Agency Official concerning the adverse effects of the undertaking on historic properties and alternatives to reduce or avoid those effects</li> <li>– any substantive revisions or additions to the documentation provided the Council.</li> </ul>

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	<p>(NOTE: When an Agency Official is conducting phased identification or evaluation, the documentation standards regarding description of historic properties may be applied flexibly. If the Council, or the SHPO/THPO when the Council is not involved, determines the applicable documentation standards are not met, the Council or the SHPO/THPO, as appropriate, shall notify the Agency Official and specify the information needed to meet the standard. At the request of the Agency Official or any of the consulting parties, the Council shall review any disputes over whether documentation standards are met and provide its views to the Agency Official and the consulting parties.)</p> <p>(NOTE: The Agency Official may use documentation prepared to comply with other laws to fulfill the requirements of the procedures in the Section 106 process, if that documentation meets the standards for Section 106 documentation.)</p> <p>(NOTE: Section 304 of the Act provides that the head of a Federal agency or other public official receiving grant assistance pursuant to the Act, after consultation with the Secretary, shall withhold from public disclosure information about the location, character, or ownership of a historic property when disclosure may cause a significant invasion of privacy; risk harm to the historic property; or impede the use of a traditional religious site by practitioners. When the head of a Federal agency or other public official has determined that information should be withheld from the public pursuant to the criteria above, the Secretary, in consultation with such Federal agency head or official, shall determine whom may have access to the information for the purpose of carrying out the Act.)</p>



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<p><b>CR.10</b></p> <p><b>RELIGIOUS/ HERITAGE ACCESS</b></p> <p><b>CR.10.1.US.</b> Facilities are required to provide American Indians with access to sites, use and possession of sacred objects, and the freedom to worship through ceremonials and traditional rites (<i>American Indian Religious Freedom Act</i> and EO 13007) [<b>Added June 1996; Revised July 2003</b>].</p>	<p>Verify that American Indians are not prohibited access to sites, use and possession of sacred objects, and the freedom to worship through ceremonials and traditional rites.</p> <p>(NOTE: American Indian includes American Indian, Eskimo, Aleut, and Native Hawaiians.)</p> <p>Verify that Federal facilities accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners.</p> <p>Verify that Federal facilities avoid adversely affecting the physical integrity of such sacred sites.</p> <p>(NOTE: Where appropriate, Federal facilities shall maintain the confidentiality of sacred sites.)</p> <p>(NOTE: Section 106 is only triggered if the site is eligible for the National Register as a traditional cultural property.)</p> <p>(NOTE: This checklist item previously cited the <i>Religious Freedom Restoration Act (RFRA) of 1993</i> which was declared unconstitutional 25 June 1997 by the U.S. Supreme Court. The next event was the proposal of the <i>Religious Liberty Protection Act</i> of 2000 (RLPA) that never became law. The final result was the passage of the <i>Religious Land Use and Institutionalized Persons Act</i> on 22 September 2000. The focus of this law is quite different than the focus of RFRA as its primary purposes are to:</p> <ul style="list-style-type: none"> <li>– eliminate restrictive municipal zoning regulations that prevent churches and religious organizations from locating in certain area</li> <li>– guarantee that institutionalized persons (prisoners, and persons in mental or medical institutions) retain freedom of religious expression.)</li> </ul>



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<p><b>CR.15</b></p> <p><b>ARCHAEOLOGICAL/ INDIAN SITES</b></p> <p><b>CR.15.1.US.</b> Checklist item deleted [Deleted February 1996].</p> <p><b>CR.15.2.US.</b> Archaeological resources located on public lands or Indian lands cannot be excavated, removed, damaged, or otherwise altered, or defaced without a permit (32 CFR 229.4(a), 229.5(b), and 229.18).</p> <p><b>CR.15.3.US.</b> Federal facilities in possession or control of any collection that may contain</p>	<p>This checklist item has been replaced by CR.15.3.US through CR.15.8.US.</p> <p>Determine if there is currently any excavation, removal, or disturbing of archaeological resources other than a contract effort by the agency.</p> <p>Verify that any actions taken in relationship to archaeological resources have received permits.</p> <p>Verify that the parameters of the permit are being enforced.</p> <p>(NOTE: A permit is not required in the following circumstances:</p> <ul style="list-style-type: none"> <li>– for activities being conducted on public lands under other permits, leases, licenses, or entitlements for use when those activities are exclusively for activities other than excavation and/or removal of archaeological resources, even if those activities might disturb the archaeological resources</li> <li>– for the collection for private purposes, any rock, coin, bullet, or mineral that is not an archaeological resource, if the collection of the item does not result in the disturbance of an archaeological resource, if not regulated by the state</li> <li>– for archaeological work being performed under contract to the installation or facility</li> <li>– excavations done by an Indian tribe or member of an Indian tribe on the lands of that tribe.)</li> </ul> <p>(NOTE: Federal land managers will not make public any information about the nature and location of any archaeological resources, except under the following circumstances:</p> <ul style="list-style-type: none"> <li>– the disclosure furthers the purposes of the ARPA without risking harm to the archaeological resource or the site at which it is located</li> <li>– when the governor of any state submits a request for information, if the request includes: <ul style="list-style-type: none"> <li>– specific archaeological resource or area about which information is sought</li> <li>– the reason the information is requested</li> <li>– the governor’s written commitment to adequately protect the confidentiality of the information.)</li> </ul> </li> </ul> <p>(NOTE: The regulations in 43 CFR 10 pertain to the identification and appropriate disposition of human remains, funerary objects, sacred objects, or objects of cultural patrimony that are any of the following:</p>

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<p>unassociated funerary objects (UFO), sacred objects, or objects of cultural patrimony are required to develop a Summary (43 CFR 10.8(a) through 10.8(e) and NAGPRA of 1990, 25 USC 3004, Section 6) [Added February 1996; Revised July 2013].</p>	<ul style="list-style-type: none"> <li>– in Federal possession or control</li> <li>– in the possession or control of any institution or state or local government receiving Federal funds</li> <li>– excavated intentionally or discovered inadvertently on Federal or tribal lands.</li> </ul> <p>This particular checklist item [CR.15.3.US] concerning the development of a Summary only applies to UFO, sacred objects, and objects of cultural patrimony.)</p> <p>(NOTE: The regulations in 43 CFR 10.1 through 10.17 apply to human remains, funerary objects, sacred objects, or objects of cultural patrimony which are indigenous to Alaska, Hawaii, and the continental United States, but not to territories of the United States. See Appendix 2-1 for information on when the requirements apply in relation to existing collections, new collections, or newly designated Federally-recognized Indian tribes.)</p> <p>Determine whether the Federal facility is in possession or control of any collection that may contain unassociated funerary objects, sacred objects, or objects of cultural patrimony.</p> <p>(NOTE: Material acquired from excavations after 16 November 1990 is addressed as an Inadvertent Discovery or Intentional Excavation.)</p> <p>(NOTE: Possession or control may include collections being curated at a separate facility.)</p> <p>Verify that, if a collection exists, a Summary of the collection has been compiled based on available information held by the museum or Federal agency.</p> <p>(NOTE: The Summary serves in lieu of an object by object inventory. If an inventory is available, it may be substituted. It does not serve in lieu of a NAGPRA Sect. 5 inventory of Native American human remains and associated funerary objects.)</p> <p>Verify that the Summary includes the following for each collection or portion of a collection:</p> <ul style="list-style-type: none"> <li>– estimate of the number of objects in the collection or portion of the collection</li> <li>– a description of the kinds of objects included</li> <li>– reference to geographical location, means and period of acquisition</li> <li>– information relevant to identifying lineal descendants, if available, and cultural affiliation.</li> </ul> <p>Verify that there has been consultation with Indian tribe officials and traditional religious leaders:</p> <ul style="list-style-type: none"> <li>– from whose tribal lands unassociated funerary objects, sacred objects, or objects of cultural patrimony originated</li> </ul>

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	<ul style="list-style-type: none"> <li>– that are, or are likely to be, culturally affiliated with unassociated funerary objects, sacred objects, or objects of cultural patrimony</li> <li>– from whose aboriginal lands unassociated funerary objects, sacred objects, or objects of cultural patrimony originated.</li> </ul> <p>Verify that the consultation process started no later than the completion of the summary process.</p> <p>Verify that the Summary has been distributed to:</p> <ul style="list-style-type: none"> <li>– the lineal descendants</li> <li>– potentially culturally affiliated Indian tribes and Native Hawaiian organizations</li> <li>– the Departmental Consulting Archeologist (DCA) (i.e., the National Park Service).</li> </ul> <p>Verify that, upon request from Indian tribes and Native Hawaiian organizations, access is provided to records, catalogues, and relevant studies or information for determining geographic origin, cultural affiliation, and the acquisition and accession of objects.</p> <p>Verify that the Federal agency official has requested, as appropriate, the following information from all potential culturally affiliated groups:</p> <ul style="list-style-type: none"> <li>– name and address of the Indian tribe official to act as representative in consultations related to particular objects</li> <li>– recommendations on how the consultation process should be conducted, including: <ul style="list-style-type: none"> <li>– names and appropriate methods to contact lineal descendants who should be contacted to participate in the consultation process</li> <li>– names and appropriate methods to contact any traditional religious leader who should be contacted to participate in the consultation process</li> </ul> </li> <li>– kinds of cultural items that the Indian tribe or Native Hawaiian organization considers sacred objects or objects of cultural patrimony.</li> </ul> <p>Verify that museum and Federal agency officials document the following information in the summary:</p> <ul style="list-style-type: none"> <li>– accession and catalogue entries</li> <li>– information related to the acquisition of the unassociated funerary object, sacred object, or object of cultural patrimony, including: <ul style="list-style-type: none"> <li>– the name of the person or organization from whom the object was obtained, if known</li> <li>– the date of acquisition</li> <li>– the place each object was acquired (i.e., name or number of site, county, state, and Federal agency administrative unit)</li> </ul> </li> </ul>

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<p><b>CR.15.4.US.</b> An inventory must be developed of collections of human remains and associated funerary objects (43 CFR 10.9(c) 10.9(d), 10.9(f) and 25 USC 3003, Section 5(a), 5(b)(1)(a), 5(b)(1)(B)) [Added February 1996; Citation Revised July 2003].</p>	<ul style="list-style-type: none"> <li>– the means of acquisition (gift, purchase, or excavation)</li> <li>– a description of each unassociated funerary object, sacred object, or object of cultural patrimony, including dimensions, materials, and photographic documentation, if appropriate, and the antiquity of such objects if known</li> <li>– a summary of the evidence used to determine the cultural affiliation of the objects.</li> </ul> <p>(NOTE: Museum and Federal agency officials must use this information in determining, as appropriate, the lineal descendants of a deceased Native American individual with whom unassociated funerary objects and sacred objects are affiliated, and the Indian tribes and Native Hawaiian organizations with which unassociated funerary objects, sacred objects, or objects of cultural patrimony are affiliated.)</p> <p>(NOTE: The regulations in 43 CFR 10 pertain to the identification and appropriate disposition of human remains, funerary objects, sacred objects, or objects of cultural patrimony that are any of the following:</p> <ul style="list-style-type: none"> <li>– in Federal possession or control</li> <li>– in the possession or control of any institution or state or local government receiving Federal funds</li> <li>– excavated intentionally or discovered inadvertently on Federal or tribal lands.)</li> </ul> <p>(NOTE: The regulations in 43 CFR 10.1 through 10.17 apply to human remains, funerary objects, sacred objects, or objects of cultural patrimony which are indigenous to Alaska, Hawaii, and the continental United States, but not to territories of the United States.)</p> <p>Verify that the following documentation, if available, is included in all inventories:</p> <ul style="list-style-type: none"> <li>– accession and catalogue entries</li> <li>– information related to the acquisition of each object, including: <ul style="list-style-type: none"> <li>– the name of the person or organization from whom the object was obtained, if known</li> <li>– the date of acquisition</li> <li>– the place each object was acquired (i.e., name or number of site, county, state, and Federal agency administrative unit)</li> <li>– the means of acquisition (gift, purchase, or excavation)</li> </ul> </li> <li>– a description of each set of human remains or associated funerary objects including dimensions, materials, and photographic documentation, if appropriate, and the antiquity of such objects if known</li> <li>– a summary of the evidence used to determine the cultural affiliation of the objects.</li> </ul> <p>Verify that the inventory consists of the following documents:</p>

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<p><b>CR.15.5.US.</b> Specific consultation and notification procedures must be followed during the creation of the inventory (43 CFR 10.9(a), 10.9(b), 10.9(e), and 25 USC 3003, Section 5(a), 5(b)(1)(a), 5(b)(1)(B)) [Added February 1996].</p>	<ul style="list-style-type: none"> <li>– a listing of all human remains and associated funerary objects that are identified as being culturally affiliated with one or more present day Indian tribes or Native Hawaiian organizations including an indication for each item or set of items whether cultural affiliation is clearly determined or likely based on the preponderance of the evidence</li> <li>– a listing of all culturally unidentifiable human remains and associated funerary objects for which no culturally affiliated present-day Indian tribe or Native Hawaiian organization can be determined.</li> </ul> <p>(NOTE: The regulations in 43 CFR 10 pertain to the identification and appropriate disposition of human remains, funerary objects, sacred objects, or objects of cultural patrimony that are any of the following:</p> <ul style="list-style-type: none"> <li>– in Federal possession or control</li> <li>– in the possession or control of any institution or state or local government receiving Federal funds</li> <li>– excavated intentionally or discovered inadvertently on Federal or tribal lands.)</li> </ul> <p>(NOTE: The regulations in 43 CFR 10.1 through 10.17 apply to human remains, funerary objects, sacred objects, or objects of cultural patrimony which are indigenous to Alaska, Hawaii, and the continental United States, but not to territories of the United States.)</p> <p>Verify that the following are consulted with in the inventory process:</p> <ul style="list-style-type: none"> <li>– lineal descendants of individuals whose remains and associated funerary objects are likely to be subject to the inventory provisions</li> <li>– Indian tribe officials and traditional religious leaders: <ul style="list-style-type: none"> <li>– from whose tribal lands the human remains and associated funerary objects originated</li> <li>– that are, or are likely to be, culturally affiliated with human remains and associated funerary objects</li> <li>– from whose aboriginal lands the human remains and associated funerary objects originated.</li> </ul> </li> </ul> <p>Verify that inventory consultation began as early as possible, but no later in the inventory process than the time at which investigation into the cultural affiliation of human remains and associated funerary objects are being conducted.</p> <p>Verify that during the inventory consultation process, the following information is provided in writing to lineal descendants, officials, and traditional religious leaders representing Indian tribes or Native Hawaiian organizations that are, or are likely to be, culturally affiliated:</p> <ul style="list-style-type: none"> <li>– a list of all Indian tribes and Native Hawaiian organizations that are, or have been, consulted regarding the particular human remains and associated funerary objects</li> </ul>

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	<ul style="list-style-type: none"> <li>– a general description of the conduct of the inventory</li> <li>– the projected time frame for conducting the inventory</li> <li>– an indication that additional documentation used to identify cultural affiliation will be supplied upon request.</li> </ul> <p>Verify that the Federal agency official has requested, as appropriate, the following information from all potential culturally affiliated groups:</p> <ul style="list-style-type: none"> <li>– name and address of the Indian tribe official to act as representative in consultations related to particular human remains and associated funerary objects</li> <li>– recommendations on how the consultation process should be conducted, including: <ul style="list-style-type: none"> <li>– names and appropriate methods to contact lineal descendants of individuals whose remains and associated funerary objects are or are likely to be included in the inventory</li> <li>– names and appropriate methods to contact any traditional religious leader who should be contacted to participate in the consultation process</li> </ul> </li> <li>– kinds of cultural objects that the Indian tribe or Native Hawaiian organizations reasonably believe to have been made exclusively for burial purposes or to contain human remains of their ancestors.</li> </ul> <p>Verify that if the inventory results in the identification or likely identification of the cultural affiliation of any particular human remains or associated funerary objects, a copy of the inventory and notice of inventory completion is sent to the appropriate groups no later than 6 mo after completion of the inventory.</p> <p>Verify that the notice of inventory completion summarizes the contents of the inventory in sufficient detail to enable the recipients to determine their interest in claiming the inventoried items, including:</p> <ul style="list-style-type: none"> <li>– identifying each particular set of human remains or each associated funerary object and the circumstances surrounding acquisition</li> <li>– describing the human remains or associated funerary objects that are clearly identifiable as to cultural affiliation</li> <li>– describing the human remains and associated funerary objects that are not clearly identifiable as to cultural affiliation but given the circumstances, are identified as likely to be culturally affiliated with a particular Indian tribe or Native Hawaiian organization.</li> </ul> <p>Verify that if the inventory results in a determination that the human remains are of an identifiable individual, this information is conveyed to the lineal descendant of the deceased individual, if known, and the Indian tribe or Native Hawaiian organization of which the deceased individual was culturally affiliated.</p>

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<p><b>CR.15.6.US.</b> Specific procedures are required to be followed for repatriation of Native American human remains or cultural objects (43 CFR 10.8(f), 10.10, and 25 USC 3005 Section 7) [<b>Added February 1996; Revised July 2013</b>].</p>	<p>Verify that a hard copy and electronic form of the notice of inventory completion and the inventory are sent to the DCA.</p> <p>Verify that, upon request from Indian tribes and Native Hawaiian organizations, access is provided to records, catalogues, and relevant studies or information for determining geographic origin, cultural affiliation, and the acquisition and accession of human remains and associated funerary objects.</p> <p>Verify that if the Federal facility has control over/possession of human remains that cannot be identified as affiliated with particular individual, Indian tribe, or Native Hawaiian organization, notice and a copy of the list of culturally unidentifiable human remains and associated funerary objects is provided to the DCA.</p> <p>(NOTE: The regulations in 43 CFR 10 pertain to the identification and appropriate disposition of human remains, funerary objects, sacred objects, or objects of cultural patrimony that are any of the following:</p> <ul style="list-style-type: none"> <li>– in Federal possession or control</li> <li>– in the possession or control of any institution or state or local government receiving Federal funds</li> <li>– excavated intentionally or discovered inadvertently on Federal or tribal lands.)</li> </ul> <p>(NOTE: The regulations in 43 CFR 10.1 through 10.17 apply to human remains, funerary objects, sacred objects, or objects of cultural patrimony which are indigenous to Alaska, Hawaii, and the continental United States, but not to territories of the United States. See Appendix 2-1 for information on when the requirements apply in relation to existing collections, new collections, or newly designated Federally-recognized Indian tribes.)</p> <p>(NOTE: See checklist item CR.15.11.US for details on the repatriation of human remains, funerary objects, sacred objects, or objects of cultural patrimony found as a result of intentional excavation or inadvertent discovery.)</p> <p>Determine if there has been a request by a lineal descendant, Indian tribe, or Native Hawaiian organization, for repatriation of unassociated funerary objects, sacred objects, or objects of cultural patrimony.</p> <p>Verify that prior to repatriation of unassociated funerary objects, sacred objects, or objects of cultural patrimony to lineal descendants, culturally affiliated Indian tribes, or Native Hawaiian organizations, a notice of intent to repatriate is submitted to the Manager, National NAGPRA Program and published in the Federal Register.</p> <p>Verify that the notice to repatriate:</p> <ul style="list-style-type: none"> <li>– describes the objects being claimed in sufficient detail so as to enable other parties to determine their interest in the objects</li> </ul>

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	<ul style="list-style-type: none"> <li>– includes information that identified each claimed object and the circumstances surrounding acquisition</li> <li>– describes the objects that are clearly identifiable as to cultural affiliation</li> <li>– describes the objects that are not clearly identifiable as being culturally affiliated with a particular Indian tribes or Native Hawaiian organization, but which, given the totality of the circumstances surrounding acquisition of the objects, are likely to be culturally affiliated with a particular group.</li> </ul> <p>Verify that the notice of intent is published at least 30 days prior to repatriation.</p> <p>Verify that these requests for repatriation of unassociated funerary objects, sacred objects, or objects of cultural patrimony are responded to expeditiously and follow the appropriate standards for repatriation, that is:</p> <ul style="list-style-type: none"> <li>– the objects meet the regulatory definitions</li> <li>– the cultural affiliation is established through: <ul style="list-style-type: none"> <li>– the summary, consultation, and notification procedures</li> <li>– a preponderance of the evidence presented by a requesting Indian tribe or Native Hawaiian organization</li> </ul> </li> <li>– the known lineal descendant or culturally affiliated Indian tribe or Native Hawaiian organization presents evidence which, if standing alone before the introduction to the contrary, would support a finding that the museum or Federal agency does not have the right of possession</li> <li>– the agency or museum is unable to present evidence that they do have the right of possession</li> <li>– none of the exceptions apply.</li> </ul> <p>Verify that, upon the request of a lineal descendant, Indian tribe, or Native Hawaiian organization a museum or Federal agency expeditiously repatriates human remains and associated funerary objects if the following criteria are met:</p> <ul style="list-style-type: none"> <li>– the human remains or associated objects meet the regulatory definitions</li> <li>– the affiliation of the deceased individual to known lineal descendants, present day Indian tribe, or Native Hawaiian organization: <ul style="list-style-type: none"> <li>– has been reasonably traced through established procedures</li> <li>– has been shown by a preponderance of the evidence presented by a requesting Indian tribe or Native Hawaiian organization</li> </ul> </li> <li>– the known lineal descendant or culturally affiliated Indian tribe or Native Hawaiian organization presents evidence which, if standing alone before the introduction to the contrary, would support a finding that the museum or Federal agency does not have the right of possession</li> <li>– the agency or museum is unable to present evidence that they do have the right of possession</li> <li>– none of the exceptions apply.</li> </ul>

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	<p>Verify that repatriation takes place within 90 days after receipt of an appropriate written request provided that repatriation does not occur until at least 30 days after publication of the notice to repatriate in the Federal Register.</p> <p>(NOTE: The requirements for repatriation do not apply to any of the following:</p> <ul style="list-style-type: none"> <li>– circumstances where human remains, funerary objects, sacred objects, or objects of cultural patrimony are indispensable to the completion of a specific scientific study, the outcome of which is of major benefit to the United States. In these circumstance, repatriation must occur no later than 90 days after completion of the study</li> <li>– circumstances where there are multiple requests for repatriation of human remains, associated funerary objects, unassociated funerary objects, sacred objects, or objects of cultural patrimony and the museum or Federal agency cannot determine by a preponderance of the evidence which competing requesting party is the most appropriate claimant <ul style="list-style-type: none"> <li>– (NOTE: In these circumstances, the museum or Federal agency may retain the cultural items in question until the competing requesting parties agree upon the appropriate recipient or the dispute is otherwise resolved pursuant to these regulations or by a court of competent jurisdiction)</li> </ul> </li> <li>– circumstances where a court of competent jurisdiction has determined that the repatriation of human remains, funerary objects, sacred objects, or objects of cultural patrimony in the possession or control of a museum would result in taking of property without just compensation</li> <li>– circumstances where the repatriation is not consistent with the repatriation limitations identified in 43 CFR 10.15.)</li> </ul> <p>Verify that the recipients of repatriations are informed of any treatment of the human remains, funerary objects, sacred objects, or objects of cultural patrimony with pesticides, preservatives, or other substances that represent a potential hazard to the objects or to persons handling the objects.</p> <p>Verify that the content and recipients of all repatriations have been documented.</p> <p>(NOTE: If the cultural affiliation of human remains cannot be established under these regulations, the human remains must be considered culturally unidentifiable. Museum and Federal agency officials must report the inventory information regarding these human remains in their holdings to the Manager, National NAGPRA Program, who will send this information to the Review Committee. The Review Committee will:</p> <ul style="list-style-type: none"> <li>– compile an inventory of culturally unidentifiable human remains in the possession or control of each museum and Federal agency; and</li> <li>– recommend to the Secretary specific actions for disposition of any human remains not already addressed in 43 CFR 10.11.)</li> </ul>

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<p><b>CR.15.7.US.</b> Intentional archaeological excavations are required to be done according to specific parameters (43 CFR 10.3 and 25 USC 3002, Section 3(c)) <b>[Added February 1996].</b></p>	<p>(NOTE: The regulations in 43 CFR 10 pertain to the identification and appropriate disposition of human remains, funerary objects, sacred objects, or objects of cultural patrimony that are any of the following:</p> <ul style="list-style-type: none"> <li>– in Federal possession or control</li> <li>– in the possession or control of any institution or state or local government receiving Federal funds</li> <li>– excavated intentionally or discovered inadvertently on Federal or tribal lands.)</li> </ul> <p>(NOTE: The regulations in 43 CFR 10.1 through 10.17 apply to human remains, funerary objects, sacred objects, or objects of cultural patrimony which are indigenous to Alaska, Hawaii, and the continental United States, but not to territories of the United States.)</p> <p>(NOTE: This applies to intentional excavation of human remains, funerary objects, sacred objects, or objects of cultural patrimony from Federal or tribal lands after 16 November 1990.)</p> <p>Determine whether there are plans to intentionally excavate and remove Native American human remains or cultural objects.</p> <p>Verify that excavations are done according the requirements outlines in checklist item CR.15.2.US.</p> <p>Verify that the objects are excavated only after consultation with, or for tribal lands, consent of, the appropriate Indian tribe or Native Hawaiian Organization (see also 43 CFR 10.5, checklist item CR.15.9.US. and CR.15.10.US.).</p> <p>Verify that the Federal agency officials take reasonable steps to determine whether a planned activity may result in the excavation of human remains, funerary objects, sacred objects, or objects of cultural patrimony.</p> <p>(NOTE: If a planned activity is also subject to review under NHPA, the Federal agency official needs to coordinate consultation and any subsequent agreement for compliance with the requirements for consultation under these regulations.)</p>
<p><b>CR.15.8.US.</b> Inadvertent discoveries are required to be handled according to specific parameters (43 CFR 10.4(a) through 10.4(d) and 25 USC 3002, Section 3(d)(1) and 3(d)(2); 43 CFR 10.5(e)) <b>[Added February 1996; Revised July 2013].</b></p>	<p>(NOTE: The regulations in 43 CFR 10 pertain to the identification and appropriate disposition of human remains, funerary objects, sacred objects, or objects of cultural patrimony that are any of the following:</p> <ul style="list-style-type: none"> <li>– in Federal possession or control</li> <li>– in the possession or control of any institution or state or local government receiving Federal funds</li> <li>– excavated intentionally or discovered inadvertently on Federal or tribal lands.)</li> </ul> <p>(NOTE: The regulations in 43 CFR 10.1 through 10.17 apply to human remains, funerary objects, sacred objects, or objects of cultural patrimony which are indigenous to Alaska, Hawaii, and the continental United States, but not to territories of the United States. See Appendix 2-1 for information on when the</p>

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	<p>requirements apply in relation to existing collections, new collections, or newly designated Federally-recognized Indian tribes.)</p> <p>(NOTE: This applies to inadvertent discovery of human remains, funerary objects, sacred objects, or objects of cultural patrimony from Federal or tribal lands after 16 November 1990.)</p> <p>Verify that immediate telephone notification is given to the responsible Federal agency official with respect to Federal lands following the inadvertent discovery of human remains, funerary objects, sacred objects, or objects of cultural patrimony.</p> <p>(NOTE: If written confirmation is provided by certified mail, the return receipt constitutes evidence of the receipt of the written notification by the Federal agency official.)</p> <p>Verify that if the inadvertent discovery occurred in connection with an ongoing activity on Federal lands, the person providing the notice stops the activity in the area of the inadvertent discovery and makes a reasonable effort to protect the human remains, funerary objects, sacred objects, or objects of cultural patrimony.</p> <p>Verify that within 3 working days after receipt of notification of inadvertent discovery, the responsible Federal agency official:</p> <ul style="list-style-type: none"> <li>– certifies receipt of the notification</li> <li>– takes immediate steps, if necessary, to further secure and protect the inadvertently discovered human remains, funerary objects, sacred objects, or objects of cultural patrimony, including, as appropriate, stabilization or covering</li> <li>– provides notification of discovery, by telephone, with written confirmation: <ul style="list-style-type: none"> <li>– to any known lineal descendants of a deceased Native American individual whose human remains and associated funerary objects were discovered</li> <li>– with respect to a discovery of human remains, associated funerary objects, unassociated funerary objects, sacred objects, or objects of cultural patrimony, the Indian tribes or Native Hawaiian organizations likely to be culturally affiliated with the cultural items, the Indian tribe or Native Hawaiian organization that aboriginally occupied the area, and any other Indian tribe or Native Hawaiian organization known to have a cultural relationship to the cultural items.</li> </ul> </li> </ul> <p>Verify that the notification includes information about the kinds of human remains, associated funerary objects, unassociated funerary objects, sacred objects, or objects of cultural patrimony, their condition, and the circumstances of their discovery.</p> <p>Verify that the consultation and disposition procedures in 43 CFR 10.5 and 10.6 (see checklist items CR.15.9.US. through CR.15.11.US) are followed.</p>

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<p><b>CR.15.9.US.</b> The consultation process for intentional excavation and inadvertent discovery is required to follow specific procedures (43 CFR 10.5(a) through 10.5(d) and 25 USC 3002, Section 3(c)) [Added February 1996; Revised July 2013].</p>	<p>Verify that, if the human remains, funerary objects, sacred objects, or objects of cultural patrimony must be excavated or removed, the requirements and procedures of 43 CFR 10.3(b) (see checklist item CR.15.7.US) for intentional archaeological excavations are followed.</p> <p>Verify that the activity resulting in inadvertent discovery does not resume until 30 days after receiving certification from the notified Federal agency official that they have received the notification of inadvertent discovery.</p> <p>(NOTE: Following consultation, the Federal agency official must prepare, approve, and sign a written plan of action. A copy of this plan of action must be provided to the lineal descendants, Indian tribes and Native Hawaiian organizations involved. Lineal descendants and Indian tribe official(s) may sign the written plan of action as appropriate. The activity may also resume at any time a written binding agreement is executed between the Federal agency and the affiliated Indian tribes or Native Hawaiian organizations adopt a recovery plan for the inadvertently discovered objects.)</p> <p>(NOTE: The regulations in 43 CFR 10 pertain to the identification and appropriate disposition of human remains, funerary objects, sacred objects, or objects of cultural patrimony that are any of the following:</p> <ul style="list-style-type: none"> <li>– in Federal possession or control</li> <li>– in the possession or control of any institution or state or local government receiving Federal funds</li> <li>– excavated intentionally or discovered inadvertently on Federal or tribal lands.)</li> </ul> <p>(NOTE: The regulations in 43 CFR 10.1 through 10.17 apply to human remains, funerary objects, sacred objects, or objects of cultural patrimony which are indigenous to Alaska, Hawaii, and the continental United States, but not to territories of the United States. See Appendix 2-1 for information on when the requirements apply in relation to existing collections, new collections, or newly designated Federally-recognized Indian tribes.)</p> <p>(NOTE: This applies to intentional excavation or inadvertent discovery of human remains, funerary objects, sacred objects, or objects of cultural patrimony from Federal or tribal lands after 16 November 1990.)</p> <p>Verify that the Federal agency officials consult with known lineal descendants and Indian tribe officials:</p> <ul style="list-style-type: none"> <li>– from Indian tribes on whose aboriginal lands the planned activity occurred or where the inadvertent discovery has been made</li> <li>– from Indian tribes and Native Hawaiian organizations that are, or are likely to be, culturally affiliated with the human remains, funerary objects, sacred objects, or objects of cultural patrimony</li> </ul>

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	<p>– from Indian tribes and Native Hawaiian organizations that have a demonstrated cultural relationship with the human remains, funerary objects, sacred objects, or objects of cultural patrimony.</p> <p>Verify that in order to identify the lineal descendants, Indian tribes, or Native Hawaiian organization entitled to custody, the Federal agency official notifies the following in writing:</p> <ul style="list-style-type: none"> <li>– any known lineal descendants of the deceased Native American individual whose human remains and associated funerary objects have been or are likely to be excavated intentionally or discovered inadvertently</li> <li>– the Indian tribe or Native Hawaiian organizations that are likely to be culturally affiliated with the human remains, funerary objects, sacred objects, or objects of cultural patrimony which have been or are likely to be excavated intentionally or discovered inadvertently</li> <li>– the Indian tribes which aboriginally occupied the area in which the remains, funerary objects, sacred objects, or objects of cultural patrimony which have been or are likely to be excavated intentionally or discovered inadvertently</li> <li>– the Indian tribes or Native Hawaiian organization that have demonstrated cultural relationship with the remains, funerary objects, sacred objects, or objects of cultural patrimony which have been or are likely to be excavated intentionally or discovered inadvertently.</li> </ul> <p>Verify that the notice proposed a time and place for meeting or consultation to further consider the intentional excavation or inadvertent discovery, the proposed treatment, and the proposed disposition of any intentionally excavated or inadvertently discovered remains, funerary objects, sacred objects, or objects of cultural patrimony.</p> <p>Verify that the consultation process has sought to identify traditional religious leaders, lineal descendants, and Indian tribes, or Native Hawaiian organization affiliated with the human remains, funerary objects, sacred objects, or objects of cultural patrimony which have been or are likely to be excavated intentionally or discovered inadvertently.</p> <p>Verify that, as appropriate, the Federal agency official provides the following to all participants:</p> <ul style="list-style-type: none"> <li>– a list of all lineal descendants, Indian tribes, or Native Hawaiian organizations that are being, or have been, consulted regarding the particular human remains, funerary objects, sacred objects, or objects of cultural patrimony</li> <li>– an indication that additional documentation used to identify affiliation will be supplied upon request.</li> </ul> <p>Verify that the Federal agency official has requested, as appropriate, the following information from all participants:</p>

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<p><b>CR.15.10.US.</b> After the consultation for intentional excavations or inadvertent discoveries, the Federal agency official is required to prepare, approve, and sign a written plan of action (43 CFR 10.5(e)) [Added February 1996].</p>	<ul style="list-style-type: none"> <li>– name and address of the Indian tribe official to act as representative in consultations related to particular human remains, funerary objects, sacred objects, or objects of cultural patrimony</li> <li>– names and appropriate methods to contact lineal descendants who should be contacted to participate in the consultation process</li> <li>– recommendations on how the consultation process should be conducted</li> <li>– kinds of cultural items that the Indian tribe or Native Hawaiian organization considers likely to be unassociated funerary objects, sacred objects, or objects of cultural patrimony.</li> </ul> <p>(NOTE: The regulations in 43 CFR 10 pertain to the identification and appropriate disposition of human remains, funerary objects, sacred objects, or objects of cultural patrimony that are any of the following:</p> <ul style="list-style-type: none"> <li>– in Federal possession or control</li> <li>– in the possession or control of any institution or state or local government receiving Federal funds</li> <li>– excavated intentionally or discovered inadvertently on Federal or tribal lands.)</li> </ul> <p>(NOTE: The regulations in 43 CFR 10.1 through 10.17 apply to human remains, funerary objects, sacred objects, or objects of cultural patrimony which are indigenous to Alaska, Hawaii, and the continental United States, but not to territories of the United States.)</p> <p>(NOTE: This applies to intentional excavation or inadvertent discovery of human remains, funerary objects, sacred objects, or objects of cultural patrimony from Federal or tribal lands after 16 November 1990.)</p> <p>Verify that after the consultation, the Federal agency official has prepared, approved, and signed a written plan of action.</p> <p>Verify that a copy of the plan is provided to the lineal descendants, Indian tribes, and Native Hawaiian organizations involved.</p> <p>(NOTE: Lineal descendants and Indian tribe officials may sign the written plan of action as appropriate.)</p> <p>Verify that the plan documents the following:</p> <ul style="list-style-type: none"> <li>– the kinds of objects to be considered as cultural items</li> <li>– the specific information used to determine custody</li> <li>– the planned, treatment, care, and handling of human remains, funerary objects, sacred objects, or objects of cultural patrimony recovered</li> <li>– the planned archaeological recording of the human remains, funerary objects, sacred objects, or objects of cultural patrimony recovered</li> <li>– the kinds of analysis planned for each kind of object</li> </ul>

<p align="center"><b>COMPLIANCE CATEGORY:</b>  <b>CULTURAL RESOURCES MANAGEMENT</b>  <b>U.S. TEAM Guide</b></p>	
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<p><b>CR.15.11.US.</b> The transfer of custody of human remains, funerary objects, sacred objects, or objects of cultural patrimony found as a result of intentional excavation or inadvertent discovery is required to be done according to specific parameters (43 CFR 10.6) [Added February 1996; Revised July 2013].</p>	<ul style="list-style-type: none"> <li>– any steps to be followed to contact Indian tribe officials at the time of intentional excavation or inadvertent discovery of specific human remains, funerary objects, sacred objects, or objects of cultural patrimony</li> <li>– the kind of traditional treatment, if any, to be afforded the human remains, funerary objects, sacred objects, or objects of cultural patrimony by members of the Indian tribe or Native Hawaiian organization</li> <li>– the nature of reports to be filed</li> <li>– the disposition of human remains, funerary objects, sacred objects, or objects of cultural patrimony following the custody process.</li> </ul> <p>(NOTE: The regulations in 43 CFR 10 pertain to the identification and appropriate disposition of human remains, funerary objects, sacred objects, or objects of cultural patrimony that are any of the following:</p> <ul style="list-style-type: none"> <li>– in Federal possession or control</li> <li>– in the possession or control of any institution or state or local government receiving Federal funds</li> <li>– excavated intentionally or discovered inadvertently on Federal or tribal lands.)</li> </ul> <p>(NOTE: The regulations in 43 CFR 10.1 through 10.17 apply to human remains, funerary objects, sacred objects, or objects of cultural patrimony which are indigenous to Alaska, Hawaii, and the continental United States, but not to territories of the United States. See Appendix 2-1 for information on when the requirements apply in relation to existing collections, new collections, or newly designated Federally-recognized Indian tribes.)</p> <p>(NOTE: This applies to intentional excavation or inadvertent discovery of human remains, funerary objects, sacred objects, or objects of cultural patrimony from Federal or tribal lands after 16 November 1990.)</p> <p>Verify that upon determination of the lineal descendant, Indian tribe, or Native Hawaiian organization that is entitled to custody of particular human remains, funerary objects, sacred objects, or objects of cultural patrimony excavated intentionally or discovered inadvertently, the Federal agency official transfers custody to the appropriate entity.</p> <p>Verify that prior to disposition, the Federal agency official publishes general notices of the proposed disposition in a newspaper of general circulation in the area in which the human remains, funerary objects, sacred objects, or objects of cultural patrimony were excavated intentionally or discovered inadvertently.</p> <p>Verify that, if appropriate, a general notice is published in a newspaper of general circulation in the area in which the affiliated Indian tribes or Native Hawaiian organizations members now reside.</p>

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	<p>Verify that the notice provides information as to the nature and affiliation of the human remains, funerary objects, sacred objects, or objects of cultural patrimony and solicits further claims to custody.</p> <p>Verify that the notice is published at least two times, at least a week apart, and the transfer does not take place until at least 30 days after the publication of the second notice.</p> <p>(NOTE: If additional claimants do come forward and the Federal agency official cannot clearly determine which claimant is entitled to custody, the Federal agency must not transfer custody of the objects until the proper recipient is determined.)</p> <p>Verify that a copy of the notice and information on when and in what newspapers the notice was published has been sent to the Manager, National NAGPRA Program.</p> <p>(NOTE: The order of priority of custody is as follows for listed items:</p> <ul style="list-style-type: none"> <li>– for human remains and associated funerary objects, the lineal descendants of the deceased individuals (when the identity of the deceased individual is known)</li> <li>– when a lineal descendant of a deceased Native American individual cannot be ascertained with respect to the human remains and associated funerary objects, and with respect to unassociated funerary objects, sacred objects, and objects of cultural patrimony: <ul style="list-style-type: none"> <li>– the Indian tribe on whose tribal lands the human remains, funerary objects, sacred objects, or objects of cultural patrimony were discovered inadvertently</li> <li>– the Indian tribe or Native Hawaiian organization that has the closest cultural affiliation with the human remains, funerary objects, sacred objects, or objects of cultural patrimony.)</li> </ul> </li> </ul> <p>(NOTE: In circumstances where cultural affiliation cannot be ascertained and the objects were discovered inadvertently on Federal land that is recognized by a final judgment of the Indian Claims commission or the United States Court of Claims as the aboriginal land, one of the following custody priorities applies:</p> <ul style="list-style-type: none"> <li>– the Indian tribe aboriginally occupying the Federal land on which the human remains, funerary objects, sacred objects, or objects of cultural patrimony were discovered inadvertently</li> <li>– if a preponderance of the evidence shows that a different Indian tribe or Native Hawaiian organization has a stronger cultural relationship with the human remains, associated funerary objects, unassociated funerary objects, sacred objects, or objects of cultural patrimony, in the Indian tribe or Native Hawaiian organization that has the strongest demonstrated relationship with the cultural items.)</li> </ul>



<p style="text-align: center;"><b>COMPLIANCE CATEGORY:</b>  <b>CULTURAL RESOURCES MANAGEMENT</b>  <b>U.S. TEAM Guide</b></p>	
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<p><b>CR.20</b></p> <p><b>COLLECTION MANAGEMENT AND CURATION</b></p> <p><b>CR.20.1.US.</b> Federal facilities responsible for the long-term management and preservation of pre-existing collections are subject to certain regulations regarding curation (36 CFR 79.5(a)).</p> <p><b>CR.20.2.US.</b> Federal facilities responsible for the long-term management and preservation of new archaeological collections are required to meet specific curation standards (36 CFR 79.5(b)).</p> <p><b>CR.20.3.US.</b> Federal facilities responsible for the long-term management and preservation of pre-existing and new archaeological collections are required to keep specific</p>	<p>Determine if the Federal facility has responsibility for the long-term management and preservation of pre-existing archaeological collections.</p> <p>Verify that the responsible person identifies repositories holding pre-existing collections placed prior to 12 October 1990 and reviews and evaluates the curatorial services being provided.</p> <p>Verify that, if the curatorial services being provided are not adequate, appropriate actions to eliminate inadequacies are being taken.</p> <p>Determine if the Federal facility has responsibility for the long-term management and preservation of new archaeological collections.</p> <p>Verify that new archaeological collections are deposited in a repository only after the following criteria have been met:</p> <ul style="list-style-type: none"> <li>– the repository has the capability to provide adequate long-term curatorial services</li> <li>– the repository’s facilities, written curatorial policies, and operating procedures are consistent with 36 CFR 79 (see checklist items CR.20.1.US. through CR.20.9.US.)</li> <li>– the repository has certified, in writing, that the collection will be cared for, maintained, and made accessible in accordance with 36 CFR 79</li> <li>– when the collection is from Indian lands, written consent to the disposition has been obtained from the Indian landowner and the Indian tribe having jurisdiction over the lands</li> <li>– the initial processing of the material remains (including appropriate cleaning, sorting, labeling, cataloging, stabilizing, and packaging) has been completed, and associated records have been prepared and organized in accordance with the repository’s processing and documentation procedures.</li> </ul> <p>Verify that the following administrative records on the disposition of each collection includes:</p> <ul style="list-style-type: none"> <li>– the name and location of the repository where the collection is deposited</li> <li>– a copy of the contract, memorandum, agreement, or other appropriate written instrument, and any subsequent amendments, between the Federal facility, the repository, and any other party for curatorial services</li> </ul>

<p style="text-align: center;"><b>COMPLIANCE CATEGORY:</b>  <b>CULTURAL RESOURCES MANAGEMENT</b>  <b>U.S. TEAM Guide</b></p>	
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<p>administrative records (36 CFR 79.5(c)).</p> <p><b>CR.20.4.US.</b> Federal facilities responsible for the long-term management and preservation of pre-existing and new archaeological collections are required to provide long-term curatorial services (36 CFR 79.9(a) and 79.9(b)(1)) [Revised May 1996].</p> <p><b>CR.20.5.US.</b> Federal facilities responsible for the long-term management and preservation of pre-existing and new archaeological collections are required to provide repository security that meets specific standards (36 CFR 79.9(b)(2), 79.9(b)(3), and 79.9(b)(6)).</p>	<ul style="list-style-type: none"> <li>– a catalogue list of the contents of the collection deposited in the repository</li> <li>– a list of any other Federal personal property furnished to the repository as part of the contract, memorandum, or agreement</li> <li>– copies of reports documenting inspection, inventories and investigations of loss, damage, or destruction that are conducted</li> <li>– any subsequent permanent transfer of the collection to another repository.</li> </ul> <p>Verify that the repository provides the following as adequate long-term care:</p> <ul style="list-style-type: none"> <li>– accession, labeling, cataloging, storage, maintenance, inventory, and conservation of the particular collection on a long-term basis using professional museum and archival practices</li> <li>– maintenance of complete and accurate records of the collection, including: <ul style="list-style-type: none"> <li>– records on acquisition</li> <li>– catalogues and artifact inventory lists</li> <li>– descriptive information, including field notes, site forms, and reports</li> <li>– photographs, negatives, and slides</li> <li>– locational information, including maps</li> <li>– information on the condition of the collection including any completed conservation treatments</li> <li>– records on deaccessions and subsequent transfers or repatriation as required by the FAO</li> <li>– approved loans and other uses</li> <li>– inventory and inspection records, including any environmental monitoring records</li> <li>– records on lost, deteriorated, damaged, or destroyed government property.</li> </ul> </li> </ul> <p>Verify that the repository has dedicated equipment and space to properly store, study, and conserve the collection.</p> <p>Verify that the collection is under physically secure conditions within storage, laboratory, study, and any exhibition areas, and the physical plant meets the following criteria:</p> <ul style="list-style-type: none"> <li>– local electrical, fire, building, health, and safety codes are met</li> <li>– has an appropriate and operational fire detection and suppression system</li> <li>– has an appropriate and operational intrusion detection and deterrent system</li> <li>– has an adequate emergency management plan establishing procedures for responding to fires, floods, natural disasters, civil unrest, acts of violence, structural failures, and failures of mechanical systems within the physical plant</li> <li>– provides fragile or valuable items with additional security, and limits and controls access to keys, the collection, and the physical plant</li> </ul>

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<p><b>CR.20.6.US.</b> Curation staff responsible for the long-term management and preservation of pre-existing and new archaeological collections is required to be qualified museum professionals (36 CFR 79.9(b)(4)).</p> <p><b>CR.20.7.US.</b> Federal facilities responsible for the long-term management and preservation of pre-existing and new archaeological collections are required to follow specific curatorial procedures (36 CFR 79.9(b)(5)).</p> <p><b>CR.20.8.US.</b> Federal facilities responsible for the long-term management and preservation of pre-existing and new archaeological collections are required to follow specific practices regarding the use of the collections (36 CFR 79.10).</p> <p><b>CR.20.9.US.</b> Federal facilities responsible for the long-term management and preservation of pre-existing and new archaeological collections are required to inventory and inspect those collections (36 CFR 79.9(b)(7), 79.9(b)(8),</p>	<p>– inspections of the physical plant for possible security weaknesses and environmental control problems are carried out, and inadequacies corrected.</p> <p>Verify that storage of site forms, field notes, artifacts inventory lists, computer disks and tapes, catalogue forms and a copy of the final report is done in a manner that protects them from theft and fire by one of the following:</p> <ul style="list-style-type: none"> <li>– storing a duplicate set of records in a separate location</li> <li>– ensuring that records are maintained and accessible through another party.</li> </ul> <p>Verify that the staff and consultants who are responsible for managing the collection are qualified museum professionals.</p> <p>Verify that handling, storage, cleaning, conservation, and exhibition of the collection is performed in a manner that:</p> <ul style="list-style-type: none"> <li>– is appropriate to the nature of the material remains and associated records</li> <li>– protects the collections from breakage and possible deterioration from adverse temperature and relative humidity, visible light, ultraviolet radiation, dust, soot, gases, mold, fungus, insects, rodents, and general neglect</li> <li>– preserves data that may be studied in future laboratory analyses.</li> </ul> <p>Verify that the collection is available for scientific, educational, and religious uses, subject to such terms and conditions as are necessary to protect and preserve the condition, research potential, religious or sacred importance, and uniqueness of the collection.</p> <p>Verify that inspections and inventories of the collection are conducted periodically.</p> <p>Verify that inspection of the collection for possible deterioration and damage is conducted.</p>

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and 79.11(b) through 79.11(d)).	<p>Verify that the inventories include the material remains and associated records and any other U.S. Government-owned personal property in the possession of the repository.</p> <p>Verify that qualified museum professionals conduct the inspections and inventories.</p> <p>Verify that, following each inspection and inventory, the personnel responsible for the inspection and inventory prepare and provide the responsible person with a written report of the results, including the status of the collection, treatments completed, and recommendations for additional treatments.</p> <p>(NOTE: For collections from Indian lands, the Indian landowner and the tribal official and the Indian tribe that has jurisdiction over the lands is provided with a copy of the notification also.)</p> <p>Verify that, within 5 days of the discovery of any loss or theft of, deterioration and damage to, or destruction of the collection (or a part thereof) or any other U.S. Government-owned property, the personnel responsible for the curation of the collection prepare and provide the responsible person with written notification of the circumstances surrounding the loss.</p> <p>Verify that the collection is available for inspection by the responsible person, the Indian landowner and tribal official (when the collection is from Indian lands), the Indian tribal elder, religious leaders, and other officials representing the Indian tribe or other group for which the remains have religious or sacred importance..</p>

## **Appendix 2-1**

### **Future NAGPRA Applicability Guidance (43 CFR 10.13) [Added July 2013]**

#### **New Holdings or Collections.**

- Any museum or Federal agency that, after completion of the summaries and inventories receives a new holding or collection or locates a previously unreported current holding or collection that may include human remains, funerary objects, sacred objects or objects of cultural patrimony, must:
  - Within 6 mo of receiving a new holding or collection or locating a previously unreported current holding or collection provide a summary of the holding or collection to any Indian tribe or Native Hawaiian organization that is, or is likely to be, affiliated with the collection;
  - Within 2 yr of receiving a new holding or collection or locating a previously unreported current holding or collection prepare, in consultation with any affiliated Indian tribe or Native Hawaiian organization, an inventory.

(NOTE: Any museum that has made a good faith effort to complete its inventory, but which will be unable to complete the process by this deadline, may request an extension of the time requirements.)

- Additional pieces or fragments of previously repatriated human remains, funerary objects, sacred objects and objects of cultural patrimony may be returned to the appropriate Indian tribe or Native Hawaiian organization without publication of a notice in the Federal Register if they do not change the number or cultural affiliation of the cultural items listed in the previous notice.
- A museum or Federal agency that receives a new holding or collection for which a summary or inventory was previously prepared may rely upon the previously prepared documents. The receiving museum or Federal agency must provide a copy of the previously prepared summary or inventory to all affiliated Indian tribes or Native Hawaiian organizations, along with notification that the receiving museum or Federal agency has assumed possession and control of the holding or collection.

#### **New Indian Tribes.**

- Any museum or Federal agency that has possession or control of human remains, funerary objects, sacred objects, or objects of cultural patrimony that are, or are likely to be, culturally affiliated with a newly Federally recognized Native American tribe, must:
- Within 6 mo of the publication in the Federal Register of the Native American group's placement on the list of Indian Entities Recognized and Eligible to Receive Services from the United States Bureau of Indian Affairs, or within 6 m of the effective date of this rule, whichever is later, provide a summary of the collection to that Indian tribe; and
- Within 2 yr of the publication in the Federal Register of the Native American group's placement on the list of Indian Entities Recognized and Eligible to Receive Services from the United States Bureau of Indian Affairs, or within 2 yr of the effective date of this rule, whichever is later, prepare, in consultation with the newly recognized culturally affiliated Indian tribe an inventory.

(NOTE: Any museum that has made a good faith effort to complete its inventory, but which will be unable to complete the process by this deadline, may request an extension of the time requirements. The list of Indian Entities Recognized and Eligible to Receive Services from the United States Bureau of Indian

Affairs is published in the Federal Register as required by section 104 of the Federally Recognized Indian Tribe List Act of 1994 [25 U.S.C. 479a-1 (2006)].)

**New Federal Funds.**

- Any museum that has possession or control of human remains, funerary objects, sacred objects, or objects of cultural patrimony and receives Federal funds for the first time after expiration of the statutory deadlines for completion of summaries and inventories must:
  - Within 3 yr of the date of receipt of Federal funds, or within 3 yr of the effective date of this rule, whichever is later, provide a summary of the collection to any Indian tribe or Native Hawaiian organization that is, or is likely to be, culturally affiliated with the collections; and
  - Within 5 yr of the date of receipt of Federal funds, or within 5 yr of the effective date of this rule, whichever is later, prepare, in consultation with any affiliated Indian tribe or Native Hawaiian organization, an inventory.

**Amendment of Previous Decision.**

- Any museum or Federal agency that has previously published a notice in the Federal Register regarding the intent to repatriate unassociated funerary objects, sacred objects, and objects of cultural patrimony under 43 CFR 10.8(f), or the completion of an inventory of Native American human remains and associated funerary objects as required by 43 CFR 10.9(e), must publish an amendment to that notice if, based on subsequent information, the museum or Federal agency revises its decision in a way that changes the number or cultural affiliation of the cultural items listed.
- Repatriation may not occur until at least 30 days after publication of the amended notice in the Federal Register.

**NOTE: All actions taken must also comply with all other relevant sections of 43 CFR 10.**



## SECTION 3

### HAZARDOUS MATERIALS MANAGEMENT

U.S. TEAM Guide, December 2018

#### A. Applicability

This section primarily addresses the proper storage and handling of chemicals and the training, reporting, spill contingency, and response requirements related to hazardous materials. Oil and pesticides are hazardous materials that have additional regulatory requirements that are addressed in separate sections. Radioactive substances and the general category of hazardous wastes also are not included in this section. This section does not focus on individual hazardous chemicals or substances used but deals with the generic requirements and management practices (MP) associated with minimizing impacts on the environment due to spills or releases of hazardous materials because of improper storage and handling.

Assessors are required to review state and local regulations and, if applicable, the appropriate Agency Supplement, to perform a comprehensive assessment.

Select portions of this section (i.e., Review of Federal Legislation, State and Local Regulations, Key Compliance Requirements, Key Terms and Definitions, Typical Records to Review, Typical Physical Features to Inspect, and the Checklist) have been reviewed by USEPA personnel from the Office of Enforcement and Compliance Assurance (OECA) and USEPA's Office of General Counsel. USEPA's comments and suggestions for changes have been incorporated in this version of the TEAM Guide. USEPA did not review all portions of this section. USEPA also did not review and comment on items pertaining to federal Executive Orders, DOT regulations, OSHA regulations or any other area outside of Title 40 of the Code of Federal Regulations. Portions that have been added or revised as a result of this review are identified as either being reviewed, revised or added in March 2001, for example [**Reviewed March 2001**].

#### B. Federal Legislation

- *The Occupational Safety and Health Act (OSHA)*. This act, last amended in November 1990, 29 U.S. Code (USC) 651-678, is a Federal statute that governs the issues related to occupational safety and health. The purpose and policy of this act are to assure every working man and woman in the nation safe and healthful working condition and to preserve our human resources by, among other things, providing for the development and publication of occupational safety and health standards, providing for an effective enforcement program, and providing for appropriate reporting procedures with respect to occupational safety and health which procedures will help achieve the objectives of this act and accurately describe the nature of the occupational safety and health (29 USC 651(b)(9)(10)(12)).
- *The Hazardous Materials Transportation Act of 1975*. This act, as last amended in November 1990, 49 USC 1801-1819, et al, is the federal legislation that governs the transportation of hazardous materials in the nation. The policy of Congress is to improve the regulatory and enforcement authority of the Secretary of Transportation to protect the nation adequately against the risks to life and property that are inherent in the transportation of hazardous materials in commerce (49 USC 1801).
- *The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)*. CERCLA, known commonly as Superfund, became law in 1980 and authorizes USEPA to respond to releases or threatened releases of hazardous substances that may endanger public health, welfare, or the environment. The basic purpose of CERCLA is to provide funding and enforcement authority to USEPA for overseeing the clean up of environmental contamination caused by responsible parties. The Superfund Amendments and Reauthorization Act (SARA) of 1986 revised various sections of CERCLA, and created a free-standing law, SARA Title III, also known as the *Emergency Planning and Community Right-to-Know Act (EPCRA)*. The CERCLA hazardous substance release reporting regulations (Section 103; 40 CFR Part 302) direct the person in charge of a facility to report to the

National Response Center any environmental release of a listed hazardous substance that equals or exceeds a reportable quantity. Reportable quantities are listed in 40 CFR Section 302.4. A release report may trigger a response by USEPA or by one or more federal or state emergency response authorities [**Revised March 2001**].

- *Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA)*. This act, also known as SARA Title III, was designed to promote emergency planning and preparedness at both the state and local level. It provides citizens, local governments, and local response authorities with information regarding the potential hazards in their community. EPCRA requires the use of emergency planning and designates state and local governments as recipients of information regarding certain chemicals used in the community. EPCRA has four major components [**Revised March 2001**]:

- Emergency planning (Sections 301-303)
- Emergency release notification (Section 304)
- Community right-to-know reporting (Sections 311-312)
- Toxic chemical release reporting (Section 313).

- *Pollution Prevention Act of 1990 (PPA)*. The goals of PPA were the following: preventing or reducing pollution at the source whenever feasible; pollution that cannot be prevented should be recycled in an environmentally safe manner whenever feasible; pollution that cannot be prevented or recycled should be treated in an environmentally safe manner whenever feasible; and disposal or other release into the environment should be employed only as a last resort and conducted in an environmentally safe manner. Section 6607 of the PPA requires owners or operators of facilities who have to file an annual toxic chemical release form (Form R) under EPCRA Section 313 to include a toxic chemical source reduction and recycling report for the preceding calendar year that has been incorporated into the Form R [**Added March 2001**].
- *The Oil Pollution Act of 1990*. This law, Public Law (PL) 301-308 (33 USC 2701-2761, et al.), as amended, requires the prevention of oil pollution into navigable waters by tank vessels. This includes the preparation of a response plan, construction of oil carriers with double hulls, and inspection of spill response equipment.
- Executive Order (EO) 12088, *Federal Compliance with Pollution Standards*. This EO, dated 13 October 1978, requires Federally owned and operated facilities to comply with applicable Federal, state, and local pollution control standards. It makes the head of each executive agency responsible for seeing to it that the agencies, facilities, programs, and activities the agency funds meet applicable Federal, state, and local environmental requirements and for correcting situations that are not in compliance with such requirements. In addition, the EO requires that each agency ensure that sufficient funds for environmental compliance are included in the agency budget.
- The National Fire Code, *Flammable and Combustible Liquids Code*, NFPA 30. This code prohibits the storage of Class I and Class II liquids in plastic containers in general-purpose warehousing.
- Executive Order (EO) 13693, *Planning for Federal Sustainability in the Next Decade*, was signed by President Obama on 19 March 2015. Section 16 of this EO revokes the following [**Added April 2015**]:
  - Executive Order 13423 of January 24, 2007;
  - Executive Order 13514 of October 5, 2009;
  - Presidential Memorandum of December 2, 2011 (Implementation of Energy Savings Projects and Performance-Based Contracting for Energy Savings);
  - Section 1 of Presidential Memorandum of February 21, 2012 (Driving Innovation and Creating Jobs in Rural America through Biobased and Sustainable Product Procurement); and
  - Presidential Memorandum of December 5, 2013 (Federal Leadership on Energy Management); and
  - Presidential Memorandum of May 24, 2011 (Federal Fleet Performance).

The goal of EO 13693 is to maintain Federal leadership in sustainability and greenhouse gas emission reductions.

### C. State/Local Regulations

For information on regulations in specific states, see the State Supplements to TEAM Guide.

Hazardous materials may be regulated on the state level as well as local agencies (county/city fire departments) that may require flammable/combustible materials to meet certain storage requirements. Usually, these local ordinances will follow the National Fire Protection Association (NFPA), *Fire Protection Guide on Hazardous Materials* (Pamphlets 325A, 325M, 49, 491F and 704M).

### D. Key Compliance Requirements

- Planning and Documentation – There must be a written Hazard Communication Program addressing the chemical hazards in the workplace. Safety data sheet (SDS) files are required for each hazardous chemical it stores and uses, not including such items as hazardous waste, tobacco, or drugs and cosmetics meant for personal use (29 CFR 1910.1200(b) and 1910.1200(g)) [**Revised April 2012**].
- Personnel Training - All employees must be provided with written information about hazardous chemicals to which they are exposed. Personnel who work with hazardous materials are required to be trained in the use of and potential hazards of such materials. All employees and supervisors working on sites exposed to hazardous materials or other hazards are required to be trained before engaging in these activities (29 CFR 1910.1200).
- Emergency Response Plans - 40 CFR 355 establishes requirements for a facility to provide information necessary for developing and implementing State and local chemical emergency response plans, and requirements for emergency notification of chemical releases. 40 CFR 355 also lists Extremely Hazardous Substances (EHSs) and Threshold Planning Quantities (TPQs) in Appendices A and B, which are used in determining if a facility are subject to the requirements of 40 CFR 355 [**Revised January 2009**].
- Community Right-to-Know - 40 CFR 370 establishes reporting requirements for providing the public with important information on the hazardous chemicals in their communities. Reporting raises community awareness of chemical hazards and aids in the development of State and local emergency response plans. The reporting requirements established under this 40 CFR 370 consist of Safety Data Sheet (SDS) reporting and inventory reporting [**Revised March 2001, Revised January 2009**].
- Toxic Chemical Release Reporting. Section 313 of EPCRA and Section 6607 of the PPA require certain facilities to report to the federal and state governments the annual quantity of toxic chemicals (listed in 40 CFR 372.65) entering each environmental medium, either through normal operations or as the result of an accident, quantities transferred offsite in waste, as well as other information. Facilities subject to this requirement must submit to USEPA and state officials a toxic chemical release form (Form R) for each toxic chemical manufactured, processed, or otherwise used in quantities exceeding minimum threshold values during the preceding calendar year. Facilities that have a “reportable waste quantity” of 500 lb of a listed toxic chemical may take advantage of an alternate threshold of one million pounds. If the facility does not manufacture, process or otherwise use more than one million pounds, it may certify by filing a Form A certification statement rather than a Form R. Releases that must be reported include those to air, water, and land (including land disposal and underground injection). In addition, discharges to a POTW and transfers to off-site locations for treatment, disposal, energy recovery, and recycling must also be reported. Facilities must also report on the quantities of the chemicals treated, recycled, or combusted for energy recovery onsite [**Revised March 2001**].

Form R/Form A reports must be submitted to both the USEPA and the state on or before July 1. Copies of Form R/Form A reports and related documentation must be kept at the facility for three years after the report is submitted.

The Pollution Prevention Act requires facilities subject to Form R/Form A reporting to also submit information on source reduction.

- **Hazardous Materials Storage** - Containers for hazardous chemicals are required to be labeled or tagged with the identity of the substance and appropriate warning markings. Areas where hazardous materials are stored or used are required to be kept free from accumulations of materials that create a hazard, such as leaking containers, or a placement of containers in a manner that would create hazards such as tripping, fire, or pests. Substances that together may create a fire hazard must be separated (29 CFR 1910.176(c), 1910.1200(b), and 1910.1200(f)).
- **Hazardous Materials in Laboratories** - A chemical hygiene plan that is reviewed annually is required when hazardous chemicals are used in laboratories. Employees are required to be provided with information and training about the hazardous chemicals in their work areas. Records about the exposure of employees are to be kept along with medical records (29 CFR 1910.1450(e), 1910.1450(f), 1910.1450(h), and 1910.1450(j)).
- **Storage of Flammable Liquids** - In general, containers of flammable liquids are to be stored and handled so not to damage the container or label, block exits, or create a fire hazard (29 CFR 1910.106(d)) **[Revised April 2012]**.
- **Flammable Liquids Storage Cabinets** - Storage cabinets are to be fire resistant and labeled **FLAMMABLE - KEEP FIRE AWAY**. Not more than 60 gal of Category 1, 2, or 3 flammable liquids, nor more than 120 gal of Category 4 flammable liquids can be stored in a storage cabinet (29 CFR 1910.106(d)(3)) **[Revised April 2012]**
- **Flammable Liquids Storage Rooms** - Storage rooms inside a building are to be fire resistant and have a raised sill or ramp to prevent the flow of spilled material from exiting the room. Ventilation and clear aisles must be provided, and dispensing must be done by an approved pump or self-closing faucet (29 CFR 1910.106(d)(4)) **[Revised April 2012]**.
- **Flammable Liquids Warehouses or Storage Buildings** - These structures will have 3 ft wide aisles for access to doors, windows, or standpipe connections. Materials will be stacked using pallets or dunnage when needed for stabilization, and fire protection must be provided (29 CFR 1910.106(d)(5)(iv)) **[Revised April 2012]**.
- **Outside Storage of Flammable Liquids** - Containers of flammable liquids can be stored outside if no more than 1100 gal of liquid are stored adjacent to a building. More than 1100 gal can be stored if there are 10 ft or more between buildings and the nearest flammable container. The storage area must be graded to divert spills or surrounded by a curb (29 CFR 1910.106(d)(6)) **[Revised April 2012]**
- **Storage of Flammable Liquids in Industrial Areas** - Specific guidelines, requirements, or operating standards apply wherever flammable liquids are stored, dispensed, or used in industrial plants, are in incidental storage, or in use in unit operations. This includes availability of portable fire extinguishers, precautions being taken to prevent ignition, and use of maintenance and operating practices to control leakage and prevent accidental escape of flammable liquids (29 CFR 1910.106(e)(2) through 1910.106(e)(9)) **[Revised April 2012]**
- **Compressed Gases** - Regardless of where the cylinders are stored, **NO SMOKING** signs should be posted and actions taken to prevent fire. Compressed gases are required to be stored according to the Compressed Gas Association Pamphlet P-1-1965 (29 CFR 1910.101).
- **Acid Storage** - Bulk storage of acids should be done in buildings that are one story in height with ventilation. Safety equipment and fire protection must be available. The building is labeled **NO SMOKING** and heated to prevent freezing (MP).
- **Hazardous Materials Transportation** - The regulations found in Title 49, Subchapter C of the CFR detail requirements for the transportation of hazardous materials, 49 CFR 171.1(b) stipulates that these requirements apply to any person who, under contract with any department, agency, or instrumentality of the executive, legislative, or judicial branch of the Federal Government, transports, or causes to be transported or shipped, a hazardous material or manufactures, fabricates, marks, maintains, reconditions, repairs, or tests a package or container which is represented, marked, certified, or sold by such person as qualified for use in the transportation of a hazardous material is required to comply with all provisions of the Federal hazardous materials transportation law, all orders and regulations issued thereunder, and all other substantive and procedural requirements of Federal, State, and local governments and Indian tribes (except any such requirements that have been preempted by the

Federal hazardous materials transportation law or any other Federal law), in the same manner and to the same extent as any person engaged in such activities that are in or affect commerce is subject to such provisions, orders, regulations, and requirements **[Revised July 2002]**.

#### **E. Key Compliance Definitions**

- *Aerosol* - a material which is dispensed from its container as a mist, spray, or foam by a propellant under pressure (29 CFR 1910.106(a)(1)).
- *Approval* - a written authorization, including a competent authority approval, from the Associate Administrator or other designated Department official, to perform a function for which prior authorization by the Associate Administrator is required under 49 CFR 171 through 180 (49 CFR 171.8) **[Added April 2005]**.
- *Approved* - approval issued or recognized by the Department unless otherwise specifically indicated in 49 CFR parts 171 through 180 (49 CFR 171.8) **[Added April 2005]**.
- *Approved* - listed or approved by Underwriters Laboratories, Inc., Factory Mutual Engineering Corporation, The Bureau of Mines, National Institute of Occupational Safety and Health (NIOSH), The American National Standards Institute (ANSI), National Fire Protection Association (NFPA), or other nationally recognized agencies that list, approve, test, or develop specifications for equipment to meet fire protection, health or safety requirements (29 CFR 1910.106(a)(35)).
- *Article* - a manufactured item which (40 CFR 372.3) **[Added March 2001]**:
  1. is formed to a specific shape or design during manufacture;
  2. has end use functions dependent in whole or in part upon its shape or design during end use;
  3. does not release a toxic chemical under normal conditions of processing or use of that item at the facility or establishments.
- *Article* - a manufactured item other than a fluid or particle (29 CFR 1910.1200(c)):
  1. which is formed to a specific shape or design during manufacture;
  2. which has end use function(s) dependent in whole or in part upon its shape or design during end use; and
  3. which under normal conditions of use does not release more than very small quantities, e.g., minute or trace amounts of a hazardous chemical, and does not pose a physical hazard or health risk to employees.
- *Barge* - any nonself-propelled vessel (46 CFR 90.10-2).
- *Barrel* - a volume of 42 U.S. gallons (29 CFR 1910.106(a)(33)).
- *Basement* - a story of a building or structure having one-half or more of its height below ground level and to which access for fire fighting purposes is unduly restricted (29 CFR 1910.106(a)(4)).
- *Boiling Point* - the temperature at which a liquid starts to boil when at atmospheric pressure (14.7 psia), as determined by ASTM test D-86-72) (29 CFR 1910.106(a)(5)).
- *Bulk Packaging* - a packaging, other than a vessel or a barge, including a transport vehicle or freight container, in which hazardous materials are loaded with no intermediate form of containment and which has (49 CFR 171.8) **[Added April 2005]**:
  1. A maximum capacity greater than 450 L (119 gal) as a receptacle for a liquid;
  2. A maximum net mass greater than 400 kg (882 lb) and a maximum capacity greater than 450 L (119 gal) as a receptacle for a solid; or
  3. A water capacity greater than 454 kg (1000 lb) as a receptacle for a gas as defined in 49 CFR 173.115.

- *Bulk Plant* - that portion of the property where flammable or combustible liquids are received by tank vessel, pipelines, tank car, or tank vehicle and are stored or blended in bulk for the purpose of distributing such liquids by tank vessel, pipeline, car, tank vehicle, or container (29 CFR 1910.106(a)(7)).
- *Bundle of Cylinders* - assemblies of UN cylinders fastened together and interconnected by a manifold and transported as a unit. The total water capacity for the bundle may not exceed 3,000 L, except that a bundle intended for the transport of gases in Division 2.3 is limited to a water capacity of 1,000 L. Not permitted for air transport (49 CFR 171.8) **[Added April 2015]**.
- *Captain of the Port (COTP)* - the U.S. Coast Guard officer commanding a Captain of the Port Zone described in part 3 of this chapter, or that person's authorized representative (33 CFR 154.105 and 156.105) **[Added October 2013]**.
- *Cargo* - on tank vessels this means combustible liquid, flammable liquid, or liquefied flammable gas, unless otherwise stated (46 CFR 30.10-5).
- *Cargo Areas* - on tank vessels, the part of a vessel that includes the cargo tanks and other tanks into which cargo or cargo vapors are intentionally introduced; holds containing these tanks; all intervening spaces within, between, below, or outboard of these tanks or holds; and the deck areas over the length and beam of the vessel above these tanks, holds, or spaces (46 CFR 30.10-5a).
- *Cargo Control Stations* - on tank vessels means a location that is manned during cargo transfer operations for the purpose of directing or controlling the loading or unloading of cargo (46 CFR 30.10- 5b).
- *Category A Machinery Space* - for a tank vessel this means any space and trunks and ducts to such a space that contains (46 CFR 30.10-6a):
  1. internal combustion machinery used for main propulsion
  2. internal combustion machinery used for purposes other than main propulsion where the total aggregate power is at least 500 brake horsepower
  3. internal combustion machinery that uses a fuel with a flashpoint of less than 43.3 °C (110 °F), or
  4. one or more oil-fired boilers or oil-fuel units.
- *CERCLA Hazardous Substance* - a substance defined in section 101(14) of CERCLA and listed in Table 302.4 of 40 CFR 302) (40 CFR 355.61) **[Added March 2001, Revised January 2009]**.
- *Certificated* - for tank vessels this applies to a vessel covered by a certificate of inspection issued by the Coast Guard; when applied to personnel employed on tank vessels, the term refers to a certificate of ability issued by the Coast Guard (46 CFR 30.10-7).
- *Chemical* - any substance, or mixture of substances (29 CFR 1910.1200(c)) **[Revised April 2012]**.
- *Chemical Manufacturer* - an employer with a workplace where chemical(s) are produced for use or distribution (29 CFR 1910.1200(c)).
- *Chemical Name* - the scientific designation of a chemical in accordance with the nomenclature system developed by the International Union of Pure and Applied Chemistry (IUPAC) or the Chemical Abstracts Service (CAS) rules of nomenclature, or a name that will clearly identify the chemical for the purpose of conducting a hazard classification (29 CFR 1910.1200(c)) **[Revised April 2012]**.
- *Classification* - to identify the relevant data regarding the hazards of a chemical; review those data to ascertain the hazards associated with the chemical; and decide whether the chemical will be classified as hazardous according to the definition of hazardous chemical in 29 CFR 1910.1200. In addition, classification for health and

physical hazards includes the determination of the degree of hazard, where appropriate, by comparing the data with the criteria for health and physical hazards (29 CFR 1910.1200(c)) **[Added April 2012]**.

- *Closed Container* - a container so sealed with a lid or other closing device that neither liquid and/or vapor will escape from it at ordinary temperatures (29 CFR 1910.106(a)(9)).
- *Coastwise* - this includes all tank vessels and vessels normally navigating the waters of any ocean or the Gulf of Mexico at 20 nautical miles or less offshore (46 CFR 90.10-11).
- *Cofferdam* - a void or empty space separating two or more compartments for the purpose of isolation or to prevent the contents of one compartment from entering another compartment in the event of the failure of the walls of one to retain their tightness (46 CFR 30.10-13).
- *Combustible Liquid* - for tank vessels this means any liquid having a flashpoint above 80 °F and include (46 CFR 30.10-15):
  1. Grade D, which is any combustible liquid with a flashpoint below 150 °F and above 80 °F
  2. Grade E, which is any combustible liquid with a flashpoint of 150 °F or above.
- *Commerce* - trade or transportation in the jurisdiction of the United States within a single state; between a place in a state and a place outside of the state; that affects trade or transportation between a place in a state and place outside of the state; or on a United States-registered aircraft (49 CFR 171.8) **[Added April 2005; Revised January 2010]**.
- *Common Name* - any designation or identification such as code name, code number, trade name, brand name or generic name used to identify a chemical other than by its chemical name (29 CFR 1910.1200(c)).
- *Consignee* - the person or place shown on a shipping document, package marking, or other media as the location to which a carrier is directed to transport a hazardous material (49 CFR 171.8) **[Added April 2005]**.
- *Consumer Commodity* - a material that is packaged and distributed in a form intended or suitable for sale through retail sales agencies or instrumentalities for consumption by individuals for purposes of personal care or household use. This term also includes drugs and medicines (49 CFR 171.8) **[Added April 2005]**.
- *Container* - any bag, barrel, bottle, box, can, cylinder, drum, reaction vessel, storage tank, or the like that contains a hazardous chemical. For purposes of this section, pipes or piping systems, and engines, fuel tanks, or other operating systems in a vehicle, are not considered to be containers (29 CFR 1910.1200(c)).
- *Continuous* - continuous release is a release that occurs without interruption or abatement or that is routine, anticipated, and intermittent and incidental to normal operations or treatment processes (40 CFR 302.8(b)) **[Added April 1999; Reviewed March 2001]**.
- *Control Space* - an enclosed space in which is located a ship's radio, main navigating equipment, or emergency source of power, or in which is located centralized fire recording or fire control equipment, but not including firefighting apparatus that must be located in the cargo area or individual pieces of firefighting equipment (46 CFR 30.10-19a).
- *Designated Facility* - a hazardous waste treatment, storage, or disposal facility that has been designated on the manifest by the generator (49 CFR 171.8) **[Added April 2005]**.
- *Designated Representative* - any individual or organization to whom an employee gives written authorization to exercise such employee's rights under this section. A recognized or certified collective bargaining agent shall be treated automatically as a designated representative without regard to written employee authorization (29 CFR 1910.1200(c)).

- *Director* - the Director, National Institute for Occupational Safety and Health, U.S. Department of Health and Human Services, or designee (29 CFR 1910.1200(c)).
- *Discharge* - any release, however caused, from a ship and includes any escape, disposal, spilling, leaking, pumping, emitting, or emptying (33 CFR 151.05).
- *Distributor* - a business, other than a chemical manufacturer or importer, which supplies hazardous chemicals to other distributors or to employers (29 CFR 1910.1200(c)).
- *Division 6.2 (Infectious Substance)* - a material known or reasonably expected to contain a pathogen. A pathogen is a microorganism (including bacteria, viruses, rickettsiae, parasites, fungi) or other agent, such as a proteinaceous infectious particle (prion) that can cause disease in humans or animals. An infectious substance must be assigned the identification number UN 2814, UN 2900, UN 3373, or UN 3291 as appropriate, and must be assigned to one of the following categories (49 CFR 173.134(a)(1)) **[Added July 2006]**:
  1. Category A: An infectious substance in a form capable of causing permanent disability or life-threatening or fatal disease in otherwise healthy humans or animals when exposure to it occurs. An exposure occurs when an infectious substance is released outside of its protective packaging, resulting in physical contact with humans or animals. A Category A infectious substance must be assigned to identification number UN 2814 or UN 2900, as appropriate. Assignment to UN 2814 or UN 2900 must be based on the known medical history or symptoms of the source patient or animal, endemic local conditions, or professional judgment concerning the individual circumstances of the source human or animal.
  2. Category B: An infectious substance that is not in a form generally capable of causing permanent disability or life-threatening or fatal disease in otherwise healthy humans or animals when exposure to it occurs. This includes Category B infectious substances transported for diagnostic or investigational purposes. A Category B infectious substance must be described as "Biological substance, Category B" and assigned identification number UN 3373. This does not include regulated medical waste, which must be assigned identification number UN 3291.
- *Domestic Wastes* - all types of wastes generated in the living spaces on board a ship except victual wastes (33 CFR 151.05).
- *Drums, Barrels, or Other Packages* - this is interpreted to mean portable tanks having a maximum capacity of 110 gal and Department of Transportation (DOT) specification cylinders having a water capacity of not more than 1000 lb that are actually loaded and discharged from vessels with their content intact (46 CFR 30.01-20(a) and 90.05-30).
- *Employee* - a worker who may be exposed to hazardous chemicals under normal operating conditions or in foreseeable emergencies. Workers such as office workers or bank tellers who encounter hazardous chemicals only in non-routine, isolated instances are not covered (29 CFR 1910.1200(c)).
- *Employer* - a person engaged in a business where chemicals are either used, distributed, or are produced for use or distribution, including a contractor or subcontractor (29 CFR 1910.1200(c)).
- *Environment* - includes water, air, and land and the interrelationship that exists among and between water, air, and land and all living things (40 CFR 355.61 and 370.66) **[Added January 2009]**.
- *Exposure or Exposed* - that an employee is subjected in the course of employment to a chemical that is a physical or health hazard, and includes potential (e.g. accidental or possible) exposure. "Subjected" in terms of health hazards includes any route of entry (e.g. inhalation, ingestion, skin contact or absorption.) (29 CFR 1910.1200(c)).
- *Extremely Hazardous Substance* - all substances listed in Appendices A and B of 40 CFR 355 (40 CFR 355.61 and 370.66) **[Reviewed March 2001, Citation Revised January 2009]**.

- *Facility* - either an onshore or offshore facility, except for an offshore facility operating under the jurisdiction of the Secretary of the Department of Interior, and includes, but is not limited to, structure, equipment, and appurtenances thereto, used or capable of being used to transfer oil or hazardous materials to or from a vessel or public vessel. Also included are facilities that tank clean or strip and any floating structure that is used to support an integral part of the facility's operation. A facility includes federal, state, municipal, and private facilities (33 CFR 154.105 and 156.105) **[Added October 2013]**.
- *Facility Operator* - the person who owns, operates, or is responsible for the operation of the facility (33 CFR 154.105 and 156.105) **[Added October 2013]**.
- *Facility* - all buildings, equipment, structures, and other stationary items that are located on a single site or on contiguous or adjacent sites and that are owned or operated by the same person (or by any person that controls, is controlled by, or under common control with, such person). Facility includes manmade structures, as well as all natural structures in which chemicals are purposefully placed or removed through human means such that it functions as a containment structure for human use (40 CFR 370.66) **[Added March 2001, Revised January 2009]**.
- *Facility* - all buildings, equipment, structures, and other stationary items that are located on a single site or on contiguous or adjacent sites and that are owned or operated by the same person (or by any person that controls, is controlled by, or under common control with, such person). Facility includes manmade structures, as well as all natural structures in which chemicals are purposefully placed or removed through human means such that it functions as a containment structure for human use. For purposes of emergency release notification, the term includes motor vehicles, rolling stock, and aircraft (40 CFR 355.61) **[Added January 2009]**.
- *Facility* - all buildings, equipment, structures, and other stationary items which are located on a single site or on contiguous or adjacent sites and which are owned or operated by the same person (or by any person which controls, is controlled by, or under common control with such person). A facility may contain more than one establishment (40 CFR 372.3) **[Added March 2001]**.
- *Fire Area* - that portion of a building separated from the remainder by construction having a rated fire resistance of at least 1 h and having all communicating openings properly protected by an assembly having a fire-resistance rating of at least 1 h (29 CFR 1910.106(a)(12)).
- *Flammable Aerosol* - a flammable aerosol as defined by Appendix B to 29 CFR 1910.1200--Physical Hazard Criteria. For the purposes of 29 CFR 106(d) of this section, such aerosols are considered Category 1 flammable liquids (29 CFR 1910.106(a)(13)) **[Added April 2012]**.
- *Flammable Liquid* - any liquid having a flashpoint at or below 199.4 °F (93 °C). Flammable liquids are divided into four categories as follows (29 CFR 1910.106(a)(19)) **[Revised April 2012]**:
  1. Category 1 shall include liquids having flashpoints below 73.4 °F (23 °C) and having a boiling point at or below 95 °F (35 °C).
  2. Category 2 shall include liquids having flashpoints below 73.4 °F (23 °C) and having a boiling point above 95 °F (35 °C).
  3. Category 3 shall include liquids having flashpoints at or above 73.4 °F (23 °C) and at or below 140 °F (60 °C). When a Category 3 liquid with a flashpoint at or above 100 °F (37.8 °C) is heated for use to within 30 °F (16.7 °C) of its flashpoint, it shall be handled in accordance with the requirements for a Category 3 liquid with a flashpoint below 100 °F (37.8 °C).
  4. Category 4 shall include liquids having flashpoints above 140 °F (60 °C) and at or below 199.4 °F (93 °C). When a Category 4 flammable liquid is heated for use to within 30 °F (16.7 °C) of its flashpoint, it shall be handled in accordance with the requirements for a Category 3 liquid with a flashpoint at or above 100 °F (37.8 °C).
  5. When liquid with a flashpoint greater than 199.4 °F (93 °C) is heated for use to within 30 °F (16.7 °C) of its flashpoint, it shall be handled in accordance with the requirements for a Category 4 flammable liquid.

- *Flammable Liquid* - any liquid that gives off flammable vapors at or below a temperature of 80 °F (46 CFR 30.10-22).
- *Flame Arrester* - any device or assembly of a cellular, tubular, pressure, or other type used for preventing the passage of flames into an enclosed space (46 CFR 30.10-23).
- *Flashpoint* - means the minimum temperature at which a liquid gives off vapor within a test vessel in sufficient concentration to form an ignitable mixture with air near the surface of the liquid, and shall be determined as follows: (29 CFR 1910.106(a)(14)) **[Revised April 2012]**.
  1. For a liquid which has a viscosity of less than 45 SUS at 100 °F (37.8 °C), does not contain suspended solids, and does not have a tendency to form a surface film while under test, the procedure specified in the Standard Method of Test for Flashpoint by Tag Closed Tester (ASTM D-56-70), which is incorporated by reference as specified in 29 CFR 1910.6, or an equivalent test method as defined in Appendix B to 29 CFR 1910.1200--Physical Hazard Criteria, shall be used.
  2. For a liquid which has a viscosity of 45 SUS or more at 100 °F (37.8 °C), or contains suspended solids, or has a tendency to form a surface film while under test, the Standard Method of Test for Flashpoint by Pensky-Martens Closed Tester (ASTM D-93-71) or an equivalent method as defined by Appendix B to 29 CFR 1910.1200--Physical Hazard Criteria, shall be used except that the methods specified in Note 1 to section 1.1 of ASTM D-93-71 may be used for the respective materials specified in the Note. The preceding ASTM standard is incorporated by reference as specified in 29 CFR 1910.6.
  3. For a liquid that is a mixture of compounds that have different volatilities and flashpoints, its flashpoint shall be determined by using the procedure specified in paragraph 1 or 1 of this definition on the liquid in the form it is shipped.
  4. Organic peroxides, which undergo autoaccelerating thermal decomposition, are excluded from any of the flashpoint determination methods specified in this definition.
- *Flexible Bulk Container* - a flexible container with a capacity not exceeding 15 cubic meters and includes liners and attached handling devices and service equipment (49 CFR 171.8) **[Added April 2013]**.
- *Foreseeable Emergency* - any potential occurrence such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment which could result in an uncontrolled release of a hazardous chemical into the workplace (29 CFR 1910.1200(c)).
- *Fuel Tank* - a tank other than a cargo tank, used to transport flammable or combustible liquid, or compressed gas for the purpose of supplying fuel for propulsion of the transport vehicle to which it is attached, or for the operation of other equipment on the transport vehicle (49 CFR 171.8) **[Added April 2005]**.
- *Hazard Category* – This term is divided into two categories, health and physical hazards. (40 CFR 370.66) **[Added April 1999; Reviewed March 2001; Citation Revised January 2009; Revised July 2016]**:
  1. Health hazard means a chemical which poses one of the following hazardous effects: Carcinogenicity; acute toxicity (any route of exposure); aspiration hazard; reproductive toxicity; germ cell mutagenicity; skin corrosion or irritation; respiratory or skin sensitization; serious eye damage or eye irritation; specific target organ toxicity (single or repeated exposure); simple asphyxiant; and hazard not otherwise classified (HNOC).
  2. Physical hazard means a chemical which poses one of the following hazardous effects: Flammable (gases, aerosols, liquids or solids); gas under pressure; explosive; self-heating; pyrophoric (liquid or solid); pyrophoric gas; oxidizer (liquid, solid or gas); organic peroxide; self-reactive; in contact with water emits flammable gas; combustible dust; corrosive to metal; and hazard not otherwise classified (HNOC).

- *Hazard Category* - the division of criteria within each hazard class, e.g., oral acute toxicity and flammable liquids include four hazard categories. These categories compare hazard severity within a hazard class and should not be taken as a comparison of hazard categories more generally (29 CFR 1910.1200(c)) **[Added April 2012]**.
- *Hazard Class* - the category of hazard assigned to a hazardous material under the definitional criteria of 49 CFR 173 and the provisions of the 49 CFR 172.101 table. A material may meet the defining criteria for more than one hazard class but is assigned to only one hazard class (49 CFR 171.8) **[Added April 2005]**.
- *Hazard Class* - the nature of the physical or health hazards, e.g., flammable solid, carcinogen, oral acute toxicity (29 CFR 1910.1200(c)) **[Added April 2012]**.
- *Hazard Not Otherwise Classified (HNOC)* - an adverse physical or health effect identified through evaluation of scientific evidence during the classification process that does not meet the specified criteria for the physical and health hazard classes addressed in 29 CFR 1910.1200. This does not extend coverage to adverse physical and health effects for which there is a hazard class addressed in 29 CFR 1910.1200, but the effect either falls below the cut-off value/concentration limit of the hazard class or is under a GHS hazard category that has not been adopted by OSHA (e.g., acute toxicity Category 5) (29 CFR 1910.1200(c)) **[Added April 2012]**.
- *Hazard Statement* - a statement assigned to a hazard class and category that describes the nature of the hazard(s) of a chemical, including, where appropriate, the degree of hazard (29 CFR 1910.1200(c)) **[Added April 2012]**.
- *Hazardous Chemical* - any chemical which is classified as a physical hazard or a health hazard, a simple asphyxiant, combustible dust, pyrophoric gas, or hazard not otherwise classified (29 CFR 1910.1200(c)) **[Added April 2012]**.
- *Hazardous Chemical* - in relationship to laboratories, any chemical which is classified as health hazard or simple asphyxiant in accordance with the Hazard Communication Standard (29 CFR 1910.1450(b)) **[Revised April 2012]**.
- *Hazardous Chemical* - any hazardous chemical as defined under 29 CFR 1910.1200(c), except that this term does not include (40 CFR 355.61 and 370.66) **[Added March 2001; Revised January 2009]**:
  1. Any food, food additive, color additive, drug, or cosmetic regulated by the Food and Drug Administration.
  2. Any substance present as a solid in any manufactured item to the extent exposure to the substance does not occur under normal conditions of use.
  3. Any substance to the extent it is used:
    - a. For personal, family, or household purposes, or is present in the same form and concentration as a product packaged for distribution and use by the general public. Present in the same form and concentration as a product packaged for distribution and use by the general public means a substance packaged in a similar manner and present in the same concentration as the substance when packaged for use by the general public, whether or not it is intended for distribution to the general public or used for the same purpose as when it is packaged for use by the general public;
    - b. In a research laboratory or hospital or other medical facility under the direct supervision of a technically qualified individual; or
    - c. In routine agricultural operations or is a fertilizer held for sale by a retailer to the ultimate customer.
- *Hazardous Material* - a substance or material that the Secretary of Transportation has determined is capable of posing an unreasonable risk to health, safety, and property when transported in commerce, and has designated as hazardous under section 5103 of Federal hazardous materials transportation law (49 U.S.C. 5103). The term includes hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, materials designated as hazardous in the Hazardous Materials Table (see 49 CFR 172.101), and materials that meet the defining criteria for hazard classes and divisions in 49 CFR 173 (49 CFR 171.8) **[Added April 2005; Revised October 2012]**.

- *Hazardous Material* - a liquid material or substance, other than oil or liquefied gases, listed under 46 CFR 153.40 (a), (b), (c), or (e) (33 CFR 154.105 and 156.105) [**Added October 2013**].
- *Hazardous Substance* - any substance designated pursuant to 40 CFR 302 (40 CFR 302.3) [**Reviewed March 2001**].
- *Hazardous Substance* - for the purposes of this subchapter, means a material, including its mixtures and solutions, that (49 CFR 171.8) [**Added April 2005**]:
  1. Is listed in the appendix A to 49 CFR 172.101;
  2. Is in a quantity, in one package, which equals or exceeds the reportable quantity (RQ) listed in the appendix A to 49 CFR 172.101; and
  3. When in a mixture or solution--
    - a. For radionuclides, conforms to paragraph 7 of the appendix A to 49 CFR 172.101.
    - b. For other than radionuclides, is in a concentration by weight which equals or exceeds the concentration corresponding to the RQ of the material, as shown in the following table:

RQ pounds (kg)	Concentration by weight	
	Percent	PPM
5000 (2270)_	10	10,000
1000 (454)	2	20,000
100 (45.4)	0.2	2,000
10 (4.54)	0.02	200
1 (0.454)	0.002	20

The term does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance in appendix A to 49 CFR 172.101, and the term does not include natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas).

- *Hazmat* - a hazardous material (49 CFR 171.8) [**Added April 2005**].
- *Hazmat Employee* – this term means (49 CFR 171.8) [**Added April 2005; Revised January 2006**]:
  1. A person who is:
    - a. Employed on a full-time, part time, or temporary basis by a hazmat employer and who in the course of such full time, part time or temporary employment directly affects hazardous materials transportation safety;
    - b. Self-employed (including an owner-operator of a motor vehicle, vessel, or aircraft) transporting hazardous materials in commerce who in the course of such self-employment directly affects hazardous materials transportation safety;
    - c. A railroad signalman; or
    - d. A railroad maintenance-of-way employee.
  2. This term includes an individual, employed on a full time, part time, or temporary basis by a hazmat employer, or who is self-employed, who during the course of employment:
    - a. Loads, unloads, or handles hazardous materials;
    - b. Designs, manufactures, fabricates, inspects, marks, maintains, reconditions, repairs, or tests a package, container or packaging component that is represented, marked, certified, or sold as qualified for use in transporting hazardous material in commerce.
    - c. Prepares hazardous materials for transportation;
    - d. Is responsible for safety of transporting hazardous materials;
    - e. Operates a vehicle used to transport hazardous materials.

- *Hazmat Employer* – this term means (49 CFR 171.8) [**Added January 2006**]:
  1. A person who employs or uses at least one hazmat employee on a full-time, part time, or temporary basis; and who:
    - a. Transports hazardous materials in commerce;
    - b. Causes hazardous materials to be transported in commerce; or
    - c. Designs, manufactures, fabricates, inspects, marks, maintains, reconditions, repairs or tests a package, container, or packaging component that is represented, marked, certified, or sold by that person as qualified for use in transporting hazardous materials in commerce;
  2. A person who is self-employed (including an owner-operator of a motor vehicle, vessel, or aircraft) transporting materials in commerce; and who:
    - a. Transports hazardous materials in commerce;
    - b. Causes hazardous materials to be transported in commerce; or
    - c. Designs, manufactures, fabricates, inspects, marks, maintains, reconditions, repairs or tests a package, container, or packaging component that is represented, marked, certified, or sold by that person as qualified for use in transporting hazardous materials in commerce; or
  3. A department, agency, or instrumentality of the United States Government, or an authority of a State, political subdivision of a State, or an Indian tribe; and who:
    - a. Transports hazardous materials in commerce;
    - b. Causes hazardous materials to be transported in commerce; or
    - c. Designs, manufactures, fabricates, inspects, marks, maintains, reconditions, repairs or tests a package, container, or packaging component that is represented, marked, certified, or sold by that person as qualified for use in transporting hazardous materials in commerce.
- *Health Hazard* - a chemical which is classified as posing one of the following hazardous effects: acute toxicity (any route of exposure); skin corrosion or irritation; serious eye damage or eye irritation; respiratory or skin sensitization; germ cell mutagenicity; carcinogenicity; reproductive toxicity; specific target organ toxicity (single or repeated exposure); or aspiration hazard. The criteria for determining whether a chemical is classified as a health hazard are detailed in Appendix A to 29 CFR 1910.1200--Health Hazard Criteria (29 CFR 1910.1200(c)) [**Revised April 2012**].
- *Health Hazard* - a chemical that is classified as posing one of the following hazardous effects: acute toxicity (any route of exposure); skin corrosion or irritation; serious eye damage or eye irritation; respiratory or skin sensitization; germ cell mutagenicity; carcinogenicity; reproductive toxicity; specific target organ toxicity (single or repeated exposure); aspiration hazard. The criteria for determining whether a chemical is classified as a health hazard are detailed in Appendix A of the Hazard Communication Standard and 29 CFR 1910.1200© [definition of “simple asphyxiant” (29 CFR 1910.1450(b)) [**Added April 2012**].
- *HMR* - the Hazardous Materials Regulations, Parts 171 through 180 of Title 49 (49 CFR 171.8) [**Added April 2005**].
- *Identity* - any chemical or common name which is indicated on the safety data sheet (SDS) for the chemical. The identity used shall permit cross-references to be made among the required list of hazardous chemicals, the label and the MSDS (29 CFR 1910.1200(c)).
- *Immediate Use* - that the hazardous chemical will be under the control of and used only by the person who transfers it from a labeled container and only within the work shift in which it is transferred (29 CFR 1910.1200(c)).
- *IM 101 or 102 Portable Tank* - a portable tank constructed in accordance with 49 CFR 178.270 through 178.272 and approved under 73.32a (46 CFR 98.30-2(a)).
- *Indian Country* - Indian country defined in 18 U.S.C. 1151 as (40 CFR 355.61 and 370.66) [**Added January 2009**]:

1. All land within the limits of any Indian reservation under the jurisdiction of the United States government, notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation;
  2. All dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or without the limits of a State; and
  3. All Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same.
- *Indian Tribe or Tribe* - those Tribes federally recognized by the Secretary of the Interior (40 CFR 355.61 and 370.66) **[Added January 2009]**.
  - *Industrial Vessel* - every vessel which, by reason of its special outfit, purpose, and design for function, engages in certain industrial ventures. Included in this classification are such vessels as drill rigs, missile range ships, dredges, cable layers, derrick barges, pipe lay barges, and construction and wrecking barges.
  - *Inflammable or Combustible Liquid Cargo in Bulk* - this is interpreted on tank vessels to include such cargo in portable tanks of a capacity more than 110 gal (46 CFR 30.01-20(b)).
  - *Institutional Occupancy* - the occupancy or use of a building or structure or any portion thereof by persons harbored or detained to receive medical, charitable or other care or treatment or by persons involuntarily detained (29 CFR 1910.106(a)(16)).
  - *Inventory Form* - the uniform Tier I and Tier II emergency and hazardous chemical inventory forms published by EPA. These forms can be used for reporting inventory information, as described in 40 CFR 370.40 through 370.45 (40 CFR 370.66) **[Added April 1999; Reviewed March 2001; Revised January 2009]**.
  - *Keel Laying Date* - the date upon which progressive construction identifiable with a specific vessel begins, including construction of the first module or prefabricated section of the hull that is identifiable with that vessel (46 CFR 30.10-37).
  - *LEPC* - the Local Emergency Planning Committee appointed by the State Emergency Response Commission (40 CFR 355.61) **[Added January 2009]**.
  - *Label* - an appropriate group of written, printed or graphic information elements concerning a hazardous chemical that is affixed to, printed on, or attached to the immediate container of a hazardous chemical, or to the outside packaging. (29 CFR 1910.1200(c)) **[Revised April 2012]**.
  - *Label Elements* - the specified pictogram, hazard statement, signal word and precautionary statement for each hazard class and category (29 CFR 1910.1200(c)) **[Added April 2012]**.
  - *Laboratory* - a facility where the laboratory use of hazardous chemicals occurs. It is a workplace where relatively small quantities of hazardous chemicals are used on a nonproduction basis (29 CFR 1910.1450(b)).
  - *Laboratory Scale* - work with substances in which the containers used for reactions, transfers, and other handling of substances are designed to be easily and safely manipulated by one person (29 CFR 1910.1450(b)).
  - *Laboratory Use of a Hazardous Chemical* - handling or use of such chemicals in which all of the following conditions are met (29 CFR 1910.1450(b)):
    1. chemical manipulations are carried out on a laboratory scale
    2. multiple chemical procedures or chemicals are used
    3. the procedures involved are not part of a production process, nor in any way simulate a production process
    4. protective laboratory practices and equipment are available and in common use to minimize the potential for employee exposure to hazardous chemicals.

- *Large Salvage Packaging* - a special packaging into which damaged, defective or leaking hazardous materials packages, or hazardous materials that have spilled or leaked are placed for the purpose of transport for recovery or disposal, that (49 CFR 171.8) **[Added April 2015]**:
  1. Is designed for mechanical handling; and
  2. Has a net mass greater than 400 kg (882 pounds) or a capacity of greater than 450 L (119 gallons), but has a volume of not more than 3 cubic meters (106 cubic feet).
- *Lightweight* - the displacement of a vessel in metric tons without cargo, oil fuel, lubricating oil, ballast water, fresh water, feedwater in tanks, consumable stores, and persons and their effects (46 CFR 30.10-38).
- *Liquefied Flammable Gas* - any flammable gas having a Reid vapor pressure exceeding 40 lb, which has been liquefied (46 CFR 30.10-39).
- *Liquid* - any material with a fluidity greater than that of 300 penetration asphalt when tested in accordance with ASTM Test D-5-65 (29 CFR 1910.106(a)(17)) **[Revised April 2012]**.
- *Liquid* - a material, other than an elevated temperature material, with a melting point or initial melting point of 20 °C (68 °F) or lower at a standard pressure of 101.3 kPa (14.7 psia). A viscous material for which a specific melting point cannot be determined must be subjected to the procedures specified in ASTM D 4359 "Standard Test Method for Determining Whether a Material is Liquid or Solid" (IBR, see 49 CFR 171.7).
- *Loading Incidental to Movement* - loading by carrier personnel or in the presence of carrier personnel of packaged or containerized hazardous material onto a transport vehicle, aircraft, or vessel for the purpose of transporting it, including the loading, blocking and bracing a hazardous materials package in a freight container or transport vehicle, and segregating a hazardous materials package in a freight container or transport vehicle from incompatible cargo. For a bulk packaging, loading incidental to movement means filling the packaging with a hazardous material for the purpose of transporting it. Loading incidental to movement includes transloading (49 CFR 171.8) **[Added April 2005]**.
- *Machinery Space* - any space that contains machinery and related equipment including Category A machinery spaces, propelling machinery, boilers, oil fuel units, steam and internal combustion engines, generators and centralized electrical machinery, oil filling stations, refrigeration stabilizing, ventilation, and air-conditioning machinery, and similar spaces and trunks to such spaces (46 CFR 30.10-42).
- *Management Practice (MP)* - practices that, although not mandated by law, are encouraged to promote safe operating procedures.
- *Manufacture* - to produce, prepare, import, or compound a toxic chemical. Manufacture also includes coincidental production of a toxic chemical during the manufacture, processing, use, or treatment of another chemical or mixture of chemicals, including a toxic chemical that is separated from that other chemical or mixture of chemicals as a byproduct, and a toxic chemical that remains in that other chemical or mixture as an impurity (>0.1% for carcinogens; otherwise >1%) (40 CFR 372.3) **[Added March 2001]**.
- *Marine Pollutant* - a material which is listed in appendix B to 49 CFR 172.101 (also see 49 CFR 171.4) and, when in a solution or mixture of one or more marine pollutants, is packaged in a concentration which equals or exceeds (49 CFR 171.8) **[Added April 2005]**:
  1. Ten percent by weight of the solution or mixture for materials listed in the appendix; or
  2. One percent by weight of the solution or mixture for materials that are identified as severe marine pollutants in the appendix.
- *Marine Portable Tank (MPT)* - a liquid-carrying tank that has a capacity of 110 gal or more, is designed to be carried on a vessel, can be lifted full or empty onto and off a vessel, can be filled and discharged while on a vessel, is not permanently attached to the vessel, and was inspected by the Coast Guard on or before 30 September 1992 (46 CFR 64.5).

- *Marine Transfer Area* - that part of a waterfront facility handling oil or hazardous materials in bulk between the vessel, or where the vessel moors, and the first manifold or shutoff valve on the pipeline encountered after the pipeline enters the secondary containment required under 40 CFR 112.7 or 49 CFR 195.264 inland of the terminal manifold or loading arm, or, in the absence of secondary containment, to the valve or manifold adjacent to the bulk storage tank, including the entire pier or wharf to which a vessel transferring oil or hazardous materials is moored (33 CFR 154.105 and 156.105) **[Added October 2013]**.
- *Marking* - a descriptive name, identification number, instructions, cautions, weight, specification, or UN marks, or combinations thereof, required by 49 CFR 171 on outer packagings of hazardous materials (49 CFR 171.8) **[Added April 2005]**.
- *Material Poisonous By Inhalation or Material Toxic By Inhalation* - this means (49 CFR 171.8) **[Added January 2010]**:
  1. A gas meeting the defining criteria in 49 CFR 173.115(c) and assigned to Hazard Zone A, B, C, or D in accordance with 49 CFR 173.116(a);
  2. A liquid (other than as a mist) meeting the defining criteria in 49 CFR 173.132(a)(1)(iii) and assigned to Hazard Zone A or B in accordance with 49 CFR 173.133(a); or
  3. Any material identified as an inhalation hazard by a special provision in column 7 of the 49 CFR 172.101 table.
- *Material Safety Data Sheet (MSDS)* – see *Safety Data Sheet* **[Revised April 2012]**.
- *Medium or Media* - the environment (i.e., air, water, land) (40 CFR 355.61) **[Added January 2009]**.
- *Mixture* - a combination or a solution composed of two or more substances in which they do not react (29 CFR 1910.1200(c)) **[Added April 2012]**.
- *Mixture* (EPCRA 311, 312, and 313) - any combination of two or more chemicals, if the combination is not, in whole or in part, the result of a chemical reaction. However, if the combination was produced by a chemical reaction but could have been produced without a chemical reaction, it is also treated as a mixture. A mixture also includes any combination that consists of a chemical and associated impurities (40 CFR 372.3) **[Added March 2001]**.
- *Mixture* - for the purposes of 40 CFR 355, a heterogeneous association of substances where the various individual substances retain their identities and can usually be separated by mechanical means. This definition includes, for the purposes of 40 CFR 355, solutions but does not include alloys or amalgams (40 CFR 355.61) **[Added April 1999; Reviewed March 2001, Revised January 2009]**.
- *Mixture* - any combination of two or more chemicals if the combination is not, in whole or in part, the result of a chemical reaction (40 CFR 370.66) **[Added April 2012]**.
- *Mobile Facility* - any facility that can readily change location, such as a tank truck or tank car, other than a vessel or public vessel (33 CFR 154.105 and 156.105) **[Added October 2013]**.
- *Motor Vehicle* - includes a vehicle, machine, tractor, trailer, or semitrailer, or any combination thereof, propelled or drawn by mechanical power and used upon the highways in the transportation of passengers or property. It does not include a vehicle, locomotive, or car operated exclusively on a rail or rails, or a trolley bus operated by electric power derived from a fixed overhead wire, furnishing local passenger transportation similar to street-railway service (49 CFR 171.8) **[Added April 2005]**.
- *Movement* - the physical transfer of a hazardous material from one geographic location to another by rail car, aircraft, motor vehicle, or vessel (49 CFR 171.8) **[Added April 2005]**.

- *Mutagen* - chemicals that cause permanent changes in the amount or structure of the genetic material in a cell. Chemicals classified as mutagens in accordance with the Hazard Communication Standard shall be considered mutagens for purposes of this section (29 CFR 1910.1450(b)) **[Added April 2012]**.
- *New Ship* - a ship (33 CFR 151.05):
  1. for which the building contract is placed after 31 December 1975
  2. in the absence of a building contract, the keel of which is laid or which is at a similar stage of construction after 30 June 1976
  3. the delivery of which is after 31 December 1979
  4. that has undergone a major conversion:
    - a. for which the contract is placed after 31 December 1979
    - b. in the absence of a contract, the construction work of which is begun after 30 June 1975
    - c. that is completed after 31 December 1979.
- *Non-bulk Packaging* - a packaging which has (49 CFR 171.8) **[Added April 2015]**:
  1. A maximum capacity of 450 L (119 gallons) or less as a receptacle for a liquid;
  2. A maximum net mass of 400 kg (882 pounds) or less and a maximum capacity of 450 L (119 gallons) or less as a receptacle for a solid;
  3. A water capacity of 454 kg (1000 pounds) or less as a receptacle for a gas as defined in 49 CFR 173.115; or
  4. Regardless of the definition of bulk packaging, a maximum net mass of 400 kg (882 pounds) or less for a bag or a box conforming to the applicable requirements for specification packagings, including the maximum net mass limitations, provided in subpart L of 49 CFR 178.
- *Normal Range* - the normal range of a release is all releases (in pounds or kilograms) of a hazardous substance reported or occurring over any 24-hour period under normal operating conditions during the preceding year. Only releases that are both continuous and stable in quantity and rate may be included in the normal range (40 CFR 302.8(b)) **[Added April 1999; Reviewed March 2001]**.
- *Office Occupancy* - the occupancy or use of a building or structure, or any portion thereof, for the transaction of business, or the rendering or receiving of professional services (29 CFR 1910.106(a)(24)).
- *Offshore Facility* - any facility of any kind located in, on, or under, any of the navigable waters of the United States, and any facility of any kind which is subject to the jurisdiction of the United States and is located in, on, or under any other waters, other than a vessel or a public vessel (33 CFR 154.105 and 156.105) **[Added October 2013]**.
- *Oil* - oil of any kind or in any form, including but not limited to, petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged spoil (33 CFR 154.105 and 156.105) **[Added October 2013]**.
- *Onshore Facility* - any facility (including, but not limited to, motor vehicles and rolling stock) of any kind located in, on, or under any land within the United States other than submerged land (33 CFR 154.105 and 156.105) **[Added October 2013]**.
- *Otherwise Use* - any use of a toxic chemical that is not covered by the terms “manufacture” or “process” and includes use of a toxic chemical contained in a mixture, trade name product or waste. Otherwise use of a toxic chemical does not include disposal, stabilization (without subsequent distribution in commerce), or treatment for destruction unless (40 CFR 372.3) **[Added March 2001]**:
  1. the toxic chemical that was disposed, stabilized, or treated for destruction was received from off-site for the purposes of further waste management; or
  2. the toxic chemical that was disposed, stabilized, or treated for destruction was manufactured as a result of waste management activities on materials received from off-site for the purposes of further waste

management activities. Relabeling or redistributing of the toxic chemical where no repackaging of the toxic chemical occurs does not constitute otherwise use or processing of the toxic chemical.

- *Person* - any individual, trust, firm, joint stock company, corporation (including a government corporation), partnership, association, State, municipality, commission, political subdivision of a State, or interstate body (40 CFR 355.61 and 370.66) **[Added January 2009]**.
- *Person* - an individual, corporation, company, association, firm, partnership, society, joint stock company; or a government, Indian Tribe, or authority of a government or Tribe, that offers a hazardous material for transportation in commerce, transports a hazardous material to support a commercial enterprise, or designs, manufactures, fabricates, inspects, marks, maintains, reconditions, repairs, or tests a package, container, or packaging component that is represented, marked, certified, or sold as qualified for use in transporting hazardous material in commerce. This term does not include the United States Postal Service or, for purposes of 49 U.S.C. 5123 and 5124, a Department, agency, or instrumentality of the government. (49 CFR 171.8) **[Added April 2005; Revised October 2011]**.
- *Person Who Offers or Offeror* - any person who does either or both of the following (49 CFR 171.8) **[Added October 2005]**:
  1. Performs, or is responsible for performing, any pre-transportation function required under this subchapter for transportation of the hazardous material in commerce.
  2. Tenders or makes the hazardous material available to a carrier for transportation in commerce.A carrier is not an offeror when it performs a function required by this subchapter as a condition of acceptance of a hazardous material for transportation in commerce (e.g., reviewing shipping papers, examining packages to ensure that they are in conformance with this subchapter, or preparing shipping documentation for its own use) or when it transfers a hazardous material to another carrier for continued transportation in commerce without performing a pre-transportation function.
- *Physical Hazard* - a chemical that is classified as posing one of the following hazardous effects: explosive; flammable (gases, aerosols, liquids, or solids); oxidizer (liquid, solid or gas); self-reactive; pyrophoric (liquid or solid); self-heating; organic peroxide; corrosive to metal; gas under pressure; or in contact with water emits flammable gas. See Appendix B to 29 CFR 1910.1200--Physical Hazard Criteria (29 CFR 1910.1200(c)) **[Revised April 2012]**.
- *Physical Hazard* - a chemical that is classified as posing one of the following hazardous effects: Explosive; flammable (gases, aerosols, liquids, or solids); oxidizer (liquid, solid, or gas); self reactive; pyrophoric (gas, liquid or solid); self-heating; organic peroxide; corrosive to metal; gas under pressure; in contact with water emits flammable gas; or combustible dust. The criteria for determining whether a chemical is classified as a physical hazard are in Appendix B of the Hazard Communication Standard and 29 CFR 1910.1200(c) (definitions of "combustible dust" and "pyrophoric gas")(29 CFR 1910.1450(b)) **[Added April 2012]**.
- *Pictogram* - a composition that may include a symbol plus other graphic elements, such as a border, background pattern, or color, that is intended to convey specific information about the hazards of a chemical. Eight pictograms are designated under this standard for application to a hazard category (29 CFR 1910.1200(c)) **[Revised April 2012]**.
- *Portable Tank* - a closed container having a liquid capacity over 60 U.S. gal and not intended for fixed installation (29 CFR 1910.106(a)(25)) **[Revised April 2012]**.
- *Precautionary Statement* - a phrase that describes recommended measures that should be taken to minimize or prevent adverse effects resulting from exposure to a hazardous chemical, or improper storage or handling (29 CFR 1910.1200(c)) **[Added April 2012]**.
- *Pre-transportation Function* - a function specified in the HMR that is required to assure the safe transportation of a hazardous material in commerce, including (49 CFR 171.8) **[Revised July 2005]**:

1. Determining the hazard class of a hazardous material.
  2. Selecting a hazardous materials packaging.
  3. Filling a hazardous materials packaging, including a bulk packaging.
  4. Securing a closure on a filled or partially filled hazardous materials package or container or on a package or container containing a residue of a hazardous material.
  5. Marking a package to indicate that it contains a hazardous material.
  6. Labeling a package to indicate that it contains a hazardous material.
  7. Preparing a shipping paper.
  8. Providing and maintaining emergency response information.
  9. Reviewing a shipping paper to verify compliance with the HMR or international equivalents.
  10. For each person importing a hazardous material into the United States, providing the shipper with timely and complete information as to the HMR requirements that will apply to the transportation of the material within the United States.
  11. Certifying that a hazardous material is in proper condition for transportation in conformance with the requirements of the HMR.
  12. Loading, blocking, and bracing a hazardous materials package in a freight container or transport vehicle.
  13. Segregating a hazardous materials package in a freight container or transport vehicle from incompatible cargo.
  14. Selecting, providing, or affixing placards for a freight container or transport vehicle to indicate that it contains a hazardous material.
- *Pressure Vacuum Relief Valve* - any device or assembly of a mechanical, liquid, weight, or other type used for the automatic regulation of pressure or vacuum in enclosed spaces (46 CFR 30.10-55).
  - *Private Track or Private Siding* - (49 CFR 171.8) **[Added April 2005]**:
    1. Track located outside of a carrier's right-of-way, yard, or terminals where the carrier does not own the rails, ties, roadbed, or right-of-way, or
    2. Track leased by a railroad to a lessee, where the lease provides for, and actual practice entails, exclusive use of that trackage by the lessee and/or a general system railroad for purpose of moving only cars shipped to or by the lessee, and where the lessor otherwise exercises no control over or responsibility for the trackage or the cars on the trackage.
  - *Produce* - to manufacture, process, formulate, blend, extract, generate, emit, or repackage (29 CFR 1910.1200(c)).
  - *Product Identifier* - the name or number used for a hazardous chemical on a label or in the SDS. It provides a unique means by which the user can identify the chemical. The product identifier used shall permit cross-references to be made among the list of hazardous chemicals required in the written hazard communication program, the label and the SDS (29 CFR 1910.1200(c)) **[Revised April 2012]**.
  - *Protection for Exposure* - adequate fire protection for structures on property adjacent to tanks where there are employees of the establishment (29 CFR 1910.106(a)(27)).
  - *Pyrophoric Gas* - a chemical in a gaseous state that will ignite spontaneously in air at a temperature of 130 °F (54.4 °C) or below (29 CFR 1910.1200(c)) **[Added April 2012]**.
  - *Release* - any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (including the abandonment or discarding of barrels, containers, and other closed receptacles) of any hazardous chemical, extremely hazardous substance, or CERCLA hazardous substance (40 CFR 355.61) **[Added April 1999; Reviewed March 2001, Citation Revised January 2009]**.
  - *Release* - any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (including the abandonment or discarding of barrels, containers, and other closed receptacles) of any toxic chemical (40 CFR 372.3) **[Added March 2001]**.

- *Release* - any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (including the abandonment or discarding of barrels, containers, and other closed receptacles containing any hazardous substance or pollutant or contaminant), but excludes (40 CFR 302.3) **[Added October 2002]**:
  1. any release which results in exposure to persons solely within a workplace, with respect to such claim which such persons may assert against the employer of such persons;
  2. emissions from the engine exhaust of a motor vehicle, rolling stock, aircraft, vessel, or pipeline pumping station engine;
  3. release of source, byproduct, or special nuclear material from a nuclear incident, as those terms are defined in the *Atomic Energy Act of 1954*, if such release is subject to requirements with respect to financial protection established by the Nuclear Regulatory Commission under section 170 of such Act, or for the purposes of section 103 of CERCLA or any other response action, any release of source, byproduct, or special nuclear material from any processing sites designates under section 102(a)(1) or 302(a) of the *Uranium Mill Tailing Radiation Control Act of 1978*; and
  4. the normal application of fertilizer.
- *Reportable Quantity (RQ)* - for any CERCLA hazardous substance, the quantity established in Table 302.4 of 40 CFR 302.4, for such substance. For any extremely hazardous substance (EHS), reportable quantity means the quantity established in Appendices A and B of 40 CFR 355 for such substance. Unless and until superseded by regulations establishing a reportable quantity for newly listed EHSs or CERCLA hazardous substances, a weight of 1 pound shall be the reportable quantity (40 CFR 355.61) **[Added April 1999; Reviewed March 2001, Revised January 2009]**.
- *Reportable Quantity (RQ)* – that quantity, as set forth in 40 CFR 302, the release of which requires notification pursuant to 40 CFR 302 (40 CFR 302.3) **[Added October 2002]**.
- *Responsible Party* - someone who can provide additional information on the hazardous chemical and appropriate emergency procedures, if necessary (29 CFR 1910.1200(c)).
- *Routine* - routine release is a release that occurs during normal operating procedures or processes (40 CFR 302.8(b)) **[Added April 1999; Reviewed March 2001]**.
- *SERC* - the State Emergency Response Commission for the State in which the facility is located except where the facility is located in Indian Country, in which case, SERC means the Emergency Response Commission for the Tribe under whose jurisdiction the facility is located. In the absence of a SERC for a State or Indian Tribe, the Governor or the chief executive officer of the tribe, respectively, shall be the SERC. Where there is a cooperative agreement between a State and a Tribe, the SERC shall be the entity identified in the agreement (40 CFR 355.61 and 370.66) **[Added January 2009]**.
- *Safety Can* - an approved container, of not more than 5 gal capacity, having a spring-closing lid, spout cover, and so designed that it will safely relieve internal pressure when subjected to fire exposure (29 CFR 1910.106(a)(29)).
- *Safety Data Sheet (SDS)* - written or printed material concerning a hazardous chemical that is prepared in accordance with 29 CFR 1910.1200(g) (29 CFR 1910.1200(c)) **[Added April 2012]**.
- *Select Carcinogens* - any substance that meets one of the following criteria (29 CFR 1910.1450(b)):
  1. it is regulated by OSHA as a carcinogen
  2. it is listed under the category “known to be carcinogens” in the Annual Report on Carcinogens published by the National Toxicology Program (NTP)
  3. it is listed under Group 1 (carcinogenic to humans) by the International Agency for Research on Cancer Monographs (IARC)

4. it is listed in either Group 2A or 2B by IARC or under the category “reasonably anticipated to be carcinogens” by NTP, and causes statistically significant tumor incidences in experimental animals under specific situations.
- *Service Space* - spaces that are used for galleys, pantries containing cooking appliances, lockers, storerooms, paint and lamp rooms, and similar spaces that contain highly combustible materials, laundries, garbage and trash disposal and stowage rooms, workshops other than those forming part of the machinery spaces, and similar spaces and trunks to such spaces (46 CFR 30.10-62a).
  - *Ship* - a vessel of any type whatsoever operating in the marine environment (33 CFR 151.05).
  - *Shipping Paper* - a shipping order, bill of lading, manifest or other shipping document serving a similar purpose and containing the information required by 49 CFR 172.202, 172.203 and 172.204 (49 CFR 171.8) **[Added April 2005]**.
  - *Signal Word* - a word used to indicate the relative level of severity of hazard and alert the reader to a potential hazard on the label. The signal words used in this section are “danger” and “warning.” “Danger” is used for the more severe hazards, while “warning” is used for the less severe (29 CFR 1910.1200(c)) **[Added April 2012]**.
  - *Simple Asphyxiant* - a substance or mixture that displaces oxygen in the ambient atmosphere, and can thus cause oxygen deprivation in those who are exposed, leading to unconsciousness and death (29 CFR 1910.1200(c)) **[Added April 2012]**.
  - *Special Permit* - a document issued by the Associate Administrator under the authority of 49 U.S.C. 5117 permitting a person to perform a function that is not otherwise permitted under subchapter A or C of this chapter, or other regulations issued under 49 U.S.C. 5101 et seq. (e.g., Federal Motor Carrier Safety routing requirements). The terms “special permit” and “exemption” have the same meaning for purposes of subchapter A or C of this chapter or other regulations issued under 49 U.S.C. 5101 through 5127. An exemption issued prior to October 1, 2005 remains valid until it is past its expiration date, terminated by the Associate Administrator, or issued as a special permit, whichever occurs first (49 CFR 171.8) **[Added January 2006]**.
  - *Specific Chemical Identity* - the chemical name, Chemical Abstracts Service (CAS) Registry Number, or any other information that reveals the precise chemical designation of the substance (29 CFR 1910.1200(c)).
  - *Stable In Quantity and Rate* - a release that is stable in quantity and rate is a release that is predictable and regular in amount and rate of emission (40 CFR 302.8(b)) **[Added April 1999; Reviewed March 2001]**.
  - *State* - any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the United States Virgin Islands, the Northern Mariana Islands, any other territory or possession over which the United States has jurisdiction and Indian Country (40 CFR 355.61 and 370.66) **[Added January 2009]**.
  - *Statistically Significant Increase* - a statistically significant increase in a release is an increase in the quantity of the hazardous substance released above the upper bound of the reported normal range of the release (40 CFR 302.8(b)) **[Added April 1999; Reviewed March 2001]**.
  - *Storage Incidental to Movement* - storage of a transport vehicle, freight container, or package containing a hazardous material by any person between the time that a carrier takes physical possession of the hazardous material for the purpose of transporting it in commerce until the package containing the hazardous material is physically delivered to the destination indicated on a shipping document, package marking, or other medium, or, in the case of a private motor carrier, between the time that a motor vehicle driver takes physical possession of the hazardous material for the purpose of transporting it in commerce until the driver relinquishes possession of the package at its destination and is no longer responsible for performing functions subject to the HMR with respect to that particular package. Storage incidental to movement includes:

1. Storage at the destination shown on a shipping document, including storage at a transloading facility, provided the shipping documentation identifies the shipment as a through-shipment and identifies the final destination or destinations of the hazardous material; and
2. Rail cars containing hazardous materials that are stored on track that does not meet the definition of “private track or siding” in 49 CFR 171.8, even if those cars have been delivered to the destination shown on the shipping document.

Storage incidental to movement does not include storage of a hazardous material at its final destination as shown on a shipping document (49 CFR 171.8) **[Revised July 2005]**.

- *Substance* - chemical elements and their compounds in the natural state or obtained by any production process, including any additive necessary to preserve the stability of the product and any impurities deriving from the process used, but excluding any solvent which may be separated without affecting the stability of the substance or changing its composition (29 CFR 1910.1200(c)) **[Added April 2012]**.
- *Tank Barge* - a non-self-propelled tank vessel (33 CFR 154.105 and 156.105) **[Added October 2013]**.
- *Tank Barge* - any tank vessel not equipped with means of self-propulsion (46 CFR 30.10-65).
- *Tankship* - a self-propelled tank vessel constructed or adapted primarily to carry oil or hazardous material in bulk in the cargo spaces (33 CFR 154.105 and 156.105) **[Added October 2013]**.
- *Tankship* - any tank vessel propelled by power or sail (46 CFR 30.10-67).
- *Tank Vessel* - a vessel that is constructed or adapted to carry, or that carries, oil or hazardous material in bulk as cargo or cargo residue, and that (33 CFR 154.105 and 156.105) **[Added October 2013]**:
  1. Is a vessel of the United States;
  2. Operates on the navigable waters of the United States; or
  3. Transfers oil or hazardous material in a port or place subject to the jurisdiction of the United States.
- *Tank Vessel* - any vessel especially constructed or converted to carry liquid bulk cargo in tanks (46 CFR 30.10-69).
- *Threshold Planning Quantity* - for a substance listed in Appendices A and B of 40 CFR 355, the quantity listed in the column “threshold planning quantity” for that substance (40 CFR 355.61 and 370.66) **[Added March 2001; Revised January 2009]**.
- *Title III* - Title III of the *Superfund Amendments and Reauthorization Act of 1986*, also titled the *Emergency Planning and Community Right-to-Know Act of 1986* (40 CFR 372.3) **[Added March 2001]**.
- *Toxic Chemical* - a chemical or chemical category listed in 40 CFR 372.65 (40 CFR 372.3).
- *Trade Secret* - any confidential formula, pattern, process, device, information or compilation of information that is used in an employer's business, and that gives the employer an opportunity to obtain an advantage over competitors who do not know or use it. Appendix E to 29 CFR 1910.1200--Definition of Trade Secret, sets out the criteria to be used in evaluating trade secrets (29 CFR 1910.1200(c)) **[Added April 2012]**.
- *Transfer* - any movement of oil or hazardous material to, from, or within a vessel by means of pumping, gravitation, or displacement. A transfer is considered to begin when the person in charge on the transferring vessel or facility and the person in charge on the receiving facility or vessel first meet to begin completing the declaration of inspection as required by § 156.150 of this chapter. A transfer is considered to be complete when all the connections for the transfer have been uncoupled and secured with blanks or other closure devices and both of the persons in charge have completed the declaration of inspection to include the date and time the transfer was complete (33 CFR 154.105 and 156.105) **[Added October 2013]**.

- *Transloading* - the transfer of a hazardous material by any person from one bulk packaging to another bulk packaging, from a bulk packaging to a non-bulk packaging, or from a non-bulk packaging to a bulk packaging for the purpose of continuing the movement of the hazardous material in commerce (49 CFR 171.8) [Revised July 2005].
- *Transportation or Transport* - the movement of property and loading, unloading, or storage incidental to that movement (49 CFR 171.8) [**Added April 2005**].
- *Undeclared Hazardous Material* - a hazardous material that is (49 CFR 171.8) [**Added April 2004**]:
  1. subject to any of the hazard communication requirements in subparts C (Shipping Papers), D (Marking), E (Labeling), and F (Placarding) of 49 CFR 172, or an alternative marking requirement in 49 CFR 173 (such as 49 CFR 173.4(a)(10) and 173.6(c)), and
  2. offered for transportation in commerce without any clear indication of the presence of the hazardous material in or on at least one of the following: an accompanying shipping paper, the outer package, the transport vehicle or freight container, or another written statement by the person offering the hazardous material for transportation.
- *Unloading Incidental to Movement* - moving a packaged or containerized hazardous material from a transport vehicle, aircraft, or vessel, or for a bulk packaging, emptying a hazardous material from the bulk packaging after the hazardous material has been delivered to the consignee when performed by carrier personnel or in the presence of carrier personnel or, in the case of a private motor carrier, while the driver of the motor vehicle from which the hazardous material is being unloaded immediately after movement is completed is present during the unloading operation. (Emptying a hazardous material from a bulk packaging while the packaging is on board a vessel is subject to separate regulations as delegated by Department of Homeland Security Delegation No. 0170.1 at 2(103).) Unloading incidental to movement includes transloading (49 CFR 171.8) [**Revised July 2005**].
- *Unintentional Release* - the escape of a hazardous material from a package on an occasion not anticipated or planned. This includes releases resulting from collision, package failures, human error, criminal activity, negligence, improper packing, or unusual conditions such as the operation of pressure relief devices as a result of over-pressurization, overfill or fire exposure. It does not include releases, such as venting of packages, where allowed, and the operational discharge of contents from packages (49 CFR 171.8) [**Added April 2004**].
- *Unlisted Hazardous Substances* - a solid waste, as defined in 40 CFR 261.2, which is not excluded from regulation as a hazardous waste under 40 CFR 261.4(b), is a hazardous substance under section 101(14) of CERCLA if it exhibits any of the characteristics identified in 40 CFR 261.20 through 261.24 (40 CFR 302.4(b)) [**Added April 1999; Reviewed March 2001**].
- *Use* - to package, handle, react, emit, extract, generate as a byproduct, or transfer (29 CFR 1910.1200(c)).
- *Vapor Pressure* - the pressure, measured in pounds per square inch (absolute) exerted by a volatile liquid (29 CFR 1910.106(a)(30)).
- *Vessel Operator* - a person who owns, operates, or is responsible for the operation of a vessel (33 CFR 154.105 and 156.105) [**Added October 2013**].
- *Work Area* - a room or defined space in a workplace where hazardous chemicals are produced or used, and where employees are present (29 CFR 1910.1200(c)).
- *Workplace* - an establishment, job site, or project, at one geographical location containing one or more work areas (29 CFR 1910.1200(c)).

## F. Records To Review

- Hazardous Substance Spill Control and Contingency Plan
- Spill records
- Emergency plan documents
- SDSs
- Inventory records
- Hazardous substance release reports
- Shipping papers
- Training records
- Placarding of hazardous materials
- Ships log
- Certificate of Inspection
- Classification Society Certificates
- Licenses, documents, and endorsements for crew members
- Vessel Response Plan
- Hazardous Communication Plan
- Chemical Hygiene Plan (labs)

#### **G. Physical Features To Inspect**

- Hazardous material storage areas
- Shop activities
- Shipping and receiving area
- Hazardous material transfer areas

## H. Guidance for Hazardous Materials Management Checklist Users

	<b>REFER TO CHECKLIST ITEMS:</b>
All Facilities	HM.1.1.US through HM.1.4.US
Missing, Risk Management, and Positive Checklist Items	HM.2.1.US through HM.2.3.US
Personnel Training	HM.10.1.US and HM.10.2.US
Hazardous Materials in Laboratories	HM.15.1.US through HM.15.4.US
Releases of Hazardous Materials	HM.20.1.US through HM.20.4.US
Emergency Planning	HM.25.1.US
Right-to-Know	HM.30.1.US through HM.30.3.US
Flammable/Combustible Liquids Storage General Industrial Areas	HM.35.1.US through HM.35.9.US HM.40.1.US through HM.40.3.US
Compressed Gases Storage	HM.45.1.US
Hazardous Materials Transportation	HM.50.1.US through HM.50.12.US
Hazardous Material Transfer Operations To or From Vessels	HM.55.1.US through HM.55.5.US
Fixed Facility Transfer Operations for Hazardous Materials	HM.60.1.US through HM.60.3.US
Hazardous Materials Storage on Floating Plants	HM.65.1.US through HM.65.3.US
Hazardous Materials on Tank Vessels	HM.70.1.US through HM.70.12.US
Hazardous Materials on Cargo and Miscellaneous Vessels	HM.75.1.US
<hr/> Appendix 3-0, Comparison of 40 CFR 355 Emergency Release Notification Requirements and the Release Notification Requirements of CERCLA as Codified In 40 CFR 302	
Appendix 3-0a, Community Right-To-Know Reporting of Mixtures	
Appendix 3-0b, Codes for Tier I and Tier II Inventory Reporting	
Appendix 3-1, Combined List of Chemicals Covered in Title III of SARA	
Appendix 3-1a, Lower Thresholds for Chemicals of Special Concern	
Appendix 3-2, Maximum Allowable Capacity of Containers and Portable Tanks	

Appendix 3-3, Storage in Inside Rooms

Appendix 3-4, Flammable Materials Storage.

Appendix 3-5, Deleted

Appendix 3-6, Placarding Guidelines.

Appendix 3-7, List of Flammable and Combustible Bulk Liquid Cargoes.

Appendix 3-8, Classes of Vessels.

Select portions of this section (i.e., Review of Federal Legislation, State and Local Regulations, Key Compliance Requirements, Key Terms and Definitions, Typical Records to Review, Typical Physical Features to Inspect, and the Checklist) have been reviewed by USEPA personnel from the Office of Enforcement and Compliance Assurance (OECA) and USEPA's Office of General Counsel. USEPA's comments and suggestions for changes have been incorporated in this version of the TEAM Guide. USEPA did not review all portions of this section. USEPA also did not review and comment on items pertaining to federal Executive Orders, DOT regulations, OSHA regulations or any other area outside of Title 40 of the Code of Federal Regulations. Portions that have been added or revised as a result of this review are identified as either being reviewed, revised or added in March 2001, for example [**Reviewed March 2001**].

<p style="text-align: center;"><b>COMPLIANCE CATEGORY</b>  <b>HAZARDOUS MATERIALS MANAGEMENT</b>  <b>U.S. TEAM Guide</b></p>	
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<p><b>HM.1</b></p> <p><b>ALL FACILITIES</b></p> <p><b>HM.1.1.US.</b> The current status of any ongoing or unresolved consent orders, compliance agreements, notices of violation (NOVs), interagency agreements, or equivalent state enforcement actions is required to be examined (a finding under this checklist item will have the enforcement action/identifying information as the citation).</p> <p><b>HM.1.2.US.</b> A Safety Data Sheet (SDS) is required to be on file for each hazardous chemical stored and used (29 CFR 1910.1200(b)(3)(ii), 1910.1200(b)(4)(ii), 1910.1200(b)(6), 1910.1200(g)(1), and 1910.1200(g)(8) through 1910.1200(g)(10)) <b>[Revised April 2012]</b>.</p>	<p>Determine if noncompliance issues have been resolved by reviewing a copy of the previous report, consent orders, compliance agreements, NOVs, interagency agreements, or equivalent state enforcement actions.</p> <p>Verify that copies of any SDS received with incoming shipments of sealed containers of hazardous chemicals are kept.</p> <p>Verify that if an SDS is not received with a shipment of sealed containers of hazardous chemicals, an SDS is obtained as soon as possible.</p> <p>Verify that an SDS is on file and readily accessible to workers on all shifts in the workplace for each hazardous material stored or used.</p> <p>Verify that the employer maintains in the workplace copies of the required SDSs for each hazardous chemical and ensures that the SDSs are readily accessible during each work shift to employees when they are in their work area(s).</p> <p>(NOTE: Electronic access and other alternatives to maintaining paper copies of the safety data sheets are permitted as long as no barriers to immediate employee access in each workplace are created by such options.)</p> <p>(NOTE: Where employees must travel between workplaces during a workshift, (i.e., their work is carried out at more than one geographical location), the SDSs may be kept at the primary workplace facility. In this situation, the employer must ensure that employees can immediately obtain the required information in an emergency.)</p> <p>(NOTE: SDSs may be kept in any form, including operating procedures, and may be designed to cover groups of hazardous chemicals where it may be more appropriate to address the hazards of a process rather than individual hazardous chemicals. However, the employer must ensure that in all cases the required information is provided for each hazardous chemical, and is readily accessible during each work shift to employees when they are in their work area(s).)</p>

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<p><b>HM.1.3.US.</b> Containers of hazardous chemicals in the workplace are required to be labeled, tagged, or marked with specific information (29 CFR 1910.1200(b)(3)(i), 1910.1200(b)(4)(i), 1910.1200(b)(5), 1910.1200(b)(6), and 1910.1200(f)(6) through</p>	<p>(NOTE: These requirements do not apply to:</p> <ul style="list-style-type: none"> <li>– hazardous waste</li> <li>– CERCLA hazardous substances when the hazardous substance is the focus of remedial or removal action being conducted under CERCLA in accordance with EPA regulations</li> <li>– tobacco or tobacco products</li> <li>– wood or wood products</li> <li>– articles that are defined as a manufactured item other than a fluid or particle which under normal conditions of use does not release more than very small amounts of a hazardous chemical and does not pose a physical hazard or health risk to personnel and that: <ul style="list-style-type: none"> <li>– is formed to a specific shape or design during manufacture</li> <li>– has end use functions dependent in whole or in part upon its shape or design during end use</li> <li>– which under normal conditions does not release more than very small quantities (e.g., minute or trace amounts) and does not pose a physical hazard or health risk to the employee</li> </ul> </li> <li>– food or alcoholic beverages that are sold, used, or prepared in a retail establishment and foods intended for consumption by personnel while in the workplace</li> <li>– any drug as that term is defined in the <i>Federal Food, Drug, and Cosmetic Act</i> when it is in its solid, final form for direct administration</li> <li>– cosmetics that are packaged for sale or intended for personal use</li> <li>– any consumer product or hazardous substance as defined in the <i>Consumer Product Safety Act</i> and the <i>Federal Hazardous Substances Act</i> for which the facility can demonstrate that it is used in the workplace in the same manner as normal consumer use, and which use results in a duration and frequency of exposure not greater than exposure experienced by consumers</li> <li>– ionizing and nonionizing radiation</li> <li>– biological hazards.)</li> </ul> <p>(NOTE: This requirement also applies to work operations where employees handle packaged chemical products or substances.)</p> <p>Verify that all containers of hazardous chemicals in the workplace are labeled, tagged, or marked with one of the following:</p> <ul style="list-style-type: none"> <li>– the manufacturer label with the following information: <ul style="list-style-type: none"> <li>– product identifier</li> <li>– signal word</li> <li>– hazard statement</li> <li>– pictogram(s)</li> <li>– precautionary statement(s)</li> <li>– name, address, and telephone number of the chemical manufacturer, importer, or other responsible party</li> </ul> </li> </ul>

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1910.1200(f)(10)) [Revised April 2012].	<p>– product identifier and words, pictures, symbols, or combination of those, which provide at least general information regarding the hazards of the chemicals, and which, in conjunction with the other information immediately available to employees under the hazard communication program, will provide employees with the specific information regarding the physical and health hazards of the hazardous chemical.</p> <p>(NOTE: The employer may use signs, placards, process sheets, batch tickets, operating procedures, or other such written materials in lieu of affixing labels to individual stationary process containers, as long as the alternative method identifies the containers to which it is applicable and conveys the required information.)</p> <p>Verify that, when the employer uses written materials instead of labels, the written materials are readily accessible to the employees in their work area throughout each work shift.</p> <p>(NOTE: The employer is not required to label portable containers into which hazardous chemicals are transferred from labeled containers, and which are intended only for the immediate use of the employee who performs the transfer. For purposes of 29 CFR 1200, drugs which are dispensed by a pharmacy to a health care provider for direct administration to a patient are exempted from labeling.)</p> <p>Verify that the employer ensures that workplace labels or other forms of warning are legible, in English, and prominently displayed on the container, or readily available in the work area throughout each work shift.</p> <p>(NOTE: Employers having employees who speak other languages may add the information in their language to the material presented, as long as the information is presented in English as well.)</p> <p>(NOTE: These labeling requirements do not apply to:</p> <ul style="list-style-type: none"> <li>– any pesticide as such term is defined in the <i>Federal Insecticide, Fungicide, and Rodenticide Act</i> (FIFRA), when subject to the labeling requirements of that act and regulations issued under that act</li> <li>– any chemical substance or mixture as defined by the <i>Toxic Substances Control Act</i> (TSCA) when subject to the labeling requirements of TSCA</li> <li>– any food, food additive, color additive, drug, cosmetic, or medical or veterinary device as defined in the <i>Federal Food, Drug, and Cosmetic Act</i></li> <li>– any distilled spirits (beverage alcohols), wine, or malt beverage intended for nonindustrial use as defined in the <i>Federal Alcohol Administration Act</i></li> <li>– any consumer product or hazardous substance as defined in the <i>Consumer Product Safety Act</i> and the <i>Federal Hazardous Substances Act</i> when subject to a consumer product safety standard or labeling requirement under those acts</li> <li>– agricultural or vegetable seed treated with pesticides and labeled in accordance with the <i>Federal Seed Act</i>.)</li> </ul> <p>(NOTE: These requirements do not apply to:</p>

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<p><b>HM.1.4.US.</b> Specific housekeeping requirements must be met in areas where hazardous materials are stored (29 CFR 1910.176(c)).</p>	<ul style="list-style-type: none"> <li>– hazardous waste</li> <li>– CERCLA hazardous substances when the hazardous substance is the focus of remedial or removal action being conducted under CERCLA in accordance with EPA regulations</li> <li>– tobacco or tobacco products</li> <li>– wood or wood products</li> <li>– articles that are defined as a manufactured item other than a fluid or particle which under normal conditions of use does not release more than very small amounts of a hazardous chemical and does not pose a physical hazard or health risk to personnel and that: <ul style="list-style-type: none"> <li>– is formed to a specific shape or design during manufacture</li> <li>– has end use functions dependent in whole or in part upon its shape or design during end use</li> <li>– which under normal conditions does not release more than very small quantities (e.g., minute or trace amounts) and does not pose a physical hazard or health risk to the employee</li> </ul> </li> <li>– food or alcoholic beverages that are sold, used, or prepared in a retail establishment and foods intended for consumption by personnel while in the workplace</li> <li>– any drug as that term is defined in the <i>Federal Food, Drug, and Cosmetic Act</i> when it is in its solid, final form for direct administration</li> <li>– cosmetics that are packaged for sale or intended for personal use</li> <li>– any consumer product or hazardous substance as defined in the <i>Consumer Product Safety Act</i> and the <i>Federal Hazardous Substances Act</i> for which the facility can demonstrate that it is used in the workplace in the same manner as normal consumer use, and which use results in a duration and frequency of exposure not greater than exposure experienced by consumers</li> <li>– ionizing and nonionizing radiation</li> <li>– biological hazards.)</li> </ul> <p>(NOTE: This requirement also applies to work operations where employees handle packaged chemical products or substances.)</p> <p>Verify that areas where hazardous materials are stored and/or used are free from accumulations of materials that create a hazard from tripping, fire, explosion, or pest harborage.</p> <p>(NOTE: The following are suggested housekeeping practices:</p> <ul style="list-style-type: none"> <li>– drums/containers are not leaking and are tightly sealed</li> <li>– drip pans and/or absorbent material are placed under containers</li> <li>– dispensing areas are located away from catch basins and storm drains.)</li> </ul>

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<p><b>HM.2</b></p> <p><b>MISSING, RISK MANAGEMENT, AND POSITIVE CHECKLIST ITEMS</b></p> <p><b>HM.2.1.US.</b> Facilities are required to comply with all applicable Federal regulatory requirements not contained in this checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of finding).</p> <p><b>HM.2.2.US.</b> Risk management techniques should be promoted in environmental efforts (MP) [Added April 2002].</p> <p><b>HM.2.3.US.</b> Facilities should go above and beyond statutory and regulatory compliance (MP) [Added April 2002].</p>	<p>Determine if any new regulations have been issued since the finalization of the guide.</p> <p>Determine if the facility has activities or facilities that are regulated but not addressed in this checklist.</p> <p>Verify that the facility is in compliance with all applicable and newly issued regulations.</p> <p>Determine if risk management techniques are promoted in environmental efforts.</p> <p>Determine if the facility has gone above and beyond simply complying with environmental requirements.</p>



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<p><b>HM.10</b></p> <p><b>PERSONNEL TRAINING</b></p> <p><b>HM.10.1.US.</b> A written hazard communication program is required that is designed to provide all employees with information about the hazardous chemicals to which they are exposed (29 CFR 1910.1200(b)(1), 1910.1200(b)(6), and 1910.1200(e)) [Revised February 1995; Revised April 2012].</p>	<p>Verify that employers develop, implement, and maintain at each workplace, a written hazard communication program which at least describes how the regulatory requirements for labeling and other forms of warning, safety data sheets, and employee information and training will be met.</p> <p>Verify that the written hazard communication program specifically contains the following:</p> <ul style="list-style-type: none"> <li>– a list of the hazardous chemicals known to be present using a product identifier that is referenced on the appropriate safety data sheet (SDS) (the list can be done for the entire workplace or individual work areas)</li> <li>– the methods the employer will use to inform the employees of the hazards of nonroutine tasks and the hazards associated with chemicals contained in unlabeled pipes in their work areas.</li> </ul> <p>Verify that, employers who produce, use, or store hazardous chemicals at a workplace in such a way that the employees of other employer(s) may be exposed (for example, employees of a construction contractor working on-site) additionally ensure that the hazard communication programs include the following:</p> <ul style="list-style-type: none"> <li>– the methods the employer will use to provide the other employees onsite with access to SDSs for each hazardous chemical the other employer’s employees may be exposed to while working</li> <li>– the methods the employer will use to inform the other employers of any precautionary measures that need to be taken to protect employees during the workplace’s normal operating conditions and in foreseeable emergencies</li> <li>– the methods the employer will use to inform the other employers of the labeling system used in the workplace.</li> </ul> <p>(NOTE: Where employees must travel between workplaces during a workshift, (i.e., their work is carried out at more than one geographical location), the written hazard communication program may be kept at the primary workplace facility.)</p> <p>(NOTE: This requirement also applies to work operations where employees handle packaged chemical products or substances.)</p> <p>(NOTE: These requirements do not apply to:</p> <ul style="list-style-type: none"> <li>– hazardous waste</li> <li>– CERCLA hazardous substances when the hazardous substance is the focus of remedial or removal action being conducted under CERCLA in accordance with EPA regulations</li> <li>– tobacco or tobacco products</li> <li>– wood or wood products</li> </ul>

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<p><b>HM.10.2.US.</b> Personnel working with hazardous materials are required to be trained in their use and the potential hazards of such materials (29 CFR 1910.1200(b)(4)(iii), 1910.1200(b)(6), and 1910.1200(h)) [Revised April 2012].</p>	<ul style="list-style-type: none"> <li>– articles that are defined as a manufactured item other than a fluid or particle which under normal conditions of use does not release more than very small amounts of a hazardous chemical and does not pose a physical hazard or health risk to personnel and that: <ul style="list-style-type: none"> <li>– is formed to a specific shape or design during manufacture</li> <li>– has end use functions dependent in whole or in part upon its shape or design during end use</li> <li>– which under normal conditions does not release more than very small quantities (e.g., minute or trace amounts) and does not pose a physical hazard or health risk to the employee</li> </ul> </li> <li>– food or alcoholic beverages that are sold, used, or prepared in a retail establishment and foods intended for consumption by personnel while in the workplace</li> <li>– any drug as that term is defined in the <i>Federal Food, Drug, and Cosmetic Act</i> when it is in its solid, final form for direct administration</li> <li>– cosmetics that are packaged for sale or intended for personal use</li> <li>– any consumer product or hazardous substance as defined in the <i>Consumer Product Safety Act</i> and the <i>Federal Hazardous Substances Act</i> for which the facility can demonstrate that it is used in the workplace in the same manner as normal consumer use, and which use results in a duration and frequency of exposure not greater than exposure experienced by consumers</li> <li>– ionizing and nonionizing radiation</li> <li>– biological hazards.)</li> </ul> <p>Verify that employees are provided Hazard Communication training to the extent necessary to protect them in the event of a spill or leak of a hazardous chemical from a sealed container.</p> <p>Verify that employers provide employees with effective information and training on hazardous chemicals in their work area at the time of their initial assignment, and whenever a new chemical hazard the employees have not previously been trained about is introduced into their work area.</p> <p>(NOTE: Information and training may be designed to cover categories of hazards (e.g., flammability, carcinogenicity) or specific chemicals. Chemical-specific information must always be available through labels and safety data sheets.)</p> <p>Verify that employees are informed of the following:</p> <ul style="list-style-type: none"> <li>– any operations in their work areas in which hazardous chemicals are present</li> <li>– the location and availability of the written hazard communication program, including the required lists of hazardous chemicals and SDSs.</li> </ul> <p>Verify that training includes:</p> <ul style="list-style-type: none"> <li>– methods and observations that may be used to detect the presence of a release of a hazardous chemical in the work area (such as monitoring conducted by</li> </ul>

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	<p>the employer, continuous monitoring devices, visual appearance or odor of hazardous chemicals when being released, etc.)</p> <ul style="list-style-type: none"> <li>– the physical, health, simple asphyxiation, combustible, dust, and pyrophoric gas hazards as well as hazards not otherwise classified, of the chemicals in the work areas</li> <li>– the measures employees can take to protect themselves from these hazards, including specific procedures the employer has implemented to protect employees from exposure to hazardous chemicals, such as appropriate work practices, emergency procedures, and personal protective equipment to be used</li> <li>– the details of the hazard communication program, including: <ul style="list-style-type: none"> <li>– an explanation of the labels received on shipped containers and the workplace labeling system used by their employer</li> <li>– SDSs, including the order of information and how employees can obtain and use the appropriate hazard information.</li> </ul> </li> </ul> <p>(NOTE: These requirements also apply, as necessary for protection in event of a spill or leak, to work operations in which employees only handle packaged chemical products or substances.)</p> <p>(NOTE: These requirements do not apply to:</p> <ul style="list-style-type: none"> <li>– hazardous waste</li> <li>– CERCLA hazardous substances when the hazardous substance is the focus of remedial or removal action being conducted under CERCLA in accordance with EPA regulations</li> <li>– tobacco or tobacco products</li> <li>– wood or wood products</li> <li>– articles that are defined as a manufactured item other than a fluid or particle which under normal conditions of use does not release more than very small amounts of a hazardous chemical and does not pose a physical hazard or health risk to personnel and that: <ul style="list-style-type: none"> <li>– is formed to a specific shape or design during manufacture</li> <li>– has end use functions dependent in whole or in part upon its shape or design during end use</li> <li>– which under normal conditions does not release more than very small quantities (e.g., minute or trace amounts) and does not pose a physical hazard or health risk to the employee</li> </ul> </li> <li>– food or alcoholic beverages that are sold, used, or prepared in a retail establishment and foods intended for consumption by personnel while in the workplace</li> <li>– any drug as that term is defined in the <i>Federal Food, Drug, and Cosmetic Act</i> when it is in its solid, final form for direct administration</li> <li>– cosmetics that are packaged for sale or intended for personal use</li> <li>– any consumer product or hazardous substance as defined in the <i>Consumer Product Safety Act</i> and the <i>Federal Hazardous Substances Act</i> for which the facility can demonstrate that it is used in the workplace in the same manner as</li> </ul>

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	<p>normal consumer use, and which use results in a duration and frequency of exposure not greater than exposure experienced by consumers</p> <ul style="list-style-type: none"> <li>– ionizing and nonionizing radiation</li> <li>– biological hazards.)</li> </ul>

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<b>HM.15</b>  <b>HAZARDOUS MATERIALS IN LABORATORIES</b>  <b>HM.15.1.US.</b> A Chemical Hygiene Plan is required when engaged in the laboratory use of hazardous chemicals (see definitions) (29 CFR 1910.1450(e)).	<p>(NOTE: The requirements for hazardous materials in laboratories do not apply to:</p> <ul style="list-style-type: none"> <li>– uses of hazardous chemicals that do not meet the definition of laboratory use</li> <li>– laboratory uses of hazardous chemicals that provide no potential for exposure such as:               <ul style="list-style-type: none"> <li>– commercially prepared kits such as pregnancy tests in which all the reagents needed to conduct the test are contained in the kit</li> <li>– procedures using chemically impregnated test media such as Dip-and-Read tests.)</li> </ul> </li> </ul> <p>Verify that a written Chemical Hygiene Plan exists and is:</p> <ul style="list-style-type: none"> <li>– capable of protecting employees from health hazards associated with hazardous chemicals in the laboratory</li> <li>– capable of keeping exposure to regulated substances below required limits.</li> </ul> <p>Verify that the plan is readily available to employees and employee representatives.</p> <p>Verify that the plan includes the following elements and indicates specific measures to be taken when laboratory work involves the use of hazardous chemicals:</p> <ul style="list-style-type: none"> <li>– standard operating procedures relevant to safety and health considerations to be followed</li> <li>– criteria that will be used to determine and implement control measures to reduce employee exposure to hazardous chemicals, including the engineering controls, the use of personal protective equipment, and hygiene practices</li> <li>– a requirement that fume hoods and other protective equipment are functioning properly and specific measures are taken to ensure proper and adequate performance of the equipment</li> <li>– provisions for employee information and training</li> <li>– circumstances and situations that require prior approval from a designated individual</li> <li>– provisions for medical consultations and medical exams</li> <li>– designation of individuals responsible for the implementation of the plan</li> <li>– assignment of a Chemical Hygiene Officer and, if appropriate, establishment of a Chemical Hygiene Committee</li> <li>– provisions for additional employee protection when working with particularly hazardous substances, including select carcinogens, reproductive toxins, and substances that have a high degree of acute toxicity. Provisions might include:               <ul style="list-style-type: none"> <li>– establishment of a designated area</li> </ul> </li> </ul>

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<p><b>HM.15.2.US.</b> Employees engaged in the laboratory use of hazardous chemicals (see definitions) are required to be provided with information and training concerning the hazards of the chemicals in their work areas (29 CFR 1910.1200(b)(3)(iii) and 1910.1450(f)) <b>[Revised April 2012]</b>.</p>	<ul style="list-style-type: none"> <li>– use of containment devices such as fume hoods or glove boxes</li> <li>– procedures for safe removal of contaminated waste</li> <li>– decontamination procedures.</li> </ul> <p>Verify that the plan is reviewed annually and updated as needed.</p> <p>(NOTE: The requirements for hazardous materials in laboratories do not apply to:</p> <ul style="list-style-type: none"> <li>– uses of hazardous chemicals that do not meet the definition of laboratory use</li> <li>– laboratory uses of hazardous chemicals that provide no potential for exposure such as: <ul style="list-style-type: none"> <li>– commercially prepared kits such as pregnancy tests in which all the reagents needed to conduct the test are contained in the kit</li> <li>– procedures using chemically impregnated test media such as Dip-and-Read tests.)</li> </ul> </li> </ul> <p>Verify that information about the hazards of the chemicals in the work area is provided at the time of initial employment and prior to assignment involving new exposure risks.</p> <p>(NOTE: The frequency of refresher training is to be determined by the facility.)</p> <p>Verify that employees are informed of:</p> <ul style="list-style-type: none"> <li>– the requirements to be trained and informed</li> <li>– the location and availability of the Chemical Hygiene Plan</li> <li>– the permissible exposure limits for OSHA regulated substances or recommended exposure levels for other hazardous chemicals where there is no OSHA limit</li> <li>– signs and symptoms associated with exposure</li> <li>– the location and known availability of known reference material such as Safety Data Sheets.</li> </ul> <p>Verify that training includes:</p> <ul style="list-style-type: none"> <li>– methods and observations that may be used to detect the presence of or release of a hazardous chemical</li> <li>– the physical and health hazards of chemicals in the work area</li> <li>– the measures employees can take to protect themselves</li> <li>– applicable details of the Chemical Hygiene Plan.</li> </ul> <p>(NOTE: The requirements for hazardous materials in laboratories do not apply to:</p> <ul style="list-style-type: none"> <li>– uses of hazardous chemicals that do not meet the definition of laboratory use</li> <li>– laboratory uses of hazardous chemicals that provide no potential for exposure such as:</li> </ul>
<p><b>HM.15.3.US.</b> Specific handling and operating procedures must be followed when engaged in the laboratory use of hazardous</p>	<p>(NOTE: The requirements for hazardous materials in laboratories do not apply to:</p> <ul style="list-style-type: none"> <li>– uses of hazardous chemicals that do not meet the definition of laboratory use</li> <li>– laboratory uses of hazardous chemicals that provide no potential for exposure such as:</li> </ul>

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<p>chemicals (see definitions) (29 CFR 1910.1450(h)) [<b>Revised April 2012</b>].</p> <p><b>HM.15.4.US.</b> Specific records are required when engaged in the laboratory use of hazardous chemicals (see definitions) (29 CFR 1910.1450(j)).</p>	<ul style="list-style-type: none"> <li>– commercially prepared kits such as pregnancy tests in which all the reagents needed to conduct the test are contained in the kit</li> <li>– procedures using chemically impregnated test media such as Dip-and-Read tests.)</li> </ul> <p>Verify that labels on incoming containers of hazardous chemicals are not removed or defaced.</p> <p>Verify that Safety Data Sheets that are received with shipments of hazardous chemicals are maintained.</p> <p>Verify that Safety Data Sheets are readily accessible to lab employees.</p> <p>Verify that, if developing chemical substances, a determination is made as to whether or not it is a hazardous chemical, if the composition of the chemical is known and the chemical is produced only for use by the laboratory.</p> <p>Verify that, if developing a chemical substance as a byproduct and the composition is not known, it is assumed to be hazardous.</p> <p>Verify that, if the chemical substance is produced for another user outside of the lab, the lab meets the standards outlined in 29 CFR 1910.1200 (see checklist items HM.1.4.US, HM.1.5.US, HM.10.1.US, and HM.10.2.US.).</p> <p>Verify that records of monitoring for employee exposure are maintained along with any medical records or test results.</p> <p>(NOTE: The requirements for hazardous materials in laboratories do not apply to:</p> <ul style="list-style-type: none"> <li>– uses of hazardous chemicals that do not meet the definition of laboratory use</li> <li>– laboratory uses of hazardous chemicals that provide no potential for exposure such as: <ul style="list-style-type: none"> <li>– commercially prepared kits such as pregnancy tests in which all the reagents needed to conduct the test are contained in the kit</li> <li>– procedures using chemically impregnated test media such as Dip-and-Read tests.)</li> </ul> </li> </ul>



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<p><b>HM.20</b></p> <p><b>RELEASES OF HAZARDOUS MATERIALS</b></p> <p><b>HM.20.1.US.</b> Absorbent materials should be available for spill and/or release cleanup in areas where hazardous materials are used or stored and there is a risk of release to or contamination of the environment (MP) [<b>Revised October 2011</b>].</p> <p><b>HM.20.2.US.</b> Releases in excess of or equal to the RQ of listed and unlisted hazardous substances shall be reported to the NRC immediately (40 CFR 302.1 through 302.6) [<b>Revised April 1999; Reviewed March 2001; Revised October 2006</b>].</p>	<p>Verify that absorbent materials are available for spill cleanup.</p> <p>(NOTE: See checklist item PO.20.1.US. for requirements to prevent the discharge or petroleum products from reaching navigable water courses at facilities subject to the requirements for a Spill Prevention Control and Countermeasure (SPCC) Plan.)</p> <p>(NOTE: For facilities subject to the SPCC requirements, their SPCC Plan may include requirements for spill prevention which must be implemented at the facility, see checklist item PO.5.2.US.)</p> <p>(NOTE: See checklist items HW.85.1.US. through HW.85.7.US for spill prevention requirements for hazardous waste storage in hazardous waste containment buildings at large quantity generators [LQGs].)</p> <p>Verify that a release (other than a Federally permitted release or application of a pesticide) of a hazardous substance from a vessel, an offshore facility, or an onshore facility is reported to the NRC immediately after the release is identified.</p> <p>(NOTE: See Appendix 3-1 for the RQ of listed hazardous substances. The RQ of an unlisted hazardous substance (see definitions) is 100 lb, except for those unlisted hazardous wastes that exhibit extraction procedure (EP) toxicity identified in 40 CFR 261.24. Unlisted hazardous wastes that exhibit EP toxicity have the RQs listed in Appendix 3-1 for the contaminant on which the characteristic of EP toxicity is based. The RQ applies to the waste itself, not merely to the toxic contaminant. If an unlisted hazardous waste exhibits EP toxicity on the basis of more than one contaminant, the RQ for that waste shall be the lowest of the RQ listed in Appendix 3-1 for those contaminants. If an unlisted hazardous waste exhibits the characteristic of EP toxicity and one or more of the other characteristics referenced in 40 CFR 302.4(b), the RQ for that waste is the lowest of the applicable reportable quantities.)</p> <p>Verify that, if mixtures or solutions of hazardous substances are released, except for radionuclides, it is reported when either of the following occur:</p> <ul style="list-style-type: none"> <li>– the quantity of all hazardous constituents of the mixture or solution is known and a reportable quantity or more of any hazardous constituent is released</li> <li>– the quantity of one or more of the hazardous constituents of the mixture or solution is unknown and the total amount of the mixture or solution released equals or exceeds the reportable quantity for the hazardous constituent with the lowest RQ.</li> </ul> <p>(NOTE: Radionuclides are subject to these notification requirements only in the following circumstances:</p>

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	<ul style="list-style-type: none"> <li>– if the identity and quantity (in curies) of each radionuclide in a released mixture or solution is known, the ratio between the quantity released (in curies) and the RQ for the radionuclide must be determined for each radionuclide (NOTE: The only such releases notification requirements are those in which the sum of the ratios for the radionuclides in the mixture or solution released is <math>\geq 1</math>.)</li> <li>– if the identity of each radionuclide in a released mixture or solution is known but the quantity released (in curies) of one or more of the radionuclides is unknown, the only such releases subject to notification requirements are those in which the total quantity (in curies) of the mixture or solution released is <math>\geq</math> the lowest RQ of any individual radionuclide in the mixture or solution</li> <li>– if the identity of one or more radionuclides in a released mixture or solution is unknown (or if the identity of a radionuclide released by itself is unknown), the only such releases subject to notification requirements are those in which the total quantity (in curies) released is equal to or greater than either one curie or the lowest RQ of any known individual radionuclide in the mixture or solution, whichever is lower.)</li> </ul> <p>(NOTE: The following categories of releases are exempt from the notification requirements:</p> <ul style="list-style-type: none"> <li>– releases of those radionuclides that occur naturally in the soil from land holdings such as parks, golf courses, or other large tracts of land</li> <li>– releases of naturally occurring radionuclides from land disturbance activities, including farming, construction, and land disturbance incidental to extraction during mining activities, except that which occurs at uranium, phosphate, tin, zircon, hafnium, vanadium, monazite, and rare earth mines. Land disturbance incidental to extraction includes: land clearing; overburden removal and stockpiling; excavating, handling, transporting, and storing ores and other raw materials; and replacing materials in mined-out areas as long as such materials have not been beneficiated or processed and do not contain elevated radionuclide concentrations (greater than 7.6 pCi/g of Uranium-238, 6.8 pCi/g of Thorium-232, or 8.4 pCi/g of Radium-226)</li> <li>– releases of radionuclides from the dumping and transportation of coal and coal ash (including fly ash, bottom ash, and boiler slags), including the dumping and land spreading operations that occur during coal ash uses</li> <li>– releases of radionuclides from piles of coal and coal ash, including fly ash, bottom ash, and boiler slags</li> <li>– releases in amounts less than 1,000 lb/24 h of nitrogen oxide to the air which are the result of combustion and combustion-related activities</li> <li>– releases in amounts less than 1,000 lb/24 h of nitrogen dioxide to the air which are the result of combustion and combustion-related activities.)</li> </ul> <p>(NOTE: Except for releases of radionuclides, notification of the release of an RQ of solid particles of antimony, arsenic, beryllium, cadmium, chromium, copper, lead, nickel, selenium, silver, thallium, or zinc is not required if the mean diameter of the particles released is larger than 100 micrometers (0.004 in.))</p>

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<p><b>HM.20.3.US.</b> Specific notification requirements are required to be met for releases of hazardous substances that are continuous and stable in quantity and rate (40 CFR 302.8) [Revised April 1999; Revised March 2001].</p>	<p>Determine if there are any releases that are continuous and stable in quantity and rate.</p> <p>Verify that the following notifications have been given:</p> <ul style="list-style-type: none"> <li>– initial telephone notification</li> <li>– initial written notification within 30 days of the initial telephone notification</li> <li>– follow-up notification within 30 days of the first anniversary date of the initial written notification</li> <li>– notification of changes in: <ul style="list-style-type: none"> <li>– the composition or source of the release</li> <li>– information submitted in the initial written notification</li> </ul> </li> <li>– the follow-up notification required on the first anniversary date of the initial written notification of when there is an increase in the quantity of the hazardous substances in any 24-h period that represents a statistically significant increase.</li> </ul> <p>Verify that, prior to making an initial telephone notification of a continuous release, the person in charge of a facility or vessel establishes a sound basis for qualifying the release for reporting by one of the following:</p> <ul style="list-style-type: none"> <li>– using release data, engineering estimates, knowledge of operating procedures, or best professional judgment to establish the continuity and stability of the release</li> <li>– reporting the release to the NRC for a period sufficient to establish the continuity and stability of the release, or, when a basis has been established to qualify the release for reduced reporting, initial notification to the NRC is made by telephone.</li> </ul> <p>Verify that the notification is identified as an initial continuous release notification report and includes the following information:</p> <ul style="list-style-type: none"> <li>– the name and location of the facility or vessel</li> <li>– the name and identity of the hazardous substance being released.</li> </ul> <p>Verify that initial written notification of a continuous release is made to the appropriate USEPA Regional Office for the geographical area where the releasing facility or vessel is located and occurs within 30 days of the initial telephone notification to the NRC.</p> <p>Verify that the initial written notification includes, for each release for which reduced reporting as a continuous release is claimed, the following information:</p> <ul style="list-style-type: none"> <li>– the name of the facility or vessel; the location, including the latitude and longitude; the case number assigned by the NRC or the USEPA; the Dun and Bradstreet number of the facility, if available; the port of registration of the</li> </ul>

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	<p>vessel; the name and telephone number of the person in charge of the facility or vessel</p> <ul style="list-style-type: none"> <li>– the population density within a 1-mi radius of the facility or vessel, described in terms of the following ranges: 0-50 persons, 51-100 persons, 101-500 persons, 501-1,000 persons, more than 1,000 persons</li> <li>– the identity and location of sensitive populations and ecosystems within a 1-mi radius of the facility or vessel (e.g., elementary schools, hospitals, retirement communities, or wetlands)</li> <li>– for each hazardous substance release claimed to qualify for reporting under CERCLA section 103(f)(2), the following information: <ul style="list-style-type: none"> <li>– the name/identity of the hazardous substance; the CAS Registry Number for the substance (if available); and, if the substance being released is a mixture, the components of the mixture and their approximate concentrations and quantities, by weight</li> <li>– the upper and lower bounds of the normal range of the release (in pounds or kilograms) over the previous year</li> <li>– the source(s) of the release (e.g., valves, pump seals, storage tank vents, stacks). If the release is from a stack, the stack height (in feet or meters)</li> <li>– the frequency of the release and the fraction of the release from each release source and the specific period over which it occurs</li> <li>– a brief statement describing the basis for stating that the release is continuous and stable in quantity and rate</li> <li>– an estimate of the total annual amount that was released in the previous year (in pounds or kilograms)</li> <li>– the environmental medium affected by the release, such as the name of the surface water body; the stream order or average flowrate (in cubic feet/second) and designated use; the surface area (in acres) and average depth (in feet or meters) of the lake; the location of public water supply wells within 2 mi if on or underground</li> </ul> </li> <li>– a signed statement that the hazardous substance release described is continuous and stable in quantity and rate and that all reported information is accurate and current to the best knowledge of the person in charge.</li> </ul> <p>Verify that, within 30 days of the first anniversary date of the initial written notification, each hazardous substance release reported is evaluated to verify and update the information submitted in the initial written notification.</p> <p>Verify that the followup notification contains all the information required in the initial notification, plus notification of changes in the release not otherwise reported.</p> <p>(NOTE: Instead of the initial written report or follow-up report, a copy of the Toxic Release Inventory (TRI) form submitted under SARA Title III section 313 for the previous 1 July may be used if the following information is added:</p> <ul style="list-style-type: none"> <li>– the population density within a 1 mi radius of the facility or vessel described in terms of the following ranges: 0-50 persons, 51-100 persons, 101-500 persons, 501-1,000 persons, more than 1,000 persons</li> </ul>

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	<ul style="list-style-type: none"> <li>– the identify and location of sensitive populations and ecosystems within a 1-mi radius of the facility or vessel (e.g., elementary schools, hospitals, retirement communities, or wetlands)</li> <li>– the following information for each hazardous substance release that qualifies for reporting under CERCLA section 103(f)(2):               <ul style="list-style-type: none"> <li>– the upper and lower bounds of the normal range of the release over the previous year</li> <li>– the frequency of the release and the fraction of the release from each release source and the specific period over which it occurs</li> <li>– a brief statement describing the basis for stating that the release is continuous and stable in quantity and rate</li> <li>– a signed statement that the release is continuous and stable in quantity and rate and that all reported information is accurate and current to the best knowledge of the person in charge.)</li> </ul> </li> </ul> <p>(NOTE: If there is a change in any information submitted in the initial written notification or the followup notification other than a change in the source, composition, or quantity of the release, the person in charge of the facility or vessel shall provide written notification of the change to the USEPA Region for the geographical area where the facility or vessel is located, within 30 days of determining that the information submitted previously is no longer valid. Notification shall include the reason for the change, and the basis for stating that the release is continuous and stable under the changed conditions. Notification of changes shall include the case number assigned by the NRC or the USEPA and also the signed certification statement.)</p> <p>Verify that notification of a statistically significant increase in a release is made to the NRC as soon as there is knowledge of the release.</p> <p>(NOTE: A determination of whether an increase is a “statistically significant increase” shall be made based upon calculations or estimation procedures that will identify releases that exceed the upper bound of the reported normal range.)</p> <p>Verify that each hazardous substance release is evaluated annually to determine if changes have occurred in the information submitted in the initial written notification, the followup notification, and/or in a previous change notification.</p> <p>(NOTE: Where necessary to satisfy the requirements of this section, the person in charge may rely on recent release data, engineering estimates, the operating history of the facility or vessel, or other relevant information to support notification. All supporting documents, materials, and other information shall be kept on file at the facility, or in the case of a vessel, at an office within the United States in either a port of call, a place of regular berthing, or the headquarters of the business operating the vessel.)</p> <p>Verify that supporting materials are kept on file for a period of 1 yr and that they substantiate the reported normal range of releases, the basis for stating that the</p>

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<p><b>HM.20.4.US.</b> When there is a release of an RQ of any extremely hazardous substance (EHS) or CERCLA hazardous substance, emergency release notification is required (40 CFR 355.30, 355.31, 355.32, 355.33, 355.41, 355.42, 355.43, 355.40, 355.60 and Appendix A) [Revised April 1999; Revised July 2000; Reviewed March 2001; Revised October 2006; Citation Revised January 2007; Revised January 2009]</p>	<p>release is continuous and stable in quantity and rate, and the other information in the initial written report, the followup report, and the annual evaluations.</p> <p>(NOTE: Multiple concurrent releases of the same substance occurring at various locations with respect to contiguous plants or installations upon contiguous grounds that are under common ownership or control may be considered separately or added together in determining whether such releases constitute a continuous or a statistically significant release; whichever approach is elected for purposes of determining whether a release is continuous also must be used to determine a statistically significant increase in the release.)</p> <p>(NOTE: The emergency release notification requirements of 40 CFR 355 are in addition to the release notification requirements of CERCLA. If the facility has a release of a CERCLA hazardous substance, the facility must comply with the emergency release notification requirements of 40 CFR 355 and the release notification requirements of CERCLA section 103, codified at 40 CFR 302 [see checklist items HM.20.2.US and HM.20.3.US]. See Appendix 3-0 for a chart comparing the emergency release notification requirements of 40 CFR 355 and CERCLA)</p> <p>Verify that, if there is a release of a reportable quantity (RQ) of an EHS or CERCLA hazardous substance within any 24-h period, the emergency release notification requirements are triggered.</p> <p>(NOTE: RQs for EHSs are listed in Appendix 3-1. The EPA's October 2006 Consolidated List of Chemicals Subject to the Emergency Planning and Community Right-to-Know Act (EPCRA) and Section 112(r) of the Clean Air Act is online and searchable at <a href="http://yosemite.epa.gov/oswer/lol.nsf/homepage">http://yosemite.epa.gov/oswer/lol.nsf/homepage</a>.)</p> <p>Verify that an immediate, oral, notification is made, and as soon as practicable thereafter a written follow-up emergency notification (or notifications, as more information becomes available).</p> <p>Verify that the immediate notification includes as much of the following information known at the time:</p> <ul style="list-style-type: none"> <li>– the chemical name or identity of any substance involved in the release</li> <li>– indicate whether the substance is an EHS</li> <li>– provide an estimate of the quantity of any such substance that was released into the environment</li> <li>– state the time and duration of the release</li> <li>– the medium or media into which the release occurred</li> <li>– any known or anticipated acute or chronic health risks associated with the emergency and, where appropriate, advice regarding medical attention necessary for exposed individuals</li> </ul>

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	<ul style="list-style-type: none"> <li>– proper precautions to take as a result of the release, including evacuation (unless such information is readily available to the community emergency coordinator pursuant to the emergency plan)</li> <li>– the name and telephone number of the individual (or individuals) to be contacted for further information.</li> </ul> <p>(NOTE: The retrieval of the above information for immediate notification should not cause a delay in the notification on the emergency response.)</p> <p>Verify that, except for releases that occur during transportation or from storage incident to transportation, the facility provides a written follow-up emergency notice (or notices, as more information becomes available), as soon as practicable after the release.</p> <p>Verify that, in the written follow-up emergency notice, the facility provides and updates the information required in the immediate notification and includes additional information with respect to all of the following:</p> <ul style="list-style-type: none"> <li>– actions taken to respond and contain the release</li> <li>– any known or anticipated acute or chronic health risks associated with the release</li> <li>– where appropriate, advice regarding medical attention necessary for exposed individuals.</li> </ul> <p>(NOTE: The facility is not required to submit a written follow-up notification for a release that occurred during transportation or from storage incident to transportation. For a release that occurs during transportation or from storage incident to transportation, the facility may meet the emergency notification requirements by notifying the 911 operator (or in the absence of a 911 emergency telephone number, the operator) of the immediate notification information listed above. )</p> <p>Verify that the immediate emergency release notification information and the written follow-up are provided to:</p> <ul style="list-style-type: none"> <li>– the community emergency coordinator for the LEPC of any area likely to be affected by the release (if there is no LEPC, notify the relevant local emergency response personnel)</li> <li>– the SERC of any State likely to be affected by the release.</li> </ul> <p>(NOTE: If the release of an EHS or CERCLA hazardous substance is continuous and stable in quantity and rate at the facility as defined in 40 CFR 302.8(b) [see checklist item HM.20.3.US], then the release qualifies for reduced reporting requirements. Under reduced reporting requirements, the facility does not need to provide the immediate or the followup notifications. However, in addition to the notifications required under 40 CFR 302.8 [see checklist item HM.20.3.US] , the facility must make all of the following notifications to the community emergency</p>

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	<p>coordinator for the LEPC for any area likely to be affected by the release and to the SERC of any State likely to be affected by the release:</p> <ul style="list-style-type: none"> <li>– initial notifications as specified in 40 CFR 302.8(d) and 302.8(e)</li> <li>– notification of a “statistically significant increase,” defined in 40 CFR 302.8(b) as any increase above the upper bound of the reported normal range</li> <li>– notification of a “new release” as specified in 40 CFR 302.8(g)(1)</li> <li>– notification of a change in the normal range of the release as specified under 40 CFR 302.8(g)(2).)</li> </ul> <p>(NOTE: Emergency release notification is not required for any of the following types of releases of EHSs or CERCLA hazardous substances that occur at a facility:</p> <ul style="list-style-type: none"> <li>– any release that results in exposure to persons solely within the boundaries of your facility</li> <li>– any release that is a federally permitted release as defined in section 101(10) of CERCLA</li> <li>– any release of a pesticide product that is exempt from reporting under section 103(e) of CERCLA</li> <li>– any release that does not meet the definition of release under section 101(22) of CERCLA and is therefore exempt from CERCLA section 103(a) reporting</li> <li>– any radionuclide release that occurs: <ul style="list-style-type: none"> <li>– naturally in soil from land holdings such as parks, golf courses, or other large tracts of land</li> <li>– naturally from land disturbance activities, including farming, construction, and land disturbance incidental to extraction during mining activities, except that which occurs at uranium, phosphate, tin, zircon, hafnium, vanadium, monazite, and rare earth mines</li> <li>– from the dumping and transportation of coal and coal ash (including fly ash, bottom ash, and boiler slags), including the dumping and land spreading operations that occur during coal ash uses</li> <li>– from piles of coal and coal ash, including fly ash, bottom ash, and boiler slags</li> </ul> </li> <li>– any release less than 1,000 pounds per 24 h of nitrogen oxide or nitrogen dioxide to the air which is the result of combustion and combustion related activities.)</li> </ul> <p>(NOTE: Land disturbance incidental to extraction includes: land clearing; overburden removal and stockpiling; excavating, handling, transporting, and storing ores and other raw (not beneficiated or processed) materials; and replacing in mined-out areas coal ash, earthen materials from farming or construction, or overburden or other raw materials generated from the exempted mining activities.)</p>

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<p><b>HM.25</b></p> <p><b>EMERGENCY PLANNING</b></p> <p><b>HM.25.1.US.</b> When extremely hazardous substances (EHS) are present in amounts equal to or greater than their threshold planning quantity (TPQ) or the facility has been designated for emergency planning purposes, specific emergency planning procedures are required to be followed (40 CFR 355.10, 355.11, 355.13, 355.14, 355.15, 355.16, 355.20 and 355.21; EO 13693, Section 3, para 3(j)(i)) <b>[Revised April 1999; Revised July 2000; Reviewed March 2001; Citation Revised January 2007; Citation Revised July 2007; Revised January 2009; Citation Revised April 2015].</b></p>	<p>(NOTE: This checklist item applies if the facility meets either of the following two conditions:</p> <ul style="list-style-type: none"> <li>– any EHS is present at the facility in an amount equal to or greater than its TPQ [See Appendix 3-1, plus, the EPA's October 2006 Consolidated List of Chemicals Subject to the Emergency Planning and Community Right-to-Know Act (EPCRA) and Section 112(r) of the Clean Air Act is online and searchable at <a href="http://yosemite.epa.gov/oswer/lol.nsf/homepage">http://yosemite.epa.gov/oswer/lol.nsf/homepage</a>]</li> <li>– the facility has been designated for emergency planning purposes, after public notice and opportunity for comment, by one of the following three entities: <ul style="list-style-type: none"> <li>– the State Emergency Response Commission (SERC)</li> <li>– the Governor of the State in which your facility is located</li> <li>– the Chief Executive Officer of the Tribe for the Indian Tribe under whose jurisdiction the facility is located.</li> </ul> </li> </ul> <p>If a facility is designated for emergency planning purposes, substances that are not EHSs at this facility may become subject to the emergency planning requirements.)</p> <p>Verify that the SERC and the LEPC are notified that the facility is subject to emergency planning requirements for EHSs within 60 days after the facility first becomes subject to EHS emergency planning requirements.</p> <p>Verify that the facility designates a representative who will participate in the local emergency planning process as a facility emergency response coordinator.</p> <p>Verify that the facility notifies the LEPC (or the SERC if there is no LEPC, or the Governor if there is no SERC) who the facility emergency response coordinator is within 60 days after the facility first becomes subject to EHS emergency planning requirements.</p> <p>Verify that, if no LEPC exists for the facility at the time the facility is required to provide emergency planning notification and identification of the emergency response coordinator, the facility reports to the LEPC within 30 days after an LEPC is established for the emergency planning district in which the facility is located.</p> <p>Verify that the facility notifies the LEPC of any changes occurring at the facility that may be relevant to emergency planning within 30 days of the change.</p> <p>(NOTE: The facility must provide to the LEPC any information necessary for developing and implementing the local emergency plan upon the request of the LEPC.)</p> <p>(NOTE: EPA does not require any specific format. EPA recommends that the facility submits the required information in writing in order to insure appropriate</p>

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	<p>documentation. The SERC or LEPC may request that information be submitted in a specific format.)</p> <p>(NOTE: If an EHS is present in a mixture in a particular container, determine the quantity (in pounds) of the EHS in that container by multiplying the concentration of the EHS (in weight percent) by the weight (in pounds) of the mixture in the container. If the concentration of an EHS is less than or equal to one percent in the mixture, the facility does not have to count that EHS.)</p> <p>(NOTE: You must aggregate (i.e., add together) the amounts of each EHS at the facility to determine if a TPQ is present. This means that, for a particular EHS, the facility must determine the total amount present at any one time at the facility by adding together the quantity of pure EHS and the quantity contained in all mixtures, regardless of location, number of containers, or method of storage. The facility does not have to count an EHS in a mixture if the concentration of that EHS is less than or equal to one percent.)</p> <p>(NOTE: EHSs that are in solid form are subject to one of two different TPQs (for example, TPQs may be listed as 500/10,000 pounds), both of which are listed in Appendix 3-1 [EPA's October 2006 Consolidated List of Chemicals Subject to the Emergency Planning and Community Right-to-Know Act (EPCRA) and Section 112(r) of the Clean Air Act is online and searchable at <a href="http://yosemite.epa.gov/oswer/lol.nsf/homepage">http://yosemite.epa.gov/oswer/lol.nsf/homepage</a>]. Here is how to determine which of the two listed TPQs must be used for an EHS present at the facility in solid form:</p> <ul style="list-style-type: none"> <li>– use the lower TPQ from Appendix 3-1 if the solid meets one of the following: <ul style="list-style-type: none"> <li>– is in powdered form and has a particle size less than 100 microns</li> <li>– is in solution</li> <li>– is in molten form</li> <li>– meets the criteria for a National Fire Protection Association (NFPA) rating of 2, 3 or 4 for reactivity.</li> </ul> </li> <li>– if the solid does not meet one of the above criteria, then the TPQ is 10,000 pounds.</li> </ul> <p>For the three forms of solids use the following instructions to determine the quantity of EHS present:</p> <ul style="list-style-type: none"> <li>– solid in powdered form with a particle size less than 100 microns: multiply the weight percent of solid with a particle size less than 100 microns in a particular container by the total weight of solid in the container</li> <li>– solid in solution: multiply the weight percent of solid in solution in a particular container by the total weight of solution in the container</li> <li>– solid in molten form: multiply the weight of solid in molten form by 0.3.)</li> </ul>

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<b>HM.30</b>  <b>RIGHT-TO-KNOW</b>  <b>HM.30.1.US.</b> Facilities are required to report certain hazardous chemicals when they are present in amounts above the regulatory threshold levels (40 CFR 370.10, 370.12, 370.13, 370.14, 370.30, 370.31, 370.32, 370.33, 370.60, and 370.64b; EO 13693, Section 3, para 3(j)(i)) [Revised April 1999; Revised July 2000; Revised March 2001; Citation Revised January 2007; Citation Revised July 2007; Revised January 2009; Citation Revised April 2015; Revised July 2016].	<p>Verify that the facility reports any hazardous chemical for which they are required to prepare or have available an MSDS (or SDS) under OSHA Hazard Communication Standard that is present at the facility in amounts equal to or above the applicable threshold levels (see NOTE below) by either:</p> <ul style="list-style-type: none"> <li>– submitting an MSDS (or SDS) for each hazardous chemical present at the facility that meets or exceeds its applicable threshold level</li> <li>– submitting a list of all hazardous chemicals present at the facility at or above the applicable threshold levels with the hazardous chemicals grouped by Hazard Category and the list contains the chemical or common name of each hazardous chemical as provided on the MSDS (or SDS).</li> </ul> <p>Verify that, while MSDS (or SDS) reporting is a one-time requirement, the information is updated in all of the following ways:</p> <ul style="list-style-type: none"> <li>– submitting a revised MSDS (or SDS) after discovering significant new information concerning a hazardous chemical for which an MSDS was submitted</li> <li>– submitting an MSDS (or SDS), or a list, for any new hazardous chemical for which the facility become subject to these reporting requirements</li> <li>– submitting, as requested by the LEPC, an MSDS for any hazardous chemical present at the facility which you have not already submitted a MSDS (or SDS).</li> </ul> <p>Verify that the MSDS (or SDS) or list (new or revised) are submitted to the LEPC, the SERC, and the fire department with jurisdiction over the facility within 3 mo after first becoming subject to the reporting requirements.</p> <p>Verify that, for a mixture containing a hazardous chemical, the table in Appendix 3-0a is used to determine if a reporting threshold is equaled or exceeded, and to determine how to report.</p> <p>Verify that, for each specific mixture, the reporting option used is consistent for both MSDS (or SDS) and inventory reporting, unless it is not possible to do so.</p> <p>(NOTE: This means that if the facility reports on a specific mixture as a whole for MSDS (or SDS) reporting, report on that mixture as a whole for inventory reporting too (unless it is not possible).)</p> <p>(NOTE: To determine the quantity of an EHS or a non-EHS hazardous chemical component present in a mixture, multiply the concentration of the hazardous chemical component (in weight percent) by the weight of the mixture (in pounds). It is not necessary to count a hazardous chemical present in a mixture if the</p>

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	<p>concentration is less than or equal to 1%, or less than or equal to 0.1% for a carcinogenic chemical.)</p> <p>(NOTE: The EPA has not issued a list of hazardous chemicals subject to this reporting requirement. A substance is a hazardous chemical if it is required to have an MSDS (or SDS) and meets the definition of hazardous chemical under the OSHA regulations found at 29 CFR 1910.1200(c). See checklist item HM.1.2.US for more detailed information on MSDS requirements.)</p> <p>(NOTE: The threshold levels for reporting are as follows:</p> <ul style="list-style-type: none"> <li>– a hazardous chemical that is an Extremely Hazardous Substance (EHS) is present at the facility at any one time in an amount equal to or greater than 500 lbs (227 kg--approximately 55 gal) or the Threshold Planning Quantity (TPQ), whichever is lower (EHSs and their TPQs are listed in Appendices A and B of 40 CFR 355)</li> <li>– a hazardous chemical that is not an EHS is present at the facility at any one time in an amount equal to or greater than the threshold level for that hazardous chemical and the threshold level for hazardous chemicals that do not meet the following criteria is 10,000 lbs (or 4,540 kg): <ul style="list-style-type: none"> <li>– for gasoline at a retail gas station, the threshold level is 75,000 gal (approximately 283,900 L)</li> <li>– for diesel fuel at a retail gas station the threshold level is 100,000 gal (approximately 378,500 L).</li> </ul> </li> </ul> <p>(NOTE: A retail gas station means a retail facility engaged in selling gasoline and/or diesel fuel principally to the public, for motor vehicle use on land.)</p> <p>(NOTE: The threshold levels at retail gas stations include all grades of gasoline or diesel combined as applicable. The threshold levels at retail gas stations also only apply for gasoline or diesel that was in tank(s) entirely underground and was in compliance at all times during the preceding calendar year with all applicable UST requirements at 40 CFR 280 or requirements of the EPA-approved state UST program)</p> <p>Verify that, regardless of the threshold levels of hazardous chemicals at the facility, if the LEPC requests that the facility submit an MSDS for a hazardous chemical, the facility submits the MSDS (or SDS) within 30 days of the request.</p> <p>Verify that, regardless of the threshold levels of hazardous chemicals at the facility, if the LEPC, SERC, or the fire department with jurisdiction over the facility requests that the facility submits Tier II information, the facility submits the Tier II Information.</p> <p>(NOTE: In general, facilities are not required to report substances for which they are not required to have an MSDS (or SDS) under the OSHA regulations, or that are excluded from the definition of hazardous chemical under EPCRA section</p>

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<p><b>HM.30.2.US.</b> When applicable, inventory information (Tier I and Tier II inventory forms) must be submitted annually by March 1 (40 CFR 370.10, 370.40, 370.41, 370.42, 370.44, 370.45, 370.61, and 370.64(b); EO 13693, Section 3, para 3(j)(i)) [Revised April 1999; Revised March 2001; Citation Revised January 2007; Citation Revised July 2007; Revised January 2009; Revised April 2009; Revised April 2011; Revised October 2011; Revised October 2012;</p>	<p>311(e). Each of the following substances are excluded under EPCRA section 311(e):</p> <ul style="list-style-type: none"> <li>– any food, food additive, color additive, drug, or cosmetic regulated by the Food and Drug Administration</li> <li>– any substance present as a solid in any manufactured item to the extent exposure to the substance does not occur under normal conditions of use</li> <li>– any substance to the extent it is used: <ul style="list-style-type: none"> <li>– for personal, family, or household purposes, or is present in the same form and concentration as a product packaged for distribution and use by the general public</li> <li>– in a research laboratory or hospital or other medical facility under the direct supervision of a technically qualified individual</li> <li>– in routine agricultural operations or is a fertilizer held for sale by a retailer to the ultimate customer.)</li> </ul> </li> </ul> <p>(NOTE: “Present in the same form and concentration as a product packaged for distribution and use by the general public” means a substance packaged in a similar manner and present in the same concentration as the substance when packaged for use by the general public, whether or not it is intended for distribution to the general public or used for the same purpose as when it is packaged for use by the general public.)</p> <p>(NOTE: Any person may obtain an MSDS for a specific facility by writing to the LEPC and asking for it. If the LEPC has the MSDS (or SDS), it must provide it to the person making the request. If the LEPC does not have the MSDS, it must request the MSDS (or SDS) from the facility's owner or operator.)</p> <p>(NOTE: The threshold levels for reporting are as follows:</p> <ul style="list-style-type: none"> <li>– a hazardous chemical that is an Extremely Hazardous Substance (EHS) is present at the facility at any one time in an amount equal to or greater than 500 lbs (227 kg--approximately 55 gal) or the Threshold Planning Quantity (TPQ), whichever is lower (EHSs and their TPQs are listed in Appendices A and B of 40 CFR 355)</li> <li>– a hazardous chemical that is not an EHS is present at the facility at any one time in an amount equal to or greater than the threshold level for that hazardous chemical and the threshold level for hazardous chemicals that do not meet the following criteria is 10,000 lbs (or 4,540 kg): <ul style="list-style-type: none"> <li>– for gasoline at a retail gas station, the threshold level is 75,000 gal (approximately 283,900 L)</li> <li>– for diesel fuel at a retail gas station the threshold level is 100,000 gal (approximately 378,500 L.)</li> </ul> </li> </ul> <p>(NOTE: Tier I information provides State and local officials and the public with information on the general types and locations of hazardous chemicals present at a facility during the previous calendar year. The Tier I information is the minimum information that must be provided to be in compliance with the inventory reporting</p>

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<b>Citation Revised April 2015; Revised July 2016].</b>	<p>requirements. Tier II information provides State and local officials and the public with specific information on the amounts and locations of hazardous chemicals present at a facility during the previous calendar year.)</p> <p>Verify that the facilities which are required to report any hazardous chemical for which they are required to prepare or have available an MSDS (or SDS) under OSHA Hazard Communication Standard that is present at the facility in amounts equal to or in excess of the applicable threshold levels (see also checklist item HM.30.1.US) submit inventory information by March 1 of every year to the SERC, LEPC, and fire department with jurisdiction over the facility.</p> <p>Verify that the inventory information addresses any hazardous chemical present at the facility at any time during the previous calendar year in an amount equal to or in excess of its threshold level.</p> <p>(NOTE: EPA publishes Tier I and Tier II Inventory Forms that provide uniform formats for reporting the Tier I and Tier II information. You may use a State or local format for reporting inventory information if the State or local format contains at least the required Tier I information. EPA's Tier I and Tier II forms are available at <a href="http://www.epa.gov/epcra">http://www.epa.gov/epcra</a>. Some states require electronic reporting (online or via diskettes) and electronic certification. Contact the state for the specific requirements in that state.)</p> <p>Verify that, if the facility is reporting Tier I information, the facility reports aggregate information on hazardous chemicals by hazard categories.</p> <p>(NOTE: There are two health hazard categories and three physical hazard categories for purposes of reporting, see the Definitions.)</p> <p>Verify that Tier I form is complete and the owner or operator or the officially designated representative of the owner or operator has certified that all information included in the Tier I submission is true, accurate, and complete as follows: "I certify under penalty of law that I have personally examined and am familiar with the information and that based on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete."</p> <p>(NOTE: See the EPA or State provided forms or 40 CFR 370.41 for details on the contents of the forms.)</p> <p>Verify that the Tier I certification is accompanied by the full name, official title, and signature of the signatory as well as the date signed, and total number of pages in the submission including all attachments.</p> <p>Verify that all other pages of the Tier I form contain a signature or signature stamp, the date the certification was signed, and the total number of pages in the submission.</p>

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<p><b>HM.30.3.US.</b> Facilities that manufacture, process, or otherwise use a toxic chemical in excess of applicable threshold quantities and that</p>	<p>Verify that Tier II information is submitted to the SERC, LEPC, or fire department having jurisdiction over the facility within 30 days after a request from the SERC, LEPC, or the fire department.</p> <p>Verify that, if the facility is reporting Tier II information, the form is complete and the owner or operator or the officially designated representative of the owner or operator has certified that all information included in the Tier II submission is true, accurate, and complete as follows: "I certify under penalty of law that I have personally examined and am familiar with the information and that based on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete."</p> <p>(NOTE: See the EPA or State provided forms or 40 CFR 370.41 for details on the contents of the forms.)</p> <p>Verify that the Tier II certification is accompanied by the full name, official title, and signature of the signatory as well as the date signed, and total number of pages in the submission including all Confidential and Non-Confidential Information Sheets and all attachments.</p> <p>Verify that all other pages contain a signature or signature stamp, the date the certification was signed, and the total number of pages in the submission.</p> <p>(NOTE: In order to prevent disclosure to the public of the location information for a specific chemical, the facility must complete The Confidential Location Information Sheet available at <a href="http://www.epa.gov/epcra">http://www.epa.gov/epcra</a>.)</p> <p>(NOTE: Any person may request Tier II information for a specific facility by writing to the SERC or the LEPC and asking for such information. If the SERC or LEPC has the Tier II information, the SERC or LEPC must provide it to the person making the request. If the SERC or LEPC does not have the Tier II information, it must request it from the facility owner or operator in either of the following cases:</p> <ul style="list-style-type: none"> <li>– the person making the request is a State or local official acting in his or her official capacity</li> <li>– the request is for hazardous chemicals in amounts greater than 10,000 lb stored at the facility at any time during the previous calendar year.</li> </ul> <p>If the SERC or LEPC does not have the Tier II information, it may request it from the facility owner or operator when neither of the above 2 conditions is met, but the person's request includes a general statement of need. A SERC or LEPC must respond to a request for Tier II information under this section within 45 days of receiving such a request.)</p> <p>(NOTE: Federal agencies are required to comply with these provisions without regard to the Standard Industrial Classification (SIC) or North American Industrial Classification System (NAICS) delineations.)</p>

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<p>have 10 or more employees are subject to certain reporting and recordkeeping requirements (40 CFR 372.10(a), 372.10(c), 372.10(d), 372.22 through 372.38; EO 13693, Section 3, para 3(j)(i)) [Revised January 2000; Revised July 2000; Revised March 2001; Citation Revised January 2007; Revised April 2007; Citation Revised July 2007; Revised July 2008; Citation Revised April 2015; Revised January 2018].</p>	<p>(NOTE: These reporting and recordkeeping requirements apply to facilities that meet all of the following criteria for a calendar year:</p> <ul style="list-style-type: none"> <li>– the facility has ten or more full-time employees</li> <li>– the facility is in a Standard Industrial Classification (SIC) (as in effect on January 1, 1987) major group or industry code listed in 40 CFR 372.23(a) [see text], for which the corresponding North American Industry Classification System (NAICS) (as in effect on January 1, 2017, for reporting year 2018 and thereafter) subsector and industry codes are listed in 40 CFR 372.23(b) and 372.23(c) [see text] by virtue of the fact that it meets one of the following criteria: <ul style="list-style-type: none"> <li>– the facility is an establishment with a primary SIC major group or industry code in the above list</li> <li>– the facility is a multi-establishment complex where all establishments have primary SIC major group or industry codes in the above list</li> <li>– the facility is a multi-establishment complex in which one of the following is true: <ul style="list-style-type: none"> <li>– the sum of the value of services provided and/or products shipped and/or produced from those establishments that have primary SIC major group or industry codes in the above list is greater than 50 percent of the total value of all services provided and/or products shipped from and/or produced by all establishments at the facility</li> <li>– one establishment having a primary SIC major group or industry code in the above list contributes more in terms of value of services provided and/or products shipped from and/or produced at the facility than any other establishment within the facility</li> </ul> </li> </ul> </li> <li>– the facility manufactured (including imported), processed, or otherwise used a toxic chemical in excess of an applicable threshold quantity of that chemical.)</li> </ul> <p>(NOTE: The following are the threshold levels for a facility that is manufacturing (including importing), processing, or otherwise using a toxic chemical:</p> <ul style="list-style-type: none"> <li>– has manufactured or processed 25,000 lb/yr of toxic chemicals, except for persistent bioaccumulative toxic (PBT) chemicals</li> <li>– has otherwise used over 10,000 lb of toxic chemicals in other ways during the year, except for PBT chemicals</li> <li>– for the chemicals listed in Appendix 3-1a, the amounts indicated in the appendix.)</li> </ul> <p>(NOTE: Articles containing toxic chemicals are not included in calculations of total toxic chemical present. See 40 CFR 372.30(b)(3) for procedure to determine whether an excess has occurred.)</p> <p>Verify that a completed USEPA Form R, (USEPA Form 9350-1) is submitted annually to the USEPA and state on or before 1 July of the next year for each toxic chemical known by the facility owner or operator to be manufactured (including imported) or otherwise used and exceeding threshold levels in one calendar year.</p>

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	<p>Verify that USEPA Form R Schedule 1 (EPA Form 9350-3) is submitted for dioxin and dioxin-like compounds category.</p> <p>(NOTE: A copy of Form R is available at <a href="http://www.epa.gov/tri/report.htm">http://www.epa.gov/tri/report.htm</a>.)</p> <p>(NOTE: The owner or operator of a facility regulated under 40 CFR 372 is required to complete and submit USEPA Form R, as described above, for a toxic chemical that is present as a component of a mixture or trade name product which the owner or operator receives from another person, if that chemical is imported, processed, or otherwise used by the owner or operator in excess of an applicable threshold quantity at the facility as part of that mixture or trade name product.)</p> <p>(NOTE: The owner or operator of a facility at which a toxic chemical was manufactured (including imported), processed or otherwise used in excess of an applicable threshold quantity may submit a separate Form R for each establishment or for each group of establishments within the facility to report the activities involving the toxic chemical at each establishment or group of establishments, provided that activities involving the toxic chemical at all the establishments within the covered facility are reported. See 40 CFR 372.30(c) for instruction and procedures regarding alternatives for reporting when the facility consists of more than one establishment.)</p> <p>(NOTE: A facility may apply an alternate threshold of 1 million pounds per year to that chemical if it is calculated that the facility would have</p> <ul style="list-style-type: none"> <li>– no more than 2,000 lb of total on-site and off-site disposal or other releases (including disposal or other releases that resulted from catastrophic events)</li> <li>– an annual reportable amount of that toxic chemical not exceeding 5,000 lb for the combined total quantities released at the facility; disposed within the facility; treated for destruction at the facility; recovered at the facility as a result of recycling operations; combusted for the purpose of energy recovery at the facility; transferred from the facility to off-site locations for the purpose of recycling, energy recovery, treatment, and/or disposal; and managed as a result of remedial actions, catastrophic events, or one-time events not associated with production processes during the reporting year..)</li> </ul> <p>For chemical of special concern (see Appendix 3-1a) the facility may apply an alternate threshold of 1 million lb/yr to that chemical if the owner or operator calculates that the facility would have:</p> <ul style="list-style-type: none"> <li>– zero on-site and off-site disposal or other releases (including disposal or other releases that resulted from catastrophic events)</li> <li>– an “Annual Reportable Amount of a Chemical of Special Concern” not exceeding 500 lb.</li> </ul> <p>The “Annual Reportable Amount of a Chemical of Special Concern: is the combined total of:</p> <ul style="list-style-type: none"> <li>– quantities treated for destruction at the facility</li> <li>– quantities recovered at the facility as a result of recycling operations</li> <li>– quantities combusted for the purpose of energy recovery at the facility</li> </ul>

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	<ul style="list-style-type: none"> <li>– quantities transferred from the facility to off-site locations for the purpose of recycling, energy recovery, and/or treatment</li> <li>– quantities managed through recycling, energy recovery, or treatment for destruction that were the result of remedial actions, catastrophic events, or one-time events not associated with production processes during the reporting year.)</li> </ul> <p>Verify that, if a facility uses the alternate reporting threshold, the facility owner or operator submits the required certification statement that contains the following information instead of the USEPA Form R:</p> <ul style="list-style-type: none"> <li>– reporting year</li> <li>– an indication of whether the chemical identified is being claimed as trade secret</li> <li>– chemical name and CAS number (if applicable) of the chemical, or the category name</li> <li>– signature of a senior management official certifying the following: pursuant to 40 CFR 372.27, “I hereby certify that to the best of my knowledge and belief for the toxic chemical listed in this statement, the annual reportable amount, as defined in 40 CFR 372.27(a), did not exceed 500 lb for this reporting year and that the chemical was manufactured, or processed, or otherwise used in an amount not exceeding 1 million pounds during this reporting year”</li> <li>– date signed</li> <li>– facility name and address</li> <li>– mailing address of the facility if different than the above</li> <li>– toxic chemical release inventory facility identification number if known</li> <li>– name and telephone number of a technical contact</li> <li>– the four-digit SIC codes for the facility or establishments in the facility</li> <li>– latitude and longitude coordinates for the facility</li> <li>– Dun and Bradstreet number of the facility</li> <li>– USEPA identification number(s) (RCRA) I.D. Number(s) of the facility</li> <li>– facility NPDES permit number(s)</li> <li>– underground Injection Well Code (UIC) I.D. Number(s) of the facility</li> <li>– name of the facility's parent company</li> <li>– parent company's Dun and Bradstreet Number.</li> </ul> <p>Verify that, when more than one threshold applies to facility activities, the facility reports if it exceeds any applicable threshold and reports on all activities at the facility involving the chemical unless otherwise exempted.</p> <p>Verify that, when a facility manufactures, processes, or otherwise uses more than one member of a chemical category listed in 40 CFR 372.65(c), the facility reports if it exceeds any applicable threshold for the total volume of all the members of the category involved in the applicable activity and the report covers all activities at the facility involving members of the category.</p>

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	<p>(NOTE: A facility may process or otherwise use a toxic chemical in a recycle/reuse operation. To determine whether the facility has processed or used more than an applicable threshold of the chemical, the owner or operator of the facility counts the amount of the chemical added to the recycle/reuse operation during the calendar year. In particular, if the facility starts up such an operation during a calendar year, or in the event that the contents of the whole recycle/reuse operation are replaced in a calendar year, the facility also counts the amount of the chemical placed into the system at these times.)</p> <p>(NOTE: The following exemptions apply:</p> <ul style="list-style-type: none"> <li>– if a toxic chemical is present in a mixture of chemicals at a covered facility and the toxic chemical is in a concentration in the mixture which is below 1 percent of the mixture, or 0.1 percent of the mixture in the case of a toxic chemical which is a carcinogen, the quantity of the toxic chemical present in such mixture does not have to be considered when determining whether an applicable threshold has been met or determining the amount of release to be reported under. This exemption applies whether the person received the mixture from another person or the person produced the mixture, either by mixing the chemicals involved or by causing a chemical reaction that resulted in the creation of the toxic chemical in the mixture. However, this exemption applies only to the quantity of the toxic chemical present in the mixture. If the toxic chemical is also manufactured (including imported), processed, or otherwise used at the covered facility other than as part of the mixture or in a mixture at higher concentrations, in excess of an applicable threshold quantity, the facility is required to report. This exemption does not apply to the chemicals listed in Appendix 3-1a</li> <li>– if a toxic chemical is present in an article at a covered facility, the quantity of the toxic chemical present in such article does not have to be considered when determining whether an applicable threshold has been met or determining the amount of release to be reported. This exemption applies whether the facility received the article from another facility or produced the article. However, this exemption applies only to the quantity of the toxic chemical present in the article. If the toxic chemical is manufactured (including imported), processed, or otherwise used at the covered facility other than as part of the article, in excess of an applicable threshold quantity, reporting is required. If a release of a toxic chemical occurs as a result of the processing or use of an item at the facility, that item does not meet the definition of “article”</li> <li>– if a toxic chemical is used at a covered facility for one of the following purposes, it is not required to consider the quantity of the toxic chemical used for such purpose when determining whether an applicable threshold has been met under or determining the amount of releases to be reported. However, this exemption only applies to the quantity of the toxic chemical used for the purpose described in the following list. If the toxic chemical is also manufactured (including imported), processed, or otherwise used at the covered facility other than as listed, in excess of an applicable threshold quantity, reporting is required. The list includes:</li> </ul>

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	<ul style="list-style-type: none"> <li>– use as a structural component of the facility</li> <li>– use of products for routine janitorial or facility grounds maintenance</li> <li>– personal use by employees or other persons at the facility of foods, drugs, cosmetics, or other personal items containing toxic chemicals, including supplies of such products within the facility such as in a facility-operated cafeteria, store, or infirmary</li> <li>– use of products containing toxic chemicals for the purpose of maintaining motor vehicles operated by the facility</li> <li>– use of toxic chemicals present in process water and non-contact cooling water as drawn from the environment or from municipal sources</li> <li>– toxic chemicals present in air used either as compressed air or as part of combustion.</li> </ul> <p>– if a toxic chemical is manufactured, processed, or used in a laboratory at a covered facility under the supervision of a technically qualified individual, the laboratory is not required to consider the quantity so manufactured, processed, or used when determining whether an applicable threshold has been met or determining the amount of release to be reported.)</p> <p>Verify that the following records are kept 3 yr from the date of the submission of USEPA Form R:</p> <ul style="list-style-type: none"> <li>– a copy of each Form R report submitted</li> <li>– all supporting materials and documentation used by the person to make the compliance determination that the facility or establishments is a covered facility</li> <li>– documentation supporting the submitted report, including: <ul style="list-style-type: none"> <li>– documentation supporting any determination that a claimed allowable exemption under 40 CFR 372.38 applies</li> <li>– data supporting the determination of whether a threshold applies for each toxic chemical</li> <li>– documentation supporting the calculations of the quantity of each toxic chemical released to the environment or transferred to an offsite location</li> <li>– documentation supporting the use indications and quantity onsite reporting for each toxic chemical, including dates of manufacturing, processing, or use</li> <li>– documentation supporting the basis of estimate used in developing any release or offsite transfer estimates for each toxic chemical</li> <li>– receipts or manifests associated with the transfer of each toxic chemical in waste to offsite locations</li> <li>– documentation supporting reported waste treatment methods, estimates of treatment efficiencies, ranges of influent concentration to such treatment, the sequential nature of treatment steps, if applicable, and the actual operating data, if applicable, to support the waste treatment efficiency estimate for each toxic chemical.</li> </ul> </li> </ul> <p>Verify that the following records are maintained for 3 yr at the facility to which the report applies or from which supplier notification was provided:</p>

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	<ul style="list-style-type: none"> <li>– all supporting materials and documentation used to determine if supplier notification is required</li> <li>– all supporting materials and documentation used in developing each required supplier notification and a copy of each notification.</li> </ul> <p>Verify that, if it has been determined the alternate threshold may be applied, the following records are kept for 3 yr from the date of submission of the required certification statement:</p> <ul style="list-style-type: none"> <li>– a copy of each certification statement submitted</li> <li>– all supporting materials and documentation used to make the compliance determination that the facility or establishment is eligible to apply the alternate threshold</li> <li>– documentation supporting the certification statement submitted, including: <ul style="list-style-type: none"> <li>– data supporting the determination of whether the alternate threshold applies for each toxic chemical</li> <li>– documentation supporting the calculation of annual reportable amount, for each toxic chemical, including documentation supporting the calculations and the calculations of each data element combined for the annual reportable amount</li> <li>– receipts or manifests associated with the transfer of each chemical in waste to offsite locations.</li> </ul> </li> </ul>



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<b>FLAMMABLE/ COMBUSTIBLE LIQUIDS STORAGE</b>  <b>HM.35 General</b>  <b>HM.35.1.US.</b> Specific management practices should be considered when storing and handling flammable/combustible materials (MP) [Revised April 1995].  <b>HM.35.2.US.</b> Drums or other containers (including flammable aerosols) with less than 60 gal individual capacity and portable tanks with less than 660 gal capacity which are used for storing flammable liquids are required to meet certain general standards (29 CFR 1910.106(d)(1), 1910.106(d)(2), and 29 CFR 1910.106(j)) [Revised April 2012; Revised July 2014].	<p>Verify that the following management practices are followed:</p> <ul style="list-style-type: none"> <li>– items are not stored against pipes or coils producing heat</li> <li>– paint drums that are stored horizontally are rolled a half turn every 90 days</li> <li>– containers of paint are palletized prior to storage</li> <li>– aerosol containers are stored in well-ventilated areas.</li> </ul> <p>Verify that only approved containers and portable tanks are used.</p> <p>(NOTE: Metal containers and portable tanks meeting Department of Transportation requirements are considered acceptable.)</p> <p>Verify that flammable liquid containers meet the constraints out lined in Appendix 3-2, except that glass or plastic containers of no more than 1 gal capacity may be used for a Category 1 or 2 flammable liquid if:</p> <ul style="list-style-type: none"> <li>– the liquid would be rendered unfit for its intended use by contact with metal or would excessively corrode a metal container</li> <li>– the user's process either would require more than 1 pint of a Category 1 flammable liquid or more than 1 quart of a Category 2 flammable liquid of a single assay lot to be used at one time, or would require the maintenance of an analytical standard liquid of a quality which is not met by the specified standards of liquids available, and the quantity of the analytical standard liquid required to be used in any one control process exceeds one-sixteenth the capacity of the container allowed under Appendix 3-2 for the category of liquid.</li> </ul> <p>Verify that each portable tank has one or more devices installed in the top with sufficient emergency venting capacity to limit internal pressure under fire exposure conditions to 10 psig or 30 percent of the bursting pressure of the tank, whichever is greater.</p> <p>Verify that, for portable tanks, at least one pressure-activated vent having a minimum capacity of 6000 cubic feet of free air (14.7 psia and 60° F) is used and it is set to open at not less than 5 psig.</p> <p>Verify that, for portable tanks, if fusible vents are used, they are actuated by elements that operate at a temperature not exceeding 300° F.</p>

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<p><b>HM.35.3.US.</b> Flammable liquids stored inside of buildings shall not be stored in ways that limit the use of exits, stairways, or areas normally used for the safe egress of people (29 CFR 1910.106(d)(1)(ii) and 1910.106(d)(5)(i)) <b>[Revised April 2012]</b>.</p>	<p>(NOTE: These standards do not apply to:</p> <ul style="list-style-type: none"> <li>– storage of containers in service stations (see the checklist items addressing 29 CFR 1910.106(g) in PO.45 of the POL Management section)</li> <li>– storage of containers in bulk plants, refineries, chemical plants, or distilleries</li> <li>– Category 1, 2, or 3 flammable liquids in the fuel tanks of a motor vehicle, aircraft, boat, or portable or stationary engine</li> <li>– flammable paints, oils, varnishes, or similar mixtures used for painting or maintenance when not kept for a period in excess of 30 days</li> <li>– beverages when packaged in individual containers not greater than 1 gal.)</li> </ul> <p>(NOTE: A “safety can” is defined as an approved container, of not more than 5 gal capacity, having a spring-closing lid, spout cover, and so designed that it will safely relieve internal pressure when subjected to fire exposure (29 CFR 1910.106(a)(29).)</p> <p>(NOTE: The requirements pertaining to the handling, storage, and use of flammable liquids with a flashpoint below 199.4 °F outlined through 29 CFR 1910.106 (checklist items HM.35.2.US through HM.40.3.US.) do not apply to the following (29 CFR 1910.106(j)):</p> <ul style="list-style-type: none"> <li>– bulk transportation of flammable liquids</li> <li>– storage, handling, and use of fuel oil tanks and containers connected with oil burning equipment</li> <li>– storage of flammable liquids on farms</li> <li>– liquids without a flashpoint that may be flammable under some conditions, such as halogenated hydrocarbons and mixtures containing halogenated hydrocarbons</li> <li>– mists, sprays, or foams, except in flammable aerosols</li> <li>– the following facilities when they meet NFPA standards: <ul style="list-style-type: none"> <li>– drycleaning plants</li> <li>– manufacture of organic coatings</li> <li>– solvent extraction plants</li> <li>– stationary combustion engines and gas turbines.)</li> </ul> </li> </ul> <p>Verify that flammables liquids stored inside of buildings, including stock for sale, is not stored so as to limit use of exits, stairways, or areas normally used for the safe egress of people.</p> <p>(NOTE: These standards do not apply to:</p> <ul style="list-style-type: none"> <li>– storage of containers in service stations</li> <li>– Category 1, 2, or 3 flammable liquids in the fuel tanks of a motor vehicle, aircraft, boat, or portable or stationary engine</li> <li>– flammable paints, oils, varnishes, or similar mixtures used for painting or maintenance when not kept for a period in excess of 30 days</li> <li>– beverages when packaged in individual containers not greater than 1 gal.)</li> </ul>

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<p><b>HM.35.4.US.</b> Storage cabinets used for the storage of flammable liquids must meet specific requirements (29 CFR 1910.106(d)(1)(ii) and 1910.106(d)(3)) [Revised April 1995; Revised April 2012; Revised July 2013].</p>	<p>(NOTE: The requirements pertaining to the handling, storage, and use of flammable liquids with a flashpoint below 199.4 °F outlined through 29 CFR 1910.106 (checklist items HM.35.2.US. through HM.40.3.US.) do not apply to the following (29 CFR 1910.106(j)):</p> <ul style="list-style-type: none"> <li>– bulk transportation of flammable liquids</li> <li>– storage, handling, and use of fuel oil tanks and containers connected with oil burning equipment</li> <li>– storage of flammable liquids on farms</li> <li>– liquids without a flashpoint that may be flammable under some conditions, such as halogenated hydrocarbons and mixtures containing halogenated hydrocarbons</li> <li>– mists, sprays, or foams, except in flammable aerosols</li> <li>– the following facilities when they meet NFPA standards: <ul style="list-style-type: none"> <li>– drycleaning plants</li> <li>– manufacture of organic coatings</li> <li>– solvent extraction plants</li> <li>– stationary combustion engines and gas turbines.)</li> </ul> </li> </ul> <p>(NOTE: These standards do not apply to:</p> <ul style="list-style-type: none"> <li>– storage of containers in service stations</li> <li>– Category 1, 2, or 3 flammable liquids in the fuel tanks of a motor vehicle, aircraft, boat, or portable or stationary engine</li> <li>– flammable paints, oils, varnishes, or similar mixtures used for painting or maintenance when not kept for a period in excess of 30 days</li> <li>– beverages when packaged in individual containers not greater than 1 gal.)</li> </ul> <p>Verify that storage cabinets meet the following:</p> <ul style="list-style-type: none"> <li>– not more than 60 gal of Category 1, 2, or 3 flammable liquids, nor more than 120 gal of Category 4 flammable liquids are stored in a storage cabinet</li> <li>– the cabinets are fire-resistant</li> <li>– cabinets are conspicuously labeled <b>FLAMMABLE--Keep Fire Away.</b></li> </ul> <p>Verify that metal cabinets are constructed as follows:</p> <ul style="list-style-type: none"> <li>– the bottom, top, door, and sides are at least number 18 gage sheet iron and double walled with 1.5 in. air space</li> <li>– joints are riveted, welded, or made tight by an equally effective means</li> <li>– the door has a three point lock</li> <li>– the door sill is raised at least 2 in. above the bottom of the cabinet.</li> </ul> <p>Verify that wooden cabinets are constructed as follows:</p> <ul style="list-style-type: none"> <li>– the bottoms, sides, and top are an approved grade of plywood at least 1-in. thick which will not break down or delaminate under fire conditions</li> <li>– all joints are rabbeted and fastened in two directions with flathead woodscrews</li> </ul>

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<p><b>HM.35.5.US.</b> Storage cabinets used for the storage of flammable/combustible liquids should meet specific requirements (MP) <b>[Revised May 1996]</b>.</p> <p><b>HM.35.6.US.</b> Flammable liquid storage rooms inside of buildings must meet certain specifications (29 CFR 1910.106(d)(1)(ii) and 1910.106(d)(4)) <b>[Revised April 1995; Revised April 2012]</b>.</p>	<ul style="list-style-type: none"> <li>– there is a rabbeted overlap of at least 1 in. if more than one door is used</li> <li>– hinges are mounted so that they will not lose their holding capacity due to loosening or burning out of the screws when subjected to the fire test.</li> </ul> <p>(NOTE: The requirements pertaining to the handling, storage, and use of flammable liquids with a flashpoint below 199.4 °F outlined through 29 CFR 1910.106 (checklist items HM.35.2.US. through HM.40.3.US.) do not apply to the following (29 CFR 1910.106(j)):</p> <ul style="list-style-type: none"> <li>– bulk transportation of flammable liquids</li> <li>– storage, handling, and use of fuel oil tanks and containers connected with oil burning equipment</li> <li>– storage of flammable liquids on farms</li> <li>– liquids without a flashpoint that may be flammable under some conditions, such as halogenated hydrocarbons and mixtures containing halogenated hydrocarbons</li> <li>– mists, sprays, or foams, except in flammable aerosols</li> <li>– the following facilities when they meet NFPA standards: <ul style="list-style-type: none"> <li>– drycleaning plants</li> <li>– manufacture of organic coatings</li> <li>– solvent extraction plants</li> <li>– stationary combustion engines and gas turbines.)</li> </ul> </li> </ul> <p>(NOTE: According to an OSHA standard interpretation issued 19 April 1999, small propane and/or ether gas cylinders may not be stored in flammable liquids storage cabinets with flammable liquids.  <a href="https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=INTERPRETATIONS&amp;p_id=22731">https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=INTERPRETATIONS&amp;p_id=22731</a>.)</p> <p>Verify that storage cabinets meet the following:</p> <ul style="list-style-type: none"> <li>– materials within the cabinet are orderly</li> <li>– no containers within the cabinet are open.</li> </ul> <p>(NOTE: These standards do not apply to:</p> <ul style="list-style-type: none"> <li>– storage of containers in service stations</li> <li>– Category 1, 2, or 3 flammable liquids in the fuel tanks of a motor vehicle, aircraft, boat, or portable or stationary engine</li> <li>– flammable paints, oils, varnishes, or similar mixtures used for painting or maintenance when not kept for a period in excess of 30 days</li> <li>– beverages when packaged in individual containers not greater than 1 gal.)</li> </ul> <p>Verify that inside storage rooms are constructed to meet the required fire-resistive rating for their use.</p>

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	<p>(NOTE: Construction shall comply with the test specifications set forth in Standard Methods of Fire Tests of Building Construction and Materials, NFPA 251–1969.)</p> <p>Verify that, where an automatic sprinkler system is provided, the system shall be designed and installed in an acceptable manner.</p> <p>Verify that openings to other rooms or buildings are provided with noncombustible liquid-tight raised sills or ramps at least 4 in high, or the floor in the storage area is at least 4 inches below the surrounding floor.</p> <p>(NOTE: A permissible alternate to the sill or ramp is an open-grated trench inside of the room which drains to a safe location.)</p> <p>Verify that openings are provided with approved self-closing fire doors.</p> <p>Verify that the room is liquid-tight where the walls join the floor.</p> <p>Verify that, where other portions of the building or other properties are exposed, windows are protected as set forth in the Standard for Fire Doors and Windows, NFPA No. 80–1968 for Class E or F openings.</p> <p>(NOTE: Wood at least 1 inch nominal thickness may be used for shelving, racks, dunnage, scuffboards, floor overlay, and similar installations.)</p> <p>Verify that storage in inside rooms complies with Appendix 3-3.</p> <p>Verify that electrical wiring and equipment located in inside storage rooms used for Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100 °F (37.8 °C), is approved under 29 CFR 1910, subpart S for Class I, Division 2 Hazardous Locations; for Category 3 flammable liquids with a flashpoint at or above 100 °F (37.8 °C) and Category 4 flammable liquids, are approved for general use.</p> <p>Verify that every inside storage room is provided with either a gravity or a mechanical exhaust ventilation system.</p> <p>Verify that the ventilation system is designed to provide for a complete change of air within the room at least six times per hour.</p> <p>Verify that, if a mechanical exhaust system is used, it is controlled by a switch located outside of the door.</p> <p>Verify that the ventilating equipment and any lighting fixtures are operated by the same switch.</p>

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<p><b>HM.35.7.US.</b> The storage of flammable liquids in warehouses or storage buildings will meet specific requirements (29 CFR 1910.106(d)(1)(ii) and 1910.106(d)(5)(vi)) <b>[Revised December 1997; Revised April 2012].</b></p>	<p>Verify that a pilot light is installed adjacent to the switch if Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100 °F (37.8 °C), are dispensed within the room.</p> <p>Verify that, where gravity ventilation is provided, the fresh air intake, as well as the exhaust outlet from the room, is on the exterior of the building in which the room is located.</p> <p>Verify that, in every inside storage room there is maintained one clear aisle at least 3 ft wide.</p> <p>Verify that containers over 30 gal capacity are not stacked one upon the other.</p> <p>Verify that dispensing is by approved pump or self-closing faucet only.</p> <p>(NOTE: The requirements pertaining to the handling, storage, and use of flammable liquids with a flashpoint below 199.4 °F outlined through 29 CFR 1910.106 (checklist items HM.35.2.US. through HM.40.3.US.) do not apply to the following (29 CFR 1910.106(j)):</p> <ul style="list-style-type: none"> <li>– bulk transportation of flammable liquids</li> <li>– storage, handling, and use of fuel oil tanks and containers connected with oil burning equipment</li> <li>– storage of flammable liquids on farms</li> <li>– liquids without a flashpoint that may be flammable under some conditions, such as halogenated hydrocarbons and mixtures containing halogenated hydrocarbons</li> <li>– mists, sprays, or foams, except in flammable aerosols</li> <li>– the following facilities when they meet NFPA standards: <ul style="list-style-type: none"> <li>– drycleaning plants</li> <li>– manufacture of organic coatings</li> <li>– solvent extraction plants</li> <li>– stationary combustion engines and gas turbines.)</li> </ul> </li> </ul> <p>(NOTE: These standards do not apply to:</p> <ul style="list-style-type: none"> <li>– storage of containers in service stations</li> <li>– Category 1, 2, or 3 flammable liquids in the fuel tanks of a motor vehicle, aircraft, boat, or portable or stationary engine</li> <li>– flammable paints, oils, varnishes, or similar mixtures used for painting or maintenance when not kept for a period in excess of 30 days</li> <li>– beverages when packaged in individual containers not greater than 1 gal.)</li> </ul> <p>Verify that the following requirements are met:</p> <ul style="list-style-type: none"> <li>– if the storage area is located 50 ft or less from a building or line of adjoining property that may be built upon, the exposing wall is a blank wall having a fire-resistance rating of at least 2 h</li> </ul>

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<p><b>HM.35.8.US.</b> Flammable liquids stored outside of buildings must meet certain storage and handling criteria (29 CFR 1910.106(d)(1)(ii) and 1910.106(d)(6)) [<b>Revised April 1995; Revised April 2012</b>].</p>	<ul style="list-style-type: none"> <li>– the storage arrangements outlined in Appendix 3-4 are met</li> <li>– containers are separated by pallets or dunnage when necessary to provide stability and prevent excess stress on container walls</li> <li>– portable tanks that are stored over one tier high are designed to nest securely</li> <li>– no pile is closer than 3 ft to the nearest beam, chord, girder, or other obstruction</li> <li>– piles are 3 ft below sprinkler deflectors or discharge points of water spray</li> <li>– aisles are at least 3-ft wide when necessary for access to doors, windows, or standpipe connections.</li> </ul> <p>(NOTE: The requirements pertaining to the handling, storage, and use of flammable liquids with a flashpoint below 199.4 °F outlined through 29 CFR 1910.106 (checklist items HM.35.2.US. through HM.40.3.US.) do not apply to the following (29 CFR 1910.106(j)):</p> <ul style="list-style-type: none"> <li>– bulk transportation of flammable liquids</li> <li>– storage, handling, and use of fuel oil tanks and containers connected with oil burning equipment</li> <li>– storage of flammable liquids on farms</li> <li>– liquids without a flashpoint that may be flammable under some conditions, such as halogenated hydrocarbons and mixtures containing halogenated hydrocarbons</li> <li>– mists, sprays, or foams, except in flammable aerosols</li> <li>– the following facilities when they meet NFPA standards: <ul style="list-style-type: none"> <li>– drycleaning plants</li> <li>– manufacture of organic coatings</li> <li>– solvent extraction plants</li> <li>– stationary combustion engines and gas turbines.)</li> </ul> </li> </ul> <p>Verify that outdoor flammable liquids storage meets the following:</p> <ul style="list-style-type: none"> <li>– no more than 1100 gal of flammable liquids is stored adjacent to buildings located on the same premises unless 10 ft or more exists between buildings and the nearest flammable container</li> <li>– the storage area is graded to divert spills or is surrounded by a curb at least 6-in. high</li> <li>– when curbs are used, there is a provision for draining of accumulated water and the drains terminate in a safe location and are accessible to operate when fire conditions exist</li> <li>– the storage area is protected against tampering and kept free of waste and other combustible materials</li> <li>– all containers bear contents, labels, and hazard markings</li> <li>– total quantity and arrangement of liquids outside a building complies with the requirements in Appendix 3-4.</li> </ul> <p>(NOTE: These standards do not apply to:</p> <ul style="list-style-type: none"> <li>– storage of containers in service stations</li> </ul>

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<p><b>HM.35.9.US.</b> Areas where flammable liquids are stored must meet certain fire protection standards (29 CFR 1910.106(d)(1)(ii) and 1910.106(d)(7)) [Revised April 1995; Revised April 2005; Revised April 2012].</p>	<ul style="list-style-type: none"> <li>– Category 1, 2, or 3 flammable liquids in the fuel tanks of a motor vehicle, aircraft, boat, or portable or stationary engine</li> <li>– flammable paints, oils, varnishes, or similar mixtures used for painting or maintenance when not kept for a period in excess of 30 days</li> <li>– beverages when packaged in individual containers not greater than 1 gal.)</li> </ul> <p>(NOTE: The requirements pertaining to the handling, storage, and use of flammable liquids with a flashpoint below 199.4 °F outlined through 29 CFR 1910.106 (checklist items HM.35.2.US. through HM.40.3.US.) do not apply to the following (29 CFR 1910.106(j)):</p> <ul style="list-style-type: none"> <li>– bulk transportation of flammable liquids</li> <li>– storage, handling, and use of fuel oil tanks and containers connected with oil burning equipment</li> <li>– storage of flammable liquids on farms</li> <li>– liquids without a flashpoint that may be flammable under some conditions, such as halogenated hydrocarbons and mixtures containing halogenated hydrocarbons</li> <li>– mists, sprays, or foams, except in flammable aerosols</li> <li>– the following facilities when they meet NFPA standards: <ul style="list-style-type: none"> <li>– drycleaning plants</li> <li>– manufacture of organic coatings</li> <li>– solvent extraction plants</li> <li>– stationary combustion engines and gas turbines.)</li> </ul> </li> </ul> <p>Verify that all flammable liquids storage locations meet the following:</p> <ul style="list-style-type: none"> <li>– a suitable fire control device is available at locations where flammables are stored</li> <li>– at least one 12-B rated portable fire extinguisher is located outside and within 10 ft of a door opening into any room for storage</li> <li>– at least one 12-B rated portable fire extinguisher is located within 10 to 25 ft of any Category 1, 2, or 3 flammable liquid storage area outside of a storage room, but inside a building</li> <li>– fire extinguishing sprinklers or systems meet the standards in 29 CFR 1910.159</li> <li>– no smoking or open flame is permitted within 50 ft and signs are posted</li> <li>– no water-reactive materials are stored in the same room with flammable liquids.</li> </ul> <p>(NOTE: These standards do not apply to:</p> <ul style="list-style-type: none"> <li>– storage of containers in service stations</li> <li>– Category 1, 2, or 3 flammable liquids in the fuel tanks of a motor vehicle, aircraft, boat, or portable or stationary engine</li> <li>– flammable paints, oils, varnishes, or similar mixtures used for painting or maintenance when not kept for a period in excess of 30 days</li> <li>– beverages when packaged in individual containers not greater than 1 gal.)</li> </ul>

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	<p>(NOTE: The requirements pertaining to the handling, storage, and use of flammable liquids with a flashpoint below 199.4 °F outlined through 29 CFR 1910.106 (checklist items HM.35.2.US through HM.40.3.US.) do not apply to the following (29 CFR 1910.106(j)):</p> <ul style="list-style-type: none"> <li>– bulk transportation of flammable liquids</li> <li>– storage, handling, and use of fuel oil tanks and containers connected with oil burning equipment</li> <li>– storage of flammable liquids on farms</li> <li>– liquids without a flashpoint that may be flammable under some conditions, such as halogenated hydrocarbons and mixtures containing halogenated hydrocarbons</li> <li>– mists, sprays, or foams, except in flammable aerosols</li> <li>– the following facilities when they meet NFPA standards: <ul style="list-style-type: none"> <li>– drycleaning plants</li> <li>– manufacture of organic coatings</li> <li>– solvent extraction plants</li> <li>– stationary combustion engines and gas turbines.)</li> </ul> </li> </ul>



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<p><b>FLAMMABLE/ COMBUSTIBLE LIQUIDS STORAGE</b></p> <p><b>HM.40 Industrial Areas</b></p> <p><b>HM.40.1.US.</b> Areas where flammable materials are stored, dispensed, or used in industrial plants will meet specific guidelines (29 CFR 1910.106(e)(1), 1910.106(e)(5), 1910.106(e)(6), 1910.106(e)(8), and 1910.106(e)(9)) [Revised April 1995; Revised April 2012].</p>	<p>(NOTE: Checklist items HM.40.1.US. through HM.40.3.US. apply to industrial plants where one of the following is true:</p> <ul style="list-style-type: none"> <li>– the use of flammable liquid is incidental to the principal business</li> <li>– flammable liquids are handled or used only in unit physical operations such as mixing, drying, evaporating, filtering, distillation, and similar operations that do not involve chemical reactions.</li> </ul> <p>Examples are plants compounding cosmetics, pharmaceuticals, solvents, cleaning fluids, insecticides, and similar types of activities. The exceptions to this applicability are where industrial plants involve chemical reactions such as oxidation, reduction, halogenations, hydrogenation, alkylation, polymerization, and other chemical processes. In those cases, the industrial plants are required to meet the standards for processes detailed in 29 CFR 1910.106(h) (see text).)</p> <p>Verify that the following provisions are met:</p> <ul style="list-style-type: none"> <li>– portable fire extinguishers and fire control equipment are in place in quantity and type as needed for the special hazards of operation and storage at the site</li> <li>– water is available in a volume and adequate pressure to supply water hose streams, foam-producing equipment, automatic sprinklers, or water spray systems as the need is indicated by the special hazards of operation, dispensing, and storage</li> <li>– special extinguishing equipment such as that utilizing foam, inert gas, or dry chemical is provided as the need is indicated by the special hazards of operation dispensing and storage</li> <li>– when indicated by special hazards of operation, flammable liquids, processing equipment, major piping, or supporting steel is protected by approved water spray systems, deluge systems, approved fire resistant coatings, insulation, or a combination of these</li> <li>– plant fire protection facilities are adequately maintained and periodically inspected to ensure that they are always in satisfactory operating condition and will serve their purpose in time of emergency</li> <li>– adequate precautions are taken to prevent sources of ignition of flammable vapors</li> <li>– Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100 °F [37.8 °C] are not dispensed into containers unless nozzles and containers are electrically interconnected</li> <li>– hot work such as welding or cutting operations, use of spark-producing power tools, and chipping operations are only done under the supervision of an individual in responsible charge.</li> </ul>

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<p><b>HM.40.2.US.</b> Incidental storage of flammable liquids in industrial areas must conform to certain requirements (29 CFR 1910.106(e)(1) and 1910.106(e)(2)) <b>[Revised April 2012]</b>.</p>	<p>Verify that the following housekeeping practices are maintained:</p> <ul style="list-style-type: none"> <li>– maintenance and operating practices control leakage and prevent the accidental escape of flammable liquids</li> <li>– spills are cleaned up promptly</li> <li>– adequate aisles are maintained for unobstructed movement of personnel so that fire protection equipment can be brought to bear on any part of flammable liquid storage, use, or any unit physical operation</li> <li>– combustible waste material and residues in a building or unit operating area are kept to a minimum, stored in covered metal containers, and disposed of daily</li> <li>– the grounds area around the buildings and unit operating areas are kept free of weeds, trash or other unnecessary combustibles.</li> </ul> <p>Verify that plant fire facilities are maintained and periodically inspected and tested to ensure they are in satisfactory working condition.</p> <p>(NOTE: Checklist items HM.40.1.US. through HM.40.3.US. apply to industrial plants where one of the following is true:</p> <ul style="list-style-type: none"> <li>– the use of flammable liquid is incidental to the principal business</li> <li>– flammable liquids are handled or used only in unit physical operations such as mixing, drying, evaporating, filtering, distillation, and similar operations that do not involve chemical reactions.</li> </ul> <p>Examples are plants compounding cosmetics, pharmaceuticals, solvents, cleaning fluids, insecticides, and similar types of activities. The exceptions to this applicability are where industrial plants involve chemical reactions such as oxidation, reduction, halogenations, hydrogenation, alkylation, polymerization, and other chemical processes. In those cases, the industrial plants are required to meet the standards for processes detailed in 29 CFR 1910.106(h) [see text].)</p> <p>Verify that flammable liquids are stored in closed containers.</p> <p>Verify that the storage areas meet the requirements outlined in 29 CFR 1910.106(d)(3) through 1910.106(d)(4) as listed in checklist items HM.35.4.US. and HM.35.6.US. except that:</p> <ul style="list-style-type: none"> <li>– the quantity of liquid that is located outside of an inside storage room or storage cabinet in a building or in any one fire area of a building does not exceed: <ul style="list-style-type: none"> <li>– 25 gal of Category 1 flammable liquids in containers</li> <li>– 120 gal of Category 2, 3, or 4 flammable liquids in containers</li> <li>– 660 gal of Category 2, 3, or 4 flammable liquids in a single portable tank</li> </ul> </li> <li>– where large quantities of flammable liquids are needed, storage may be in tanks.</li> </ul>

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<p><b>HM.40.3.US.</b> Those areas in which flammable liquids are used in unit operations such as mixing, drying, evaporating, filtering, or distillation are required to meet specific operating standards (29 CFR 1910.106(e)(1), 1910.106(e)(3)(i) and 1910.106(e)(3)(iii) through 1910.106(e)(3)(vi)) <b>[Revised April 2012]</b>.</p>	<p>Verify that areas in which flammable liquids are transferred from one container to another container are separated from other operations in the building by an adequate distance or by fire-resistant construction.</p> <p>Verify that adequate drainage or other means is provided to contain spills, and adequate natural or mechanical ventilation is present.</p> <p>Verify that the following practices are observed at the point of final use:</p> <ul style="list-style-type: none"> <li>– Category 1 or 2 flammable liquids or Category 3 flammable liquids with a flashpoint below 100 °F [37.8 °C], are kept in covered containers when not actually in use</li> <li>– where flammable liquids are used or handled, means are provided to dispose promptly and safely of spills and leaks</li> <li>– Category 1 or 2 flammable liquids or Category 3 flammable liquids with a flashpoint below 100 °F [37.8 °C], are only used when there are no open flames or other sources of ignition within the possible path of vapor travel</li> <li>– flammable liquids are drawn from or transferred into vessels, containers, or portable tanks within a building only through a closed piping system, from safety cans, by means of a device drawing through the top, or from a container or portable tanks by gravity through an approved self closing valve.</li> </ul> <p>(NOTE: Transferring flammable liquids by means of air pressure on the container or portable tank is prohibited.)</p> <p>(NOTE: Checklist items HM.40.1.US. through HM.40.3.US. apply to industrial plants where one of the following is true:</p> <ul style="list-style-type: none"> <li>– the use of flammable liquid is incidental to the principal business</li> <li>– flammable liquids are handled or used only in unit physical operations such as mixing, drying, evaporating, filtering, distillation, and similar operations that do not involve chemical reactions.</li> </ul> <p>Examples are plants compounding cosmetics, pharmaceuticals, solvents, cleaning fluids, insecticides, and similar types of activities. The exceptions to this applicability are where industrial plants involve chemical reactions such as oxidation, reduction, halogenations, hydrogenation, alkylation, polymerization, and other chemical processes. In those cases, the industrial plants are required to meet the standards for processes detailed in 29 CFR 1910.106(h) (see text).)</p> <p>Verify that areas where unstable liquids are handled or small scale unit chemical processes are carried on are separated from the remainder of the plant by a fire wall of 2-h minimum fire resistance rating.</p> <p>Verify that emergency drainage systems are provided to direct flammable liquid leakage and fire protection water to a safe location.</p> <p>(NOTE: This may require curbs, scuppers, or special drainage systems to control the spread of fire.)</p>

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	<p>Verify that, if emergency drainage systems are connected to public sewers or discharged into public waterways, they are equipped with traps or separator.</p> <p>Verify that, when Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100 °F [37.8 °C], are being used, ventilation is provided at a rate of not less than 1 ft<sup>3</sup>/min/ft<sup>2</sup> of solid floor area through either natural or mechanical means with discharge or exhaust to a safe location outside the building.</p> <p>Verify that ventilation is arranged to include all floor areas or pits where flammable vapors may collect.</p> <p>Verify that equipment used in a building and the ventilation of the building are designed so as to limit flammable vapor-air mixtures under normal operating conditions to the interior of equipment, and to not more than 5 ft from equipment which exposes Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100 °F (37.8 °C), to the air.</p> <p>(NOTE: Examples of such equipment are dispensing stations, open centrifuges, plate and frame filters, open vacuum filters, and surfaces of open equipment.)</p>

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<p><b>HM.45</b></p> <p><b>COMPRESSED GASES STORAGE</b></p> <p><b>HM.45.1.US.</b> The in-plant storage, handling, and utilization of all compressed gases in cylinders, portable tanks, rail tankers, or motor vehicles must be done according to the Compressed Gas Association Pamphlet P-1-1-1965 (29 CFR 1910.101(b)) [Citation Revised October 2003; Revised July 2011].</p>	<p>(NOTE: This checklist item focuses primarily on the storage of compressed gas cylinders. See the text of the Compressed Gas Association Pamphlet P-1-1-1965 for further details on use, handling, and transportation of compressed gas cylinders.)</p> <p>Verify that compressed gas cylinders are stored in accordance with all local, state, and municipal regulations in accordance with appropriate standards of the Compressed Gas Association and the National Fire Protection Association.</p> <p>Verify that cylinder storage areas are prominently posted with the names of the gases to be stored.</p> <p>Verify that, where gases of different types are stored at the same location, cylinders are grouped by types of gas, and the groups arranged to take into account the gases containers (e.g., flammable gases are not stored near oxidizing gases).</p> <p>Verify that charged and empty cylinders are stored separately with the storage layout planned so that cylinders comprising old stock can be removed first with a minimum handling of other cylinders.</p> <p>Verify that storage rooms are dry, cool and well ventilated.</p> <p>Verify that, where practical, storage rooms are fire-resistant.</p> <p>Verify that storage in subsurface locations is avoided.</p> <p>Verify that cylinders containing compressed gases are not stored at temperatures above 125° F or near radiators or other sources of heat.</p> <p>(NOTE: Cylinders may be stored in the sun except in localities where extreme temperatures prevail, or in the case of certain gases where the supplier's recommendation for shading will be observed.)</p> <p>Verify that cylinders are not stored near highly flammable substances such as oil, gasoline, or waste.</p> <p>Verify that cylinders are not exposed to continuous dampness.</p> <p>Verify that cylinders are not stored near salt or other corrosive chemicals or fumes.</p> <p>(NOTE: Cylinders may be stored in the open but should be protected from the ground beneath to prevent rusting.)</p>

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	<p>Verify that cylinders are protected from any object that will produce a cut or other abrasion in the surface of the metal.</p> <p>Verify that cylinders are not stored near elevators or gangways, or in locations where heavy moving objects may strike or fall on them.</p> <p>Verify that cylinders are never used as rollers, supports, or for any purpose other than to contain the content as received.</p> <p>Verify that, where caps are provided for valve protection, caps are kept on cylinders in storage.</p> <p>Verify that flammable gases are not stored near highly flammable solvents, combustible waste material, and similar substances, or near unprotected electrical connections, gas flames, or other sources of ignition.</p> <p>(NOTE: Flammable compressed gases include the following: acetylene; allene; butadiene; butane; 1-butene; 2-butene; 1-chloro-1, 1-difluoroethane; chlorotrifluoroethylene; chloropropane; deuterium; 1,1-difluoroethane; dimethylether; ethane; ethylacetylene; ethylene; hydrogen; liquid hydrogen; isobutane; isobutylene; liquefied petroleum gas; methane; methyl acetylene; methyl acetylene-propadiene mix (MAPP); methyl chloride; methyl fluoride; methyl vinyl ether; natural gas; propane; propylene; trifluoroethane; vinyl bromide; vinyl chloride; vinyl fluoride.)</p> <p>(NOTE: Oxidizing gases include the following: compressed air; fluorine; nitrous oxide; liquid nitrous oxide; oxygen; liquid oxygen.)</p> <p>Verify that ICC specification cylinders containing pressurized liquid oxygen, nitrogen, or argon are stored upright.</p> <p>(NOTE: The Interstate Commerce Commission (ICC) is now the Department of Transportation [DOT], which is the regulatory body that governs the use of cylinders.)</p> <p>Verify each cylinder bears the proper ICC label required for the compressed gas contained, except under certain specified conditions set forth in ICC Regulations.</p> <p>Verify that any markings, labels, decals, tags and stencil marks used for identification of content attached by the supplier have not been defaced or removed.</p>

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<b>HM.50</b>  <b>HAZARDOUS MATERIALS TRANSPORTATION</b>  <b>HM.50.1.US.</b> Shipping papers for hazardous materials are required to indicate the proper shipping name, hazard class, identification number, packing group, and quantities of materials (49 CFR 171.1(b) and 172.201) [Revised July 2002; Revised January 2003; Revised July 2005; Revised January 2006; Revised January 2010].	<p>Verify that the proper information is displayed on the shipping papers for the hazardous material.</p> <p>Verify that, when a description of hazardous material is required to be included on a shipping paper, that description conforms to the following requirements:</p> <ul style="list-style-type: none"> <li>– when a hazardous material and a material not subject to the requirements 40 CFR 172, Subpart C (49 CFR 172.200 – 271.205) are described on the same shipping paper, the required hazardous material description entries meet one of the following:             <ul style="list-style-type: none"> <li>– must be entered first</li> <li>– must be entered in a color that clearly contrasts with any description on the shipping paper of a material not subject to the requirements of this subchapter, except that a description on a reproduction of a shipping paper may be highlighted, rather than printed, in a contrasting color</li> <li>– must be identified by the entry of an “X” placed before the proper shipping name in a column captioned “HM” (NOTE: The “X” may be replaced by “RQ,” if appropriate.)</li> </ul> </li> <li>– the required shipping description on a shipping paper and all copies used for transportation purposes, are legible and printed (manually or mechanically) in English</li> <li>– unless it is specifically authorized or required, the required shipping description does not contain any code or abbreviation.</li> </ul> <p>(NOTE: A shipping paper may contain additional information concerning the material provided the information is not inconsistent with the required description. Unless otherwise permitted or required, additional information must be placed after the basic description.)</p> <p>(NOTE: A shipping paper may consist of more than one page, if each page is consecutively numbered and the first page bears a notation specifying the total number of pages included in the shipping paper. For example, “Page 1 of 4 pages.”)</p> <p>Verify that a shipping paper contains an emergency response telephone number and, if utilizing an emergency response information telephone number service provider, identify the person (by name or contract number) who has a contractual agreement with the service provider.</p> <p>Verify that each person who provides a shipping paper:</p>

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	<ul style="list-style-type: none"> <li>– retains a copy of the shipping paper, or an electronic image, that is accessible at or through its principal place of business</li> <li>– makes the shipping paper available, upon request, to an authorized official of a Federal, State, or local government agency at reasonable times and locations</li> <li>– retains shipping paper copies for hazardous waste for 3 yr after the material is accepted by the initial carrier</li> <li>– retains shipping paper copies for hazardous materials for 2 yr after the material is accepted by the initial carrier.</li> </ul> <p>Verify that each shipping paper copy includes the date of acceptance by the initial carrier, except that, for rail, vessel, or air shipments, the date on the shipment waybill, airbill, or bill of lading may be used in place of the date of acceptance by the initial carrier.</p> <p>(NOTE: A motor carrier using a shipping paper without change for multiple shipments of one or more hazardous materials having the same shipping name and identification number may retain a single copy of the shipping paper, instead of a copy for each shipment made, if the carrier also retains a record of each shipment made, to include shipping name, identification number, quantity transported, and date of shipment.)</p> <p>(NOTE: The regulations found in Title 49, Subchapter C of the CFR detail requirements for the transportation of hazardous materials. 49 CFR 171.1(b) stipulates that these requirements apply to each person who offers a hazardous material for transportation in commerce, causes a hazardous material to be transported in commerce, or transports a hazardous material in commerce and who performs or is responsible for performing a pre-transportation function, including each person performing pre-transportation functions under contract with any department, agency, or instrumentality of the executive, legislative, or judicial branch of the Federal government. Pre-transportation functions include, but are not limited to, the following:</p> <ul style="list-style-type: none"> <li>– determining the hazard class of a hazardous material</li> <li>– selecting a hazardous materials packaging</li> <li>– filling a hazardous materials packaging, including a bulk packaging</li> <li>– securing a closure on a filled or partially filled hazardous materials package or container or on a package or container containing a residue of a hazardous material</li> <li>– marking a package to indicate that it contains a hazardous material</li> <li>– labeling a package to indicate that it contains a hazardous material</li> <li>– preparing a shipping paper</li> <li>– providing and maintaining emergency response information</li> <li>– reviewing a shipping paper to verify compliance with the HMR or international equivalents</li> <li>– for each person importing a hazardous material into the U. S., providing the shipper with timely and complete information as to the HMR requirements that will apply to the transportation of the material within the United States</li> </ul>

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<p><b>HM.50.2.US.</b> Each package or container, shall be marked in accordance with specific marking requirements (49 CFR 171.1(b), 172.301 and 172.302) [Revised July 2002; Revised April 2005; Revised January 2006; Revised July 2006; Revised April 2011; Revised April 2013; Revised July 2013].</p>	<ul style="list-style-type: none"> <li>– certifying that a hazardous material is in proper condition for transportation in conformance with the requirements of the HMR</li> <li>– loading, blocking, and bracing a hazardous materials package in a freight container or transport vehicle</li> <li>– segregating a hazardous materials package in a freight container or transport vehicle from incompatible cargo</li> <li>– selecting, providing, or affixing placards for a freight container or transport vehicle to indicate that it contains a hazardous material.)</li> </ul> <p>(NOTE: See HM.50.1.US for information on the applicability of these Title 49 requirements.)</p> <p>Verify that nonbulk packaging is marked with the proper shipping name and identification number (preceded by “UN,” “NA,” or “ID” as appropriate).</p> <p>(NOTE: See the text of 49 CFR 172.101 <i>Hazardous Materials Table</i> for the appropriate name and number.)</p> <p>Verify that the identification number marking preceded by “UN”, “NA”, or “ID” are marked in characters at least 12 mm (0.47 in) high.</p> <p>Verify that packages with a maximum capacity of 30 L (8 gal) or less, 30 kg (66 lbs) maximum net mass, or cylinders with a water capacity of 60 L (16 gal) or less are marked with characters at least 6 mm (0.24 in) high.</p> <p>Verify that packages with a maximum capacity of 5 L (1.32 gal) or 5 kg (11 lbs) or less are marked in a size appropriate for the size of the package.</p> <p>(NOTE: For domestic transportation, until 1 January 2017, the identification number markings are not subject to the minimum size requirements specified above. For domestic transportation, a packaging manufactured prior to 1 January 2017 and permanently marked (e.g., by embossing or through a heat stamp process) with the appropriate identification number marking may continue in service until the end of its useful life regardless of whether the identification number markings meet the minimum size requirements specified above.)</p> <p>(NOTE: The proper shipping name for a hazardous waste is not required to include the word “waste” if the package bears the EPA marking prescribed by 40 CFR 262.32.)</p> <p>Verify that a transport vehicle or freight container containing only a single hazardous material in non-bulk packages is marked, on each side and each end with the identification number specified for the hazardous material subject to the following provisions and limitations:</p> <ul style="list-style-type: none"> <li>– each package is marked with the same proper shipping name and identification number</li> </ul>

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	<ul style="list-style-type: none"> <li>– the aggregate gross weight of the hazardous material is 4,000 kg (8,820 lb) or more</li> <li>– all of the hazardous material is loaded at one loading facility</li> <li>– the transport vehicle or freight container contains no other material, hazardous or otherwise</li> <li>– the identification number marking requirement of this paragraph does not apply to Class 1, Class 7, or to non-bulk packagings for which identification numbers are not required.</li> </ul> <p>Verify that each non-bulk packaging containing hazardous materials subject to the provisions of 49 CFR 172.203(k) are marked with the technical name in parentheses in association with the proper shipping name in accordance with the requirements and exceptions specified for display of technical descriptions on shipping papers in 49 CFR 172.203(k).</p> <p>(NOTE: A technical name should not be marked on the outer package of a Division 6.2 material (see definitions).)</p> <p>Verify that the outside of each non-bulk package authorized by a special permit is plainly and durably marked “DOT-SP” followed by the special permit number assigned.</p> <p>(NOTE: Packages authorized by an exemption issued prior to 1 October 2007, may be plainly and durably marked “DOT-E” in lieu of “DOT-SP” followed by the number assigned as specified in the most recent version of that exemption.)</p> <p>Verify that each person who offers for transportation a hazardous material in a non-bulk package marks that package with the name and address of the consignor or consignee except when the package is one of the following:</p> <ul style="list-style-type: none"> <li>– transported by highway only and will not be transferred from one motor carrier to another</li> <li>– part of a carload lot, truckload lot or freight container load, and the entire contents of the rail car, truck or freight container are shipped from one consignor to one consignee.</li> </ul> <p>(NOTE: A package which has been previously marked as required for the material it contains and on which the marking remains legible, need not be remarked.)</p> <p>Verify that no person offers for transportation or transport a specification cylinder, except a Specification 2P or 2Q container or a Specification 39 cylinder, that contains an unodorized Liquefied petroleum gas (LPG) unless it is legibly marked NON-ODORIZED or NOT ODORIZED in letters not less than 6.3 mm (0.25 in) in height near the marked proper shipping name.</p> <p>Verify that no person offers for transportation or transport a hazardous material in a bulk packaging unless the packaging is marked as required by 49 CFR 172.332</p>

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<p><b>HM.50.3.US.</b> Vehicles transporting hazardous materials on public roads are required to be properly placarded (49 CFR 171.1(b), and 172.500 through 172.558) [Revised July 2002; Revised</p>	<p>with the identification number specified for the material in the 49 CFR 172.101 table and the marking meets one of the following:</p> <ul style="list-style-type: none"> <li>– on each side and each end, if the packaging has a capacity of 3,785 L (1,000 gal) or more</li> <li>– on two opposing sides, if the packaging has a capacity of less than 3,785 L (1,000 gal)</li> <li>– for cylinders permanently installed on a tube trailer motor vehicle, on each side and each end of the motor vehicle.</li> </ul> <p>Verify that markings on bulk packagings:</p> <ul style="list-style-type: none"> <li>– have a width of at least 6.0 mm (0.24 in) and a height of at least 100 mm (3.9 in) for rail cars</li> <li>– have a width of at least 4.0 mm (0.16 in) and a height of at least 25 mm (one in) for portable tanks with capacities of less than 3,785 L (1,000 gal) and IBCs</li> <li>– have a width of at least 6.0 mm (0.24 in) and a height of at least 50 mm (2.0 in) for cargo tanks and other bulk packagings.</li> </ul> <p>Verify that the outside of each bulk package authorized by a special permit is plainly and durably marked “DOT-SP” followed by the special permit number assigned.</p> <p>(NOTE: Packages authorized by an exemption issued prior to 1 October 2007, may be plainly and durably marked “DOT-E” in lieu of “DOT-SP” followed by the number assigned as specified in the most recent version of that exemption.)</p> <p>Verify that, each bulk packaging marked with a proper shipping name, common name or identification number as required remains marked when it is emptied unless it is one of the following:</p> <ul style="list-style-type: none"> <li>– sufficiently cleaned of residue and purged of vapors to remove any potential hazard</li> <li>– refilled, with a material requiring different markings or no markings, to such an extent that any residue remaining in the packaging is no longer hazardous.</li> </ul> <p>(NOTE: Additional requirements for marking portable tanks, cargo tanks, tank cars, multi-unit tank car tanks, and other bulk packagings are prescribed in 49 CFR 172.326, 172.328, 172.330, and 172.331.)</p> <p>(NOTE: See HM.50.1.US for information on the applicability of these Title 49 requirements.)</p> <p>Determine if facility vehicles are used to transport hazardous materials on public roads.</p> <p>Verify that no person affixes or displays on a packaging, freight container, unit load device, motor vehicle or rail car any placard described in 49 CFR, Subpart F unless:</p>

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<b>April 2005; Revised April 2011].</b>	<ul style="list-style-type: none"> <li>– the material being offered or transported is a hazardous material</li> <li>– the placard represents a hazard of the hazardous material being offered or transported</li> <li>– any placarding conforms to the requirements of 49 CFR, Subpart F.</li> </ul> <p>Verify that no person affixes or displays on a packaging, freight container, unit load device, motor vehicle or rail car any sign, advertisement, slogan (such as “Drive Safely”, or device that, by its color, design, shape or content, could be confused with any required placard.</p> <p>(NOTE: The restrictions about what can be affixed or displayed do not apply to:</p> <ul style="list-style-type: none"> <li>– a bulk packaging, freight container, unit load device, transport vehicle or rail car which is placarded in conformance with TDG Regulations, the IMDG Code or the UN Recommendations</li> <li>– to the display of a BIOHAZARD marking, a “HOT” marking, a sour crude oil hazard marking, or an identification number on a white square-on-point configuration.)</li> </ul> <p>(NOTE: Placards may be displayed for a hazardous material, even when not required, if the placarding otherwise conforms to the regulatory requirements.</p> <p>Verify that proper DOT placards, as described in 49 CFR 172.504 through 172.558, are affixed to vehicles being used to transport hazardous materials offsite.</p> <p>(NOTE: Observe, if practical, the placarding of vehicles used to transport hazardous materials.)</p> <p>(NOTE: See Appendix 3-6 for sample wording of placards.)</p> <p>(NOTE: This requirement does not apply to:</p> <ul style="list-style-type: none"> <li>– infectious substances</li> <li>– hazardous materials classed as ORM-D</li> <li>– hazardous materials authorized to be offered for transportation as limited quantities when identified as such on shipping papers</li> <li>– hazardous materials authorized by this subchapter to be offered for transportation as a limited quantity when identified as such on a shipping paper or when marked as such</li> <li>– hazardous materials which are packaged as small quantities</li> <li>– combustible liquids in nonbulk packaging.)</li> </ul>
<b>HM.50.4.US.</b> The transportation of hazardous materials between buildings onsite should be accomplished in accordance with good	<p>Verify that procedures exist to manage movement of hazardous materials between buildings onsite.</p> <p>Verify that drivers are trained in spill control procedures.</p>

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<p>management practices to help ensure against spills, releases, and accidents (MP).</p> <p><b>HM.50.5.US.</b> A facility that offers for transport, accepts for transport, transfers, or otherwise handles a hazardous material must have emergency response information available (49 CFR 171.1(b), 172.600 through 172.605) [<b>Revised July 2002; Revised April 2005; Revised January 2010; Revised April 2013</b>].</p>	<p>Verify that provisions have been made for securing hazardous materials in vehicles when transporting.</p> <p>(NOTE: See HM.50.1.US for information on the applicability of these Title 49 requirements.)</p> <p>(NOTE: This checklist item applies to persons who offer for transportation, accept for transportation, transfer or otherwise handle hazardous materials during transportation.)</p> <p>Verify that no person offers for transportation, accepts for transportation, transfers, stores or otherwise handles during transportation a hazardous material unless:</p> <ul style="list-style-type: none"> <li>– emergency response information is immediately available for use at all times the hazardous material is present</li> <li>– emergency response information, including the emergency response telephone number, is immediately available to any person who, as a representative of a Federal, State or local government agency, responds to an incident involving a hazardous material, or is conducting an investigation which involves a hazardous material.</li> </ul> <p>(NOTE: The requirements of this checklist item do not apply to hazardous material which is excepted from the shipping paper requirements or a material properly classified as an ORM-D.)</p> <p>(NOTE: The term “emergency response information” means information that can be used in the mitigation of an incident involving hazardous materials.)</p> <p>Verify that emergency response information contains, at a minimum, the following information:</p> <ul style="list-style-type: none"> <li>– the basic description and technical name of the hazardous material as required by 49 CFR 172.202 and 172.203(k), the ICAO Technical Instructions, the IMDG Code, or the TDG Regulations, as appropriate</li> <li>– immediate hazards to health</li> <li>– risks of fire or explosion</li> <li>– immediate precautions to be taken in the event of an accident or incident</li> <li>– immediate methods for handling fires</li> <li>– initial methods for handling spills or leaks in the absence of fire</li> <li>– preliminary first aid measures.</li> </ul> <p>Verify that the information required for a hazardous material is:</p> <ul style="list-style-type: none"> <li>– printed legibly in English</li> <li>– available for use away from the package containing the hazardous material</li> <li>– presented on a shipping paper</li> </ul>

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	<ul style="list-style-type: none"> <li>– presented in a document, other than a shipping paper, that includes both the basic description and technical name of the hazardous material as required by 49 CFR 172.202 and 172.203(k), the ICAO Technical Instructions, the IMDG Code, or the TDG Regulations, as appropriate, and the emergency response information required by this subpart (e.g., a safety data sheet)</li> <li>– related to the information on a shipping paper, a written notification to pilot-in-command, or a dangerous cargo manifest, in a separate document (e.g., an emergency response guidance document), in a manner that cross-references the description of the hazardous material on the shipping paper with the emergency response information contained in the document.</li> </ul> <p>Verify that each carrier who transports a hazardous material maintains the required information in the same manner as prescribed for shipping papers, except that the information is maintained in the same manner aboard aircraft as the notification of pilot-in-command, and aboard vessels in the same manner as the dangerous cargo manifest.</p> <p>Verify that the emergency response information is immediately accessible to train crew personnel, drivers of motor vehicles, flight crew members, and bridge personnel on vessels for use in the event of incidents involving hazardous materials.</p> <p>Verify that each operator of a facility where a hazardous material is received, stored or handled during transportation, maintains the required information whenever the hazardous material is present.</p> <p>Verify that the emergency response information is in a location that is immediately accessible to facility personnel in the event of an incident involving the hazardous material.</p> <p>Verify that a person who offers a hazardous material for transportation provides an emergency response telephone number, including the area code, for use in the event of an emergency involving the hazardous material.</p> <p>Verify that, for telephone numbers outside the United States, the international access code or the “+” (plus) sign, country code, and city code, as appropriate, are included.</p> <p>Verify that the emergency response telephone number is:</p> <ul style="list-style-type: none"> <li>– monitored at all times the hazardous material is in transportation, including storage incidental to transportation</li> <li>– the telephone number of a person who is either knowledgeable of the hazardous material being shipped and has comprehensive emergency response and incident mitigation information for that material, or has immediate access to a person who possesses such knowledge and information</li> <li>– entered on a shipping paper, one of the following:</li> </ul>

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	<ul style="list-style-type: none"> <li>– immediately following the description of the hazardous material required by 49 CFR, Subpart C</li> <li>– entered once on the shipping paper in a prominent, readily identifiable, and clearly visible manner that allows the information to be easily and quickly found, such as by highlighting, use of a larger font or a font that is a different color from other text and information, or otherwise setting the information apart to provide for quick and easy recognition.</li> </ul> <p>(NOTE: A telephone number that requires a call back (such as an answering service, answering machine, or beeper device) is not acceptable.)</p> <p>(NOTE: The provision allowing the telephone number to be entered once on the shipping paper in a prominent, readily identifiable, and clearly visible manner may be used only if the telephone number applies to each hazardous material entered on the shipping paper, and if it is indicated that the telephone number is for emergency response information (for example: “EMERGENCY CONTACT: * * *”).</p> <p>Verify that the required emergency response telephone number meets one of the following::</p> <ul style="list-style-type: none"> <li>– the number of the person offering the hazardous material for transportation when that person is also the emergency response provider</li> <li>– the number of an agency or organization capable of, and accepting responsibility for, providing the required detailed information to mitigate an incident with the material being shipped.</li> </ul> <p>Verify that the name of the person identified with the emergency response telephone number is entered on the shipping paper immediately before, after, above, or below the emergency response telephone number unless the name is entered elsewhere on the shipping paper in a prominent, readily identifiable, and clearly visible manner that allows the information to be easily and quickly found.</p> <p>Verify that the person who is registered with the emergency response provider ensures that the agency or organization has received current information on the material before it is offered for transportation.</p> <p>Verify that the person who is registered with the emergency response provider is identified by name or contract number on the shipping paper immediately before, after, above, or below the emergency response telephone number in a prominent, readily identifiable, and clearly visible manner that allows the information to be easily and quickly found.</p> <p>Verify that a person preparing shipping papers for continued transportation in commerce includes the information required by this checklist item.</p> <p>Verify that, if the person preparing shipping papers for continued transportation in commerce elects to assume responsibility for providing the required emergency</p>

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<p><b>HM.50.6.US.</b> Spills, leaks, and other incidents occurring during hazardous material transportation require immediate notification in specific circumstances (49 CFR 171.1(b) and 171.15) [Revised June 1997; Revised July 2002; Revised April 2004; Revised April 2005; Revised January 2010; Revised October 2011; Revised October 2013].</p>	<p>response telephone number, the person ensures that all the regulatory requirements are met.</p> <p>(NOTE: The emergency response telephone number requirements do not apply to:</p> <ul style="list-style-type: none"> <li>– hazardous materials that are offered for transportation under the provisions applicable to limited quantities</li> <li>– materials properly described under the following shipping names: <ul style="list-style-type: none"> <li>– battery powered equipment</li> <li>– battery powered vehicle</li> <li>– carbon dioxide, solid</li> <li>– castor bean</li> <li>– castor flake</li> <li>– castor meal</li> <li>– castor pomace</li> <li>– consumer commodity</li> <li>– dry ice</li> <li>– engines, internal combustion</li> <li>– fish meal, stabilized</li> <li>– fish scrap, stabilized</li> <li>– krill meal</li> <li>– refrigerating machine</li> <li>– vehicle, flammable gas powered</li> <li>– vehicle, flammable liquid powered</li> <li>– wheelchair, electric</li> </ul> </li> <li>– transportation vehicles or freight containers containing lading that has been fumigated and displaying the FUMIGANT marking as required unless other hazardous materials are present in the cargo transport unit.)</li> </ul> <p>(NOTE: See HM.50.1.US for information on the applicability of these Title 49 requirements.)</p> <p>Verify that, as soon as practical but no later than 12 h after the occurrence of any incident, each person in physical possession of the hazardous material provides notice by telephone to the National Response Center (NRC) on 800-424-8802 (toll free) or 202-267-2675 (toll call) or online at <a href="http://www.nrc.uscg.mil">http://www.nrc.uscg.mil</a>.</p> <p>Verify that each notice includes the following information:</p> <ul style="list-style-type: none"> <li>– name of reporter</li> <li>– name and address of person represented by reporter</li> <li>– phone number where reporter can be contacted</li> <li>– date, time, and location of incident</li> <li>– the extent of injury, if any</li> <li>– class or division, proper shipping name, and quantity of hazardous materials involved, if such information is available</li> </ul>

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<p><b>HM.50.7.US.</b> Written hazardous materials incident reports are required to be submitted to the DOT of each hazardous material incident within 30 days of the incident (49 CFR 171.1(b) and 171.16) [Revised June 1997; Revised</p>	<p>– type of incident and nature of hazardous material involvement and whether a continuing danger to life exists at the scene.</p> <p>Verify that a telephone report is done whenever any of the following occurs during the course of transportation in commerce (including loading, unloading, and temporary storage):</p> <ul style="list-style-type: none"> <li>– as a direct result of a hazardous material: <ul style="list-style-type: none"> <li>– a person is killed</li> <li>– a person receives an injury requiring admittance to a hospital</li> <li>– the general public is evacuated for one hour or more</li> <li>– a major transportation artery or facility is closed or shut down for one hour or more</li> <li>– the operational flight pattern or routine of an aircraft is altered</li> </ul> </li> <li>– fire, breakage, spillage, or suspected radioactive contamination occurs involving a radioactive material</li> <li>– fire, breakage, spillage, or suspected contamination occurs involving an infectious substance other than a regulated medical waste</li> <li>– a release of a marine pollutant occurs in a quantity exceeding 450 L (119 gal) for a liquid or 400 kg (882 lb) for a solid</li> <li>– a situation exists of such a nature (e.g., a continuing danger to life exists at the scene of the incident) that, in the judgment of the person in possession of the hazardous material, it should be reported to the NRC even though it does not meet the usual reporting criteria</li> <li>– during transportation by aircraft, a fire, violent rupture, explosion or dangerous evolution of heat (<i>i.e.</i>, an amount of heat sufficient to be dangerous to packaging or personal safety to include charring of packaging, melting of packaging, scorching of packaging, or other evidence) occurs as a direct result of a battery or battery-powered device.</li> </ul> <p>Verify that each person making a telephone report also makes the written report required by 49 CFR 171.16 (see checklist item HM.50.7.US).</p> <p>(NOTE: Under 40 CFR 302.6, EPA requires persons in charge of facilities (including transport vehicles, vessels, and aircraft) to report any release of a hazardous substance in a quantity equal to or greater than its reportable quantity, as soon as that person has knowledge of the release, to DOT's National Response Center at [toll free] 800-424-8802 or [toll] 202-267-2675.)</p> <p>(NOTE: See HM.50.1.US for information on the applicability of these Title 49 requirements.)</p> <p>Verify that each person in physical possession of a hazardous material at the time that any of the following incidents occurs during transportation (including loading, unloading, and temporary storage) submits a Hazardous Materials Incident Report on DOT Form F 5800.1(01/2004) within 30 days of discovery of the incident:</p>

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<b>July 2002; Revised April 2004; Revised April 2005; Revised April 2013; Revised October 2013].</b>	<ul style="list-style-type: none"> <li>– any of the circumstances set forth in 49 CFR 171.15(b) (see checklist item HM.50.6.US)</li> <li>– an unintentional release of a hazardous material or the discharge of any quantity of hazardous waste;</li> <li>– a specification cargo tank with a capacity of 1,000 gal or greater containing any hazardous material suffers structural damage to the lading retention system or damage that requires repair to a system intended to protect the lading retention system, even if there is no release of hazardous material</li> <li>– an undeclared hazardous material is discovered</li> <li>– a fire, violent rupture, explosion or dangerous evolution of heat ( i.e. , an amount of heat sufficient to be dangerous to packaging or personal safety to include charring of packaging, melting of packaging, scorching of packaging, or other evidence) occurs as a direct result of a battery or battery-powered device.</li> </ul> <p>Verify that each person reporting:</p> <ul style="list-style-type: none"> <li>– submits a written Hazardous Materials Incident Report to the Information Systems Manager, PHH-60, Pipeline and Hazardous Materials Safety Administration, Department of Transportation, East Building, 1200 New Jersey Ave., SE., Washington, DC 20590-0001, or an electronic Hazardous Material Incident Report to the Information System Manager, PHH-60, Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Washington, DC 20590-0001 at <a href="http://hazmat.dot.gov">http://hazmat.dot.gov</a></li> <li>– submits a written or electronic copy of the Hazardous Materials Incident Report to the FAA Security Field Office nearest the location of the incident for an incident involving travel by aircraft</li> <li>– retains a written or electronic copy of the Hazardous Materials Incident Report for a period of 2 yr at the reporting person's principal place of business.</li> </ul> <p>Verify that, if the written or electronic Hazardous Materials Incident Report is maintained at other than the reporting person's principal place of business, the report is made available at the reporting person's principal place of business within 24 h of a request for the report by an authorized representative or special agent of the DOT.</p> <p>Verify that a Hazardous Materials Incident Report (HMIR) is updated within 1 yr of the date of occurrence of the incident whenever:</p> <ul style="list-style-type: none"> <li>– a death results from injury caused by a hazardous material</li> <li>– there was a misidentification of the hazardous material or package information on a prior incident report</li> <li>– damage, loss or related cost that was not known when the initial incident report was filed becomes known</li> <li>– damage, loss, or related cost changes by \$25,000 or more, or 10% of the prior total estimate, whichever is greater.</li> </ul>

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<p><b>HM.50.8.US.</b> Employees involved in the transportation of hazardous materials are required to be trained according to specific requirements (49 CFR 171.1(b), 172.700 through 172.702, 172.704(a) through 172.704(d), and 173.1(b)) [Revised July 2002; Revised October 2003; Revised July 2004; Revised April 2005; Revised January 2006; Revised April 2010; Citation Revised January 2016].</p>	<p>(NOTE: Unless a telephone report is required under the provisions of 49 CFR 171.15 [see checklist item HM.50.6.US], the requirements of this checklist item do not apply to the following incidents:</p> <ul style="list-style-type: none"> <li>– a release of a minimal amount of material from: <ul style="list-style-type: none"> <li>– a vent, for materials for which venting is authorized</li> <li>– the routine operation of a seal, pump, compressor, or valve</li> <li>– connection or disconnection of loading or unloading lines, provided that the release does not result in property damage</li> </ul> </li> <li>– an unintentional release of hazardous material when: <ul style="list-style-type: none"> <li>– the material is limited quantity material packaged under authorized exceptions in 49 CFR 172.101 Hazardous Materials Table excluding Class 7 (radioactive) material</li> <li>– the material is Packing Group III material in Class or Division 3, 4, 5, 6.1, 8, or 9</li> <li>– the material is released from a package having a capacity of less than 20 L (5.2 gal) for liquids or less than 30 kg (66 lbs) for solids</li> <li>– the total amount of material released is less than 20 L (5.2 gal) for liquids or less than 30 kg (66 lbs) for solids and the material is not offered for transportation or transported by aircraft; a hazardous waste; or an undeclared hazardous material</li> </ul> </li> <li>– an undeclared hazardous material discovered in an air passenger's checked or carry-on baggage during the airport screening process. )</li> </ul> <p>(NOTE: See HM.50.1.US for information on the applicability of these Title 49 requirements.)</p> <p>(NOTE: Training means a systematic program that ensures a hazmat employee has familiarity with the general provisions for transporting hazardous materials, is able to recognize and identify hazardous materials, has knowledge of specific requirements applicable to functions performed by the employee, and has knowledge of emergency response information, self-protection measures and accident prevention methods and procedures. Additional training requirements for the individual modes of transportation are prescribed in 49 CFR 174, 175, 176, and 177.)</p> <p>(NOTE: For motor vehicle drivers, however, a State may impose more stringent training requirements only if those requirements:</p> <ul style="list-style-type: none"> <li>– do not conflict with the training requirements in this subpart and in 49 CFR 177</li> <li>– apply only to drivers domiciled in that State.)</li> </ul> <p>Verify that hazardous material employee training includes the following:</p> <ul style="list-style-type: none"> <li>– general awareness/familiarization training designed to provide familiarity with the packaging, labeling, and shipping requirements, and to enable the</li> </ul>

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	<p>employee to recognize and identify hazardous materials consistent with the hazard communication standards</p> <ul style="list-style-type: none"> <li>- function-specific training concerning requirements of 40 CFR 172, or exemptions or special permits issued under 40 CFR 172, subchapter A, that are specifically applicable to the functions the employee performs</li> <li>- emergency response information required by 40 CFR 172, subpart G</li> <li>- measures to protect the employee from the hazards associated with hazardous materials to which they may be exposed in the work place, including specific measures the hazmat employer has implemented to protect employees from exposure</li> <li>- methods and procedures for avoiding accidents, such as the proper procedures for handling packages containing hazardous materials.</li> <li>- training that provides an awareness of security risks associated with hazardous materials transportation and methods designed to enhance transportation security and a component covering how to recognize and respond to possible security threats (NOTE New hazmat employees must receive the security awareness training within 90 days after employment)</li> <li>- in-depth security training including company security objectives, organizational security structure, specific security procedures, specific security duties and responsibilities for each employee, and specific actions to be taken by each employee in the event of a security breach is required for each hazmat employee of a person required to have a security plan who handles hazardous materials covered by the plan, performs a regulated function related to the hazardous materials covered by the plan, or is responsible for implementing the plan.</li> </ul> <p>(NOTE: As an alternative to function-specific training on the requirements of 49 CFR 172, subchapter A, training relating to the requirements of the ICAO Technical Instructions and the IMDG Code may be provided to the extent such training addresses functions authorized by 49 CFR 171, subpart C.)</p> <p>(NOTE: Training conducted by employers to comply with the hazard communication programs required by OSHA or the EPA, or training conducted by employers to comply with security training programs required by other Federal or international agencies, may be used to satisfy the hazardous materials training requirements to the extent that such training addresses the training components specified above.)</p> <p>(NOTE: A new hazmat employee, or a hazmat employee who changes job functions may perform those functions prior to the completion of training provided:</p> <ul style="list-style-type: none"> <li>- the employee performs those functions under the direct supervision of a properly trained and knowledgeable hazmat employee</li> <li>- the training is completed within 90 days after employment or a change in job function.)</li> </ul> <p>Verify that a hazmat employee receives the required training at least once every 3 yr.</p>

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<p><b>HM.50.9.US.</b> Employees that operate motor vehicles transporting hazardous materials must be appropriately trained (49 CFR 171.1(b), 177.816(a), and 177.816(c)) <b>[Revised July 2002]</b>.</p>	<p>(NOTE: When in-depth security training is required, a hazmat employee must be trained at least once every 3 yr or, if the security plan for which training is required is revised during the 3-yr recurrent training cycle, within 90 days of implementation of the revised plan.)</p> <p>(NOTE: Relevant training received from a previous employer or other source may be used to satisfy these training requirements provided a current record of training is obtained from hazmat employees' previous employer.)</p> <p>Verify that a record of current training, inclusive of the preceding 3 yr, is created and retained by each hazmat employer for as long as that employee is employed by that employer as a hazmat employee and for 90 days thereafter.</p> <p>Verify that the records include:</p> <ul style="list-style-type: none"> <li>- the hazmat employee's name</li> <li>- the most recent training completion date of the hazmat employee's training</li> <li>- a description, copy, or the location of the training materials</li> <li>- the name and address of the person providing the training</li> <li>- certification that the hazmat employee has been trained and tested, as required.</li> </ul> <p>(NOTE: A hazmat employee who repairs, modifies, reconditions, or tests packagings as qualified for use in the transportation of hazardous materials, and who does not perform any other function is not subject to the safety training requirement.)</p> <p>(NOTE: It is the responsibility of each hazmat employer transporting hazardous materials to ensure that each hazmat employee is trained in accordance with the regulatory requirements. It is the duty of each person who offers hazardous materials for transportation to instruct each of his officers, agents, and employees having any responsibility for preparing hazardous materials for shipment.)</p> <p>(NOTE: See HM.50.1.US for information on the applicability of these Title 49 requirements.)</p> <p>(NOTE: This requirement may be met by compliance with the current requirements for a commercial driver's license (CDL) with a tank vehicle or hazardous materials endorsement.)</p> <p>Verify that the motor carrier does not transport (or cause to be transported) a hazardous material unless each hazardous materials employee who will operate a motor vehicle has been trained in the following:</p> <ul style="list-style-type: none"> <li>- the applicable requirements prescribed in 49 CFR 390 through 397</li> <li>- the procedures necessary for the safe operation of that vehicle.</li> </ul>

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<p><b>HM.50.10.US.</b> Employees who operate cargo tanks or vehicles with portable tanks having a capacity of 1000 gal or more of hazardous materials must be appropriately trained (49 CFR 171.1(b), 177.816(b) through 177.816(d)) [<b>Revised July 2002; Citation Revised January 2005; Revised October 2013</b>].</p>	<p>Verify that each driver receives driver training that includes the following subjects:</p> <ul style="list-style-type: none"> <li>– pretrip safety inspection</li> <li>– use of vehicle controls and equipment, including operation of emergency equipment</li> <li>– procedures for maneuvering tunnels, bridges, and railroad crossings</li> <li>– requirements pertaining to attendance of vehicles, parking, smoking, routing, and incident reports</li> <li>– loading and unloading of materials, including load securement, package handling methods, and compatibility and segregation of cargo in a mixed load</li> <li>– operation of the vehicle, including turning, backing, braking, parking, and handling</li> <li>– vehicle characteristics, including those that affect vehicle stability, such as the following: <ul style="list-style-type: none"> <li>– effects of braking and curves</li> <li>– effects of speed on vehicle control</li> <li>– dangers associated with maneuvering through curves</li> <li>– dangers associated with weather or road conditions that a driver may experience</li> <li>– high center of gravity.</li> </ul> </li> </ul> <p>(NOTE: See HM.50.1.US for information on the applicability of these Title 49 requirements.)</p> <p>(NOTE: This requirement may be met by compliance with the current requirements for a CDL with a tank vehicle or hazardous materials endorsements.)</p> <p>Verify that, in addition to meeting the training requirements in 49 CFR 177.816(a) (see checklist item HM.50.9.US) each person who operates a cargo tank or a vehicle with a portable tank with a capacity of 1,000 gal or receives training applicable to the requirements of 49 CFR 177, subpart A and has the appropriate State-issued commercial driver's license required by 49 CFR 383.</p> <p>Verify that specialized training includes the following:</p> <ul style="list-style-type: none"> <li>– operation of emergency control features of the cargo tank or portable tank</li> <li>– special vehicle handling characteristics, including: high center of gravity, fluid-load subject to surge, effects of fluid-load surge on braking, characteristic differences in stability among baffled, unbaffled, and multi-compartmented tanks; and effects of partial loads on vehicle stability</li> <li>– loading and unloading procedures</li> <li>– the properties and hazards of the material transported</li> <li>– retest and inspection requirements for cargo tanks.</li> </ul>

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<p><b>HM.50.11.US.</b> Checklist item deleted <b>[Deleted October 2003]</b>.</p> <p><b>HM.50.12.US.</b> Checklist item deleted <b>[Deleted October 2003]</b>.</p>	<p>(NOTE: Training requirements may be satisfied by compliance with the current requirements for a Commercial Driver's License (CDL) with a tank vehicle or hazardous materials endorsement.)</p> <p>Verify that the frequency and recordkeeping requirements detailed in 49 CFR 172.704 (see checklist item HM.50.8.) are met.</p> <p>(NOTE: This checklist item was consolidated with HM.50.8.US)</p> <p>(NOTE: This checklist item was consolidated with HM.50.8.US)</p>



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<b>HAZARDOUS MATERIAL TRANSFER OPERATIONS TO OR FROM VESSELS</b>  <b>HM.55</b> <b>Fixed Facility Transfer Operations</b>  <b>HM.55.1.US.</b> Transfer operations for oil or hazardous material on navigable waters or contiguous zone of the U.S. are required to be done according to specific parameters (33 CFR 156.100, 156.110, 156.115, and 156.120) [Revised October 2013; Revised July 2018].	<p>(NOTE: This checklist item applies to the transfer of oil or hazardous material on the navigable waters or contiguous zone of the United States to, from, or within each vessel with a capacity of 250 barrels [approx. 10,500 gal] or more; except that, this checklist item does not apply to transfer operations within a public vessel.)</p> <p>(NOTE: A transfer is considered to begin when the person in charge on the transferring vessel or facility and the person in charge on the receiving facility or vessel first meet to begin completing the declaration of inspection required by 33 CFR 156.150 [see checklist item HM.55.3.US].)</p> <p>Verify that no person serves as the person in charge of transfer operations on more than one vessel at a time during transfers between vessels or between two or more vessels and a facility unless authorized by the COTP.</p> <p>Verify that no person serves as the person in charge of both a vessel and a facility during transfer operations unless authorized by the COTP.</p> <p>Verify that transfer operations are not conducted unless:</p> <ul style="list-style-type: none"> <li>– the vessel's moorings are strong enough to hold during all expected conditions of surge, current, and weather and are long enough to allow adjustment for changes in draft, drift, and tide during the transfer operation</li> <li>– transfer hoses and loading arms are long enough to allow the vessel to move to the limits of its moorings without placing strain on the hose, loading arm, or transfer piping system</li> <li>– each hose is supported to prevent kinking or other damage to the hose and strain on its coupling</li> <li>– each part of the transfer system is aligned to allow the flow of oil or hazardous material</li> <li>– each part of the transfer system not necessary for the transfer operation is securely blanked or shut off</li> <li>– the end of each hose and loading arm that is not connected for the transfer of oil or hazardous material is blanked off using the closure devices required by 33 CFR 154.520 and 155.805</li> <li>– the transfer system is attached to a fixed connection on the vessel and the facility except that when a vessel is receiving fuel, an automatic back pressure shutoff nozzle may be used</li> </ul>

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	<ul style="list-style-type: none"> <li>– each overboard discharge or sea suction valve that is connected to the vessel's transfer or cargo tank system is sealed or lashed in the closed position; except when used to receive or discharge ballast in compliance with 33 CFR 157</li> <li>– each transfer hose has no unrepaired loose covers, kinks, bulges, soft spots, or any other defect which would permit the discharge of oil or hazardous material through the hose material and no gouges, cuts, or slashes that penetrate the first layer of hose reinforcement (“reinforcement” means the strength members of the hose, consisting of fabric, cord and/or metal)</li> <li>– each hose or loading arm in use meets 33 CFR 154.500 and 154.510, respectively</li> <li>– each connection meets 33 CFR 156.130</li> <li>– any monitoring devices required by 33 CFR 154.525 are installed and operating properly</li> <li>– the discharge containment equipment required by 33 CFR 154.545 is readily accessible or deployed as applicable</li> <li>– the discharge containment required by 33 CFR 154.530, 155.310, and 155.320, as applicable, is in place and periodically drained to provide the required capacity</li> <li>– each drain and scupper is closed by the mechanical means required by 33 CFR 155.310</li> <li>– all connections in the transfer system are leak free except that a component in the transfer system, such as the packing glands of a pump, may leak at a rate that does not exceed the capacity of the discharge containment provided during the transfer operation</li> <li>– the communications required by 33 CFR 154.560 and 155.785 are operable for the transfer operation</li> <li>– the emergency means of shutdown required by 33 CFR 154.550 and 155.780, as applicable, is in position and operable</li> <li>– there is a person in charge on the transferring vessel or facility and the receiving vessel or facility except as otherwise authorized under 33 CFR 156.115.</li> </ul> <p>Verify that each required person in charge:</p> <ul style="list-style-type: none"> <li>– is at the site of the transfer operation and immediately available to the transfer personnel</li> <li>– has in his or her possession a copy of the facility operations manual or vessel transfer procedures, as appropriate</li> <li>– conducts the transfer operation in accordance with the facility operations manual or vessel transfer procedures, as appropriate.</li> </ul> <p>Verify that the personnel required, under the facility operations manual and the vessel transfer procedures, to conduct the transfer operation are on duty and conduct the transfer operation in accordance with the facility operations manual or vessel transfer procedures, as appropriate.</p>

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	<p>Verify that at least one person is at the site of the transfer operation who fluently speaks the language or languages spoken by both persons in charge.</p> <p>Verify that the person in charge of the transfer on the transferring vessel or facility and the person in charge of it on the receiving vessel or facility have held a conference, to ensure that each person in charge understands:</p> <ul style="list-style-type: none"> <li>– the identity of the product to be transferred</li> <li>– the sequence of transfer operations</li> <li>– the transfer rate</li> <li>– the name or title and location of each person participating in the transfer operation</li> <li>– details of the transferring and receiving systems including procedures to ensure that the transfer pressure does not exceed the maximum allowable working pressure (MAWP) for each hose assembly, loading arm and/or transfer pipe system</li> <li>– critical stages of the transfer operation</li> <li>– federal, state, and local rules that apply to the transfer of oil or hazardous material</li> <li>– emergency procedures</li> <li>– discharge containment procedures</li> <li>– discharge reporting procedures</li> <li>– watch or shift arrangement</li> <li>– transfer shutdown procedures</li> <li>– if the persons use radios, a predetermined frequency for communications during the transfer, agreed upon by both.</li> </ul> <p>Verify that the person in charge of transfer operations on the transferring vessel or facility and the person in charge of transfer operations on the receiving vessel or facility agree to begin the transfer operation;</p> <p>Verify that between sunset and sunrise the lighting required by 33 CFR 154.570 and 155.790 is provided.</p> <p>(NOTE: For transfer operations between tank barges from sunset to sunrise, lighting is provided as described in 33 CFR 155.790.)</p> <p>Verify that a transfer operation which includes collection of vapor emitted to or from a vessel's cargo tanks through a vapor control system (VCS) not located on the vessel has the following verified by the person in charge:</p> <ul style="list-style-type: none"> <li>– each manual valve in the vapor collection system is correctly positioned to allow the collection of cargo vapor</li> <li>– a vapor collection hose or arm is connected to the vessel's vapor connection</li> <li>– the electrical insulating device required by 33 CFR 154.810(g) or 46 CFR 39.40-3(c) is fitted between the facility vapor connection and the vessel vapor connection</li> </ul>

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	<ul style="list-style-type: none"> <li>– the initial loading rate and the maximum transfer rate are determined</li> <li>– the maximum and minimum operating pressures at the facility vapor connection are determined</li> <li>– the tank barge overfill control system, if installed, is connected to the facility, tested, and operating properly</li> <li>– the following have been performed not more than 24 hours prior to the start of the transfer operation in accordance with 33 CFR 154.2150(b): <ul style="list-style-type: none"> <li>– each alarm and automatic shutdown system required by subpart E of 33 CFR 154 and 46 CFR 39 has been tested and found to be operating properly</li> <li>– analyzers required by 33 CFR 154.2105(a), 33 CFR 154.2107(d) and (e) or 46 CFR 39.40-3(a) have been checked for calibration by use of a span gas</li> </ul> </li> <li>– each vapor recovery hose has no unrepaired loose covers, kinks, bulges, soft spots, or any other defect which would permit the discharge of vapor through the hose material, and no external gouges, cuts, or slashes that penetrate the first layer of hose reinforcement</li> <li>– the oxygen content of the vessel's cargo tanks, if inerted, is at or below 8 percent by volume.</li> <li>– the oxygen content of the vessel's cargo tanks, if inerted is at or below 60 percent of the cargo's minimum oxygen concentration for combustion.</li> </ul> <p>Verify that, if the transfer operation involves loading oil, as defined in 33 CFR 151.05, into a cargo tank, the overfill device required by 33 CFR 155.480 is installed and operating properly.</p> <p>Verify that, if the cargo has the potential to polymerize, adequate precautions have been taken to prevent and detect polymerization of the cargo vapors.</p> <p>Verify that, the VCS has been cleaned, in accordance with 33 CFR 154.2150(p), between transfers of incompatible cargoes.</p> <p>Verify that the freezing point of each cargo has been determined. If there is a possibility that the ambient air temperature during transfer operations will be at or below the freezing point of the cargo, adequate precautions have been taken to prevent freezing of vapor or condensate, or to detect and remove the liquid condensate and solids to prevent accumulation.</p> <p>Verify that smoking is not permitted in the facilities marine transfer area except in designated smoking areas.</p> <p>Verify that welding, hot work operations and smoking are prohibited on vessels during the transfer of flammable or combustible materials, except that smoking may be permitted in accommodation areas designated by the master.</p> <p>(NOTE: The Assistant Commandant for Marine Safety, Security and Environmental Protection, acting for the Commandant, may grant an exemption or</p>

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<p><b>HM.55.2.US.</b> In specific cases of oil or hazardous materials discharges, transfer operations of oil or hazardous materials must be stopped (33 CFR 156.100 and 156.125) [Revised October 2013].</p>	<p>partial exemption from compliance with this requirement, and the District Commander may grant an exemption or partial exemption from compliance with any operating condition or requirement. Such exemptions must be in accordance with 33 CFR 156.110.)</p> <p>(NOTE: This checklist item applies to the transfer of oil or hazardous material on the navigable waters or contiguous zone of the United States to, from, or within each vessel with a capacity of 250 barrels [approx. 10,500 gal] or more; except that, this checklist item does not apply to transfer operations within a public vessel.)</p> <p>Verify that each person conducting the transfer operation stops the transfer operation whenever oil or hazardous material from any source is discharged to either of the following:</p> <ul style="list-style-type: none"> <li>– in the transfer operation work area</li> <li>– into the water or upon the adjoining shoreline in the transfer area.</li> </ul> <p>Verify that no person resumes the transfer operation after it has been stopped for either of the above reasons unless:</p> <ul style="list-style-type: none"> <li>– oil or hazardous material discharged in the transfer operation work area is cleaned up</li> <li>– oil or hazardous material discharged into the water or upon the adjoining shoreline is cleaned up, or is contained and being cleaned up.</li> </ul> <p>(NOTE: The COTP may authorize resuming the transfer operation if it is deemed appropriate.)</p>
<p><b>HM.55.3.US.</b> Hazardous materials or oil must not be transferred unless the declaration of inspection form has been filled out and signed (33 CFR 156.100 and 156.150) [Revised October 2013].</p>	<p>(NOTE: This checklist item applies to the transfer of oil or hazardous material on the navigable waters or contiguous zone of the United States to, from, or within each vessel with a capacity of 250 barrels [approx. 10,500 gal] or more; except that, this checklist item does not apply to transfer operations within a public vessel.)</p> <p>Verify that no person transfers oil or hazardous material to or from a vessel unless each person in charge has filled out and signed the declaration of inspection form.</p> <p>Verify that no person in charge signs the declaration of inspection unless he or she has determined by inspection, and indicated by initialing in the appropriate space on the declaration of inspection form, that the facility or vessel, as appropriate, meets 33 CFR 156.120 (see checklist item HM.55.1.US).</p> <p>(NOTE: The declaration of inspection may be in any form.)</p> <p>Verify that the declaration of inspection form contain at least the following:</p> <ul style="list-style-type: none"> <li>– the name or other identification of the transferring vessel or facility and the receiving vessel or facility</li> </ul>

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<p><b>HM.55.4.US.</b> Coast Guard approval is required before specific substances can be placed on board a vessel as ship's stores (46 CFR 147.1 and 147.40) <b>[Revised October 2013]</b>.</p>	<ul style="list-style-type: none"> <li>– the address of the facility or location of the transfer operation if not at a facility</li> <li>– the date and time the transfer operation is started</li> <li>– a list of the requirements in 33 CFR 156.120 (see checklist item HM.55.1.US) with spaces on the form following each requirement for the person in charge of the vessel or facility to indicate by initialing that the requirement is met for the transfer operation</li> <li>– a space for the date, time of signing, signature, and title of each person in charge during transfer operations on the transferring vessel or facility and a space for the date, time of signing, signature, and title of each person in charge during transfer operations on the receiving facility or vessel certifying that all tests and inspections have been completed and that they are both ready to begin transferring product</li> <li>– the date and time the transfer operation is completed.</li> </ul> <p>(NOTE: The form for the declaration of inspection may incorporate the declaration-of-inspection requirements under 46 CFR 35.35-30.)</p> <p>Verify that the vessel and facility persons in charge each have a signed copy of the declaration of inspection available for inspection by the COTP during the transfer operation.</p> <p>Verify that the operators of each vessel and facility engaged in the transfer operation retain a signed copy of the declaration of inspection on board the vessel or at the facility for at least 1 mo from the date of signature.</p> <p>Verify that Commandant (CG-OES) approval was received before the following hazardous materials were placed on board a vessel as ships' stores:</p> <ul style="list-style-type: none"> <li>– poison gases of Class 2, Division 2.3 and toxic liquids of Class 6, Division 6.1 which are poisonous by inhalation in Hazard Zone A</li> <li>– explosives of Divisions 1.1 or 1.2.</li> <li>– flammable gases, other than those addressed specifically 46 CFR 147.35 through 147.105</li> <li>– forbidden materials listed in 49 CFR 172.101.</li> </ul> <p>(NOTE: Request for approval must be submitted to the Commandant (CG-OES), identify the material, and explain the need for its use. Upon approval, the material is added to the list of materials approved. A copy of this list is available from the Commandant (CG-OES) at the address in 46 CFR 147.5.)</p> <p>(NOTE: These provisions apply to the following:</p> <ul style="list-style-type: none"> <li>– passenger vessels</li> <li>– small passenger vessels</li> <li>– steam vessels</li> <li>– tank vessels.)</li> </ul>

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<p><b>HM.55.5.US.</b> Onshore or offshore facilities must meet specific equipment, personnel, and operations requirements (33 CFR 154.105, 154.700, 154.710, 154.730, 154.740, and 154.750) [Added October 2010; Citation Revised October 2013].</p>	<p>(NOTE: For this checklist item the term “Facility” means either an onshore or offshore facility, except for an offshore facility operating under the jurisdiction of the Secretary of the Department of Interior, and includes, but is not limited to, structure, equipment, and appurtenances thereto, used or capable of being used to transfer oil or hazardous materials to or from a vessel or public vessel. Also included are facilities that tank clean or strip and any floating structure that is used to support an integral part of the facility’s operation. A facility includes federal, state, municipal, and private facilities [33 CFR 154.105].)</p> <p>Verify that no person serves, and the facility operator does not use the services of a person, as person in charge of facility transfer operations unless:</p> <ul style="list-style-type: none"> <li>– the facility operator has designated that person as a person in charge</li> <li>– the person has had at least 48 h of experience in transfer operations at a facility in operations to which 33 CFR 154 applies</li> <li>– the person has completed a training and qualification program established by the facility operator and described in the Operations Manual that provides the person with the knowledge and training necessary to properly operate the transfer equipment at the facility, perform the required duties, follow the procedures required by 33 CFR 154, and fulfill the duties required of a person in charge during an emergency, except that the COTP may approve alternative experience and training requirements for new facilities</li> <li>– the facility operator certifies that each person in charge has the knowledge of, and skills necessary to: <ul style="list-style-type: none"> <li>– the hazards of each product to be transferred</li> <li>– the rules in 33 CFR 154 and 33 CFR 156</li> <li>– the facility operating procedures as described in the operations manual</li> <li>– vessel transfer systems, in general</li> <li>– vessel transfer control systems, in general</li> <li>– each facility transfer control system to be used</li> <li>– follow local discharge reporting procedures</li> <li>– carry out the facility's response plan for discharge reporting and containment.</li> </ul> </li> </ul> <p>Verify that the person also has enough experience at the facility for which qualification is desired to enable the facility operator to determine that the person's experience is adequate.</p> <p>(NOTE: Training conducted to comply with the hazard communication programs required by OSHA or the EPA, or to meet the requirements of the spill response plan may be used to satisfy the training and qualification requirements, as long as the training addresses the requirements detailed above in this checklist item.)</p> <p>Verify that each person in charge carries evidence of his designation as a person in charge when he is engaged in transfer operations unless such evidence is immediately available at the facility.</p>

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	<p>Verify that each facility operator maintains at the facility and makes available for examination by the COTP:</p> <ul style="list-style-type: none"> <li>– a copy of the letter of intent for the facility</li> <li>– the name of each person designated as a person in charge of transfer operations at the facility and certification that each person in charge has completed the training requirements</li> <li>– the date and result of the most recent test or examination of each item tested or examined under 33 CFR 156.170 (see text)</li> <li>– the hose information except that marked on the hose</li> <li>– the record of all examinations of the facility by the COTP within the last 3 yr</li> <li>– the Declaration of Inspection</li> <li>– a record of all repairs made within the last 3 yr involving any component of the facility's vapor control system</li> <li>– a record of all automatic shut downs of the facility's vapor control system within the last 3 yr</li> <li>– plans, calculations, and specifications of the facility's vapor control system certification</li> <li>– if they are not marked as such, documentation that the portable radio devices in use at the facility are intrinsically safe.</li> </ul> <p>Verify that the facility operator requires facility personnel to use the procedures in the operations manual.</p>

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<p><b>HM.60</b></p> <p><b>FIXED FACILITY TRANSFER OPERATIONS FOR HAZARDOUS MATERIALS</b></p> <p><b>HM.60.1.US.</b> A fixed facility that is capable of transferring hazardous material, in bulk, to or from a vessel with a capacity of 250 bbl or more is required to have an Operations Manual (33 CFR 154.100(a) and 154.300 through 154.325) [Revised May 1997; Revised October 2013].</p>	<p>(NOTE: This checklist item applies to each facility that is capable of transferring oil or hazardous materials, in bulk, to or from a vessel, where the vessel has a total capacity, from a combination of all bulk products carried, of 39.75 cubic meters (250 barrels) or more. This checklist item does not apply to the facility when it is in a caretaker status. This checklist item does not apply to any offshore facility operating under the jurisdiction of the Secretary of the Department of Interior.)</p> <p>Determine if the facility is capable of transferring hazardous materials, in bulk, to or from a vessel with a total capacity, from a combination of all bulk products carried, of 250 bbl [approx. 10,500 gal] or more.</p> <p>Verify that the facility has an operations manual that:</p> <ul style="list-style-type: none"> <li>– describes how the facility is meeting applicable operating and equipment requirements</li> <li>– describes the responsibilities of personnel in conducting transfer operations</li> <li>– includes translations into a language or languages understood by all designated persons in charge of transfer operations employed by the facility.</li> </ul> <p>Verify that the manual is current and readily available for examination by the Captain of the Port (COTP).</p> <p>Verify that the operator of a facility has submitted two copies of the Operations Manual to the Captain of the Port of the zone in which the facility is located.</p> <p>Verify that, not less than 60 days prior to any transfer operation, the operator of a new facility submits, with the letter of intent, two copies of the Operations Manual to the Captain of the Port of the zone in which the facility is located.</p> <p>Verify that, after a facility is removed from caretaker status, not less than 30 days prior to any transfer operation the operator of that facility submits two copies of the Operations Manual to the COTP of the zone in which the facility is located unless the manual has been previously examined and no changes have been made since the examination.</p> <p>Verify that a sufficient number of copies of the manual, including necessary translation, are readily available for facility personnel in charge while conducting a transfer operation.</p>

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	<p>Verify that the manual contains the following specific information:</p> <ul style="list-style-type: none"> <li>– the geographic location of the facility</li> <li>– a physical description of the facility, including a plan or plans, maps, drawings, aerial photographs or diagrams showing the boundaries of the facility subject to Coast Guard jurisdiction, mooring areas, transfer locations, control stations, wharves, the extent and scope of piping, and locations of safety equipment</li> <li>– for mobile facilities, a physical description of the facility</li> <li>– the hours of operation</li> <li>– the sizes, types, and number of vessels that the facility can transfer oil or hazardous materials to or from simultaneously</li> <li>– for each product transferred at the facility: <ul style="list-style-type: none"> <li>– the name of the cargo as listed under appendix II of annex II of MARPOL 73/78, Table 30.25-1 of 46 CFR 30.25-1, Table 151.05 of 46 CFR 151.05-1, or Table 1 of 46 CFR 153</li> <li>– a description of the appearance of the cargo</li> <li>– a description of the odor of the cargo</li> <li>– the hazards involved in handling the cargo</li> <li>– instructions for safe handling of the cargo</li> <li>– the procedures to be followed if the cargo spills or leaks, or if a person is exposed to the cargo</li> <li>– a list of fire fighting procedures and extinguishing agents effective with fires involving the cargo</li> </ul> </li> <li>– the minimum number of persons on duty during transfer operations</li> <li>– the names and telephone numbers of the qualified individual and the title and/or position and telephone number of the Coast Guard, state, local, and other personnel who may be called in an emergency</li> <li>– the duties of the watchman for unmanned vessels moored at the facility</li> <li>– a description of the required communication systems</li> <li>– the location and facilities of each personnel shelter, if any</li> <li>– a description and instructions for the use of drip and discharge collection and vessel slop reception facilities, if any</li> <li>– a description and the location of each emergency shutdown system</li> <li>– quantity, types, locations, and instructions for use of monitoring devices if required by 33 CFR 154.525</li> <li>– quantity, type, location, instructions for use, and time limits for gaining access to the containment equipment required by 33 CFR 154.545</li> <li>– quantity, type, location, and instructions for use of fire extinguishing equipment required by 33 CFR 154.735(d)</li> <li>– the maximum allowable working pressure (MAWP) of each loading arm, transfer pipe system, and hose assembly required to be tested by 33 CFR 156.170, including the maximum relief valve setting (or maximum system pressure when relief valves are not provided) for each transfer system;</li> <li>– procedures for: <ul style="list-style-type: none"> <li>– operating each loading arm including the limitations of each loading arm</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– transferring oil or hazardous material</li> <li>– completion of pumping</li> <li>– emergencies.</li> <li>– procedures for reporting and initial containment of oil or hazardous material discharges</li> <li>– a brief summary of applicable Federal, state, and local oil or hazardous material pollution laws and regulations</li> <li>– procedures for shielding portable lighting authorized by the COTP under 33 CFR 154.570(c)</li> <li>– a description of the training and qualification program for persons in charge</li> <li>– statements explaining that each hazardous materials transfer hose is marked with either the name of each product which may be transferred through the hose or with letters, numbers, symbols, color codes or other system acceptable to the COTP representing all such products and the location in the Operations Manual where a chart or list of symbols utilized is located and a list of the compatible products which may be transferred through the hose can be found for consultation before each transfer</li> <li>– for facilities that conduct tank cleaning or stripping operations, a description of their procedures.</li> </ul> <p>Verify that the operations manual contains a description of the facility's vapor control system (VCS), if the facility does either of the following:</p> <ul style="list-style-type: none"> <li>– collects vapor emitted from vessel cargo tanks for recovery, destruction, or dispersion</li> <li>– balances or transfers vapor to or from vessel cargo tanks.</li> </ul> <p>(NOTE: See the text of 33 CFR 154.310(b) for details on what the VCS description needs to include.)</p> <p>Verify that the operations manual is written in the order specified above, or contains a cross-referenced index page in that order.</p> <p>Verify that the manual has been marked "Examined by the Coast Guard".</p> <p>(NOTE: The COTP may require the facility operator to amend the operations manual if the COTP finds that the operations manual does not meet the requirements.)</p> <p>Verify that the facility operator incorporates a copy of each amendment to the operations manual in each copy of the manual with the related existing requirement, or add the amendment at the end of each manual if not related to an existing requirement.</p> <p>(NOTE: No person may use any Operations Manual for transfer operations as unless the Operations Manual has been examined by the COTP. The Operations Manual is voided if the facility operator does any of the following:</p>

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<p><b>HM.60.2.US.</b> Equipment used at a fixed facility that is capable of transferring hazardous material, in bulk, to or from a vessel with a capacity of 250 bbl or more is required to meet specific standards in order to prevent environmental pollution (33 CFR 154.100(a) and 154.500, 154.510, 154.520, 154.525 154.560, and 154.570) [Revised October 2010; Revised October 2013].</p>	<ul style="list-style-type: none"> <li>– amends the Operations Manual without following the procedures in 33 CFR 154.320</li> <li>– fails to amend the Operations Manual when required by the COTP</li> <li>– notifies the COTP in writing that the facility will be placed in caretaker status.)</li> </ul> <p>(NOTE: This checklist item applies to each facility that is capable of transferring oil or hazardous materials, in bulk, to or from a vessel, where the vessel has a total capacity, from a combination of all bulk products carried, of 39.75 cubic meters (250 barrels) or more. This checklist item does not apply to the facility when it is in a caretaker status. This checklist item does not apply to any offshore facility operating under the jurisdiction of the Secretary of the Department of Interior.)</p> <p>Verify that each hose assembly used for transferring oil or hazardous material meets the following requirements:</p> <ul style="list-style-type: none"> <li>– the minimum design burst pressure for each hose assembly is at least four times the sum of the pressure of the relief valve setting (or four times the maximum pump pressure when no relief valve is installed) plus the static head pressure of the transfer system, at the point where the hose is installed</li> <li>– the maximum allowable working pressure (MAWP) for each hose assembly is more than the sum of the pressure of the relief valve setting (or the maximum pump pressure when no relief valve is installed) plus the static head pressure of the transfer system, at the point where the hose is installed.</li> <li>– each nonmetallic hose must be usable for oil or hazardous material service</li> <li>– each hose assembly must either have one of the following: <ul style="list-style-type: none"> <li>– full threaded connections</li> <li>– flanges that meet ANSI B16.5 or ANSI B16.24 (both incorporated by reference, see 33 CFR 154.106)</li> <li>– quick-disconnect couplings that meet ASTM F1122 (incorporated by reference, see 33 CFR 154.106)</li> </ul> </li> <li>– each hose is marked with one of the following: <ul style="list-style-type: none"> <li>– the name of each product for which the hose may be used</li> <li>– for oil products, the words “OIL SERVICE”</li> <li>– for hazardous materials, the words “HAZMAT SERVICE—SEE LIST” followed immediately by a letter, number or other symbol that corresponds to a list or chart contained in the facility's operations manual or the vessel's transfer procedure documents which identifies the products that may be transferred through a hose bearing that symbol</li> </ul> </li> <li>– each hose is also marked with the following, except that the information above need not be marked on the hose if it is recorded in the hose records of the vessel or facility, and the hose is marked to identify it with that information: <ul style="list-style-type: none"> <li>– maximum allowable working pressure</li> <li>– date of manufacture</li> <li>– date of the latest test required by 33 CFR 156.170</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– the hose burst pressure and the pressure used for the test required by 33 CFR 156.170 is not marked on the hose and is recorded elsewhere at the facility</li> <li>– each hose used to transfer fuel to a vessel that has a fill pipe for which containment cannot practically be provided is equipped with an automatic back pressure shutoff nozzle.</li> </ul> <p>Verify that each mechanical loading arm used for transferring oil or hazardous material and placed into service after 30 June 1973, meets the design, fabrication, material, inspection, and testing requirements in ANSI B31.3 and that the manufacturer's certification that the standard has been met and is permanently marked on the loading arm or recorded elsewhere at the facility with the loading arm marked to identify it with that information.</p> <p>Verify that each mechanical loading arm used for transferring oil or hazardous material has a means of being drained or closed before being disconnected after transfer operations are completed.</p> <p>Verify that each facility has enough butterfly valves, wafer-type resilient seated valves, blank flanges, or other means acceptable to the COTP to blank off the ends of each hose or loading arm that is not connected for the transfer of oil or hazardous material.</p> <p>(NOTE: Such hoses and/or loading arms must be blanked off during the transfer of oil or hazardous material. A suitable material in the joints and couplings shall be installed on each end of the hose assembly or loading arm not being used for transfer to ensure a leak-free seal.)</p> <p>(NOTE: The requirements for blanking off the valves does not apply to a new, unused hose, and a hose that has been cleaned and is gas free.)</p> <p>(NOTE: The COTP may require the facility to install monitoring devices if the installation of monitoring devices at the facility would significantly limit the size of a discharge of oil or hazardous material and either:</p> <ul style="list-style-type: none"> <li>– the environmental sensitivity of the area requires added protection</li> <li>– the products transferred at the facility pose a significant threat to the environment</li> <li>– the size or complexity of the transfer operation poses a significant potential for a discharge of oil or hazardous material.)</li> </ul> <p>Verify that each facility has a means that enables continuous two-way voice communication between the person in charge of the vessel transfer operation and the person in charge of the facility transfer operation.</p> <p>Verify that each facility has a means, which may be the communications system itself, that enables a person on board a vessel or on the facility to effectively indicate the desire to use the required means of communication.</p>

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<p><b>HM.60.3.US.</b> A fixed facility that is capable of transferring hazardous material, in bulk, to or from a vessel with a capacity of 250 bbl or more is required to have discharge containment equipment and means to remove spilled materials (33 CFR 154.100(a))</p>	<p>Verify that the means of communication is usable and effective in all phases of the transfer operation and all conditions of weather at the facility.</p> <p>(NOTE: A facility may use the system in 33 CFR 154.550(a)(2) to meet the requirement for a means of two-way voice communication.)</p> <p>Verify that portable radio devices used to provide the two-way voice communication during the transfer of flammable or combustible liquids are marked as intrinsically safe by the manufacturer of the device and certified as intrinsically safe by a national testing laboratory or other certification organization approved by the Commandant as defined in 46 CFR 111.105-11.</p> <p>(NOTE: As an alternative to the radio marking requirement, facility operators may maintain documentation at the facility certifying that the portable radio devices in use at the facility are in compliance.)</p> <p>Verify that, for operations between sunset and sunrise, a facility has fixed lighting that adequately illuminates:</p> <ul style="list-style-type: none"> <li>– each transfer connection point on the facility</li> <li>– each transfer connection point in use on any barge moored at the facility to or from which oil or hazardous material is being transferred</li> <li>– each transfer operations work area on the facility</li> <li>– each transfer operation work area on any barge moored at the facility to or from which oil or hazardous material is being transferred.</li> </ul> <p>(NOTE: Where the illumination is apparently inadequate, the COTP may require verification by instrument of the levels of illumination. On a horizontal plane 3 feet above the barge deck or walking surface, illumination must measure at least:</p> <ul style="list-style-type: none"> <li>– 5.0 foot candles at transfer connection points; and</li> <li>– 1.0 foot candle in transfer operations work areas.)</li> </ul> <p>(NOTE: For small or remote facilities, the COTP may authorize operations with an adequate level of illumination provided by the vessel or by portable means.)</p> <p>Verify that lighting is located or shielded so as not to mislead or otherwise interfere with navigation on the adjacent waterways.</p> <p>(NOTE: This checklist item applies to each facility that is capable of transferring oil or hazardous materials, in bulk, to or from a vessel, where the vessel has a total capacity, from a combination of all bulk products carried, of 39.75 cubic meters (250 barrels) or more. This checklist item does not apply to the facility when it is in a caretaker status. This checklist item does not apply to any offshore facility operating under the jurisdiction of the Secretary of the Department of Interior.)</p> <p>Verify that each facility has fixed catchments, curbing, or other fixed means to contain oil or hazardous material discharged in at least:</p>

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<p>and 154.530, 154.540, and 154.550) <b>[Revised May 1997; Revised October 2013]</b>.</p>	<ul style="list-style-type: none"> <li>– each hose handling and loading arm area (that area on the facility that is within the area traversed by the free end of the hose or loading arm when moved from its normal stowed or idle position into a position for connection)</li> <li>– each hose connection manifold area</li> <li>– under each hose connection that will be coupled or uncoupled as part of the transfer operation during coupling, uncoupling, and transfer.</li> </ul> <p>Verify that the required discharge containment means has a capacity of at least:</p> <ul style="list-style-type: none"> <li>– two barrels if it serves one or more hoses of 6 in inside diameter or smaller, or loading arms of 6 in nominal pipe size diameter or smaller</li> <li>– three barrels if it serves one or more hoses with an inside diameter of more than 6 in, but less than 12 in, or loading arms with a nominal pipe size diameter of more than 6 in, but less than 12 in</li> <li>– four barrels if it serves one or more hoses of 12 in inside diameter or larger, or loading arms of 12 in nominal pipe size diameter or larger.</li> </ul> <p>(NOTE: The facility may use portable means of not less than 1/2 barrel capacity each to meet the containment requirements for part or all of the facility if the COTP finds that fixed means to contain oil or hazardous material discharges are not feasible.)</p> <p>(NOTE: A mobile facility may have portable means of not less than five gallons capacity to meet the containment requirements.</p> <p>(NOTE: Fixed or portable containment may be used to meet the requirements for hose connections that will be coupled or uncoupled as part of the transfer operation during coupling, uncoupling, and transfer.)</p> <p>Verify that each facility has a means to safely remove discharged oil or hazardous material, within 1 h of completion of the transfer, from the required containment without discharging the oil or hazardous material into the water.</p> <p>Verify that the facility has an emergency means to enable the person in charge of the transfer on board the vessel, at that person's usual operating station, to stop the flow of oil or hazardous material from the facility to the vessel.</p> <p>Verify that the emergency means of shutdown meets one of the following criteria:</p> <ul style="list-style-type: none"> <li>– an electrical, pneumatic, or mechanical linkage to the facility</li> <li>– an electronic voice communications system continuously operated by a person on the facility who can stop the flow of oil or hazardous material immediately.</li> </ul> <p>Verify that the point in the transfer system at which the emergency means stops the flow of oil or hazardous material on the facility is located near the dock manifold</p>

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	<p>connection to minimize the loss of oil or hazardous material in the event of the rupture or failure of the hose, loading arm, or manifold valve.</p> <p>Verify that, for oil transfers, the means used to stop the flow will stop that flow within:</p> <ul style="list-style-type: none"> <li>– 60 s on any facility or portion of a facility that first transferred oil on or before 1 November 1980</li> <li>– 30 s on any facility that first transfers oil after 1 November 1980.</li> </ul> <p>Verify that, for hazardous material transfers, the means used to stop the flow will stop that flow within:</p> <ul style="list-style-type: none"> <li>– 60 s on any facility or portion of a facility that first transferred hazardous material before 4 October 1990</li> <li>– 30 s on any facility that first transfers hazardous material on or after 4 October 1990.</li> </ul>

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<p><b>HM.65</b></p> <p><b>STORAGE OF HAZARDOUS MATERIALS ON FLOATING PLANTS</b></p> <p><b>HM.65.1.US.</b> Ships are required to meet specific restrictions as to where hazardous materials can be carried on board (33 CFR 155.100(a), 155.100(b), and 155.470) [Revised October 2013].</p> <p><b>HM.65.2.US.</b> Stowage and handling of flammable and combustible liquids, excluding liquids used as fuel for cooking, heating, and lighting but including gasoline and diesel oil, are required to be stored according to specific requirements (46 CFR 147.1 and 147.45) [Citation Revised October 2013; Revised July 2018].</p>	<p>(NOTE: This checklist item applies to each ship that:</p> <ul style="list-style-type: none"> <li>– is operated under the authority of the United States, wherever located</li> <li>– is operated under the authority of a country other than the United States while in the navigable waters of the United States, or while at a port or terminal under the jurisdiction of the United States.</li> </ul> <p>This checklist item does not apply to:</p> <ul style="list-style-type: none"> <li>– a warship, naval auxiliary, or other ship owned or operated by a country when engaged in non-commercial service</li> <li>– any other ship specifically excluded by MARPOL 73/78.)</li> </ul> <p>Verify that ships of 400 gross tons and above for which the building contract was in place after 1 January 1982 (or if there is no building contract, the keel was laid or is in a similar state of construction after 1 July 1982) do not carry hazardous materials in the forepeak tank or a tank forward of the collision bulkhead.</p> <p>Verify that self-propelled ships of 300 gross tons and above, to which the above paragraph does not apply, do not carry hazardous materials in any space forward of a collision bulkhead, except when one of the following is met:</p> <ul style="list-style-type: none"> <li>– for a ship constructed after 30 June 1974, fuel oil for use on the ship is carried in tanks forward of a collision bulkhead, and the tanks are at least 24 in. inboard of the hull structure</li> <li>– for ships constructed before 1 July 1974, fuel oil for use on the ship is carried in tanks forward of a collision bulkhead if the tanks were designated, installed, or constructed for fuel oil carriage before 1 July 1974.</li> </ul> <p>Verify that no flammable/combustible liquids are stowed in any accommodation, control, or service space other than a paint locker.</p> <p>Verify that no more than 19 L (5 gal) of flammable liquids are stowed in any machinery space and that they are stowed in containers of 3.8 L (1 gal) or less.</p> <p>Verify that no more than 208 L (55 gal) of combustible liquids are stowed in any machinery space.</p> <p>Verify that an aggregate of more than 7.6 L (2 gal) of flammable or combustible liquids is stowed in a paint locker that is marked with a warning sign indicating flammable or combustible liquid storage.</p>

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<p><b>HM.65.3.US.</b> Cylinders of compressed gas are required to be stowed according to specific parameters (46 CFR 147.1 and 147.60(b)) [<b>Revised October 2013</b>].</p>	<p>Verify that flammable and combustible liquids used as fuel for portable auxiliary equipment are stored in one of the following:</p> <ul style="list-style-type: none"> <li>– integral tanks that form part of the vessel’s structure</li> <li>– an independent tank meeting the design requirements found in 46 CFR 58.50</li> <li>– a container meeting the requirements found in 49 CFR 173.201, 173.202, or 173.203 for the storage of flammable or combustible liquids</li> <li>– a portable outboard fuel tank meeting the specification of ABYC H-25-81 or one identified by the Underwriters Laboratories (UL) as meeting the specification of UL 1185</li> <li>– a portable safety container identified by UL as meeting the specifications of UL 30 or UL 1313</li> <li>– a portable safety container identified by UL as meeting the requirements of UL 1314.</li> </ul> <p>Verify that each portable container of flammable or combustible liquid used for portable auxiliary equipment is stowed in a paint locker or an open location designated by the master of the vessel.</p> <p>Verify that fuel tanks for portable auxiliary equipment using flammable/combustible liquids are refilled on a vessel according to the following:</p> <ul style="list-style-type: none"> <li>– appropriate containers are used that have a capacity not exceeding 6 gal</li> <li>– portable outboard containers or portable outboard fuel tanks are refilled from a larger container of flammable or combustible liquid on the weather deck of the vessel if: <ul style="list-style-type: none"> <li>– a drip pan of adequate size is used to collect drippings</li> <li>– at least one Coast Guard approved Type B, Size I fire extinguisher is within 3 m (9.75 ft), of the refilling location.</li> </ul> </li> </ul> <p>(NOTE: These provisions apply to the following:</p> <ul style="list-style-type: none"> <li>– passenger vessels</li> <li>– small passenger vessels</li> <li>– steam vessels</li> <li>– tank vessels.)</li> </ul> <p>Verify that cylinders are always secured and, when not in use, stored in a rack in an upright position with the valve protection cap in place.</p> <p>Verify that lockers or housings are vented to the open air near the top and bottom for positive circulation of vapors.</p> <p>Verify that cylinders are protected from all sources of heat that may cause the cylinders’ temperatures to rise higher than 130 degrees F.</p> <p>(NOTE: These provisions apply to the following:</p>

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	<ul style="list-style-type: none"> <li>– passenger vessels</li> <li>– small passenger vessels</li> <li>– steam vessels</li> <li>– tank vessels.)</li> </ul>



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<b>HM.70</b>  <b>HAZARDOUS MATERIALS ON TANK VESSELS</b>  <b>HM.70.1.US.</b> Only certificated vessels can carry the flammable or combustible cargos listed in 46 CFR 30.25-1, Table 30.25-1, including a mixture of two or more listed cargos, when they are transported in bulk (46 CFR 30.25-1) [Revised July 2018].  <b>HM.70.2.US.</b> A method for determining the level of the liquid in a cargo tank, without opening ullage holes, cargo hatches, or Butterworth plates, is required to exist on all tankships that are certified to carry Grade A liquids and that had conversion or construction started after 1 July 1951 (46 CFR 32.20-20).  <b>HM.70.3.US.</b> Paint rooms are required to be wholly and tightly lined with metal (46	Determine if any vessels are carrying items listed in 46 CFR 30.25-1, Table 30.25-1, in bulk.  (NOTE: See the text of Table 30.25-1 online in the Electronic Code of Federal Regulations for an up-to-date list.)  Verify that the vessel is certificated.  (NOTE: These requirements apply to all U.S. flag vessels indicated in column 3 of Appendix 3-8, except: – any vessel operating exclusively on inland waters that are NOT navigable waters of the United States – any vessel that is laid up, dismantled, and out of commission – any vessel that has its title vested in the United States and is used for public purposes.)  Determine when tankships were constructed or converted and what kind of cargo they carry.  Verify that a method of measuring without opening ullage holes, cargo hatches, or Butterworth plates exists.  (NOTE: Ullage holes fitted with sounding pipes tightly secured to the underside of tank tops, open at the bottom, and extending to within 18 in. or less of the bottom of the tank will be considered as complying with these provisions.)  (NOTE: These requirements apply to all U.S. flag vessels indicated in column 3 of Appendix 3-8, except: – any vessel operating exclusively on inland waters that are NOT navigable waters of the United States – any vessel that is laid up, dismantled, and out of commission – any vessel that has its title vested in the United States and is used for public purposes.)  Verify that paint rooms are wholly and tightly lined with metal.  (NOTE: These requirements apply to all U.S. flag vessels indicated in column 3 of Appendix 3-8, except:

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<p>CFR 32.85-1) [Citation Revised July 2014].</p> <p><b>HM.70.4.US.</b> A CO2 or water spray system is required to be installed in all lamp and paint lockers and similar spaces (46 CFR 34.05-5(a)(3)) [Revised June 1997; Revised July 2018].</p> <p><b>HM.70.5.US.</b> The installation of magnesium sacrificial anodes in cargo tanks used for the carriage of flammable or combustible liquids is forbidden (46 CFR 35.01-25).</p> <p><b>HM.70.6.US.</b> Open hopper type barges that do not meet the requirements in 46 CFR 32.63 concerning hull and cargo tank construction, and that are carrying cargos as listed in Appendix 3-8, are</p>	<p>– any vessel operating exclusively on inland waters that are NOT navigable waters of the United States  – any vessel that is laid up, dismantled, and out of commission  – any vessel that has its title vested in the United States and is used for public purposes.)</p> <p>Verify that vessels are equipped with a CO2 clean agent (as defined in 46 CFR 95.16) or water spray system.</p> <p>(NOTE: These requirements apply to all U.S. flag vessels indicated in column 3 of Appendix 3-8, except:  – any vessel operating exclusively on inland waters that are not navigable waters of the United States  – any vessel that is laid up, dismantled, and out of commission  – any vessel that has its title vested in the United States and is used for public purposes.)</p> <p>Verify that cargo tanks carrying flammable or combustible liquids are not equipped with magnesium sacrificial anodes.</p> <p>(NOTE: A sacrificial anode using an aluminum alloy is permitted in cargo tanks under the following circumstances:  – the maximum allowable energy that can be developed by a falling anode is 200 ft-lb  – no anode is installed more than 6 ft above the bottom of the tank  – each anode has at least two welded or bolted connections to the supporting structure  – the plans for the system were submitted for approval.)</p> <p>(NOTE: These requirements apply to all U.S. flag vessels indicated in column 3 of Appendix 3-8, except:  – any vessel operating exclusively on inland waters that are not navigable waters of the United States  – any vessel that is laid up, dismantled, and out of commission  – any vessel that has its title vested in the United States and is used for public purposes.)</p> <p>Determine what cargo the barge is carrying.</p> <p>Verify that placards indicating the hazards being carried are mounted:  – approximately amidships on each side  – near the centerline of each end, facing outboard.</p>

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<p>required to display additional placards or signs in four different locations (46 CFR 35.01-45(a) and 35.01-45(d)).</p>	<p>(NOTE: These requirements only apply if carrying cargos listed in Appendix 3-8, which are defined as:</p> <ul style="list-style-type: none"> <li>– flammable liquids with a Reid vapor pressure exceeding 25 psia, in independent tanks</li> <li>– liquefied flammable gases.)</li> </ul> <p>(NOTE: These requirements apply to all U.S. flag vessels indicated in column 3 of Appendix 3-8, except:</p> <ul style="list-style-type: none"> <li>– any vessel operating exclusively on inland waters that are not navigable waters of the United States</li> <li>– any vessel that is laid up, dismantled, and out of commission</li> <li>– any vessel that has its title vested in the United States and is used for public purposes.)</li> </ul>
<p><b>HM.70.7.US.</b> Manned tank barges and tankships authorized to carry Grade A, B, C, or D liquids at any temperature or Grade E liquids at elevated temperatures are required to be provided with a combustible gas indicator (46 CFR 35.30-15).</p>	<p>Determine if the vessels meet the listed description.</p> <p>Verify that vessels are equipped with a combustible gas indicator.</p> <p>(NOTE: These requirements apply to all U.S. flag vessels indicated in column 3 of Appendix 3-8, except:</p> <ul style="list-style-type: none"> <li>– any vessel operating exclusively on inland waters that are not navigable waters of the United States</li> <li>– any vessel that is laid up, dismantled, and out of commission</li> <li>– any vessel that has its title vested in the United States and is used for public purposes.)</li> </ul>
<p><b>HM.70.8.US.</b> Where Grades A, B, C, and D liquid cargos are involved, power driven or manually operated spark producing devices must not be used in bulk cargo tanks, fuel oil tanks, cargo pumprooms, or enclosed spaces immediately above or adjacent to bulk cargo tanks unless specific conditions are met (46 CFR 35.30-35).</p>	<p>Verify that the following conditions are met prior to use:</p> <ul style="list-style-type: none"> <li>– the compartment itself is gas free</li> <li>– the compartments adjacent and the compartments diagonally adjacent are either gas free, inerted, filled with water, contain Grade E liquid and are closed and secure, or are spaces in which flammable vapors and gases normally are not expected to accumulate</li> <li>– all other compartments of the vessel in which flammable vapors and gases may normally be expected to accumulate are closed and secured.</li> </ul> <p>(NOTE: These restrictions do not apply to the use of small hand tools in these locations.)</p> <p>(NOTE: These requirements apply to all U.S. flag vessels indicated in column 3 of Appendix 3-8, except:</p> <ul style="list-style-type: none"> <li>– any vessel operating exclusively on inland waters that are not navigable waters of the United States</li> <li>– any vessel that is laid up, dismantled, and out of commission</li> </ul>

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<p><b>HM.70.9.US.</b> Flammable liquids and gases, other than diesel fuel, that are going to be used as fuel for approved equipment are required to be stowed according to specific parameters (46 CFR 35.30-40).</p>	<p>– any vessel that has its title vested in the United States and is used for public purposes.)</p> <p>Verify that stowage is in containers approved by the DOT and ASME or in a portable container approved by a recognized testing laboratory.</p> <p>Verify that the content is marked on the containers and the containers are labeled according to DOT flammability labeling requirements.</p> <p>Verify that containers are stowed on or above the weather deck.</p> <p>(NOTE: Approved containers of 5 gal or less may be stowed below the weather deck in a paint or lamp locker.)</p> <p>(NOTE: These requirements apply to all U.S. flag vessels indicated in column 3 of Appendix 3-8, except:</p> <ul style="list-style-type: none"> <li>– any vessel operating exclusively on inland waters that are not navigable waters of the United States</li> <li>– any vessel that is laid up, dismantled, and out of commission</li> <li>– any vessel that has its title vested in the United States and is used for public purposes.)</li> </ul>
<p><b>HM.70.10.US.</b> Tankships and tank barges, in service on all waters, that transport liquefied or compressed flammable gases are required to meet specific standards (46 CFR 30.01-5(d), 38.01-1, and 38.01-2) [Revised July 2018].</p>	<p>Verify that the transportation of liquefied or compressed flammable gases on deck is done according to the requirements found in 49 CFR 171 through 179.</p> <p>Verify that, when liquefied or compressed gases are being transported below decks in DOT cylinders, DOT specification portable tanks, or other approved portable tanks, the following requirements are met:</p> <ul style="list-style-type: none"> <li>– cargo has an efficient means of ventilation, is protected from artificial heat, and is readily accessible from hatches</li> <li>– containers are stored so that the safety relief device is in communication with the vapor space of the container</li> <li>– containers are stored, dunnaged, and secured to prevent movement in any direction</li> <li>– containers are not overstocked in the same dry cargo space with other liquefied flammable gas containers or other cargos</li> <li>– containers are protected from damage from other cargo, ship's stores, or equipment</li> <li>– cylinders have valves protected</li> <li>– portable tanks have valves protected by a housing</li> <li>– the following are not stored in the same hold or compartment with liquefied flammable gas containers: <ul style="list-style-type: none"> <li>– explosive material, Division 1.1, 1.2, 1.3, or 1.4, as defined in 49 CFR 173.50</li> </ul> </li> </ul>

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<p><b>HM.70.11.US.</b> Tanks are required to be inspected on a periodic basis (46 CFR 38.25-1 and 38.25-10) [<b>Citation Revised July 2018</b>].</p> <p><b>HM.70.12.US.</b> Pressure vessel and nonpressure vessel-type cargo tanks that have passed tests and inspection are required to be marked (46 CFR 38.05-5) [<b>Citation Revised July 2018</b>].</p>	<ul style="list-style-type: none"> <li>–</li> <li>– flammable solids</li> <li>– oxidizing materials</li> <li>– corrosive liquids</li> <li>– poisonous articles</li> <li>– cotton and similar fibrous materials.</li> </ul> <p>(NOTE: These requirements apply to all U.S. flag vessels indicated in column 3 of Appendix 3-8, except:</p> <ul style="list-style-type: none"> <li>– any vessel operating exclusively on inland waters that are not navigable waters of the United States</li> <li>– any vessel that is laid up, dismantled, and out of commission</li> <li>– any vessel that has its title vested in the United States and is used for public purposes.)</li> </ul> <p>Verify that each tank has an internal inspection:</p> <ul style="list-style-type: none"> <li>– 10 yr after the last internal inspection if the tank is a pressure vessel type cargo tank on an unmanned barge carrying cargo at temperatures of –67 degrees F (–55 degrees C) or warmer</li> <li>– 8 yr after the last internal inspection for all other tanks.</li> </ul> <p>Verify that an external inspection of unlagged tanks and the visible parts of lagged tanks is done at each inspection for certification and at other times as needed.</p> <p>Verify that cargo tank safety relief valves are inspected at least once every 2 yr.</p> <p>Verify that tanks are marked to indicate appropriate tests and inspections have been completed.</p> <p>(NOTE: For nonpressure vessel-type tanks, omit the Coast Guard number and pressure vessel class.)</p> <p>Verify that markings are permanent and legible.</p>



<b>COMPLIANCE CATEGORY</b> <b>HAZARDOUS MATERIALS MANAGEMENT</b> <b>U.S. TEAM Guide</b>	
<b>REGULATORY REQUIREMENTS</b>	<b>REVIEWER CHECKS</b> <b>December 2018</b>
<b>HM.75</b>  <b>HAZARDOUS MATERIALS ON CARGO AND MISCELLANEOUS VESSELS</b>  <b>HM.75.1.US.</b> Paint lockers are required to be constructed of steel and wholly lined with metal (46 CFR 92.05-10).	<p>Verify that paint lockers are metal.</p> <p>(NOTE: These regulations apply to all U.S. flag vessels indicated in column 5 of Appendix 3-8, except:</p> <ul style="list-style-type: none"> <li>– any vessel operating exclusively on inland waters that are not navigable waters of the United States</li> <li>– any vessel that is laid up, dismantled, and out of commission</li> <li>– any vessel that has its title vested in the United States and is not used for public purposes, except for vessels of the U.S. Maritime Administration.)</li> </ul>



### Appendix 3-0

#### Comparison of 40 CFR 355 Emergency Release Notification Requirements and the Release Notification Requirements of CERCLA as Codified In 40 CFR 302 (40 CFR 355.60) [Added January 2009]

If a reportable quantity of a substance is released within a 24-h period at your facility	And if the release is reportable under EPCRA Section 304, you must	And if the release is reportable under CERCLA Section 103, you must
a. And the substance is on BOTH the list of EHSs (Appendices A and B of 40 CFR 355) AND the list of CERCLA Hazardous Substances (40 CFR 302.4).	Notify the LEPC and the SERC in accordance with 40 CFR 355.40 through 355.43 (except for a release during transportation or from storage incident to transportation; see 40 CFR 355.42(b) (see checklist item HM.20.4.US).	Comply with the release notification requirements of CERCLA Section 103 and its implementing regulations (40 CFR 302, [see checklist items HM.230.2.US and HM.230.3.US]). Call the NRC at 800-424-8802.
b. And the substance is on the list of CERCLA Hazardous Substances (40 CFR 302.4) and not on the list of EHSs (Appendices A and B of 40 CFR 355).	Notify the LEPC and the SERC in accordance with 40 CFR 355.40 through 355.43 (except for a release during transportation or from storage incident to transportation; see 40 CFR 355.42(b) (see checklist item HM.20.4.US).	Comply with the release notification requirements of CERCLA Section 103 and its implementing regulations (40 CFR 302). Call the NRC at 800-424-8802.
c. And the substance is on the list of EHSs (Appendices A and B of 40 CFR 355) and not the list of CERCLA Hazardous Substances (40 CFR 302.4).	Notify the LEPC and the SERC in accordance with 40 CFR 355.40 through 355.43 (except for a release during transportation or from storage incident to transportation; see 40 CFR 355.42(b) (see checklist item HM.20.4.US).	

NOTE: This table only applies to reportable releases, not to exempt releases.



### Appendix 3-0a

#### Community Right-To-Know Reporting of Mixtures (40 CFR 370.14)

[Added January 2009; Revised July 2016]

If your mixture contains a hazardous chemical:	To determine if the threshold level for that hazardous chemical is equaled or exceeded you must:	If the threshold level for the hazardous chemical is exceeded than the facility must:
1. That is an EHS	Determine the total quantity of the EHS present throughout the facility at any one time, by adding together the quantity present as a component in all mixtures and all other quantities of the EHS (the facility must include the quantity present in a mixture even if they are also counting the quantity of that particular mixture toward the threshold level for that mixture).	Report the EHS component <ul style="list-style-type: none"> <li>– submit an MSDS (or SDS) for the EHS (or include the EHS on the list of chemicals submitted in lieu of the MSDSs (or SDS)), as provided under 40 CFR 370.30, and submit Tier I (or Tier II) information for the EHS as provided under 40 CFR 370.40 or report the mixture itself</li> <li>– submit an MSDS (or SDS) for the mixture (or include the mixture on the list of chemicals submitted in lieu of the MSDSs (or SDS)), as provided under 40 CFR 370.30, and submit Tier I (or Tier II) information for the mixture, as provided under 40 CFR 370.40. If the facility reports the mixture itself, then provide the total quantity of that mixture.</li> </ul>
2. That is not an EHS	Determine either: <ul style="list-style-type: none"> <li>– The total quantity of the hazardous chemical present throughout the facility at any one time by adding together the quantity present as a component in all mixtures and all other quantities of the hazardous chemical (the facility will include the quantity present in a mixture even if the facility is also applying that particular mixture as a whole toward the threshold level for that mixture) or</li> </ul>	Report the non-EHS hazardous chemical component <ul style="list-style-type: none"> <li>– submit an MSDS (or SDS) for the non-EHS hazardous chemical (or include the non-EHS on the list of chemicals submitted in lieu of the MSDSs (or SDS)), as provided under 40 CFR 370.30, and submit Tier I (or Tier II) information for the non-EHS chemical as provided under 40 CFR 370.40 or report the mixture itself</li> <li>– submit an MSDS (or SDS) for the mixture (or include the mixture on the list of</li> </ul>

	<ul style="list-style-type: none"> <li>– the total quantity of that mixture present throughout the facility at any one time.</li> </ul>	chemicals submitted in lieu of MSDSs (or SDS)), as provided under 40 CFR 370.30, and submit Tier I (or Tier II) information for the mixture, as provided under 40 CFR 370.40. If the facility reports the mixture itself, then provide the total quantity of that mixture.
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**Appendix 3-0b**

**Codes for Tier I and Tier II Inventory Reporting  
(40 CFR 370.43)**

**[Added January 2009; Revised October 2011, Deleted October 2012]**

**Appendix deleted with the implementation of electronic reporting forms by EPA.**



## Appendix 3-1

### Consolidated List of Chemicals Covered in Title III of SARA [Revised July 2003; Revised January 2005; Revised July 2005; Revised October 2006]

**(NOTE: This list is constantly changing and the Federal Register should be consulted for the most up-to-date information.)**

This consolidated chemical list includes chemicals subject to reporting requirements under Title III of SARA. This consolidated chemical list does not contain all chemicals that are subject to reporting requirements in Sections 311 and 312 of SARA Title III. These hazardous chemicals, for which SDSs must be developed under the *Occupational Safety and Health Act*, Hazard Communication Standards, are identified by broad criteria rather than enumeration. There are over 50,000 such substances that meet the criteria. The consolidated list has been prepared to help determine whether there is a need to submit reports under Section 304 or 313 of Title III and, for a specific chemical, what reports need to be submitted.

The list includes chemicals under the four following Federal statutory provisions:

1. SARA Section 302 Extremely Hazardous Substances - the presence of which, in sufficient quantities, requires certain emergency planning activities to be conducted. Releases of these substances are also subject to reporting under Section 304 of Title III. The final rule listing the extremely hazardous substances and their threshold planning quantities (TPQ) is found in 40 CFR 355.
2. CERCLA Hazardous Substances (RQ) Chemicals - releases of which are subject to reporting under the CERCLA or Superfund of 1980. Such releases are also subject to reporting under Section 304 of Title III. CERCLA hazardous substances, and their RQs, are listed in 40 CFR 302, Table 302.4.
3. SARA Section 313 Toxic Chemicals - emissions or releases of which must be reported annually as part of SARA Title III's community right-to-know provisions. A list of these toxic chemicals is found in 40 CFR 372.65.
4. RCRA Hazardous Wastes - from the "P" and "U" lists (40 CFR 261.33) of specific chemicals. RCRA hazardous wastes from the "F" and "K" lists are not included here; such waste streams are also CERCLA hazardous substances. This listing is provided as an indicator that you may already have data on a specific chemical that can be used for Title III reporting purposes.

There are four columns in the consolidated list corresponding to these four statutory provisions. If a chemical is listed as an extremely hazardous substance under Section 302, its TPQ is given in the extremely hazardous substance column. Similarly, the CERCLA RQ is given for those chemicals that are listed as hazardous substances. A key to the symbols used in Section 302 and CERCLA columns precedes the list. An "X" in the column for 40 CFR 372.65(f) indicates that the chemical is subject to reporting under Section 313.

The letter-and-digit code in the column for 40 CFR 261.33 is the chemical's RCRA hazardous waste code. A blank in any of these columns indicates that the chemical is not subject to the corresponding statutory authorities.

The Chemical Abstract Service (CAS) registry number is provided for each chemical on the list.

#### Key to Symbols in the Consolidated Chemical List

- # Indicates that the RQ is subject to change when an assessment of potential carcinogenicity and/or chronic toxicity is completed; until then, the statutory RQ applies.
- ## Indicates that an adjusted RQ has been proposed, but a final judgment has not been made.
- + USEPA has proposed to adjust the RQ for radionuclides by establishing RQs in units of Curies; until then, the 1 lb RQ applies.

- \* Indicates that the chemical is proposed for deletion from the list of extremely hazardous substances.
- \*\* Indicates that no RQ is assigned to this generic or broad class.

### Appendix 3-1a

#### Lower Thresholds for Chemicals of Special Concern (40 CFR 372.28)

[Added January 2000; Revised January 2001]

#### Chemical Listing in Alphabetic Order.

Chemical Name	CAS NO.	Reporting Threshold
Aldrin	00309-00-2	100
Benzo(g,h,i)perylene	00191-24-2	10
Chlordane	00057-74-9	10
Heptachlor	00076-44-8	10
Hexachlorobenzene	00118-74-1	10
Isodrin	00465-73-6	10
Lead (this lower threshold does not apply to lead when contained in a stainless steel, brass or bronze alloy)	7439-92-1	100
Mercury	07439-97-6	10
Methoxychlor	00072-43-5	100
Octachlorostyrene	29082-74-4	10
Pendimethalin	40487-42-1	100
Pentachlorobenzene	00608-93-5	10
Polychlorinated biphenyl (PCBs)	01336-36-3	10
Tetrabromobisphenol A	00079-94-7	100
Toxaphene	08001-35-2	10
Trifluralin	01582-09-8	100

### Chemical Categories in Alphabetic Order

Category name	Reporting threshold
<p>Dioxin and dioxin-like compounds (Manufacturing; and the processing or otherwise use of dioxin and dioxin-like compounds if the dioxin and dioxin-like compounds are present as contaminants in a chemical and if they were created during the manufacturing of that chemical) (This category includes only those chemicals listed below).</p> <ul style="list-style-type: none"> <li>– 1,2,3,4,6,7,8-Heptachlorodibenzofuran</li> <li>– 1,2,3,4,7,8,9-Heptachlorodibenzofuran</li> <li>– 1,2,3,4,7,8-Hexachlorodibenzofuran</li> <li>– 1,2,3,6,7,8-Hexachlorodibenzofuran</li> <li>– 1,2,3,7,8,9-Hexachlorodibenzofuran</li> <li>– 2,3,4,6,7,8-Hexachlorodibenzofuran</li> <li>– 1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin</li> <li>– 1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin</li> <li>– 1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin</li> <li>– 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin</li> <li>– 1,2,3,4,6,7,8,9-Octachlorodibenzofuran</li> <li>– 1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin</li> <li>– 1,2,3,7,8-Pentachlorodibenzofuran</li> <li>– 2,3,4,7,8-Pentachlorodibenzofuran</li> <li>– 1,2,3,7,8-Pentachlorodibenzo-p-dioxin</li> <li>– 2,3,7,8-Tetrachlorodibenzofuran</li> <li>– 2,3,7,8 Tetrachlorodibenzo-p-dioxin</li> </ul>	0.1 grams
Lead Compounds	100
Mercury compounds	10
<p>Polycyclic aromatic compounds (PACs) (This 100 category includes only those chemicals listed below).</p> <ul style="list-style-type: none"> <li>– Benz(a)anthracene</li> <li>– Benzo(b)fluoranthene</li> <li>– Benzo(j)fluoranthene</li> <li>– Benzo(k)fluoranthene</li> <li>– Benzo(j,k)fluorene</li> <li>– Benzo(r,s,t)pentaphene</li> <li>– Benzo(a)phenanthrene</li> <li>– Benzo(a)pyrene</li> <li>– Dibenz(a,h)acridine</li> <li>– Dibenz(a,j)acridine</li> <li>– Dibenzo(a,h)anthracene</li> <li>– 7H-Dibenzo(c,g)carbazole</li> <li>– Dibenzo(a,e)fluoranthene</li> <li>– Dibenzo(a,e)pyrene</li> <li>– Dibenzo(a,h)pyrene</li> <li>– Dibenzo(a,l)pyrene</li> <li>– 7,12-Dimethylbenz(a)anthracene</li> </ul>	100

Category name	Reporting threshold
<ul style="list-style-type: none"> <li>– Indeno[1,2,3-cd]pyrene</li> <li>– 3-Methylcholanthrene</li> <li>– 5-Methylchrysene</li> <li>– 1-Nitropyrene</li> </ul>	



### Appendix 3-2

**Maximum Allowable Capacity of Containers and Portable Tanks**  
**(29 CFR 1910.106(d)(2), Table H-12)**  
**[Revised April 2012]**

Container Type	Category 1	Category 2	Category 3	Category 4
Glass or approved plastic	1 pt	1 qt	1 gal	1 gal
Metal (other than DOT drums)	1 gal	5 gal	5 gal	5 gal
Safety cans	2 gal	5 gal	5 gal	5 gal
Metal drums (DOT specifications)	60 gal	60 gal	60 gal	60 gal
Approved portable tanks	660 gal	660 gal	660 gal	660 gal

NOTE: Container exemptions: Medicines, beverages, foodstuffs, cosmetics, and other common consumer items, when packaged according to commonly accepted practices.



### Appendix 3-3

#### Storage in Inside Rooms (29 CFR 1910.106(d)(4), Table H-13)

Fire Protection Provided <sup>1</sup>	Fire Resistance (hours)	Maximum Size	Total Allowable Quantities ((gal/ft <sup>2</sup> ) floor area)
Yes	2	500 ft <sup>2</sup>	10
No	2	500 ft <sup>2</sup>	5
Yes	1	150 ft <sup>2</sup>	4
No	1	150 ft <sup>2</sup>	2

<sup>1</sup>Fire protection system will be sprinkler, water spray, or other approved method.



## Appendix 3-4

### Flammable Materials Storage (29 CFR 1910.106(d)(5) and 1910.106(d)(6), Tables H-14 through H-17) [Revised January 2008; Revised April 2012]

#### Indoor Container Storage (Table H-14)

Category Liquid	Liquid Storage Level	Protected Storage Maximum per Pile	Unprotected Storage Maximums per Pile
1	Ground and upper floors	2750 gal (50, 55-gal drums)	600 gal (12, 55-gal drums)
	Basement	Not permitted	Not permitted
2	Ground and upper floors	5500 gal (100, 55-gal drums)	1375 gal (25, 55-gal drums)
	Basement	Not permitted	Not permitted
3 FP < 100 °F	Ground and upper floors	16,500 gal (300, 55-gal drums)	4125 gal (25, 55-gal drums)
	Basement	Not permitted	Not permitted
3 FP ≥ 100 °F	Ground and upper floors	16,500 gal (300, 55-gal drums)	4125 gal (75, 55-gal drums)
	Basement	5500 gal (100, 55-gal drums)	Not permitted
4	Ground and upper floors	55,000 gal (1000, 55-gal drums)	13,750 gal (250, 55-gal drums)
	Basement	8250 gal (450, 55-gal drums)	Not permitted

NOTE 1: When 2 or more categories of materials are stored in a single pile, the maximum gallonage permitted in that pile will be the smallest of the 2 or more separate maximum gallonages.

NOTE 2: Aisles will be provided so that no container is more than 12 ft from an aisle. Main aisles will be at least 3 ft wide and side aisles at least 4 ft wide.

NOTE 3: Each pile shall be separated from the others by at least 4 ft.

NOTE 4: FP means Flashpoint

**Outdoor Container Storage**  
(Table H-16)

1 Class	2 Maximum per pile (gal)	3 Distance between piles (ft)	4 Distance to property line that can be built upon (ft)	5 Distance to street, alley or public way (ft)
1	1100	5	20	10
2	2200	5	20	10
3 FP < 100 °FP	4400	5	20	10
3 FP ≥ 100 °FP	8800	5	10	5
4	22,000	5	10	5

NOTE 1: When 2 or more categories of materials are stored in a single pile, the maximum gallonage permitted in that pile will be the smallest of the 2 or more separate gallonages.

NOTE 2: Within 200 ft of each container, there will be a 12 ft wide access way to permit approach of fire control apparatus.

NOTE 3: The distances listed apply to properties that have protection for exposures as defined. If there are exposures and such protection for exposures does not exist, the distances in column 4 will need to be doubled.

NOTE 4: When total quantity stored does not exceed 50 percent of maximum per pile, the distance in columns 4 and 5 may be reduced 50 percent, but not less than 3 ft.

NOTE 5: FP means Flashpoint

**Indoor Portable Tank Storage**  
(Table H-15)

**NOTE: A “portable tank” is a closed container having a liquid capacity over 60 U.S. gal  
and not intended for fixed installation (29 CFR 1910.106(a)(25))**

Category	Storage Level	Protected Storage Maximum per Pile (gal)	Unprotected Storage Maximums per Pile (gal)
1	Ground and upper floors	Not permitted	Not permitted
	Basement	Not permitted	Not permitted
2	Ground and upper floors	20,000	2000
	Basement	Not permitted	Not permitted
3 FP < 100 °F	Ground and upper floors	40,000	5500
	Basement	Not permitted	Not permitted

3 FP $\geq$ 100 °F	Ground and upper floors	40,000	5500
	Basement	20,000	Not permitted
4	Ground and upper floors	60,000	22,000
	Basement	20,000	Not permitted

NOTE 1: When 1 or more categories of materials are stored in a single pile, the maximum gallonage permitted in that pile will be the smallest of the 2 or more separate maximum gallonages.

NOTE 2: Aisles will be provided so that no portable tank is more than 12 ft from an aisle. Main aisles will be at least 3 ft wide and side aisles at least 4 ft wide.

NOTE 3: Each pile shall be separated from each other by at least 4 ft.

NOTE 4: FP means Flashpoint

**Outdoor Portable Tank Storage**  
(Table H-17)

**NOTE: A “portable tank” is a closed container having a liquid capacity over 60 U.S. gal and not intended for fixed installation (29 CFR 1910.106(a)(25))**

1 Category	2 Maximum per pile (gal)	3 Distance between piles (ft)	4 Distance to property line that can be built upon (ft)	5 Distance to street, alley, or public way (ft)
1	2200	5	20	10
2	4400	5	20	10
3 FP < 100 °F	8800	5	20	10
3 FP $\geq$ °F	17,600	5	10	5
4	44,000	5	10	5

NOTE 1: When 2 or more classes of materials are stored in a single pile, the maximum gallonage permitted in that pile will be the smallest of the 2 or more separate gallonages.

NOTE 2: Within 200 ft of each container, there will be a 12 ft wide access way to permit approach of fire control apparatus.

NOTE 3: The distances listed apply to properties that have protection for exposures as defined. If there are exposures, and such protection for exposures does not exist, the distances in column 4 will be doubled.

NOTE 4: When total quantity stored does not exceed 50 percent of maximum per pile, the distance in columns 4 and 5 may be reduced 50 percent, but not less than 3 ft.

NOTE 5: FP means Flashpoint



**Appendix 3-5**  
**(Appendix Deleted April 2012)**



### Appendix 3-6

#### Placarding Guidelines (49 CFR 172.504)

[Revised October 2001; Revised October 2013]

Each bulk packaging, freight container, unit load device, transport vehicle or rail car containing any quantity of a hazardous material must be placarded on each side and each end with the type of placards specified in the following tables:

Table 1		
Category of material (Hazard class or division number and additional description, as appropriate)	Placard Name	Placard Design Section Reference (49 CFR)
1.1	EXPLOSIVES 1.1	172.522
1.2	EXPLOSIVES 1.2	172.522
1.3	EXPLOSIVES 1.3	172.522
2.3	POISON GAS	172.540
4.3	DANGEROUS WHEN WET	172.548
5.2 (Organic peroxide, Type B, liquid or solid, temperature controlled).	ORGANIC PEROXIDE	172.552
6.1 (material poisonous by inhalation, see 49 CFR 171.8).	POISON INHALATION HAZARD	172.555
7 (Radioactive Yellow III label only).	RADIOACTIVE <sup>1</sup>	172.556

<sup>1</sup> RADIOACTIVE placard also required for exclusive use shipments of low specific activity material and surface contaminated objects transported in accordance with 49 CFR 173.427(b)(4) and (5) or (c).

Table 2		
Category of material (Hazard class or division number and additional description, as appropriate)	Placard Name	Placard Design Section Reference (49 CFR)
1.4	EXPLOSIVES 1.4	172.523
1.5	EXPLOSIVES 1.5	172.524
1.6	EXPLOSIVES 1.6	172.525
2.1	FLAMMABLE GAS	172.532
2.2	NON-FLAMMABLE GAS	172.528
3	FLAMMABLE	172.542
Combustible liquid	COMBUSTIBLE	172.544
4.1	FLAMMABLE SOLID	172.546
4.2	SPONTANEOUSLY COMBUSTIBLE	172.547
5.1	OXIDIZER	172.550
5.2 (Other than organic peroxide, Type B, liquid or solid, temperature controlled).	ORGANIC PEROXIDE	172.552
6.1 (other than material poisonous by inhalation).	POISON	172.554

Table 2		
Category of material (Hazard class or division number and additional description, as appropriate)	Placard Name	Placard Design Section Reference (49 CFR)
6.2	None	
8	CORROSIVE	172.558
9	Class 9 (see 49 CFR 172.504(f)(9)).	172.560
ORM-D	None	

### Table 2 Considerations

- A freight container, unit load device, transport vehicle, or rail car which contains non-bulk packages with two or more categories of hazardous materials that require different placards specified in Table 2 may be placarded with a DANGEROUS placard instead of the separate placarding specified for each of the materials in Table 2. However, when 1,000 kg (2,205 pounds) aggregate gross weight or more of one category of material is loaded therein at one loading facility on a freight container, unit load device, transport vehicle, or rail car, the placard specified in Table 2 must be applied.
- Except for bulk packagings and hazardous materials subject to 49 CFR 172.505, when hazardous materials covered by Table 2 of this section are transported by highway or rail, placards are not required on:
  - A transport vehicle or freight container which contains less than 454 kg (1001 pounds) aggregate gross weight of hazardous materials covered by Table 2; or
  - A rail car loaded with transport vehicles or freight containers, none of which is required to be placarded.
- Except for hazardous materials subject to 49 CFR 172.505, a non-bulk packaging that contains only the residue of a hazardous material covered by Table 2 need not be included in determining placarding requirements.

### Additional Placarding Exceptions

- When more than one division placard is required for Class 1 materials on a transport vehicle, rail car, freight container or unit load device, only the placard representing the lowest division number must be displayed.
- A FLAMMABLE placard may be used in place of a COMBUSTIBLE placard on—
  - A cargo tank or portable tank.
  - A compartmented tank car which contains both flammable and combustible liquids.
- A NON-FLAMMABLE GAS placard is not required on a transport vehicle which contains non-flammable gas if the transport vehicle also contains flammable gas or oxygen and it is placarded with FLAMMABLE GAS or OXYGEN placards, as required.
- OXIDIZER placards are not required for Division 5.1 materials on freight containers, unit load devices, transport vehicles or rail cars which also contain Division 1.1 or 1.2 materials and which are placarded with EXPLOSIVES 1.1 or 1.2 placards, as required.
- For transportation by transport vehicle or rail car only, an OXIDIZER placard is not required for Division 5.1 materials on a transport vehicle, rail car or freight container which also contains Division 1.5 explosives and is placarded with EXPLOSIVES 1.5 placards, as required.

- The EXPLOSIVE 1.4 placard is not required for those Division 1.4 Compatibility Group S (1.4S) materials that are not required to be labeled 1.4S.
- For domestic transportation of oxygen, compressed or oxygen, refrigerated liquid, the OXYGEN placard in § 172.530 of this subpart may be used in place of a NON-FLAMMABLE GAS placard.
- For domestic transportation, a POISON INHALATION HAZARD placard is not required on a transport vehicle or freight container that is already placarded with the POISON GAS placard.
- For Class 9, a CLASS 9 placard is not required for domestic transportation, including that portion of international transportation, defined in § 171.8 of this subchapter, which occurs within the United States. However, a bulk packaging must be marked with the appropriate identification number on a CLASS 9 placard, an orange panel, or a white square-on-point display configuration as required by subpart D of this part.
- For Division 6.1, PG III materials, a POISON placard may be modified to display the text “PG III” below the mid line of the placard.
- For domestic transportation, a POISON placard is not required on a transport vehicle or freight container required to display a POISON INHALATION HAZARD or POISON GAS placard.
- For shipments of Class 1 (explosive materials) by aircraft or vessel, the applicable compatibility group letter must be displayed on the placards, or labels when applicable, required by this section. When more than one compatibility group placard is required for Class 1 materials, only one placard is required to be displayed, as provided below. For the following, there is a distinction between the phrases explosive articles and explosive substances. Explosive article means an article containing an explosive substance; examples include a detonator, flare, primer or fuse. Explosive substance means a substance contained in a packaging that is not contained in an article; examples include black powder and smokeless powder.
  - Explosive articles of compatibility groups C, D or E may be placarded displaying compatibility group E.
  - Explosive articles of compatibility groups C, D, or E, when transported with those in compatibility group N, may be placarded displaying compatibility group D.
  - Explosive substances of compatibility groups C and D may be placarded displaying compatibility group D.
  - Explosive articles of compatibility groups C, D, E or G, except for fireworks, may be placarded displaying compatibility group E.



## **Appendix 3-7**

### **List of Flammable and Combustible Bulk Liquid Cargoes (46 CFR 30.25-1, Table 30.25-1) (Revised October 2013; Deleted July 2018)**

**To see the current list, consult the Electronic Code of Federal Regulations.**



## Appendix 3-8

### Classes of Vessels (46 CFR 30.01-5(d))

Method of propulsion	Size or other limitations <sup>1</sup> under subchapter	Classes of vessels (including motorboats) examined or inspected under various Coast Guard regulations <sup>1</sup>			
		Vessels inspected and certificated Passenger D- Tank Vessels <sup>2</sup>	Vessels inspected and certificated under either subchapter H- Cargo and Vessel 2,3, 4, 5 or Subchapter T- Small Passenger Vessels <sup>2</sup> , 3, 4	Vessels inspected and certificated under subchapter I- Uninspected Miscellaneous Vessels <sup>2</sup> , <sup>5</sup>	Vessels subject to provisions of subchapter C,- Vessels <sup>2</sup> , 3, 6, 7 8
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
Steam	Vessels not over 65 ft in length.	All vessels carrying combustible or flammable liquid cargo in bulk.	All vessels carrying more than 6 passengers. <sup>7</sup>	All tugboats and towboats.	All vessels except those covered by columns 3, 4, 5, and 7.
	Vessels over 65 ft in length.	All vessels carrying combustible or flammable liquid cargo in bulk.	1. All vessels carrying more than 12 passengers on an international voyage, except yachts. 2. All vessels of not over 15 gross tons which carry more than 6 passengers. <sup>7</sup> 3. All other vessels carrying passengers, <sup>7</sup> except: a. Yachts. b. Documented cargo or tank vessels issued a permit to carry not more than 16 persons in addition to the crew. c. Towing and fishing vessels, in other than ocean and coastwise service, may carry persons on the legitimate business of the	All vessels except those covered by columns 3 and 4.	None

Method of propulsion	Size or other limitations <sup>1</sup> under subchapter	Classes of vessels (including motorboats) examined or inspected under various Coast Guard regulations <sup>1</sup>			
		Vessels inspected and certificated Passenger D- Tank Vessels <sup>2</sup>	Vessels inspected and certificated under either subchapter H- Cargo and Vessel 2,3, 4, 5 or Subchapter T- Small Passenger Vessels <sup>2</sup> , 3, 4	Vessels inspected and certificated under subchapter I- Uninspected Miscellaneous Vessels <sup>2</sup> , <sup>5</sup>	Vessels subject to provisions of subchapter C,- Vessels <sup>2</sup> , 3, 6, 7 8
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
			vessel, in addition to crew, but not to exceed one for each net ton of the vessel.		
Motor	Vessels not over 15 gross tons.	All vessels carrying combustible or flammable liquid cargo in bulk.	All vessels carrying more than 6 passengers. <sup>7</sup>	Those vessels carrying dangerous cargoes when required by 46 CFR 98 or 49 CFR 171- 179.	All vessels except those covered by columns 3, 4, 5, and 7.
	Vessels over 15 gross tons except seagoing motor vessels of 300 gross tons and over.	All vessels carrying combustible or flammable liquid cargo in bulk. <sup>5</sup>	1. All vessels carrying more than 12 passengers on an international voyage, except yachts. 2. All vessels not over 65 feet in length which carry more than 6 passengers. <sup>7</sup> 3. All other vessels of over 65 feet in length carrying passengers for hire except documented cargo or tank vessels issued a permit to carry not more than 16 persons in addition to the crew.	All vessels carrying freight for hire except those covered by columns 3 and 4.	All vessels except those covered by columns 3, 4, 5, and 7.
	Seagoing motor vessels of 300 gross tons and over.	All vessels carrying combustible or flammable liquid cargo in bulk. <sup>5</sup>	1. All vessels carrying more than 12 passengers on an international voyage, except yachts.	All vessels except those covered by columns 3 and 4, and those engaged in the fishing, oystering, clamming crabbing, or any other branch	All vessels except those covered by columns 3, 4, 5, and 7.

Method of propulsion	Size or other limitations <sup>1</sup> under subchapter	Classes of vessels (including motorboats) examined or inspected under various Coast Guard regulations <sup>1</sup>			
		Vessels inspected and certificated Passenger D- Tank Vessels <sup>2</sup>	Vessels inspected and certificated under either subchapter H- Cargo and Vessel 2,3, 4, 5 or Subchapter T- Small Passenger Vessels <sup>2</sup> , 3, 4	Vessels inspected and certificated under subchapter I- Uninspected Miscellaneous Vessels <sup>2</sup> , <sup>5</sup>	Vessels subject to provisions of subchapter C,- Vessels <sup>2</sup> , 3, 6, 7 8
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
			2. All other vessels carrying passengers, <sup>7</sup> except: a. Yachts. b. Documented cargo or tank vessels issued a permit to carry not more than 16 persons in addition to the crew.	of the fishery, kelp, or sponge industry.	
Sail	Vessels not over 700 gross tons.	All vessels carrying combustible or liquid cargo in bulk.	All vessels carrying more than 6 passengers. <sup>7</sup>	Those vessels carrying dangerous cargoes when required by 46 CFR part 98 or 49 CFR 171-179.	None
	Vessels over 700 gross tons.	All vessels carrying combustible or liquid cargo in bulk.	All vessels carrying passengers for hire.	Those vessels carrying dangerous cargoes when required by 46 CFR part 98 or 146.	None
Non-self-propelled	Vessels less than 100 gross tons.	All vessels carrying combustible or liquid cargo in bulk.	Those vessels carrying dangerous cargoes when required by 49 CFR parts 171-179.	Those Vessels carrying dangerous cargoes when required by 46 CFR part 98 or 49 CFR parts 171-179.	All barges carrying passengers except those covered by column 4.
	Vessels 100 gross tons or over.	All vessels carrying combustible or flammable liquid cargo in bulk.	All seagoing barges except those covered by columns 3 and 4; and those inland barges carrying dangerous cargoes when required by 49 CFR 171- 179.	All seagoing barges except those covered by columns 3 and 4; and those inland barges carrying dangerous cargoes when required by 46 CFR 98 or 49 CFR 171-179.	All barges carrying passengers except columns 4 and 7.

<sup>1</sup> Where length is used in this table it means the length measured from end to end over the deck, excluding sheer. This expression means a straight line measurement of the overall length from the foremost part of the vessel to the aftermost part of the vessel, measured parallel to the centerline.

<sup>2</sup> Subchapter E (Load Lines), F (Marine Engineering), J (Electrical Engineering), and N (Dangerous Cargoes) of this chapter may also be applicable under certain conditions. The provisions of 49 CFR 171-179 apply whenever hazardous materials are on board vessels (including motorboats), except when specifically exempted by law.

<sup>3</sup> Public nautical schoolships, other than vessels of the Navy and Coast Guard, shall meet the requirements of 49 CFR 167 of subchapter R (Nautical Schools) of this chapter. Civilian nautical schools, as defined by 46 USC 1331, shall meet the requirements of subchapter H (Passenger Vessels) and part 168 of subchapter R (Nautical Schools) of this chapter.

<sup>4</sup> Subchapter H (Passenger Vessels) of this chapter covers only those vessels of 100 gross tons or more. Subchapter T (Small Passenger Vessels) of this chapter covers only those vessels of less than 100 gross tons.

<sup>5</sup> Vessels covered by subchapter H (Passenger Vessels) or I (Cargo and Miscellaneous Vessels) of this chapter, where the principal purpose or use of the vessel is not the carriage of liquid cargo, may be granted a permit to carry a limited amount of flammable or combustible liquid cargo in bulk. The portion of the vessel used for the carriage of the flammable or combustible liquid cargo shall meet the requirements of subchapter D (Tank Vessels) in addition to the requirements of subchapter H (Passenger Vessels) or I (Cargo and Miscellaneous Vessels) of this chapter.

<sup>6</sup> Any vessel on an international voyage is subject to the requirements of the International Convention for Safety of Life at Sea, 1974.

<sup>7</sup> The meaning of the term passenger is as defined in the Act of 10 May 1956 (Section 1, 70 Statute 151; 46 USC 390). On oceanographic vessels, scientific personnel on board shall not be deemed to be passengers or seamen, but for calculations of lifesaving equipment, etc., shall be counted as persons.

<sup>8</sup> Boilers and machinery are subject to examination on vessels over 40 ft in length.

## SECTION 4

### HAZARDOUS WASTE MANAGEMENT U.S. TEAM Guide, December 2018

#### A. Applicability

This section applies to facilities and activities that generate, store, transport, treat, or dispose of any type of hazardous waste. This section and its associated checklists are more complex than other sections in this volume. Not all checklist items will be applicable to a given facility or activity. Guidance is provided on the checklists to direct the assessor to the regulations concerning the type of hazardous waste activities/facilities at the facility or activity. Information on hazardous waste storage tanks is in the section titled Storage Tank Management.

Assessors are required to review state and local regulations and, if applicable, the appropriate Agency Supplement, to perform a comprehensive assessment.

Select portions of this section (i.e., Review of Federal Legislation, State and Local Regulations, Key Compliance Requirements, Key Terms and Definitions, Typical Records to Review, Typical Physical Features to Inspect, and the Checklist) have been reviewed by USEPA personnel from the Office of Enforcement and Compliance Assurance (OECA) and USEPA's Office of General Counsel. USEPA's comments and suggestions for changes have been incorporated in this version of the TEAM Guide. USEPA did not review all portions of this section. USEPA also did not review and comment on items pertaining to federal Executive Orders, DOT regulations, OSHA regulations or any other area outside of Title 40 of the Code of Federal Regulations. Portions that have been added or revised as a result of this review are identified as being reviewed, revised or added in March 2000 or October 2001, for example **[Added March 2000]**.

#### B. Federal Legislation

- *The Resource Conservation and Recovery Act (RCRA)*. RCRA of 1976, which amended the Solid Waste Disposal Act, addresses nonhazardous (Subtitle D) and hazardous (Subtitle C) waste management activities. The Hazardous and Solid Waste Amendments (HSWA) of 1984 strengthened RCRA's waste management provisions and added Subtitle I, which governs underground storage tanks (USTs). This section addresses Subtitle C requirements. See Solid Waste Management for Subtitle D requirements and Storage Tank Management for Subtitle I requirements **[Revised March 2000]**.

Regulations promulgated pursuant to Subtitle C of RCRA (40 CFR 260 through 299) establish a "cradle-to-grave" system governing hazardous waste from the point of generation to disposal. RCRA hazardous wastes include the specific materials listed in the regulations (commercial chemical products designated with the code "P" or "U", hazardous wastes from specific industries/sources designated with the code "K", or hazardous wastes from non-specific sources, designated with the code "F") or materials that exhibit a hazardous waste characteristic (ignitability, corrosivity, reactivity, or toxicity and designated with the code "D").

Regulated entities that generate hazardous waste are subject to waste accumulation, manifesting, and record keeping standards. Facilities generally must obtain a permit either from USEPA or from a state agency that USEPA has authorized to implement the permitting program if they store hazardous wastes for more than 90 days before treatment or disposal. Facilities may operate less- than-90-day tanks or containers of hazardous wastes without a permit. Subtitle C permits contain general facility standards, such as contingency plans, emergency procedures, record keeping and reporting requirements, financial assurance mechanisms, and unit-specific standards. RCRA also contains provisions (40 CFR 264, Subpart S and Section 264.101) for conducting corrective actions that govern the cleanup of releases of hazardous waste or constituents from solid waste management units at RCRA treatment, storage, and disposal facilities.

Many operations and organizations may have numerous operations that result in the generation and management of different types of solid and hazardous waste. These operations may be subject to specific parts of RCRA, depending on the type of waste generated, its management (e.g., stored, transported), and its disposal. Most RCRA requirements are not industry specific but apply to any entity that generates, transports, treats, stores, or disposes of hazardous waste. The following are some important RCRA regulatory requirements:

- **Identification of Solid and Hazardous Wastes** (40 CFR 261) delineates the procedure every generator must follow in determining whether the material in question is considered a hazardous waste or solid waste or is exempted from regulation.
- **Standards for Generators of Hazardous Waste** (40 CFR 262) establish the responsibilities of hazardous waste generators. These include obtaining a USEPA identification number, preparing a manifest, ensuring proper packaging and labeling, meeting standards for waste accumulation units, and meeting record keeping and reporting requirements. Providing they meet additional requirements described in 40 CFR 262.34, generators may accumulate hazardous waste for up to 90 days (or 180 or 270 days depending on the amount of waste generated and the distance the waste will be transported).
- **Land Disposal Restrictions** (LDRs) (40 CFR 268) are regulations prohibiting the disposal of hazardous waste on land without prior treatment. Under the LDR program, materials must meet LDR treatment standards prior to placement in a RCRA land disposal unit (landfill, land treatment unit, waste pile, or surface impoundment). Generators of waste subject to the LDR must provide notification of such to the designated TSD facility to ensure proper treatment prior to disposal.
- **Used Oil Management Standards** (40 CFR 279) impose management requirements affecting the storage, transportation, burning, processing, and re-refining of the used oil. For parties that merely generate used oil, regulations establish storage standards. For a party considered a used oil processor, re-refiner, burner, or marketer (one who generates and sells off-specification used oil directly to a used oil burner), additional tracking and paperwork requirements must be satisfied. These requirements are addressed in the section titled POL Management.
- **Tanks and Containers**, as well as any unit, used to store, treat, or dispose of hazardous waste, are regulated under RCRA. Tanks and containers used to store hazardous waste with a high volatile organic concentration must meet emission standards under RCRA. Regulations (40 CFR 264-265, Subpart CC) require generators to test the waste to determine the concentration of the waste, to satisfy tank and container emissions standards, and to inspect and monitor regulated units. These regulations apply to all facilities that store such waste, including large quantity generators accumulating waste prior to shipment off-site. Storage tanks are addressed in the section titled Storage Tank Management.
- **Boilers and Industrial Furnaces** (BIFs) that use or burn fuel containing hazardous waste must comply with design and operating standards. BIF regulations (40 CFR 266, Subpart H) address unit design, provide performance standards, require emissions monitoring, and restrict the type of waste that may be burned.
- *The Federal Facility Compliance Act (FFCA) of 1992.* This act provides for a waiver of sovereign immunity with respect to Federal, state, and local procedural and substantive requirements relating to RCRA solid and hazardous waste laws and regulations. Additionally, it defines hazardous waste in relation to public vessels, expands the definition of mixed waste, addresses the issue of munitions, and discusses waste discharges to Federally owned treatment works (FOTWs).
- *EO 12088, Federal Compliance with Pollution Standards.* This EO, dated 13 October 1978, requires Federally owned and operated facilities to comply with applicable Federal, state, and local pollution control standards. It makes the head of each executive agency responsible for ensuring that the agencies, facilities, programs, and activities the Agency funds meet applicable Federal, state, and local environmental requirements for correcting situations that are not in compliance with such requirements. In addition, the EO requires that each agency ensure

that sufficient funds for environmental compliance are included in the agency budget. Sections 1-4, "Pollution Control Plan" was revoked by EO 13148 **[Revised October 2002]**.

### C. State/Local Regulations

For information on regulations in specific states, see the State Supplements to TEAM Guide.

Under RCRA, USEPA may authorize a State or Territory, instead of the Federal government, to administer and enforce RCRA, including waste military munitions (WMM). While the regulations adopted by a State or Territory have to be at least as stringent as the Federal regulations, RCRA allows States and Territories to impose standards that are more stringent than those in the Federal program. Therefore, compliance requirements may differ from State to State or Territory. The definitions of when military munitions become WMM and the Designated Disposition Authority (DDA) Evaluation Process apply at all activities. These requirements are not dependent upon a State or Territory's adoption of the Federal MR or adoption of other State or Territory standards **[Revised January 2003]**.

### D. Key Compliance Requirements

- Generator Requirements - Responsibilities are based on the amount of waste being generated in 1 mo. Typical wastes include solvents, paint, contaminated antifreeze or oil, and sludges. In some states, waste oil and other substances have been classified as a hazardous waste and therefore need to be included in the total amount of waste being generated. Within Federal regulations there are three classifications *[Revised January 2017]*:
  1. A Very Small Quantity Generator (VSQG) generates less than or equal to the following amounts in a calendar month (40 CFR 260.10):
    - a. 100 kilograms (220 lbs) of nonacute hazardous waste; and
    - b. 1 kilogram (2.2 lbs) of acute hazardous waste listed in 40 CFR 261.31 or 40 CFR 261.33(e); and
    - c. 100 kilograms (220 lbs) of any residue or contaminated soil, water, or other debris resulting from the cleanup of a spill, into or on any land or water, of any acute hazardous waste listed in 40 CFR 261.31 or 40 CFR 261.33(e).
  2. A Small Quantity Generator (SQG) generates the following amounts in a calendar month (40 CFR 260.10):
    - a. Greater than 100 kilograms (220 lbs) but less than 1,000 kilograms (2200 lbs) of non-acute hazardous waste; and
    - b. Less than or equal to 1 kilogram (2.2 lbs) of acute hazardous waste listed in 40 CFR 261.31 or 40 CFR 261.33(e); and
    - c. Less than or equal to 100 kilograms (220 lbs) of any residue or contaminated soil, water, or other debris resulting from the cleanup of a spill, into or on any land or water, of any acute hazardous waste listed in 40 CFR 261.31 or 40 CFR 261.33(e).
  3. A Large *Quantity Generator* generates any of the following amounts in a calendar month (40 CFR 260.10):
    - a. Greater than or equal to 1,000 kilograms (2200 lbs) of non-acute hazardous waste; or
    - b. Greater than 1 kilogram (2.2 lbs) of acute hazardous waste listed in 40 CFR 261.31 or 40 CFR 261.33(e); or
    - c. Greater than 100 kilograms (220 lbs) of any residue or contaminated soil, water, or other debris resulting from the cleanup of a spill, into or on any land or water, of any acute hazardous waste listed in 40 CFR 261.31 or 40 CFR 261.33(e).

Whether the facility is a VSQG, an SQG, or a LQG determines the type of records they are required to keep and design standards for storage areas. Regardless of the amount of hazardous waste generated, every facility is required to test or use knowledge of materials or processes used to determine if solid waste is a listed hazardous waste or has hazardous characteristics as well as determine their generator size.

### Comparison of RCRA Generator Requirements

Requirement	VSQG	SQG	LQG
Identify HW	Yes	Yes	Yes
Quantity Limits	<100 kg/mo [approx. 220 lb/m]	100 kg/mo [approx. 220 lb] - 1000 kg/mo [approx. 2205 lb]	>1000 kg/mo [approx. 2205 lb/mo]
Acute Waste Limits	<= 1 kg/mo [approx. 2 lb/mo]	<=1 kg/mo [approx. 2 lb/mo]	> 1 kg/mo [approx. 2 lb/mo]
Facility Receiving Waste	LQG or RCRA permitted	RCRA permitted facility.	RCRA permitted facility.
USEPA ID Number	Not Required	Required	Required
RCRA Personnel Training	Not Required	Basic Training Required.	Required
DOT Training	Required if transporting or signing a manifest	Required if transporting OR signing a manifest	Required if transporting or signing a manifest
Exception Report	Not Required	Required > 60 days	Required > 45 days
Biennial Report	Not Required	Not Required	Required
Onsite Accumulation Limits (without permit)	1000 kg [approx. 2205 lb] hazardous waste  < 1 kg [approx. 2 lb] of acute hazardous waste.	6000 kg [approx. 13,228 lb] hazardous waste	Any quantity.
Accumulation Time Limits (without permit)	None	180 days or 270 days if the waste is transported more than 200 mi	<= 90 days + 30 days granted by USEPA
Storage Requirements	None	Basic requirements with technical standards for containers or tanks.	Full compliance with management of containers or tanks.
Use Manifests	No	Yes*	Yes
Episodic Waste Generation Allowance	Yes	Yes	No

\* Unless the waste is reclaimed under contractual agreement and properly marked and labeled.

- Transport Requirements - Containers of hazardous waste shipped offsite must be labeled to identify the waste and its hazard class. Transporters of hazardous waste required to be manifested must have an USEPA identification number and must comply with manifest management requirements.
- Central Accumulation Area Management – A central accumulation area (aka 180-day or 90-day storage area) is an area where hazardous waste is accumulated or stored before being turned in for disposal to a permitted facilities (i.e., a TSDF, recycler etc). Storage in these areas is temporary, and the permissible length of time for accumulation depends on generator classification.

- **Satellite Accumulation Point Management** - A satellite accumulation point is an area at which no more than 55 gal of a hazardous waste or 1 qt of acute hazardous waste is accumulated at or near the point of generation. The satellite accumulation point is under the control of one operator of the process generating the waste. When the 55 gal limit is reached the operator has 3 consecutive calendar days to move the waste to a central accumulation area (i.e. 180-day or 90-day storage area) or a permitted TSDF. The option to accumulated hazardous waste in a satellite accumulation point/area only applies to an SQG or a LQG.
- **Universal Wastes** - These requirements apply to batteries, pesticides, and thermostats as defined in 40 CFR 273. They are alternate standards for the handling of these wastes instead of the requirements found in 40 CFR 260 through 272. Handlers can be classified as either a large quantity handler of universal waste (5000 kg [ $\approx$  11,111 lb] or more in 1 yr) or a small quantity handler of universal waste (less than 5000 kg [ $\approx$  11,111 lb] in 1 yr). Depending on classification, the handler has to meet requirements concerning management of the waste, marking and labeling, notifications, and transportation. Additionally, there are standards for universal waste transporters and universal waste destination facilities (40 CFR 273). These regulations are only effective upon adoption by the state RCRA program, except in those areas without an authorized program.
- **Permitted TSDF Requirements** - The operation of a TSDF is subject to regulation and permitting under Federal and state regulations. These regulations are both administrative and technical in nature. The administrative standards require that various plans be developed to ensure that emergencies can be dealt with, waste received is properly identified, and operating personnel are adequately trained to operate the TSDF and respond to emergencies. These administrative standards also include requirements that the TSDF be inspected routinely, records of operations are compiled and maintained, and reports of both routine and contingency operations are made to the applicable regulatory agency. The administrative standards also require that a plan for ceasing operations and closing the TSDF be developed, kept on hand, and updated frequently.

The technical standards that are applicable to TSDFs fall into two classes: general standards that apply to all TSDFs and specific standards that apply to various types of facilities, i.e., container storage areas, tanks, containment buildings, surface impoundments, waste piles, land treatment facilities, incinerators, landfills, thermal treatment facilities, and chemical, physical, and biological treatment facilities.

Administrative and technical standards are applied to a particular facility through a RCRA permit issued to a facility. Existing TSDFs that have applied for a permit but not yet been issued a RCRA permit are considered to be in interim status if they applied for a part A and part B permit and can continue to operate if they comply with the RCRA mandated interim status standards (ISS) of 40 CFR 265 (interim status standards for owners and operators of hazardous waste TSDF).

- **Ordnance** - Under the provisions of 40 CFR 261.23(a)(6) through 261.23(a)(8) ordnance is classified as a reactive hazardous waste. The open burning and detonation (OB/OD) of waste explosives is allowed at interim status TSDFs as long as a minimum distance is kept from the property line of the property of others. The length of this distance is based on the amount of explosive being OB/OD. For permitted TSDFs, OB/OD activities are regulated by permit to operate a miscellaneous unit. This is often referred to as a Subpart X permit.

## **E. Key Compliance Definitions**

- **Active Life** - the period from the initial receipt of hazardous waste at the facility until the Regional Administrator receives certification of final closure (40 CFR 260.10).
- **Active Portion** - that portion of a facility where treatment, storage, or disposal operations are being or have been conducted and which is not a closed portion (40 CFR 260.10).
- **Acute Hazardous Waste** -hazardous wastes that meet the listing criteria in 40 CFR 261.11(a)(2) and therefore are either listed in 40 CFR 261.31 with the assigned hazard code of (H) or are listed in 40 CFR 261.33(e) (40 CFR 260.10) [**Reviewed October 2001, Revised January 2017**].

- *Agreement State* - a state that has entered into an agreement with the NRC under subsection 274b of the Atomic Energy Act of 1954, as amended (68 Stat. 919), to assume responsibility for regulating within its borders byproduct, source, or special nuclear material in quantities not sufficient to form a critical mass (40 CFR 266.210) **[Added January 2004]**.
- *Ampule* - an airtight vial made of glass, plastic, metal, or any combination of these materials (40 CFR 273.9) **[Added October 2005]**.
- *Aquifer* - a geologic formation or group of formations, or part of a formation capable of yielding a significant amount of groundwater to wells or springs (40 CFR 260.10) **[Reviewed October 2001]**.
- *Automated Export System (AES) Filing Compliance Date* - the date that EPA announces in the Federal Register, on or after which exporters of hazardous waste and exporters of cathode ray tubes for recycling are required to file EPA information in the Automated Export System or its successor system, under the International Trade Data System (ITDS) platform (40 CFR 260.10) **[Added January 2017]**
- *Average Volatile Organic (VO) Concentration* - the mass-weighted average VO concentration of a hazardous waste (40 CFR 265.1081) **[Reviewed October 2001]**.
- *Battery* - a device consisting of one or more electrically connected electrochemical cells that are designed to receive, store, and deliver electric energy. An electrochemical cell is a system consisting of an anode, cathode, and an electrolyte, plus such connections (electrical and mechanical) as may be needed to allow the cell to deliver or receive electrical energy. The term battery also includes an intact, unbroken battery from which the electrolyte has been removed (40 CFR 260.10 and 273.9) **[Reviewed October 2001]**.

In relation to the concept of universal wastes, this term includes all batteries except the following (40 CFR 273.2(b)):

1. spent lead acid batteries that are managed under 40 CFR 266, Subpart G (reclamation of spent lead acid batteries that are recyclable)
2. batteries as defined above that are not yet wastes under 40 CFR 261, including those that do not meet the criteria for waste generation (see definition of Waste Battery)
3. batteries as defined above that are not hazardous waste. A battery is a hazardous waste if it exhibits one or more of the characteristics identified in 40 CFR 261, Subpart C [Revised October 1999, Reviewed March 2000].

See also the definition of *Waste Battery*.

- *Boiler* - an enclosed device using controlled flame combustion and having the following characteristics (40 CFR 260.10) **[Revised October 2001]**:
  1. The unit has physical provisions for recovering and exporting thermal energy in the form of steam, heated fluids, or heated gases; and
  2. The unit's combustion chamber and primary energy recovery section(s) must be of integral design; and
  3. While in operation the unit maintains a thermal energy recovery efficiency of at least 60 percent; and
  4. The unit has been approved by the Administrator of USEPA; and
  5. The unit must export and utilize at least 75% of the recovered energy (40 CFR 260.10).

USEPA may also decide on a case-by-case basis that certain enclosed devices using controlled flame combustion are boilers even though they may not otherwise meet the definition of boiler.
- *Cathode Ray Tube or CRT* - a vacuum tube, composed primarily of glass, which is the visual or video display component of an electronic device. A used, intact CRT means a CRT whose vacuum has not been released. A used, broken CRT means glass removed from its housing or casing whose vacuum has been released (40 CFR 260.10) **[Added July 2006]**.

- *Cathode Ray Tube or CRT* - a vacuum tube, composed primarily of glass, which is the video display component of a television or computer monitor. An intact CRT means a CRT remaining within the monitor whose vacuum has not been released. A broken CRT means glass removed from the monitor after the vacuum has been released (40 CFR 261.40(f)) **[Added January 2003]**.
- *Central Accumulation Area* - any on-site hazardous waste accumulation area with hazardous waste accumulating in units subject to either 40 CFR 262.16 (for small quantity generators) or 40 CFR 262.17 (for large quantity generators). A central accumulation area at an eligible academic entity that chooses to operate under 40 CFR part 262 subpart K is also subject to 40 CFR 262.211 when accumulating unwanted material and/or hazardous waste (40 CFR 260.10) **[Added January 2009; Revised January 2011, Revised January 2017]**.
- *Certification* - a statement of professional opinion based upon knowledge and belief (40 CFR 260.10) **[Reviewed October 2001]**.
- *Certified Delivery* - certified mail with return receipt requested, or equivalent courier service, or other means, that provides the sender with a receipt confirming delivery (40 CFR 266.210) **[Added January 2004]**.
- *Characteristics of Hazardous Waste* - the characteristics of ignitibility, corrosivity, reactivity, and toxicity that identify hazardous waste (40 CFR 261.20 through 261.24) **[Reviewed October 2001]**.
- *Closed Portion* - the portion of a facility that has been closed in accordance with the approved closure plan and all applicable closure requirements (40 CFR 260.10).
- *Closure Device* - a cap, hatch, lid, plug, seal, valve, or other type of fitting that blocks an opening in a cover such that when the device is secured in the closed position it prevents or reduces air pollutant emissions to the atmosphere. Closure devices include devices that are detachable from the cover (e.g., a sampling port cap), manually operated (e.g., hinged access lid or hatch), or automatically operated (e.g., a spring loaded pressure relief valve) (40 CFR 265.1081) **[Reviewed October 2001]**.
- *College/University* - a private or public, post-secondary, degree-granting, academic institution, that is accredited by an accrediting agency listed annually by the U.S. Department of Education (40 CFR 262.200) **[Added January 2009]**.
- *Competent Authority* - the regulatory authority or authorities of concerned countries having jurisdiction over transboundary movements of wastes (40 CFR 262.81) **[Added January 2018]**.
- *Conditionally Exempt Small Quantity Generator* – See Very Small Quantity Generator.
- *Container* - any portable device in which a material is stored, transported, treated, disposed of, or otherwise handled (40 CFR 260.10) **[Reviewed October 2001]**.
- *Containment Building* - a hazardous waste management unit that is used to store or treat hazardous waste under 40 CFR 264.1100 through 264.1103 and 265.1100 through 265.1103 (40 CFR 260.10) **[Reviewed October 2001]**.
- *Contingency Plan* - a document setting out an organized, planned, and coordinated course of action to be followed in case of a fire, explosion, or release of hazardous waste or hazardous waste constituents that could threaten human health or the environment (40 CFR 260.10) **[Reviewed October 2001]**.
- *Countries Concerned* - the countries of export or import and any countries of transit (40 CFR 262.81) **[Added January 2018]**.
- *Country of Export* - any country from which a transboundary movement of hazardous wastes is planned to be initiated or is initiated (40 CFR 262.81) **[Added January 2018]**.

- *Country of Import* - any country to which a transboundary movement of hazardous wastes is planned or takes place for the purpose of submitting the wastes to recovery or disposal operations therein (40 CFR 262.81) **[Added January 2018]**.
- *Country of Transit* - any country other than the country of export or country of import across which a transboundary movement of hazardous wastes is planned or takes place (40 CFR 262.81) **[Added January 2018]**.
- *Cover* - a device that provides a continuous barrier over the hazardous waste managed in a unit to prevent or reduce air pollutant emissions to the atmosphere. A cover may have openings (such as access hatches, sampling ports, gauge wells) that are necessary for operation, inspection, maintenance, and repair of the unit on which the cover is used. A cover may be a separate piece of equipment that can be detached and removed from the unit or a cover may be formed by structural features permanently integrated into the design of the unit (40 CFR 265.1081) **[Reviewed October 2001]**.
- *CRT Collector* - a person who receives used, intact CRTs for recycling, repair, resale, or donation (40 CFR 260.10) **[Added July 2006]**.
- *CRT Glass Manufacturer* - an operation or part of an operation that uses a furnace to manufacture CRT glass (40 CFR 260.10) **[Added July 2006]**.
- *CRT Glass Manufacturing Facility* - a facility or part of a facility located within the Region III States that uses a furnace to manufacture CRT glass (40 CFR 261.40(f)) **[Added January 2003]**.
- *CRT Processing* - conducting all of the following activities (40 CFR 260.10) **[Added July 2006]**:
  1. Receiving broken or intact CRTs; and
  2. Intentionally breaking intact CRTs or further breaking or separating broken CRTs; and
  3. Sorting or otherwise managing glass removed from CRT monitors.
- *CRT Processing* - the conducting of all of the following activities at a facility within the USEPA Region III's States (40 CFR 261.40(f)) **[Added January 2003]**:
  1. receiving broken or intact CRTs;
  2. intentionally breaking intact CRTs or further breaking or separating broken CRTs;
  3. sorting or otherwise managing glass removed from CRT monitors; and
  4. cleaning coatings off the glass removed from CRTs.
- *Debris* - solid material exceeding a 60 mm particle size that is intended for disposal and that is (40 CFR 268.2) **[Reviewed October 2001]**:
  1. a manufactured object
  2. plant or animal matter
  3. natural geologic material.

The following materials are not debris:

1. any material for which a specific treatment standard is provided in Subpart D, 40 CFR 268, namely lead acid batteries, cadmium batteries, and radioactive lead solids
  2. process residuals such as smelter slag and residues from the treatment of waste, wastewater, sludges, or air emissions residues
  3. intact containers of hazardous waste that are not ruptured and retain at least 75 percent of their original volume.
- *Designated Facility* -
    1. A hazardous waste treatment, storage, or disposal facility which:
      - a. Has received a permit (or interim status) in accordance with the requirements of 40 CFR 270 and 124;

- b. Has received a permit (or interim status) from a State authorized in accordance with 40 CFR 271; or
    - c. Is regulated under 40 CFR 261.6(c)(2) or 40 CFR 266, Subpart F; and
    - d. That has been designated on the manifest by the generator pursuant to 40 CFR 262.20.
  - 2. Designated facility also means a generator site designated on the manifest to receive its waste as a return shipment from a facility that has rejected the waste in accordance with 40 CFR 264.72(f) or 40 CFR 265.72(f) of this chapter.
  - 3. If a waste is destined to a facility in an authorized State which has not yet obtained authorization to regulate that particular waste as hazardous, then the designated facility must be a facility allowed by the receiving State to accept such waste (40 CFR 260.10) [Revised April 2005].
- *Destination Facility* - a facility that treats, disposes of, or recycles a particular category of universal waste. A facility at which a particular category of universal waste is only accumulated, is not a destination facility for purposes of managing that category of universal waste. (The management activities of handlers for universal waste batteries and universal waste thermostats are exempt from the definition of a destination facility.) (40 CFR 262.10 and 273.9) [**Revised October 1999; Reviewed March 2000**].
  - *Detonation* - an explosion in which chemical transformation passes through the material faster than the speed of sound (0.33 km/s at sea level) (40 CFR 265.382).
  - *Dike* - an embankment or ridge of either natural or manmade materials used to prevent the movement of liquids, sludges, solids, or other materials (40 CFR 260.10) [**Reviewed October 2001**].
  - *Discharge or Hazardous Waste Discharge* - the accidental or intentional spilling, leaking, pumping, pouring, emitting, emptying, or dumping of hazardous waste into or on any land or water (40 CFR 260.10) [**Reviewed October 2001**].
  - *Disposal* - the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water so that such solid waste or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including groundwaters (40 CFR 260.10) [**Reviewed October 2001**].
  - *Disposal Facility* - a facility or part of a facility at which hazardous waste is intentionally placed into or on any land or water, and at which waste will remain after closure. The term disposal facility does not include a corrective action management unit into which remediation wastes are placed (40 CFR 260.10) [**Reviewed October 2001**].
  - *Disposal Operations* – in relation to the export/import of hazardous waste, activities which do not lead to the possibility of resource recovery, recycling, reclamation, direct re-use or alternate uses, which include (40 CFR 262.81) [**Added January 2018**]:
    - 1. D1 Release or Deposit into or onto land, other than by any of operations D2 through D5 or D12.
    - 2. D2 Land treatment, such as biodegradation of liquids or sludges in soils.
    - 3. D3 Deep injection, such as injection into wells, salt domes or naturally occurring repositories.
    - 4. D4 Surface impoundment, such as placing of liquids or sludges into pits, ponds or lagoons.
    - 5. D5 Specially engineered landfill, such as placement into lined discrete cells which are capped and isolated from one another and the environment.
    - 6. D6 Release into a water body other than a sea or ocean, and other than by operation D4.
    - 7. D7 Release into a sea or ocean, including sea-bed insertion, other than by operation D4.
    - 8. D8 Biological treatment not specified elsewhere in operations D1 through D12, which results in final compounds or mixtures which are discarded by means of any of operations D1 through D12.
    - 9. D9 Physical or chemical treatment not specified elsewhere in operations D1 through D12, such as evaporation, drying, calcination, neutralization, or precipitation, which results in final compounds or mixtures which are discarded by means of any of operations D1 through D12.
    - 10. D10 Incineration on land.
    - 11. D11 Incineration at sea.
    - 12. D12 Permanent storage.

13. D13 Blending or mixing, prior to any of operations D1 through D12.
  14. D14 Repackaging, prior to any of operations D1 through D13.
  15. D15 (or DC17 for transboundary movements with Canada only) Interim Storage, prior to any of operations D1 through D12.
  16. DC15 Release, including the venting of compressed or liquified gases, or treatment, other than by any of operations D1 to D12 (for transboundary movements with Canada only).
  17. DC16 Testing of a new technology to dispose of a hazardous waste (for transboundary movements with Canada only).
- *Electronic Import-Export Reporting Compliance Date* - the date that EPA announces in the Federal Register, on or after which exporters, importers, and receiving facilities are required to submit certain export and import related documents to EPA using EPA's Waste Import Export Tracking System, or its successor system (40 CFR 260.10) **[Added January 2017]**.
  - *Elementary Neutralization Unit* - a device which (40 CFR 260.10) **[Reviewed October 2001]**:
    1. is used for neutralizing wastes that are hazardous only because they exhibit corrosivity characteristic defined in 40 CFR 261.22, or they are listed in Subpart D of 40 CFR 261 only for this reason
    2. meets the definition of tank, tank system, container, transport vehicle, or vessel in 40 CFR 261.10.
  - *Eligible Academic Entity* - a college or university, or a non-profit research institute that is owned by or has a formal written affiliation agreement with a college or university, or a teaching hospital that is owned by or has a formal written affiliation agreement with a college or university (40 CFR 262.200) **[Added January 2009]**.
  - *Eligible Naturally Occurring and/or Accelerator-produced Radioactive Material (NARM)* - NARM that is eligible for the Transportation and Disposal Conditional Exemption. It is a NARM waste that contains RCRA hazardous waste, meets the waste acceptance criteria of, and is allowed by State NARM regulations to be disposed of at a low-level radioactive waste disposal facility (LLRWDF) licensed in accordance with 10 CFR part 61 or NRC Agreement State equivalent regulations (40 CFR 266.210) **[Added January 2004]**.
  - *Enclosure* - a structure that surrounds a tank or container, captures organic vapors emitted from the tank or container, and vents the captured vapors through a closed-vent system to a control device (40 CFR 265.1081) **[Reviewed October 2001]**.
  - *EPA Acknowledgment of Consent (AOC)* - the letter EPA sends to the exporter documenting the specific terms of the country of import's consent and the country(ies) of transit's consent(s). The AOC meets the definition of an export license in U.S. Census Bureau regulations 15 CFR 30.1 (40 CFR 262.81) **[Added January 2018]**.
  - *EPA Hazardous Waste Number* - the number assigned by USEPA to each hazardous waste listed in 40 CFR 261, Subpart D, and to each characteristic identified in 40 CFR 261, Subpart C (40 CFR 260.10) **[Reviewed October 2001]**.
  - *EPA Identification Number* - the number assigned by USEPA to each generator, transporter, and TSDF (40 CFR 260.10) **[Reviewed October 2001]**.
  - *Episodic Event* - an activity or activities, either planned or unplanned, that does not normally occur during generator operations, resulting in an increase in the generation of hazardous wastes that exceeds the calendar month quantity limits for the generator's usual category (40 CFR 262.231) **[Added January 2017]**.
  - *Equipment* - each valve, pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, or flange or other connector, and any control devices or systems required by this subpart (40 CFR 264.1031) **[Added April 1999; Reviewed October 2001]**.
  - *Exempted Hazardous Waste Containers and Surface Impoundments* - containers and surface impoundments are exempt from the air emission requirements (specified under 40 CFR 264.1084 through 264.1087 or under 40 CFR

265.1085 through 265.1088) if the waste management unit is one of the following (40 CFR 264.1082(c) and 265.1083(c)) **[Revised December 1997; Reviewed October 2001]**:

1. containers and surface impoundments for which all hazardous wastes entering the unit have an average VO concentration at the point of waste origination of less than 500 ppmw as determined by using the procedures specified under 40 CFR 264.1083(a) and 40 CFR 265.1084(a). This determination is updated at least every 12 mo
2. containers and surface impoundments for which the organic content of all hazardous wastes entering the unit has been reduced by an organic destruction or removal process that achieves any of the following conditions:
  - d. a. a process that removes or destroys the organics to a level such that the average VO concentration of the hazardous waste at the point of waste treatment is less than the exit concentration limit established for the process as determined by using the procedures specified under 40 CFR 264.1083(a) and 265.1084(b)
  - e. b. a process that removes or destroys the organics contained in the hazardous waste to such a level that the organic reduction efficiency for the process is equal to or greater than 95 percent, and the average VO concentration of the hazardous waste at the point of waste treatment is less than 100 ppmw as determined by using the procedures specified under 40 CFR 264.1083(a) and 265.1084(b)
  - f. c. a process that removes or destroys the organics contained in the hazardous waste to such a level that the actual organic mass removal rate for the process is greater than the required organic mass removal rate established for the process as determined by using the procedures specified under 40 CFR 264.1083(a) and 265.1084(b)
  - g. d. a biological process that destroys or degrades the organics contained in the hazardous waste such that either of the following is met:
    - i. the organic reduction efficiency for the process is equal to or greater than 95 percent and the organic biodegradation efficiency for the process is equal to or greater than 95 percent as determined by using the procedures specified under 40 CFR 264.1083(a) and 265.1084(b)
    - ii. the total actual organic mass biodegradation rate for all hazardous waste treated by the process is equal to or greater than the required organic mass removal rate as determined by using the procedures specified under 40 CFR 264.1083(a) and 265.1084(b)
  - h. e. a process that removes or destroys the organics contained in the hazardous waste and meets all the following conditions:
    - i. from the point of waste origination through the point where the hazardous waste enters the treatment process, the hazardous waste is continuously managed in waste management units which use air emissions controls as specified in 40 CFR 264.1084 through 264.2087 or in 40 CFR 265.1085 through 265.1088, as applicable to the waste management unit
    - ii. from the point of waste origination through the point where the hazardous waste enters the process, any transfer of the hazardous waste is accomplished through continuous hard-piping or other closed system transfer that does not allow exposure of the waste to the atmosphere
    - iii. the average VO concentration of the hazardous waste at the point of waste treatment is less than the lowest average VO concentration at the point of waste origination determined for each of the individual hazardous waste streams entering the process or 500 ppmw, whichever value is lower (The average VO concentration of each individual waste stream at the point of waste origination shall be determined using the procedures specified under 40 CFR 264.1083(a) and 265.1084(b))
  - i. f. a process that removes or destroys the organics contained in the hazardous waste to a level such that the organic reduction efficiency for the process is equal to or greater than 95 percent and the owner/operator certifies that the average VO concentration at the point of waste origination for each of the individual waste streams entering the process is less than 10,000 ppmw, as determined by using the procedures specified under 40 CFR 264.1083(a) and 265.1084(b))
  - j. g. a hazardous waste incinerator for which the owner/operator has been issued a final permit under 40 CFR 270, or has designed and operated the incinerator in compliance with 40 CFR 264, Subpart O
  - k. h. a boiler or industrial furnace for which the owner or operator has been issued a final permit under 40 CFR 270, or has designed and operated the unit in compliance with 40 CFR 266, Subpart H.

3. a tank, container, or surface impoundment for which all hazardous waste placed in the unit either:
  - l. a. meets the numerical concentrations limits for organic hazardous constituents as specified in 40 CFR 268, or
  - m. b. the organic hazardous constituents in the waste have been treated by the treatment technology established by the USEPA for the waste listed under 40 CFR 268.42(a) or have been removed or destroyed by an equivalent method of treatment approved by the USEPA.
  - n.
- *Exempted Hazardous Waste Management Unit* - the air emission standards specified under Subpart CC of 40 CFR 264 and 265 do not apply to the following waste management units (40 CFR 264.1080(b) and 265.1080(b)) **[Revised April 1999; Reviewed October 2001]**:
  1. a waste management unit that holds hazardous waste placed in the unit before 6 December 1996, and in which no hazardous waste is added to the unit on or after 6 December 1996
  2. a container that has a design capacity less than or equal to 0.1 m<sup>3</sup>
  3. a tank in which an owner/operator has stopped adding hazardous waste and the owner/operator has begun implementing or completed closure pursuant to an approved closure plan
  4. a surface impoundment in which an owner/operator has stopped adding hazardous waste (except to implement an approved closure plan) and the owner/operator has begun implementing or completed closure pursuant to an approved closure plan
  5. a waste management unit that is used solely for on-site treatment or storage of hazardous waste that is placed in the unit as a result of implementing remedial activities required under the corrective action authorities of RCRA Sect 3004(u), 3004(v), or 3008(h); CERCLA authorities; or similar federal or state authorities
  6. a waste management unit that is used solely for the management of radioactive mixed waste in accordance with all applicable regulations under the *Atomic Energy Act* and the *Nuclear Waste Policy Act*
  7. a waste management unit that the owner or operator certifies is equipped with and operating air emissions controls in accordance with the requirements of an applicable *Clean Air Act* (CAA) regulation codified under 40 CFR 60, 61, and 63
  8. a tank that has a process vent as defined in 40 CFR 264.1031.
- *Exempted Waste* - a waste that meets the eligibility criteria in 266.225 and meets all of the conditions in 40 CFR 230, or meets the eligibility criteria in 40 CFR 266.310 and complies with all the conditions in 40 CFR 266.315. Such waste is conditionally exempted from the regulatory definition of hazardous waste described in 40 CFR 261.3 (40 CFR 266.210) **[Added January 2004]**.
- *Existing Hazardous Waste Management (HWM) Facility or Existing Facility* - a facility which was in operation or for which construction commenced on or before 19 November 1980 (40 CFR 260.10) **[Reviewed October 2001]**.
- *Export* - the transportation of hazardous waste from a location under the jurisdiction of the United States to a location under the jurisdiction of another country, or a location not under the jurisdiction of any country, for the purposes of recovery or disposal operations therein (40 CFR 262.81) **[Added January 2018]**.
- *Exporter*- also known as primary exporter on the RCRA hazardous waste manifest, means the person domiciled in the United States who is required to originate the movement document in accordance with 40 CFR 262.83(d) or the manifest for a shipment of hazardous waste in accordance with subpart B of this part, or equivalent State provision, which specifies a foreign receiving facility as the facility to which the hazardous wastes will be sent, or any recognized trader who proposes export of the hazardous wastes for recovery or disposal operations in the country of import (40 CFR 262.81) **[Added January 2018]**.
- *Existing Portion* - the land surface area of an existing waste management unit, included in the original Part A permit application, on which wastes have been placed prior to the issuance of a permit (40 CFR 260.10).
- *External Floating Roof* - a pontoon or double-deck type floating roof that rests on the surface of a hazardous waste being managed in a tank that has no fixed roof (40 CFR 265.1081).

- *Explosives or Munitions Emergency* - a situation involving the suspected or detected presence of unexploded ordnance (UXO), damaged or deteriorated explosives or munitions, an improvised explosive device (IED), other potentially explosive material or device, or other potentially harmful military chemical munitions or device, that creates an actual or potential imminent threat to human health, including safety, or the environment, including property, as determined by an explosives or munitions emergency response specialist. Such situation may require immediate and expeditious action by an explosives or munitions emergency response specialist to control, mitigate, or eliminate the threat (40 CFR 260.10 and 266.201) **[Added January 2003]**.
- *Explosives or Munitions Emergency Response* - all immediate response activities by an explosives and munitions emergency response specialist to control, mitigate, or eliminate the actual or potential threat encountered during an explosives or munitions emergency. An explosives or munitions emergency response may include in-place render safe procedures, treatment, or destruction of the explosives or munitions and/or transporting those items to another location to be rendered safe, treated, or destroyed. Any reasonable delay in the completion of an explosives or munitions emergency response caused by a necessary, unforeseen, or uncontrollable circumstance will not terminate the explosives or munitions emergency. Explosives and munitions emergency responses can occur on either public or private lands and are not limited to responses at RCRA facilities (40 CFR 260.10 and 266.201) **[Added January 2003]**.
- *Explosives or Munitions Emergency Response Specialist* - an individual trained in chemical or conventional munitions or explosives handling, transportation, render-safe procedures, or destruction techniques. Explosives or munitions emergency response specialists include Department of Defense (DOD) emergency explosive ordnance disposal (EOD), technical escort unit (TEU), and DOD-certified civilian or contractor personnel; and other Federal, State, or local government, or civilian personnel similarly trained in explosives or munitions emergency responses (40 CFR 260.10 and 266.201) **[Added January 2003]**.
- *Facility* – This term means (40 CFR 260.10) **[Revised January 2009]**:
  1. All contiguous land, and structures, other appurtenances, and improvements on the land, used for treating, storing, or disposing of hazardous waste, or for managing hazardous secondary materials prior to reclamation. A facility may consist of several treatment, storage, or disposal operational units (e.g., one or more landfills, surface impoundments, or combinations of them).
  2. For the purpose of implementing corrective action under 40 CFR 264.101 or 267.101, all contiguous property under the control of the owner or operator seeking a permit under Subtitle C of RCRA. This definition also applies to facilities implementing corrective action under RCRA Section 3008(h).
  3. Notwithstanding paragraph (2) of this definition, a remediation waste management site is not a facility that is subject to 40 CFR 264.101, but is subject to corrective action requirements if the site is located within such a facility.
- *Federally Owned Treatment Work (FOTW)* - a facility that is owned and operated by a department, agency, or instrumentality of the Federal Government treating wastewater, a majority of which is domestic sewage, prior to discharge in accordance with a permit issued under section 402 of the Federal Water Pollution Control Act (42 USC 6939e(d)).
- *Final Closure* - the closure of all hazardous waste management units at the facility in accordance with all applicable closure requirements so that hazardous waste management activities under parts 264 and 265 are no longer conducted at the facility unless subject to the provisions of 262.34 (40 CFR 260.10).
- *Fixed Roof* - a cover that is mounted on a unit in a stationary position and does not move with fluctuations in the level of the material managed in the unit (40 CFR 265.1081) **[Reviewed October 2001]**.
- *Floating Membrane Cover* - a cover consisting of a synthetic flexible membrane material that rests upon and is supported by the hazardous waste being managed in a surface impoundment (40 CFR 265.1081).
- *Floating Roof* - a cover consisting of a double deck, pontoon single deck, or internal floating cover that rests upon and is supported by the material being contained, and is equipped with a continuous seal (40 CFR 265.1081).

- *Food-Chain Crops* - tobacco, crops grown for human consumption, and crops grown for feed for animals whose products are consumed by humans (40 CFR 260.10) **[Reviewed October 2001]**.
- *Foreign Exporter* - the person under the jurisdiction of the country of export who has, or will have at the time the planned transboundary movement commences, possession or other forms of legal control of the hazardous wastes and who proposes shipment of the hazardous wastes to the United States for recovery or disposal operations (40 CFR 262.81) **[Added January 2018]**.
- *Foreign Importer* - the person to whom possession or other form of legal control of the hazardous waste is assigned at the time the exported hazardous waste is received in the country of import (40 CFR 262.81) **[Added January 2018]**.
- *Foreign Receiving Facility* - a facility which, under the importing country's applicable domestic law, is operating or is authorized to operate in the country of import to receive the hazardous wastes and to perform recovery or disposal operations on them (40 CFR 262.81) **[Added January 2018]**.
- *Formal Written Affiliation Agreement for a Non-profit Research Institute* - a written document that establishes a relationship between institutions for the purposes of research and/or education and is signed by authorized representatives, as defined by 40 CFR 260.10, from each institution. A relationship on a project-by-project or grant-by-grant basis is not considered a formal written affiliation agreement. A formal written affiliation agreement for a teaching hospital means a master affiliation agreement and program letter of agreement, as defined by the Accreditation Council for Graduate Medical Education, with an accredited medical program or medical school (40 CFR 262.200) **[Added January 2009]**.
- *Free Liquids* - liquids that readily separate from the solid portion of a waste under ambient temperature and pressure (40 CFR 260.10) **[Reviewed October 2001]**.
- *Groundwater* - water below the land surface in a zone of saturation (40 CFR 260.10) **[Reviewed October 2001]**.
- *Halogenated Organic Compounds (HOCs)* - compounds having a carbon-halogen bond that are listed in Appendix III of 40 CFR 268 (40 CFR 268.2) **[Reviewed October 2001]**.
- *Hazardous Debris* - debris that contains a hazardous waste listed in subpart D of 40 CFR 261, or that exhibits a characteristic of hazardous waste identified in subpart C of 40 CFR 261. Any deliberate mixing of prohibited hazardous waste with debris that changes its treatment classification (i.e., from waste to hazardous debris) is not allowed under the dilution prohibition in 40 CFR 268.3 (40 CFR 268.2) **[Revised July 1999; Reviewed October 2001]**.
- *Hazardous Secondary Material* - a secondary material (e.g., spent material, by-product, or sludge) that, when discarded, would be identified as hazardous waste under 40 CFR 261 (40 CFR 260.10) **[Added January 2009]**.
- *Hazardous Secondary Material Generated and Reclaimed Under the Control of the Generator* – this means (40 CFR 260.10) **[Added January 2009]**:
  1. That such material is generated and reclaimed at the generating facility (for purposes of this definition, generating facility means all contiguous property owned, leased, or otherwise controlled by the hazardous secondary material generator); or
  2. That such material is generated and reclaimed at different facilities, if the reclaiming facility is controlled by the generator or if both the generating facility and the reclaiming facility are controlled by a person as defined in 40 CFR 260.10, and if the generator provides one of the following certifications: “on behalf of [insert generator facility name], I certify that this facility will send the indicated hazardous secondary material to [insert reclaimer facility name], which is controlled by [insert generator facility name] and that [insert the name of either facility] has acknowledged full responsibility for the safe management of the hazardous secondary material,” or “on behalf of [insert generator facility name] I certify that this facility will send the indicated hazardous secondary material to [insert reclaimer facility name], that both facilities

are under common control, and that [insert name of either facility] has acknowledged full responsibility for the safe management of the hazardous secondary material.” For purposes of this paragraph, “control” means the power to direct the policies of the facility, whether by the ownership of stock, voting rights, or otherwise, except that contractors who operate facilities on behalf of a different person as defined in 40 CFR 260.10 shall not be deemed to “control” such facilities, or

3. That such material is generated pursuant to a written contract between a tolling contractor and a toll manufacturer and is reclaimed by the tolling contractor, if the tolling contractor certifies the following: “On behalf of [insert tolling contractor name], I certify that [insert tolling contractor name], has a written contract with [insert toll manufacturer name] to manufacture [insert name of product or intermediate] which is made from specified unused materials, and that [insert tolling contractor name] will reclaim the hazardous secondary materials generated during this manufacture. On behalf of [insert tolling contractor name], I also certify that [insert tolling contractor name] retains ownership of, and responsibility for, the hazardous secondary materials that are generated during the course of the manufacture, including any releases of hazardous secondary materials that occur during the manufacturing process. For purposes of this paragraph, tolling contractor means a person who arranges for the production of a product or intermediate made from specified unused materials through a written contract with a toll manufacturer. Toll manufacturer means a person who produces a product or intermediate made from specified unused materials pursuant to a written contract with a tolling contractor (40 CFR 260.10) **[Added January 2009]**.
- *Hazardous Secondary Material Generator* - any person whose act or process produces hazardous secondary materials at the generating facility. For purposes of this paragraph, “generating facility” means all contiguous property owned, leased, or otherwise controlled by the hazardous secondary material generator. For the purposes of 40 CFR 261.2(a)(2)(ii) and 40 CFR 261.4(a)(23), a facility that collects hazardous secondary materials from other persons is not the hazardous secondary material generator (40 CFR 260.10) **[Added January 2009]**.
  - *Hazardous Waste* - a solid waste identified as a characteristic or listed hazardous waste in 40 CFR 261.3 (40 CFR 260.10) **[Reviewed October 2001]**.
  - *Hazardous Waste Constituent* - a constituent that caused the hazardous waste to be listed in 40 CFR 261, Subpart D (lists of hazardous wastes from nonspecific and specific sources, and listed hazardous wastes, or a constituent listed in the table of maximum concentrations of contaminants for the toxicity characteristic) (40 CFR 260.10) **[Reviewed October 2001]**.
  - *Hazardous Waste Management Unit* - a contiguous area of land on or in which hazardous waste is placed, or the largest area in which there is a significant likelihood of mixing hazardous waste constituents in the same area. Examples are a surface impoundment, a waste pile, a treatment area, a landfill cell, an incinerator, a tank and its associated piping and underlying containment system, and a container storage area. A container alone does not constitute a unit; the unit includes containers and the land or pad upon which they are placed (40 CFR 260.10) **[Reviewed October 2001]**.
  - *Household Waste* - any material (including garbage, trash and sanitary wastes in septic tanks) derived from households (including single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds and day-use recreation areas)(40 CFR 261.4(b)) **[Added April 2010]**.
  - *Import* - the transportation of hazardous waste from a location under the jurisdiction of another country to a location under the jurisdiction of the United States for the purposes of recovery or disposal operations therein (40 CFR 262.81) **[Added January 2018]**.
  - *Importer* - the person to whom possession or other form of legal control of the hazardous waste is assigned at the time the imported hazardous waste is received in the United States (40 CFR 262.81) **[Added January 2018]**.
  - *In Light Liquid Service* - the piece of equipment contains or contacts a waste stream where the vapor pressure of one or more of the organic components in the stream is greater than 0.3 kPa at 20 degrees C, the total concentration of the pure organic components having a vapor pressure greater than 0.3 kPa at 20 degrees C is equal to or greater

than 20 percent by weight, and the fluid is a liquid at operating conditions (40 CFR 264.1031) [**Revised December 1997; Reviewed October 2001**].

- *In Light Material Service* - the container is used to manage a material for which both of the following conditions apply (40 CFR 265.1081) [**Reviewed October 2001**]:
  1. the vapor pressure of one or more of the organic constituents in the material is greater than 0.3 kPa at 20 degrees C
  2. the total concentration of the pure organic constituents having a vapor pressure greater than 0.3 kPa at 20 degrees C is equal to or greater than 20 percent by weight.
- *Incinerator* - an enclosed device that either (40 CFR 260.10):
  1. uses controlled flame combustion and neither meets the criteria for classification as a boiler, sludge dryer, or carbon regeneration unit, nor is listed as an industrial furnace
  2. meets the definition of infrared incinerator or plasma arc incinerator.
- *Incompatible Waste* - a hazardous waste that is unsuitable for (40 CFR 260.10) [**Reviewed October 2001**]:
  1. placement in a particular device or facility because it may cause corrosion or decay of containment materials (e.g., container liners or tank walls)
  2. commingling with another waste or material under uncontrolled conditions because the commingling conditions produce heat or pressure, fire or explosion, violent reaction, toxic dusts, mist, fumes or gases, or flammable fumes or gases.
- *Individual Generation Site* - the contiguous site at or on which one or more hazardous wastes are generated. An individual generation site, such as a large manufacturing plant, may have one or more sources of hazardous waste but is considered a single or individual generation site if the site or property is contiguous (40 CFR 260.10) [**Reviewed October 2001**].
- *Industrial Furnace* - any of the following enclosed devices that are integral components of manufacturing processes and that use controlled flame devices to accomplish recovery of materials or energy: cement kilns, lime kilns, aggregate kilns, phosphate kilns, coke ovens, blast furnaces, smelting, melting and refining furnaces, titanium dioxide chloride process oxidation reactors, methane reforming furnaces, pulping liquor recovery furnaces, combustion devices used in the recovery of sulfur values from spent sulfuric acid, halogen acid furnaces, and other devices designated by the administrator (40 CFR 260.10) [**Reviewed October 2001**].
- *Injection Wells* - a well into which fluids are injected (40 CFR 260.10) [**Reviewed October 2001**].
- *Inner Liner* - a continuous layer of material placed inside a tank or container that protects the construction materials of the tank or container from the contained waste or reagents used to treat the waste (40 CFR 260.10) [**Reviewed October 2001**].
- *Intermediate Facility* - any facility that stores hazardous secondary materials for more than 10 days, other than a hazardous secondary material generator or reclaimer of such material (40 CFR 260.10) [**Added January 2009**].
- *International Shipment* - the transportation of hazardous waste into or out of the jurisdiction of the United States (40 CFR 260.10) [**Reviewed October 2001**].
- *Laboratory* - an area owned by an eligible academic entity where relatively small quantities of chemicals and other substances are used on a non-production basis for teaching or research (or diagnostic purposes at a teaching hospital) and are stored and used in containers that are easily manipulated by one person. Photo laboratories, art studios, and field laboratories are considered laboratories. Areas such as chemical stockrooms and preparatory laboratories that provide a support function to teaching or research laboratories (or diagnostic laboratories at teaching hospitals) are also considered laboratories (40 CFR 262.200) [**Added January 2009**].

- *Laboratory Clean-Out* - an evaluation of the inventory of chemicals and other materials in a laboratory that are no longer needed or that have expired and the subsequent removal of those chemicals or other unwanted materials from the laboratory. A clean-out may occur for several reasons. It may be on a routine basis (e.g., at the end of a semester or academic year) or as a result of a renovation, relocation, or change in laboratory supervisor/occupant. A regularly scheduled removal of unwanted material as required by 40 CFR 262.208 does not qualify as a laboratory clean-out (40 CFR 262.200) [**Added January 2009**].
- *Laboratory Worker* - a person who handles chemicals and/or unwanted material in a laboratory and may include, but is not limited to, faculty, staff, post-doctoral fellows, interns, researchers, technicians, supervisors/managers, and principal investigators. A person does not need to be paid or otherwise compensated for his/her work in the laboratory to be considered a laboratory worker. Undergraduate and graduate students in a supervised classroom setting are not laboratory workers (40 CFR 262.200) [**Added January 2009**].
- *Lamp* - the bulb or tube portion of an electric lighting device. A lamp is specifically designed to produce radiant energy, most often in the ultraviolet, visible, and infrared regions of the electromagnetic spectrum. Examples of common universal waste electric lamps include, but are not limited to, fluorescent, high intensity discharge, neon, mercury vapor, high pressure sodium, and metal halide lamps (40 CFR 260.10, 273.9) [**Added October 1999; Reviewed March 2000**].

The following are exempted from the definition of lamp in relation to universal waste (40 CFR 273.5(b)):

1. lamps that are not yet wastes under 40 CFR 261 (see the definition of Waste Lamp)
2. lamps that are not hazardous waste. A lamp is a hazardous waste if it exhibits one or more of the characteristics identified in 40 CFR 261.

See also the definition for *Waste Lamp*.

- *Land-based Unit* - an area where hazardous secondary materials are placed in or on the land before recycling. This definition does not include land-based production units (40 CFR 260.10) [**Added January 2009**].
- *Land Disposal* - placement in or on the land, except in a corrective action management unit, and includes, but is not limited to, placement in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, salt bed formation, underground mine or cave, or placement in a concrete vault, or bunker intended for disposal purposes (40 CFR 268.2) [**Reviewed October 2001**].
- *Land Treatment Facility* - a facility or part of a facility at which hazardous waste is applied onto or incorporated into the soil surface; such facilities are disposal facilities if the waste will remain after closure (40 CFR 260.10) [**Reviewed October 2001**].
- *Landfill* - a disposal facility or part of a facility where hazardous waste is placed in or on land and which is not a pile, a land treatment facility, a surface impoundment, an underground injection well, a salt dome formation, a salt bed formation, an underground mine, a cave, or a corrective action management unit (40 CFR 260.10) [**Reviewed October 2001**].
- *Landfill Cell* - a discrete volume of a hazardous waste landfill that uses a liner to provide isolation of wastes from adjacent cells or wastes. Examples are trenches and pits (40 CFR 260.10).
- *Large Quantity Generator* - a generator who generates any of the following amounts in a calendar month (40 CFR 260.10) [**Added January 2017**]:
  1. Greater than or equal to 1,000 kilograms (2200 lbs) of non-acute hazardous waste; or
  2. Greater than 1 kilogram (2.2 lbs) of acute hazardous waste listed in 40 CFR 261.31 or 40 CFR 261.33(e); or
  3. Greater than 100 kilograms (220 lbs) of any residue or contaminated soil, water, or other debris resulting from the cleanup of a spill, into or on any land or water, of any acute hazardous waste listed in 40 CFR 261.31 or 40 CFR 261.33(e).

- *Large Quantity Handler of Universal Waste* - a universal waste handler (as defined in this section) who accumulates 5,000 kg or more total of universal waste (batteries, pesticides, mercury-containing equipment, or lamps, calculated collectively) at any time. This designation as a large quantity handler of universal waste is retained through the end of the calendar year in which the 5,000 kilogram limit is met or exceeded (40 CFR 273.9) **[Revised October 1999; Reviewed March 2000; Revised October 2005]**.
- *Leachate* - any liquid, including any suspended components in the liquid, that has percolated through or drained from hazardous waste (40 CFR 260.10) **[Reviewed October 2001]**.
- *Leak Detection System* - a system capable of detecting the failure of either the primary or secondary containment structure or the presence of a release of hazardous waste or accumulated liquid in the secondary structure. Such a system must employ operational controls (e.g., daily, visual inspections for releases into the secondary containment system of aboveground tanks) or consist of an interstitial monitoring device designed to detect continuously and automatically the failure of the primary or secondary containment structure or the presence of a release of hazardous waste into the secondary containment structure (40 CFR 260.10) **[Reviewed October 2001]**.
- *License* - a license issued by the Nuclear Regulatory Commission, or NRC Agreement State, to users that manage radionuclides regulated by NRC, or NRC Agreement States, under authority of the Atomic Energy Act of 1954, as amended (40 CFR 266.210) **[Added January 2004]**.
- *Liner* - a continuous layer of natural or manmade materials, beneath or on the sides of a surface impoundment, landfill, or landfill cell, which restricts the downward or lateral escape of hazardous waste, hazardous waste constituents, or leachate (40 CFR 260.10).
- *Low-Level Mixed Waste (LLMW)* - a waste that contains both low-level radioactive waste and RCRA hazardous waste (40 CFR 266.210) **[Added January 2004]**.
- *Low-Level Radioactive Waste (LLW)* - a radioactive waste which contains source, special nuclear, or byproduct material, and which is not classified as high-level radioactive waste, transuranic waste, spent nuclear fuel, or byproduct material as defined in section 11e.(2) of the Atomic Energy Act. (See also NRC definition of "waste" at 10 CFR 61.2) (40 CFR 266.210) **[Added January 2004]**.
- *Malfunction* - any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operations are not malfunctions (40 CFR 265.1081) **[Reviewed October 2001]**.
- *Management or Hazardous Waste Management* - the systematic control of the collection, source separation, storage, transportation, processing, treatment, recovery, and disposal of hazardous waste (40 CFR 260.10) **[Reviewed October 2001]**.
- *Management Practice (MP)* - practices that, although not mandated by law, are encouraged to promote safe operating procedures.
- *Manifest* - the shipping document EPA Form 8700-22 (including, if necessary, EPA Form 8700-22A), originated and signed by the generator or offeror in accordance with the instructions in the appendix to 40 CFR part 262 and the applicable requirements of 40 CFR 262 through 265 (40 CFR 260.10) **[Revised April 2005]**.
- *Manifest Tracking Number* - the alphanumeric identification number (i.e., a unique three letter suffix preceded by nine numerical digits), which is pre-printed in Item 4 of the Manifest by a registered source (40 CFR 260.10) **[Added April 2005]**.

- *Mercury-Containing Equipment* - a device or part of a device (including thermostats, but excluding batteries and lamps) that contains elemental mercury integral to its function (40 CFR 260.10 and 273.9) **[Added October 2005]**.

The requirements of 40 CFR 273 do not apply to persons managing the following mercury-containing equipment (40 CFR 273.4(b)):

1. Mercury-containing equipment that is not yet a waste under 40 CFR 261.
  2. Mercury-containing equipment that is not a hazardous waste. Mercury-containing equipment is a hazardous waste if it exhibits one or more of the characteristics identified in 40 CFR 261, subpart C, or is listed in 40 CFR 261, subpart D; and
  3. Equipment and devices from which the mercury-containing components have been removed.
- *Miscellaneous Unit* - a hazardous waste management unit at which hazardous waste is treated, stored, or disposed of and that is not a container, tank, surface impoundment, pile, land treatment unit, landfill, incinerator, boiler, industrial furnace, underground injection well with appropriate technical standards under 40 CFR 146, containment building, corrective action management unit, or unit eligible for a research development and demonstration permit under 40 CFR 270.65 (40 CFR 260.10).
  - *Mixed Waste* - a waste that contains both RCRA hazardous waste and source, special nuclear, or byproduct material subject to the Atomic Energy Act of 1954, as amended (40 CFR 266.210) **[Added January 2004]**.
  - *Movement* - hazardous waste transported to a facility in an individual vehicle (40 CFR 260.10) **[Reviewed October 2001]**.
  - *Naturally Occurring and/or Accelerator-produced Radioactive Material (NARM)* - radioactive materials that (40 CFR 266.210) **[Added January 2004]**:
    1. Are naturally occurring and are not source, special nuclear, or byproduct materials (as defined by the AEA), or
    2. Are produced by an accelerator. NARM is regulated by the States under State law, or by DOE (as authorized by the AEA) under DOE orders.
  - *New Hazardous Waste Management Facility* - a facility that began operation, or for which construction commenced after 19 November 1980 (40 CFR 260.10) **[Revised March 2010]**.
  - *No Detectable Organic Emissions* - no escape of organics to the atmosphere as determined by using the procedures specified in 40 CFR 265.1084(d) (40 CFR 265.1081) **[Reviewed October 2001]**.
  - *Non-acute Hazardous Waste* - all hazardous wastes that are not acute hazardous waste, as defined in 40 CFR 260.10 (40 CFR 260.10) **[Added January 2017]**.
  - *Non-profit Research Institute* - an organization that conducts research as its primary function and files as a non-profit organization under the tax code of 26 U.S.C. 501(c)(3) (40 CFR 262.200) **[Added January 2009]**.
  - *Nonwastewaters* - wastes that do not meet the criteria for wastewaters (40 CFR 268.2) **[Reviewed October 2001]**.
  - *NRC* - the U. S. Nuclear Regulatory Commission (40 CFR 266.210) **[Added January 2004]**.
  - *OECD* - the Organization for Economic Cooperation and Development (40 CFR 262.81) **[Added January 2018]**.
  - *OECD Area* - all land or marine areas under the national jurisdiction of any OECD Member country. When the regulations refer to shipments to or from an OECD Member country, this means OECD area (40 CFR 262.81) **[Added January 2018]**.

- *OECD Member Country* - the countries that are members of the OECD and participate in the Amended 2001 OECD Decision. (EPA provides a list of OECD Member countries at <https://www.epa.gov/hwgenerators/international-agreements-transboundary-shipments-waste>) (40 CFR 262.81) **[Added January 2018]**.
- *Onsite* - the same or geographically contiguous property which may be divided by a public or private right-of-way, provided the entrance and exit between the properties is at a crossroads intersection, and access is by crossing as opposed to going along the right-of-way. Non-contiguous properties owned by the same person but connected by a right-of-way that he controls and to which the public does not have access is also considered onsite property (40 CFR 260.10) **[Reviewed March 2000; Reviewed October 2001]**.
- *Open Burning* - the combustion of any material without the following characteristics (40 CFR 260.10) **[Reviewed October 2001]**:
  1. control of combustion air to maintain adequate temperature for efficient combustion
  2. containment of the combustion-reaction in an enclosed device to provide sufficient residence time and mixing for complete combustion
  3. control of emission of the gaseous combustion products.
- *Open-ended Valve or Line* - any valve, except pressure relief valves, having one side of the valve seat in contact with hazardous waste and one side open to the atmosphere, either directly or through open piping (40 CFR 264.1031) **[Added April 1999; Reviewed October 2001]**.
- *Ordnance* - See Waste Explosives.
- *Partial Closure* - the closure of a hazardous waste management unit in accordance with the applicable closure requirements of 40 CFR 264 and 265 at a facility that contains other active hazardous waste management units. For example, partial closure may include the closure of a tank (including its associated piping and underlying containment systems) while other units of the same facility continue to operate (40 CFR 260.10).
- *Pesticides* - any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest, or intended for use as a plant regulator, defoliant, or desiccant, other than any article that either (40 CFR 262.10 and 273.9):
  1. is a new animal drug under FFDCA Section 201(w)
  2. is an animal drug that has been determined by regulation of the Secretary of Human Health and Human Services not to be a new animal drug
  3. is an animal feed under FFDCA section 201(x) that bears or contains any substances described by paragraph 1 or 2 of this definition.

Pesticides that are regulated as universal wastes include pesticides that are either (40 CFR 273.3(a):

1. recalled pesticides that are stocks of a suspended and canceled pesticide that are a part of a voluntary or mandatory recall under FIFRA Section 19(b), including, but not limited to, those owned by the registrant responsible for conducting the recall
2. recalled pesticide that are stocks of suspended or canceled pesticides, or a pesticide that is not in compliance with FIFRA, that are part of a voluntary recall by the registrant
3. stocks of other unused pesticide products that are collected and managed as a part of a waste pesticide collection.

Pesticides that are not universal wastes include (40 CFR 273.3(b):

1. the following pesticides when disposed of on a farmers own farm in a manner consistent with the label, and the container is triple rinsed:
  - a. suspended or recalled pesticides that are a part of a voluntary or mandatory recall under FIFRA Section 19(b), including, but not limited to, those owned by the registrant responsible for conducting the recall

- p. b. stocks of suspended or canceled pesticide products that are not in compliance with FIFRA and are part of a voluntary recall by the registrant
  - q. c. stocks of other unused pesticide products
- 2. pesticides not meeting the definition of a universal waste
- 3. pesticides that are not wastes under 40 CFR 261, including those who do not meet the criteria for waste generation or those that are not wastes (see the definition of Waste Pesticide)
- 4. pesticides that are not a hazardous waste [Revised October 1999; Reviewed March 2000].

See also the definition for Waste Pesticides.

- *Pile* - any noncontainerized accumulation of solid, nonflowing hazardous waste used for treatment or storage that is not a containment building (40 CFR 260.10) **[Reviewed October 2001]**.
- *Planned Episodic Event* - an episodic event that the generator planned and prepared for, including regular maintenance, tank cleanouts, short-term projects, and removal of excess chemical inventory (40 CFR 262.231) **[Added January 2017]**.
- *Point of Waste Treatment* - the point where a hazardous waste exits a waste management unit used to destroy, degrade, or remove organics in the hazardous waste (40 CFR 265.1081) **[Reviewed October 2001]**.
- *Point Source* - any discernible, confined, and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture (40 CFR 260.10) **[Reviewed October 2001]**.
- *Publicly Owned Treatment Works (POTW)* - any device or system used in the treatment (including recycling and reclamation) of municipal sewage or industrial wastes of a liquid nature that is owned by a state or municipality (as defined by section 502(4) of the CWA). This definition includes sewers, pipes, or other conveyances only if they convey wastewater to a POTW providing treatment (40 CFR 260.10) **[Reviewed October 2001]**.
- *Pump Operating Level* - a liquid level proposed by the owner or operator and approved by the Regional Administrator based on pump activation level, sump dimensions, and level that avoids backup into the drainage layer and minimizes head in the sump (40 CFR 264.226(d)(3)).
- *Qualified Groundwater Scientist* - a scientist or engineer who has received a baccalaureate or post-graduate degree in the natural sciences or engineering and has sufficient training and experience in groundwater hydrology and related fields as may be demonstrated by state registration, professional certification, or completion of accredited university courses that enable the individual to make sound professional judgments regarding groundwater monitoring and contaminant fate and transport (40 CFR 260.10) **[Reviewed October 2001]**.
- *Reactive Acutely Hazardous Unwanted Material* - an unwanted material that is one of the acutely hazardous commercial chemical products listed in 40 CFR 261.33(e) for reactivity (40 CFR 262.200) **[Added January 2009]**.
- *Receiving Facility* - a U.S. facility which, under RCRA and other applicable domestic laws, is operating or is authorized to operate to receive hazardous wastes and to perform recovery or disposal operations on them (40 CFR 262.81) **[Added January 2018]**.
- *Recognized Trader* - a person domiciled in the United States, by site of business, who acts to arrange and facilitate transboundary movements of wastes destined for recovery or disposal operations, either by purchasing from and subsequently selling to United States and foreign facilities, or by acting under arrangements with a United States waste facility to arrange for the export or import of the wastes (40 CFR 260.10) **[Added January 2017]**.
- *Recovery Operations* - activities leading to resource recovery, recycling, reclamation, direct re-use or alternative uses, which include (40 CFR 262.81) **[Added January 2018]**:

1. R1 Use as a fuel (other than in direct incineration) or other means to generate energy.
  2. R2 Solvent reclamation/regeneration.
  3. R3 Recycling/reclamation of organic substances which are not used as solvents.
  4. R4 Recycling/reclamation of metals and metal compounds.
  5. R5 Recycling/reclamation of other inorganic materials.
  6. R6 Regeneration of acids or bases.
  7. R7 Recovery of components used for pollution abatement.
  8. R8 Recovery of components used from catalysts.
  9. R9 Used oil re-refining or other reuses of previously used oil.
  10. R10 Land treatment resulting in benefit to agriculture or ecological improvement.
  11. R11 Uses of residual materials obtained from any of the operations numbered R1 through R10 or RC14 (for transboundary shipments with Canada only).
  12. R12 Exchange of wastes for submission to any of the operations numbered R1 through R11 or RC14 (for transboundary shipments with Canada only).
  13. Accumulation of material intended for any operation numbered R1 through R12 or RC14 (for transboundary shipments with Canada only).
  14. RC14 Recovery or regeneration of a substance or use or re-use of a recyclable material, other than by any of operations R1 to R10 (for transboundary shipments with Canada only).
  15. RC15 Testing of a new technology to recycle a hazardous recyclable material (for transboundary shipments with Canada only).
  16. RC16 Interim storage prior to any of operations R1 to R11 or RC14 (for transboundary shipments with Canada only).
- *Remediation Waste* - all solid and hazardous wastes, and all media (including ground water, surface water, soils, and sediments) and debris, that are managed for implementing cleanup (40 CFR 260.10) [**Added April 2002**].
  - *Replacement Unit* - a landfill, surface impoundment, or waste pile unit (40 CFR 260.10):
    1. from which all or substantially all of the waste is removed
    2. that is subsequently reused to treat, store, or dispose of hazardous waste. This does not apply to a unit from which waste is removed during closure, if the subsequent reuse solely involves the disposal of waste from that unit and other closing units or corrective action areas at the facility, in accordance with an approved closure plan or USEPA or state-approved corrective action.
  - *Representative Sample* - a sample of a universe or whole (e.g., waste pile, lagoon, groundwater) that can be expected to exhibit the average properties of the universe or whole (40 CFR 260.10) [**Reviewed October 2001**].
  - *Restricted Wastes* - categories of hazardous wastes that are restricted from land disposal either by regulation or by statute, in other words, a hazardous waste that is restricted no later than the date of the deadline established in RCRA Section 3004 (40 CFR 268) [**Reviewed October 2001**].
  - *Runoff* - any rainwater, leachate, or other liquid that drains over land from any part of a facility (40 CFR 260.10) [**Reviewed October 2001**].
  - *Run-On* - any rainwater, leachate, or other liquid that drains over land onto any part of a facility (40 CFR 260.10) [**Reviewed October 2001**].
  - *Sampling Connection System* - an assembly of equipment within a process or waste management unit used during periods of representative operation to take samples of the process or waste fluid. Equipment used to take non-routine grab samples is not considered a sampling connection system (40 CFR 264.1031) [**Added April 1999**].
  - *Sludge* - any solid, semisolid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility exclusive of the treated effluent from a wastewater treatment plant (40 CFR 260.10) [**Reviewed October 2001**].

- *Small Quantity Generator (SQG)* - a generator that generates the following amounts in a calendar month (40 CFR 260.10) **[Revised January 2017]**:
  1. Greater than 100 kilograms (220 lbs) but less than 1,000 kilograms (2200 lbs) of non-acute hazardous waste; and
  2. Less than or equal to 1 kilogram (2.2 lbs) of acute hazardous waste listed in 40 CFR 261.31 or 40 CFR 261.33(e); and
  3. Less than or equal to 100 kilograms (220 lbs) of any residue or contaminated soil, water, or other debris resulting from the cleanup of a spill, into or on any land or water, of any acute hazardous waste listed in 40 CFR 261.31 or 40 CFR 261.33(e).
- *Small Quantity Handler of Universal Waste* - a universal waste handler (as defined in this section) who does not accumulate 5,000 kg or more of universal waste (batteries, pesticides, mercury-containing equipment, or lamps, calculated collectively) at any time (40 CFR 273.9) **[Revised October 1999; Reviewed March 2000; Revised October 2005]**.
- *Soil* - unconsolidated earth material composing the superficial geologic strata (material overlying bedrock), consisting of clay, silt, sand, or gravel size particles as classified by the U.S. Natural Resources Conservation Service, or a mixture of such materials with liquids, sludges or solids which is inseparable by simple mechanical removal processes and is made up primarily of soil by volume based on visual inspection. Any deliberate mixing of prohibited hazardous waste with soil that changes its treatment classification (i.e., from waste to contaminated soil) is not allowed under the dilution prohibition in 40 CFR 268.3 (40 CFR 268.2) **[Added July 1999; Reviewed October 2001]**.
- *Storage* - the holding of hazardous wastes for a temporary period, at the end of which the hazardous wastes are treated, disposed of, or stored elsewhere (40 CFR 260.10) **[Reviewed October 2001]**.
- *Sump* - any pit or reservoir that meets the definition of tank and those troughs/trenches connected to it that serve to collect hazardous waste for transport to hazardous waste TSDFs except that as used in the landfill, surface impoundment, and waste pile rules, sump means any lined pit or reservoir that serves to collect liquids drained from a leachate collection and removal system or leak detection system for subsequent removal from the system (40 CFR 260.10) **[Reviewed October 2001]**.
- *Surface Impoundment* - a facility or part of a facility that is a natural topographic depression, man-made excavation, or diked area formed primarily of earthen materials designed to hold an accumulation of liquid wastes or wastes containing free liquids and which is not an injection well (40 CFR 260.10).
- *Teaching Hospital* - a hospital that trains students to become physicians, nurses or other health or laboratory personnel (40 CFR 262.200) **[Added January 2009]**.
- *Thermal Treatment* - the treatment of hazardous waste in a device that uses elevated temperature as the primary means to change the chemical, physical, or biological character or composition of the hazardous waste (40 CFR 260.10).
- *Thermostat* - a temperature control device that contains metallic mercury in an ampule attached to a bimetal sensing element, and mercury-containing ampules that have been removed from these temperature control devices in compliance with the requirements of 40 CFR 273.12(c)(2) or 273.33(c)(2) (40 CFR 262.10 and 273.9).

The following are exempted from the definition of thermostat in relation to universal waste (40 CFR 273.4(b)):

1. thermostats that are not yet wastes under 40 CFR 261 (see the definition of Waste Thermostat)
2. thermostats that are not hazardous waste **[Revised October 1999; Reviewed March 2000]**.

See also the definition for Waste Thermostat.

- *Totally Enclosed Treatment Facility* - a facility for the treatment of hazardous waste which is directly connected to an industrial production process and which is constructed and operated in a manner which prevents the release of any hazardous waste or any constituent thereof into the environment during treatment. An example is a pipe in which waste acid is neutralized (40 CFR 260.10).
- *Trained Professional* - a person who has completed the applicable RCRA training requirements of 40 CFR 262.17 for large quantity generators, or is knowledgeable about normal operations and emergencies in accordance with 40 CFR 262.16 for small quantity generators and very small quantity generators. A trained professional may be an employee of the eligible academic entity or may be a contractor or vendor who meets the requisite training requirements (40 CFR 262.200) **[Added January 2009; Revised January 2017]**.
- *Transboundary Movement* - any movement of wastes from an area under the national jurisdiction of one OECD Member country to an area under the national jurisdiction of another OECD Member country (40 CFR 262.81) **[Added April 2010]**.
- *Transfer Facility* - any transportation-related facility, including loading docks, parking areas, storage areas and other similar areas where shipments of hazardous waste or hazardous secondary materials are held during the normal course of transportation (40 CFR 260.10) **[Revised January 2009]**.
- *Transport Vehicle* - a motor vehicle or rail car used for the transportation of cargo by any mode. Each cargo-carrying body (trailer, railroad freight car, etc.) is a separate transport vehicle (40 CFR 260.10) **[Reviewed October 2001]**.
- *Transporter* - a person engaged in the offsite transportation of hazardous wastes by air, rail, highway, or water (40 CFR 260.10) **[Reviewed October 2001]**.
- *Treatability Study* - a study in which a hazardous waste is subjected to a treatment process to determine (40 CFR 260.10) **[Reviewed October 2001]**:
  1. whether the waste is amenable to the treatment process
  2. what pretreatment (if any) is required
  3. the optimal process conditions needed to achieve the desired treatment
  4. the efficiency of a treatment process for a specific waste or wastes
  5. the characteristics and volumes of residuals from a particular treatment process.

Also included in this definition for the purpose of the 261.4(e) and (f) exemptions are liner compatibility, corrosion, and other material compatibility studies and toxicological and health effects studies. A treatability study is not a means to commercially treat or dispose of hazardous waste.

- *Treatment* - any method, technique, or process, including neutralization, designed to change the physical, chemical, or biological character or composition of any hazardous waste to neutralize the waste, recover energy or material resources from the waste, or render the waste nonhazardous or less hazardous; safer to transport, store, or dispose of; or amenable for recovery, amenable for storage, or reduced in volume (40 CFR 260.10) **[Reviewed October 2001]**.
- *Treatment Zone* - a soil area of the unsaturated zone of a land treatment unit within which hazardous constituents are degraded, transformed, or immobilized (40 CFR 260.10).
- *Underground Injection* - the subsurface emplacement of fluids through a bored, drilled, driven, or dug well, when the depth of the dug well is greater than the largest surface dimension (40 CFR 260.10).
- *Unexploded Ordnance (UXO)* - military munitions that have been primed, fused, armed, or otherwise prepared for action, and have been fired, dropped, launched, projected, or placed in a such a manner as to constitute a hazard to operations, installation, personnel, or material and remain unexploded either by malfunction, design, or any other cause (40 CFR 266.201).

- *United States* - the 50 states, the District of Columbia, the Commonwealth of Puerto Rico, the U.S. Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands (40 CFR 260.10) **[Reviewed October 2001]**.
- *Universal Waste* - any of the following hazardous wastes that are managed under the universal waste requirements of 40 CFR 273 (40 CFR 260.10 and 273.9):
  1. Batteries as described in 40 CFR 273.2 (see definition of Battery)
  2. Pesticides as described in 40 CFR 273.3 (see definition of Pesticides)
  3. Mercury-containing equipment as described in 40 CFR 273.4 (see definition of Mercury-Containing Equipment)
  4. Lamps as described in 40 CFR 273.5 (see definition of Lamp) **[Revised October 1999; Reviewed March 2000; Revised October 2005]**.
- *Universal Waste Handler* - this term means either (40 CFR 262.10 and 273.9):
  1. a generator of universal waste
  2. the owner or operator of a facility, including all contiguous property, that receives universal waste from other universal waste handlers, accumulates universal waste, and sends universal waste to another universal waste handler, to a destination facility, or to a foreign destination.

It does not mean:

  1. a person who treats (except under the provisions of 40 CFR 273.13(a) or (c), or 273.33(a) or (c), disposes of, or recycles universal waste
  2. a person engaged in offsite transportation of a universal waste by air, rail, highway, or water, including a universal waste transfer facility **[Revised October 1999; Reviewed March 2000]**.
- *Universal Waste Transfer Facility* - any transportation related facility including loading docks, parking areas, storage areas, and other similar areas where shipments of universal waste are held during the normal course of transportation for 10 days or less (40 CFR 273.9) **[Revised October 1999; Reviewed March 2000]**.
- *Universal Waste Transporter* - a person engaged in the offsite transportation of universal waste by air, rail, highway, or water (40 CFR 260.10 and 273.9) **[Revised October 1999; Reviewed March 2000]**.
- *Unplanned Episodic Event* - an episodic event that the generator did not plan or reasonably did not expect to occur, including production process upsets, product recalls, accidental spills, or “acts of nature,” such as tornado, hurricane, or flood (40 CFR 262.231) **[Added January 2017]**.
- *Unsaturated Zone or Zone of Aeration* - the zone between the land surface and the water table (40 CFR 260.10) **[Reviewed October 2001]**.
- *Unwanted Material* - any chemical, mixtures of chemicals, products of experiments or other material from a laboratory that is no longer needed, wanted or usable in the laboratory and that is destined for hazardous waste determination by a trained professional. Unwanted materials include reactive acutely hazardous unwanted materials and materials that may eventually be determined not to be solid waste pursuant to 40 CFR 261.2, or a hazardous waste pursuant to 40 CFR 261.3. If an eligible academic entity elects to use another equally effective term in lieu of “unwanted material,” as allowed by 40 CFR 262.206(a)(1)(i), the equally effective term has the same meaning and is subject to the same requirements as “unwanted material” under 40 CFR 262, Subpart K (40 CFR 262.200) **[Added January 2009]**.
- *Uppermost Aquifer* - the geologic formation nearest the natural ground surface that is an aquifer, as well as lower aquifers that are hydraulically interconnected with this aquifer, within the facility’s property boundary (40 CFR 260.10) **[Reviewed October 2001]**.

- *Used Oil* - any oil that has been refined from crude oil, or any synthetic oil, that has been used and as a result of such use is contaminated by physical or chemical impurities [NOTE: See also the definition of Used Oil in POL Management] (40 CFR 260.10) [**Reviewed October 2001**].
- *Very Small Quantity Generator (VSQG)* - a generator who generates less than or equal to the following amounts in a calendar month (40 CFR 260.10) [**Added January 2017**]:
  1. 100 kilograms (220 lbs) of nonacute hazardous waste; and
  2. 1 kilogram (2.2 lbs) of acute hazardous waste listed in 40 CFR 261.31 or 40 CFR 261.33(e); and
  3. 100 kilograms (220 lbs) of any residue or contaminated soil, water, or other debris resulting from the cleanup of a spill, into or on any land or water, of any acute hazardous waste listed in 40 CFR 261.31 or 40 CFR 261.33(e).
- *Volatile Organic (VO) Concentration* - the fraction by weight of the volatile organic compounds in a hazardous waste expressed in terms of ppmw as determined by direct measurement or by knowledge of the waste (40 CFR 265.1081) [**Reviewed October 2001**].
- *Waste Battery* - a used battery becomes a waste on the date that it is discarded (e.g., when sent for reclamation). An unused battery becomes a waste on the date the handler decides to discard it. See also the definition of Battery (40 CFR 273.2(c)) [**Reviewed March 2000**].
- *Waste Explosives* - waste that has the potential to detonate and bulk military propellants that cannot be safely disposed of through other modes of treatment (40 CFR 265.382).
- *Waste Lamp* - a used lamp becomes a waste on the date it is discarded. An unused lamp becomes a waste on the date the handler decides to discard it (40 CFR 273.5(c)) [**Added October 1999; Reviewed March 2000**].
- *Waste Mercury-Containing Equipment* - used mercury-containing equipment becomes a waste on the date it is discarded. Unused mercury-containing equipment becomes a waste on the date the handler decides to discard it (40 CFR 273.4(c)) [**Added October 2005**].
- *Waste Pesticides* - this term applies as follows (40 CFR 273.3(c):
  1. a recalled pesticides becomes a waste on the first date on which both of the following conditions apply:
    - r. a. the generator of the recalled pesticide agrees to participate in the recall; and
    - s. b. the person conducting the recall decides to discard (e.g., burn the pesticides for energy recovery) the pesticides
  2. stocks of unused pesticide products that are collected and managed as part of a waste pesticide collection program becomes a waste on the day the generator decides to discard it.

The following pesticides are not waste (40 CFR 273.3(d):

1. recalled pesticides providing the person conducting the recall either:
    - t. a. has not made a decision to discard (e.g., burn for energy recovery) the pesticide
    - u. b. has made a decision to use a management option that, under 40 CFR 261.2, does not cause the pesticide to be a solid waste (i.e., the selected option is use (other than use constituting disposal), or reuse, or reclamation)
  2. unused pesticide products that are collected and managed as a part of a waste pesticide collection program if the generator of the unused pesticide product has not decided to discard (e.g., burn for energy recovery) them [**Reviewed March 2000**].
- *Waste Stabilization Process* - any physical or chemical process used to either reduce the mobility of hazardous constituents in a hazardous waste or eliminate free liquids as determined by Test Method 9095B (Paint Filter Liquids Test) in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as incorporated by reference in 40 CFR 260.11. A waste stabilization process includes mixing the hazardous

waste with binders or other materials, and curing the resulting hazardous waste and binder mixture. Other synonymous terms used to refer to this process are “waste fixation” or “waste solidification.” This does not include the adding of absorbent materials to the surface of a waste, without mixing, agitation, or subsequent curing, to absorb free liquid (40 CFR 265.1081) [**Reviewed October 2001; Revised July 2005**].

- *Waste Thermostats* - A used thermostat becomes a waste on the date it is discarded (e.g., sent for reclamation). An unused thermostat becomes a waste on the date the handler decides to discard it (40 CFR 273.4(c)) [**Reviewed March 2000**].
- *Wastewater Treatment Unit* - a device that is part of a wastewater treatment facility subject to regulation under section 402 or 307(b) of the CWA and receives and treats or stores an influent wastewater that is a hazardous waste (as defined in 40 CFR 261.3), or that generates and accumulates a wastewater treatment sludge that is a hazardous waste, or treats or stores a wastewater treatment sludge, and meets the definition of tank or tank system (40 CFR 260.10) [**Reviewed October 2001**].
- *Wastewaters* - wastes that contain less than 1 percent by weight total organic compounds and less than 1 percent by weight total suspended solids (TSS) with certain exceptions (40 CFR 268.2) [**Reviewed October 2001**].
- *Working Container* - a small container (i.e., 2 gal or less) that is in use at a laboratory bench, hood, or other work station, to collect unwanted material from a laboratory experiment or procedure (40 CFR 262.200) [**Added January 2009**].
- *Zone of Engineering Control* - an area under the control of the owner/operator that, upon detection of a hazardous waste release, can be readily cleaned up before the release of hazardous waste or hazardous constituents to groundwater or surface water (40 CFR 260.10) [**Reviewed October 2001**].

#### **F. Records To Review [Revised October 1998]**

Generator (including TSDFs if they are also generators):

- Notification (USEPA identification number)
- Hazardous waste manifests
- LDR Restriction Notification Forms
- Manifest exception reports
- Biennial reports
- Inspection Logs (as applicable)
- Delistings
- Land disposal restriction certifications
- Employee training documentation
- Contingency plan
- Notifications of hazardous waste oil fuel marketing or blending activity

In addition to the above, TSDFs would require:

- Permits, if issued, otherwise Part A application
- Unmanifested waste reports
- Waste analysis plan(s)
- Operating record
- Groundwater monitoring records and annual reports (where required)
- Biennial reports
- Closure/postclosure plans
- Closure/postclosure notices (where applicable)
- Location map of the TSDF
- Part A permit, including:
  - inspection plan

- training plan
- closure/postclosure plans
- other documents as required by the permit
- Emergency permits

**G. Physical Features To Inspect**

- Disposal sites
- Accumulations points
- Incinerators
- Vehicles used for transport
- Storage facilities (including drums)
- Surface impoundments
- OB/OD sites
- Treatment units
- Generation sites
- Satellite accumulation points
- Recycling sites

## H. Guidance for Hazardous Waste Management Checklist Users

	<b>REFER TO CHECKLIST ITEMS:</b>
All Facilities	HW.1.1.US. and HW.1.2.US.
Missing, Risk Management, and Positive Checklist Items	HW.2.1.US. through HW.2.3.US
All Sizes of Generators	HW.10.1.US. through HW.10.18.US
Very Small Quantity Generators (VSQGs)	HW.15.1.US. through HW.15.6.US.
Small Quantity Generators (SQGs)	
General	HW.20.1.US. through HW.20.8.US.
Personnel Training	HW.25.1.US. and HW.25.2.US.
Containers	HW.30.1.US. through HW.30.6.US.
Satellite Accumulation Points	HW.35.1.US.
Container Storage Areas	HW.40.1.US. through HW.40.3.US.
Drip Pads	HW.42.1.US through HW.42.6.US
Containment Buildings	HW.43.1.US through HW.43.8.US
Disposal of Restricted Wastes	HW.45.1.US. through HW.45.5.US.
Generators	
General	HW.55.1.US. through HW.55.11.US.
Personnel Training	HW.60.1.US. and HW.60.2.US.
Contingency Plans and Emergency Coordinators	HW.65.1.US. through HW.65.4.US.
Containers	HW.70.1.US. through HW.70.12.US.
Emissions from Process Vents	HW.71.1.US. through HW.71.6.US.
Air Emission Standards for Equipment Leaks	HW.72.1.US. through HW.72.10.US.
Satellite Accumulation Points	HW.75.1.US.
Container Storage Areas	HW.80.1.US. through HW.80.4.US.
Drip Pads	HW.83.1.US through HW.83.6.US
Containment Buildings	HW.85.1.US. through HW.85.7.US.
Disposal of Restricted Waste	HW.90.1.US. through HW.90.6.US.
Transfer Facilities	HW.95.1.US
Transportation of Hazardous Waste	HW.100.1.US. through HW.100.8.US.
Military Munitions	HW.102.1.US. through HW.102.5.US.
All TSDFs	
General	HW.105.1.US. through HW.105.11.US.
Personnel Training	HW.110.1.US. and HW.110.2.US.
Containers	HW.115.1.US. through HW.115.12.US.
Container Storage Areas	HW.120.1.US. through HW.120.3.US.
Drip Pads	HW.123.1.US through HW.123.5.US
Containment Buildings	HW.125.1.US. through HW.125.7.US.
Restricted Wastes	HW.130.1.US. through HW.130.6.US.
Emissions from Process Vents	HW.135.1.US. through HW.135.6.US.
Air Emissions Standards for Equipment Leaks	HW.140.1.US. through HW.140.11.US.
Documentation Requirements	HW.145.1.US. through HW.145.14.US.
Surface Impoundments	HW.150.1.US. through HW.150.8.US.
Waste Piles	HW.155.1.US.

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	<b>REFER TO CHECKLIST ITEMS:</b>
Land Treatment Units	HW.160.1.US.
Hazardous Waste Landfills	HW.165.1.US. through HW.165.10.US.
Hazardous Waste Munitions and Explosives Storage	HW.167.1.US. through HW.167.5.US.
Closure	HW.170.1.US. through HW.170.5.US.
Additional Requirements for Permitted TSDFs	
General	HW.180.1.US. through HW.180.14.US.
Surface Impoundments	HW.185.1.US. through HW.185.12.US.
Waste Piles	HW.190.1.US. through HW.190.5.US.
Land Treatment Units	HW.195.1.US. through HW.195.7.US.
Hazardous Waste Landfills	HW.200.1.US. through HW.200.4.US.
Incinerators	HW.205.1.US. through HW.205.4.US.
Miscellaneous Units	HW.210.1.US. through HW.210.3.US.
Additional Requirements for Interim Status TSDFs	
General	HW.220.1.US. through HW.220.9.US.
Surface Impoundments	HW.225.1.US. through HW.225.6.US.
Waste Piles	HW.230.1.US. through HW.230.5.US.
Land Treatment Units	HW.235.1.US. through HW.235.4.US.
Hazardous Waste Landfills	HW.240.1.US and HW.240.2.US
Incinerators	HW.245.1.US. through HW.245.5.US.
Thermal Treatment	HW.250.1.US. through HW.250.3.US.
Chemical/Physical/Biological Treatment	HW.255.1.US. through HW.255.3.US.
Corrective Action Management Unit	HW.262.1.US through HW.262.5.US
Export/Import of Hazardous Waste	HW.265.1.US. through HW.265.13.US.
Hazardous Waste on Public Vessels	HW.270.1.US.
Small Quantity Universal Waste Handlers	
General	HW.280.1.US. through HW.280.4.US.
Specific Wastes	HW.290.1.US. through HW.290.6.US.
Personnel Training	HW.300.1.US.
Containers	HW.310.1.US.
Transportation	HW.330.1.US. and HW.330.2.US.
Large Quantity Universal Waste Handlers	
General	HW.370.1.US. through HW.370.4.US.
Specific Wastes	HW.380.1.US. through HW.380.6.US.
Personnel Training	HW.390.1.US.
Containers	HW.400.1.US.
Notifications	HW.410.1.US.
Transportation	HW.420.1.US. through HW.420.3.US.
Universal Waste Transporters	HW.450.1.US. through HW.450.7.US.
Universal Waste Destination Facilities	HW.470.1.US. through HW.470.4.US.

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Appendix 4-1, Hazardous Waste from Nonspecific Sources and from Specific Sources

Appendix 4-2, Commercial Chemical Products or Manufacturing Chemical Intermediates Identified as Toxic Wastes

Appendix 4-3, Toxicity Constituents and Regulatory Levels

Appendix 4-4, This appendix has been deleted

Appendix 4-5, Commercial Chemical Products or Manufacturing Chemical Intermediates Identified as Acute Hazardous Waste

Appendix 4-6, Hazardous Materials/Hazardous Waste Storage Incompatibility Chart

Appendix 4-7, Recordkeeping, Notification, and/or Certification Requirements for 40 CFR 268.

Appendix 4-8, Land Disposal Restricted Wastes and Their Effective Dates

Appendix 4-8a, Deleted January 2004

Appendix 4-9, Treatment Standards for Hazardous Waste

Appendix 4-10, Technology Codes and Description of Technology Based Standards

Appendix 4-11, Maximum Concentrations of Constituents for Groundwater Protection

Appendix 4-12, Groundwater Monitoring List

Appendix 4-13, Interim Primary Drinking Water Standards

Select portions of this section (i.e., Review of Federal Legislation, State and Local Regulations, Key Compliance Requirements, Key Terms and Definitions, Typical Records to Review, Typical Physical Features to Inspect, and the Checklist) have been reviewed by USEPA personnel from the Office of Enforcement and Compliance Assurance (OECA) and USEPA's Office of General Counsel. USEPA's comments and suggestions for changes have been incorporated in this version of the TEAM Guide. USEPA did not review all portions of this section. USEPA also did not review and comment on items pertaining to federal Executive Orders, DOT regulations, OSHA regulations or any other area outside of Title 40 of the Code of Federal Regulations. Portions that have been added or revised as a result of this review are identified as being reviewed, revised or added in March 2000, for example [**Added March 2000**].



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<p><b>HW.1.</b></p> <p><b>ALL FACILITIES</b></p> <p><b>HW.1.1.US.</b> The current status of any ongoing or unresolved consent orders, compliance agreements, notices of violation (NOVs), interagency agreements, or equivalent state enforcement actions is required to be examined (a finding under this checklist item will have the enforcement action/identifying information as the citation).</p> <p><b>HW.1.2.US.</b> Specific persons or positions should be designated responsible for areas where hazardous waste is stored or accumulated for all sizes of generators and TSDFs (MP) [Revised October 2011].</p>	<p>Determine if noncompliance issues have been resolved by reviewing a copy of the previous report, consent orders, compliance agreements, NOVs, interagency agreements, or equivalent state enforcement actions.</p> <p>Verify that specific individuals or positions have been designated as responsible for hazardous waste storage or accumulation areas.</p> <p>Verify that the individuals designated responsible for hazardous waste storage or accumulation areas are aware of the precise nature of their responsibilities.</p>



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<p><b>HW.2.</b></p> <p><b>MISSING, RISK MANAGEMENT, AND POSITIVE CHECKLIST ITEMS</b></p> <p><b>HW.2.1.US.</b> Facilities are required to comply with all applicable Federal regulatory requirements not contained in this checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of finding).</p> <p><b>HW.2.2.US.</b> Risk management techniques should be promoted in environmental efforts (MP) [Added April 2002].</p> <p><b>HW.2.3.US.</b> Facilities should go above and beyond statutory and regulatory compliance (MP) [Added April 2002].</p>	<p>Determine if any new regulations have been issued since the finalization of TEAM.</p> <p>Determine if the facility has activities or facilities that are regulated but not addressed in this checklist.</p> <p>Verify that the facility is in compliance with all applicable and newly issued regulations.</p> <p>Determine if risk management techniques are promoted in environmental efforts.</p> <p>Determine if the facility has gone above and beyond simply complying with environmental requirements.</p>



<p style="text-align: center;"><b>COMPLIANCE CATEGORY</b>  <b>HAZARDOUS WASTE MANAGEMENT</b>  <b>U.S. TEAM Guide</b></p>	
<p style="text-align: center;"><b>REGULATORY REQUIREMENTS</b></p>	<p style="text-align: center;"><b>REVIEWER CHECKS</b>  <b>December 2018</b></p>
<p><b>HW.10.</b></p> <p><b>ALL SIZES OF GENERATORS</b></p> <p><b>HW.10.1.US.</b> Generators of solid waste must determine if the wastes are hazardous wastes (40 CFR 260.34(a), 262.11(a) through 262.11(d) through 262.11(f)) <b>[Revised January 2003; Revised January 2009; Revised April 2014; Revised January 2017].</b></p>	<p>Verify that generators of solid waste make an accurate determination whether or not that waste is hazardous waste.</p> <p>Verify that determination is made at the point of waste generation, before any dilution, mixing, or other alteration of the waste occurs.</p> <p>Verify that determination is also made at any time in the course of the wastes management that it has, or may have, changed its properties as a result of exposure to the environment or other factors that may change the properties of the waste.</p> <p>(NOTE: See 40 CFR 261.4 [www.ecfr.gov] for a list of items which are:</p> <ul style="list-style-type: none"> <li>– not considered solid waste and therefore do not have to go through the determination process under Federal regulations</li> <li>– solid waste, but not considered hazardous waste.)</li> </ul> <p>Verify that, if the waste is not excluded under 40 CFR 261.4, the generator uses knowledge of the waste to determine whether it is a listed waste under 40 CFR 261, Subpart D (40 CFR 261.30 – 261.35; see www.ecfr.gov for a current list).</p> <p>(NOTE: Acceptable knowledge to use when making a determination of whether or not a waste is listed may include waste origin, composition, the process producing the waste, feedstock, and other reliable and relevant information.)</p> <p>Verify that, after determining if the waste is listed, the generator determines if the waste exhibits one or more of the following hazardous characteristics:</p> <ul style="list-style-type: none"> <li>– reactivity</li> <li>– corrosivity</li> <li>– ignitability</li> <li>– toxicity.</li> </ul> <p>(NOTE: Accepted procedures for determining whether or not a waste exhibits a hazardous characteristic are:</p> <ul style="list-style-type: none"> <li>– apply knowledge of the hazard characteristic of the waste in light of the materials or the processes used to generate the waste.</li> <li>– When available knowledge is inadequate to make an accurate determination, test the waste according to the applicable methods set forth in subpart C of 40 CFR 261 or according to an equivalent method approved by the Administrator under 40 CFR 260.21 and in accordance with the following: <ul style="list-style-type: none"> <li>– obtain a representative sample of the waste for the testing, as defined at 40 CFR 260.10</li> </ul> </li> </ul>

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	<p>– where a test method is specified in subpart C of 40 CFR part 261, the results of the regulatory test, when properly performed, are definitive for determining the regulatory status of the waste.)</p> <p>(NOTE: When determining if a waste exhibits a hazardous characteristic, acceptable knowledge may include process knowledge (<i>e.g.</i>, information about chemical feedstocks and other inputs to the production process); knowledge of products, by-products, and intermediates produced by the manufacturing process; chemical or physical characterization of wastes; information on the chemical and physical properties of the chemicals used or produced by the process or otherwise contained in the waste; testing that illustrates the properties of the waste; or other reliable and relevant information about the properties of the waste or its constituents. A test other than a test method set forth in subpart C of 40 CFR 261, or an equivalent test method approved by the Administrator under 40 CFR 260.21, may be used as part of a person’s knowledge to determine whether a solid waste exhibits a characteristic of hazardous waste. However, such tests do not, by themselves, provide definitive results. Persons testing their waste must obtain a representative sample of the waste for the testing, as defined at 40 CFR 260.10.)</p> <p>(NOTE: Unidentified waste materials and spilled hazardous materials may have to be disposed of as hazardous waste depending on their constituents or characteristics.)</p> <p>(NOTE: A facility may apply to the Administrator for a formal determination that a hazardous secondary material [see definitions] is not discarded and therefore not a solid waste.)</p> <p>(NOTE: Some batteries, pesticides, thermostats, and mercury lamps may be considered universal wastes instead of hazardous wastes and need to be handled according to the requirements in 40 CFR 273 [see the appropriate definitions for clarification.]</p> <p>(NOTE: If the waste is determined to be hazardous, the generator must refer to 40 CFR 261, 264, 265, 266, 267, 268, and 273 for other possible exclusions or restrictions pertaining to management of the specific waste.)</p> <p>Verify that the appropriate records are kept for 3 yr from the date the waste was last sent to the onsite or offsite TSDF.</p> <p>(NOTE: Hazardous waste determination records are required for SQGs and LQGs but not for VSQGs; but VSQGs are still required to determine whether or not their wastes are hazardous waste.)</p> <p>(NOTE: These records must comprise the generator’s knowledge of the waste and support the generator’s determination. The records must include, but are not limited to, the following types of information:</p>

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<p><b>HW.10.2.US.</b> Generators of hazardous waste must determine their generator category (40 CFR 262.13) [Added January 2017].</p>	<ul style="list-style-type: none"> <li>– the results of any tests, sampling, waste analyses, or other determinations made in accordance with 40 CFR 262.11</li> <li>– records documenting the tests, sampling, and analytical methods used to demonstrate the validity and relevance of such tests</li> <li>– records consulted in order to determine the process by which the waste was generated, the composition of the waste, and the properties of the waste</li> <li>– records which explain the knowledge basis for the generator’s determination.)</li> </ul> <p>(NOTE: The recordkeeping requirement does not apply to non-hazardous waste determinations.)</p> <p>(NOTE: Periods of retention for reports may be extended automatically during the course of any unresolved enforcement action or at the request of the USEPA Administrator.)</p> <p>(NOTE: A generator’s category is based on the amount of hazardous waste generated each month and may change from month to month.)</p> <p>Verify that a generator who either generates acute hazardous waste or non-acute hazardous waste in a calendar month determines its generator category for that month by doing the following:</p> <ul style="list-style-type: none"> <li>– counting the total amount of hazardous waste generated in the calendar month;</li> <li>– subtracting from the total any amounts of waste exempt from counting; see following list: <ul style="list-style-type: none"> <li>– is exempt from regulation under 40 CFR 261.4(c) through (f), 261.6(a)(3), 261.7(a)(1), or 261.8 (see <a href="http://www.ecfr.gov">www.ecfr.gov</a> for current lists)</li> <li>– is managed immediately upon generation only in on-site elementary neutralization units, wastewater treatment units, or totally enclosed treatment facilities as defined in 40 CFR 260.10</li> <li>– is recycled, without prior storage or accumulation, only in an on-site process subject to regulation under 40 CFR 261.6(c)(2)</li> <li>– is used oil managed under the requirements of 40 CFR 261.6(a)(4) and 40 CFR 279</li> <li>– is spent lead-acid batteries managed under the requirements of 40 CFR 266 subpart G</li> <li>– is universal waste managed under 40 CFR 261.9 and 40 CFR 273</li> <li>– is a hazardous waste that is an unused commercial chemical product (listed in 40 CFR 261 subpart D or exhibiting one or more characteristics in 40 CFR part 261 subpart C) that is generated solely as a result of a laboratory clean-out conducted at an eligible academic entity as defined in 40 CFR 262.200</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– is managed as part of an episodic event in compliance with the conditions of 40 CFR 262, subpart L (see checklist items HW.15.2.US and HW.20.8.US)</li> <li>– determining the resulting generator category for the hazardous waste generated.</li> </ul> <p>(NOTE: In determining the quantity of hazardous waste generated in a calendar month, a generator need not include:</p> <ul style="list-style-type: none"> <li>– hazardous waste when it is removed from on-site accumulation, so long as the hazardous waste was previously counted once;</li> <li>– hazardous waste generated by onsite treatment (including reclamation) of the generator’s hazardous waste, so long as the hazardous waste that is treated was previously counted once; and</li> <li>– hazardous waste spent materials that are generated, reclaimed, and subsequently reused on site, so long as such spent materials have been previously counted once.)</li> </ul> <p>Verify that a generator who generates both acute hazardous waste and non-acute hazardous waste in the same calendar month determine its generator category for that month by doing the following:</p> <ul style="list-style-type: none"> <li>– counting separately the total amount of acute hazardous waste and the total amount of non-acute hazardous waste generated in the calendar month</li> <li>– subtracting from the total any amounts of waste exempt from counting; see following list: <ul style="list-style-type: none"> <li>– is exempt from regulation under 40 CFR 261.4(c) through (f), 261.6(a)(3), 261.7(a)(1), or 261.8 (see <a href="http://www.ecfr.gov">www.ecfr.gov</a>)</li> <li>– is managed immediately upon generation only in on-site elementary neutralization units, wastewater treatment units, or totally enclosed treatment facilities as defined in 40 CFR 260.10</li> <li>– is recycled, without prior storage or accumulation, only in an on-site process subject to regulation under 40 CFR 261.6(c)(2)</li> <li>– is used oil managed under the requirements of 40 CFR 261.6(a)(4) and 40 CFR 279</li> <li>– is spent lead-acid batteries managed under the requirements of 40 CFR 266 subpart G</li> <li>– is universal waste managed under 40 CFR 261.9 and 40 CFR 273</li> <li>– is a hazardous waste that is an unused commercial chemical product (listed in 40 CFR 261 subpart D or exhibiting one or more characteristics in 40 CFR 261, subpart C) that is generated solely as a result of a laboratory clean-out conducted at an eligible academic as defined in 40 CFR 262.200</li> <li>– is managed as part of an episodic event in compliance with the conditions of 40 CFR 262, subpart L (see checklist items HW.15.2.US and HW.20.8.US)</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– determining separately the resulting generator categories for the quantities of acute and non-acute hazardous waste generated</li> <li>– comparing the resulting generator categories and applying the more stringent generator category to the accumulation and management of both non-acute hazardous waste and acute hazardous waste generated for that month.</li> </ul> <p>(NOTE: For Federal regulations, the generator categories are Very Small Quantity Generator (VSQG), Small Quantity Generator (SQG), and Large Quantity Generator (LQG). For information on the generation amounts associated with each category see 40 CFR 262.13, Table 1 or the definitions in this Section of the U.S. TEAM Guide.)</p> <p>(NOTE: Hazardous wastes generated by a VSQG may be mixed with solid wastes. VSQGs may mix a portion or all of its hazardous waste with solid waste and remain subject to 40 CFR 262.14 (see checklist item HW.15.1.US) even though the resultant mixture exceeds the quantity limits identified in the definition of VSQG, unless the mixture exhibits one or more of the characteristics of hazardous waste identified in part 261 subpart C. If the resulting mixture exhibits a characteristic of hazardous waste, this resultant mixture is a newly-generated hazardous waste. The VSQG must count both the resultant mixture amount plus the other hazardous waste generated in the calendar month to determine whether the total quantity exceeds the VSQG calendar month quantity limits. If so, to remain exempt from the permitting, interim status, and operating standards, the VSQG must meet the conditions for exemption applicable to either a SQG or a LQG. The VSQG must also comply with the applicable independent requirements for either a SQG or a LQG.)</p> <p>(NOTE: According to 40 CFR 262.1, “condition for exemption” means any requirement in 40 CFR 262.14, 262.15, 262.16, 262.17, 262.70, or subpart K or subpart L that states an event, action, or standard that must occur or be met in order to obtain an exemption from any applicable requirement in 40 CFR 124, 264 through 268, and 270, or from any requirement for notification under section 3010 of RCRA.)</p> <p>(NOTE: According to 40 CFR 262.1, “independent requirement” means a requirement of 40 CFR 262 that states an event, action, or standard that must occur or be met; and that applies without relation to, or irrespective of, the purpose of obtaining a conditional exemption from storage facility permit, interim status, and operating requirements under 40 CFR 262.14, 262.15, 262.16, 262.17, or subpart K or subpart L.)</p> <p>(NOTE: If a VSQG’s wastes are mixed with used oil, the mixture is subject to 40 CFR 279. Any material produced from such a mixture by processing, blending, or other treatment is also regulated under 40 CFR part 279.)</p>

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	<p>(NOTE: Hazardous wastes generated by a SQG or LQG may be mixed with solid waste. These mixtures are subject to the following: the mixture rule in 40 CFR 261.3(a)(2)(iv), 261.3(b)(2) and (3), and 261.3(g)(2)(i); the prohibition of dilution rule at 40 CFR 268.3(a); the land disposal restriction requirements of 40 CFR 268.40 if a characteristic hazardous waste is mixed with a solid waste so that it no longer exhibits the hazardous characteristic; and the hazardous waste determination requirement at 40 CFR 262.11. If the resulting mixture is found to be a hazardous waste, this resultant mixture is a newly-generated hazardous waste. A SQG must count both the resultant mixture amount plus the other hazardous waste generated in the calendar month to determine whether the total quantity exceeds the SQG calendar monthly quantity limits. If so, to remain exempt from the permitting, interim status, and operating standards, the SQG must meet the conditions for exemption applicable to a LQG. The SQG must also comply with the applicable independent requirements for a LQG.)</p>
<p><b>HW.10.3.US.</b> Facilities that claim that a particular material is not a solid waste or is conditionally exempt from regulation as a hazardous waste are required to provide specific documentation (40 CFR 261.2(f)) [Added February 1995; Reviewed October 2001].</p>	<p>Determine if the facility has any waste that are typically handled as hazardous waste that it claims are exempt.</p> <p>Verify that, for these wastes, the facility can demonstrate that there is a known market or disposition for the material and that they meet the terms of the exclusion or exemption.</p> <p>Verify that documentation is provided that indicates the material is not a waste, or is exempt from regulation.</p> <p>(NOTE: One example of documentation are contracts showing that a second person uses the material as an ingredient in a production process.)</p> <p>Verify that, if the facility is claiming to recycle material, the equipment for the recycling is actually at the facility and in working order.</p>
<p><b>HW.10.4.US.</b> Checklist item deleted [Added January 2003; Deleted April 2003].</p>	<p>On 24 February 2003, USEPA withdrew the direct final rule for Regulatory Innovations: Pilot-Specific Rule for Electronic Materials in USEPA Region III Mid-Atlantic States; Hazardous Waste Management System; Modification of the Hazardous Waste Program; Cathode Ray Tubes (CRT). The direct final rule was published on 26 December 2002 date (67 FR 78718-78731).</p>
<p><b>HW.10.5.US.</b> In order for low level mixed waste (LLMW) to not be stored or treated as a hazardous waste, certain parameters must be met (40 CFR 266.220 through 266.260) [Added January 2004].</p>	<p>(NOTE: LLMW is exempt from the regulatory definition of hazardous waste in 40 CFR 261.3 if the waste meets the eligibility criteria and conditions in this checklist. This is referred to as a “storage and treatment conditional exemption”.)</p> <p>Verify that LLMW managed under a storage and treatment conditional exemption is generated and managed by the facility under a single NRC or NRC Agreement State license.</p>

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	<p>(NOTE: Mixed waste generated at a facility with a different license number and shipped to a facility for storage or treatment requires a permit and is ineligible for this exemption. In addition, NARM waste is ineligible this exemption.)</p> <p>Verify that a facility with LLMW managed under a storage and treatment conditional exemption notifies the USEPA in writing by certified delivery that the facility is claiming a conditional exemption for the LLMW stored on the facility.</p> <p>Verify that notification has been made or is made within 90 days of when a storage unit is first used to store conditionally exempt LLMW.</p> <p>Verify that the dated notification includes the facility name, address, RCRA identification number, NRC or NRC Agreement State license number, the waste code(s) and storage unit(s) for which an exemption is sought, and a statement that the facility meets the conditions of this checklist item.</p> <p>Verify that the notification is signed by the authorized representative who certifies that the information in the notification is true, accurate, and complete.</p> <p>Verify that, to qualify for and maintain an exemption for LLMW, the facility:</p> <ul style="list-style-type: none"> <li>– stores LLMW waste in tanks or containers in compliance with the requirements of the facility’s license requirements that apply to the proper storage of low-level radioactive waste (not including those license requirements that relate solely to recordkeeping)</li> <li>– stores LLMW in tanks or containers in compliance with chemical compatibility requirements of a tank or container in 40 CFR 264.177, 264.199, or 40 CFR 265.177, 265.199 (see checklist items HW.115.5.US and HW.170.5.US)</li> <li>– certifies that facility personnel who manage stored conditionally exempt LLMW are trained in a manner that ensures that the conditionally exempt waste is safely managed and includes training in chemical waste management and hazardous materials incidents response that meets the personnel training standards found in 40 CFR 265.16(a)(3) (see checklist item HW.110.1.US)</li> <li>– conducts an inventory of the stored conditionally exempt LLMW at least annually and inspects it at least quarterly for compliance</li> <li>– maintains an accurate emergency plan and provides it to all local authorities who may have to respond to a fire, explosion, or release of hazardous waste or hazardous constituents.</li> </ul> <p>Verify that the emergency plan describes emergency response arrangements with local authorities; describes evacuation plans; lists the names, addresses, and telephone numbers of all facility personnel qualified to work with local authorities as emergency coordinators; and lists emergency equipment.</p>

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	<p>Verify that, if an LLMW managed under a storage and treatment conditional exemption is treated at the facility, it is done in a tank or container in accordance with the terms of the NRC or NRC Agreement State license.</p> <p>(NOTE: Treatment that cannot be done in a tank or container without a RCRA permit [such as incineration] is not allowed under this conditional exemption.)</p> <p>Verify that, if the LLMW loses the exemption, the facility immediately manages that waste which failed the condition as RCRA hazardous waste, and the storage unit storing the LLMW immediately becomes subject to RCRA hazardous waste container and/or tank storage requirements.</p> <p>Verify that, if the LLMW loses the exemption, a report is submitted to the USEPA and the NRC, or the oversight agency in the NRC Agreement State, in writing by certified delivery within 30 days of learning of the failure.</p> <p>Verify that the report of LLMW conditional exemption loss is signed by the authorized representative certifying that the information provided is true, accurate, and complete, and the report includes:</p> <ul style="list-style-type: none"> <li>– the specific condition(s) which were not met</li> <li>– a description of the LLMW (including the waste name, hazardous waste codes, and quantity) and storage location at the facility</li> <li>– the date(s) on which the facility failed to meet the condition(s).</li> </ul> <p>Verify that, if the failure to meet any of the conditions for LLMW conditional exemption may endanger human health or the environment, the facility immediately notifies the USEPA orally within 24 h and follows up with a written notification within 5 days.</p> <p>(NOTE: Failures that may endanger human health or the environment include, but are not limited to, discharge of a CERCLA reportable quantity or other leaking or exploding tanks or containers, or detection of radionuclides above background or hazardous constituents in the leachate collection system of a storage area.)</p> <p>Verify that, if the failure to meet any of the conditions for LLMW conditional exemption may endanger human health or the environment, the facility follows the provisions of the emergency plan.</p> <p>Verify that, in addition to records required by the facility's NRC or NRC Agreement State license, the following records are kept:</p> <ul style="list-style-type: none"> <li>– initial notification records, return receipts, reports to USEPA of failure(s) to meet the exemption conditions, and all records supporting any reclaim of an exemption</li> <li>– records of LLMW annual inventories and quarterly inspections</li> </ul>

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<p><b>HW.10.6.US.</b> Recyclable materials used in a manner constituting disposal must be done according to specific parameters (40 CFR 266.20 through 266.23) <b>[Added April 2003; Moved January 2004]</b>.</p>	<ul style="list-style-type: none"> <li>– certification that facility personnel who manage stored mixed waste are trained in safe management of LLMW including training in chemical waste management and hazardous materials incidents response</li> <li>– the facility emergency plan.</li> </ul> <p>Verify that records concerning notification, personnel trained, and the emergency plan are maintained for as long as the exemption is claimed and for 3 yr thereafter, or in accordance with NRC regulations under 10 CFR 20 (or equivalent NRC Agreement State regulations), whichever is longer.</p> <p>Verify that records concerning annual inventory and quarterly inspections are maintained for 3 yr after the waste is sent for disposal, or in accordance with NRC regulations under 10 CFR 20 (or equivalent NRC Agreement State regulations), whichever is longer.</p> <p>(NOTE: When LLMW has met the requirements of the facility NRC or NRC Agreement State license for decay-in-storage and can be disposed of as non-radioactive waste, then the conditional exemption for storage no longer applies. On that date the waste is subject to hazardous waste regulation under the relevant sections of 40 CFR 260 through 271, and the time period for accumulation of a hazardous waste begins.)</p> <p>(NOTE: When conditionally exempt LLMW which has been generated and stored under a single NRC or NRC Agreement State license number is removed from storage, it is no longer eligible for the storage and treatment exemption. However, the waste may be eligible for the transportation and disposal conditional exemption at 40 CFR 266.305 [see checklist item HW.100.8.US].)</p> <p>(NOTE: This was formerly checklist item SO.25.5.US.)</p> <p>(NOTE: This checklist applies to recyclable materials that are applied to or placed on the land in either of the following ways:</p> <ul style="list-style-type: none"> <li>– without mixing with any other substance(s)</li> <li>– after mixing or combination with any other substance(s).</li> </ul> <p>These materials will be referred to throughout this subpart as “materials used in a manner that constitutes disposal.”)</p> <p>(NOTE: Products produced for the general public's use that are used in a manner that constitutes disposal and that contain recyclable materials are not presently subject to regulation if the recyclable materials have undergone a chemical reaction in the course of producing the products so as to become inseparable by physical means and if such products meet the applicable treatment standards in subpart D of 40 CFR 268 [or applicable prohibition levels in 40 CFR 268.32 or RCRA section 3004(d), where no treatment standards have been established] for each recyclable material [i.e., hazardous waste] that they contain.)</p>

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<p><b>HW.10.7.US.</b> Recyclable materials reclaimed to recover economically significant amounts of gold, silver, platinum, palladium, iridium, osmium, rhodium, ruthenium, or any combination of these must be managed according to specific parameters (40 CFR 266.70) [Added April 2003; Moved January 2004; Revised July 2010; Revised January 2017].</p>	<p>(NOTE: Commercial fertilizers that are produced for the general public's use and contain recyclable materials also are not presently subject to regulation provided they meet these same treatment standards or prohibition levels for each recyclable material that they contain. However, zinc-containing fertilizers using hazardous waste K061 that are produced for the general public's use are not presently subject to regulation.)</p> <p>(NOTE: Anti-skid/deicing uses of slags, which are generated from high temperature metals recovery (HTMR) processing of hazardous waste K061, K062, and F006, in a manner constituting disposal, are subject to regulation.)</p> <p>Verify that generators and transporters of materials that are used in a manner that constitutes disposal meet the applicable requirements of 40 CFR 262 and 263, and the notification requirement under section 3010 of RCRA (see the checklist items for managing hazardous waste as a generator [VSQG, SQG, or LQG] and/or transporter of hazardous waste in the Hazardous Waste Management section of the U.S. TEAM Guide.)</p> <p>(NOTE: Owners or operators of facilities that store recyclable materials that are to be used in a manner that constitutes disposal, but who are not the ultimate users of the materials, are regulated under all applicable provisions of subparts A through L of parts 40 CFR 264 and 265 and 270.1 and 40 CFR 124 and the notification requirement under section 3010 of RCRA.)</p> <p>(NOTE: Owners or operators of facilities that use recyclable materials in a manner that constitutes disposal are regulated under all applicable provisions of subparts A through N of 40 CFR 124, 264, 265, 268, and 270 and the notification requirement under section 3010 of RCRA.)</p> <p>(NOTE: This was formerly checklist item SO.25.6.US.)</p> <p>Verify that persons who generate, transport, or store recyclable materials reclaimed to recover economically significant amounts of gold, silver, platinum, palladium, iridium, osmium, rhodium, ruthenium, or any combination of these, meet the following:</p> <ul style="list-style-type: none"> <li>– notification requirements under section 3010 of RCRA</li> <li>– manifesting requirements for hazardous waste generators, transporters, or storers as appropriate (see the U.S. TEAM Guide Hazardous Waste Management section.)</li> <li>– for precious metals exported to or imported from other countries for recovery, 40 CFR part 262, subpart H and 40 CFR 265.12.</li> </ul> <p>Verify that persons who store recycled materials that are regulated under this checklist item keep the following records to document that they are not accumulating these materials speculatively:</p>

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<p><b>HW.10.8.US.</b> Unless all handling requirements are met, samples must be handled as hazardous waste (40 CFR 261.4(d) through 261.4(f)) <b>[Added July 2005; Revised July 2006].</b></p>	<ul style="list-style-type: none"> <li>– records showing the volume of these materials stored at the beginning of the calendar year</li> <li>– the amount of these materials generated or received during the calendar year</li> <li>– the amount of materials remaining at the end of the calendar year.</li> </ul> <p>(NOTE: A material is accumulated speculatively if it is accumulated before being recycled. A material is not accumulated speculatively, however, if the person accumulating it can show that the material is potentially recyclable and has a feasible means of being recycled; and that--during the calendar year (commencing on January 1)--the amount of material that is recycled, or transferred to a different site for recycling, equals at least 75 percent by weight or volume of the amount of that material accumulated at the beginning of the period. In calculating the percentage of turnover, the 75 percent requirement is to be applied to each material of the same type (e.g., slags from a single smelting process) that is recycled in the same way (i.e., from which the same material is recovered or that is used in the same way). Materials that are already defined as solid wastes also are not to be included in making the calculation. Materials are no longer in this category once they are removed from accumulation for recycling.)</p> <p>Verify that recyclable materials regulated under this checklist item that are accumulated speculatively meet all applicable provisions of 40 CFR 262 through 265, 267, 270, and 124 (see the Hazardous Waste Management section of the U.S. TEAM Guide.</p> <p>Verify that, so a sample of solid waste, water, soil, or air collected for the sole purpose of testing to determine its characteristics or composition as hazardous waste does not have to be treated as hazardous waste, one of the following is true:</p> <ul style="list-style-type: none"> <li>– the sample is being transported to a laboratory for the purpose of testing</li> <li>– the sample is being transported back to the sample collector after testing</li> <li>– the sample is being stored by the sample collector before transport to a laboratory for testing</li> <li>– the sample is being stored in a laboratory before testing</li> <li>– the sample is being stored in a laboratory after testing but before it is returned to the sample collector</li> <li>– the sample is being stored temporarily in the laboratory after testing for a specific purpose (for example, until conclusion of a court case or enforcement action where further testing of the sample may be necessary).</li> </ul> <p>Verify that, in order to qualify for the exemptions related to transportation to and from a lab for the purpose of testing, the sample collector shipping samples to a laboratory and a laboratory returning samples to a sample collector meets one of the following:</p> <ul style="list-style-type: none"> <li>– comply with U.S. Department of Transportation (DOT), U.S. Postal Service (USPS), or any other applicable shipping requirements</li> </ul>

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	<ul style="list-style-type: none"> <li>– comply with the following requirements if the sample collector determines that DOT, USPS, or other shipping requirements do not apply to the shipment of the sample:               <ul style="list-style-type: none"> <li>– assures that the following information accompanies the sample:                   <ul style="list-style-type: none"> <li>– the sample collector's name, mailing address, and telephone number</li> <li>– the laboratory's name, mailing address, and telephone number</li> <li>– the quantity of the sample</li> <li>– the date of shipment</li> <li>– a description of the sample</li> </ul> </li> <li>– packages the sample so that it does not leak, spill, or vaporize from its packaging.)</li> </ul> </li> </ul> <p>(NOTE: The above exemption does not apply if the laboratory determines that the waste is hazardous but the laboratory is no longer meeting any of the conditions stated in the first “Verify” statement in this checklist item.)</p> <p>Verify that, unless the following are met, persons who generate or collect samples for the purpose of conducting treatability studies handle the samples as hazardous waste unless one of the following is true:</p> <ul style="list-style-type: none"> <li>– the sample is being collected and prepared for transportation by the generator or sample collector</li> <li>– the sample is being accumulated or stored by the generator or sample collector prior to transportation to a laboratory or testing facility</li> <li>– the sample is being transported to the laboratory or testing facility for the purpose of conducting a treatability study.</li> </ul> <p>(NOTE: The exemption from handling treatability studies as hazardous waste is applicable to samples of hazardous waste being collected and shipped for the purpose of conducting treatability studies provided that:</p> <ul style="list-style-type: none"> <li>– the generator or sample collector uses (in “treatability studies”) no more than 10,000 kg of media contaminated with non-acute hazardous waste, 1000 kg of non-acute hazardous waste other than contaminated media, 1 kg of acute hazardous waste, 2500 kg of media contaminated with acute hazardous waste for each process being evaluated for each generated waste stream</li> <li>– the mass of each sample shipment does not exceed 10,000 kg; the 10,000 kg quantity may be all media contaminated with non-acute hazardous waste, or may include 2500 kg of media contaminated with acute hazardous waste, 1000 kg of hazardous waste, and 1 kg of acute hazardous waste</li> <li>– the sample is packaged so that it will not leak, spill, or vaporize from its packaging during shipment and one of the following requirements is met:</li> <li>– the transportation of each sample shipment complies with U.S. Department of Transportation (DOT), U.S. Postal Service (USPS), or any other applicable shipping requirements</li> </ul>

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	<ul style="list-style-type: none"> <li>– if the DOT, USPS, or other shipping requirements do not apply to the shipment of the sample, the following information accompanies the sample:               <ul style="list-style-type: none"> <li>– the name, mailing address, and telephone number of the originator of the sample</li> <li>– the name, address, and telephone number of the facility that will perform the treatability study</li> <li>– the quantity of the sample</li> <li>– the date of shipment</li> <li>– a description of the sample, including its EPA Hazardous Waste Number</li> </ul> </li> <li>– the sample is shipped to a laboratory or testing facility which is exempt under 40 CFR 261.4(f) or has an appropriate RCRA permit or interim status</li> <li>– the generator or sample collector maintains the following records for a period ending 3 yr after completion of the treatability study:               <ul style="list-style-type: none"> <li>– copies of the shipping documents</li> <li>– a copy of the contract with the facility conducting the treatability study</li> <li>– documentation showing [NOTE: This documentation must also be included in the biennial report]:                   <ul style="list-style-type: none"> <li>– the amount of waste shipped under this exemption</li> <li>– the name, address, and EPA identification number of the laboratory or testing facility that received the waste</li> <li>– the date the shipment was made</li> <li>– whether or not unused samples and residues were returned to the generator.)</li> </ul> </li> </ul> </li> </ul> <p>(NOTE: The Regional Administrator may grant requests on a case-by-case basis for up to an additional 2 yr for treatability studies involving bioremediation. The Regional Administrator may grant requests on a case-by-case basis for quantity limits in excess of those specified in the above NOTE for up to an additional 5000 kg of media contaminated with non-acute hazardous waste, 500 kg of non-acute hazardous waste, 2500 kg of media contaminated with acute hazardous waste and 1 kg of acute hazardous waste:</p> <ul style="list-style-type: none"> <li>– in response to requests for authorization to ship, store and conduct treatability studies on additional quantities in advance of commencing treatability studies [NOTE: Factors to be considered in reviewing such requests include the nature of the technology, the type of process (e.g., batch versus continuous), size of the unit undergoing testing (particularly in relation to scale-up considerations), the time/quantity of material required to reach steady state operating conditions, or test design considerations such as mass balance calculations]</li> <li>– in response to requests for authorization to ship, store and conduct treatability studies on additional quantities after initiation or completion of initial treatability studies, when:               <ul style="list-style-type: none"> <li>– there has been an equipment or mechanical failure during the conduct of a treatability study</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– there is a need to verify the results of a previously conducted treatability study; there is a need to study and analyze alternative techniques within a previously evaluated treatment process</li> <li>– there is a need to do further evaluation of an ongoing treatability study to determine final specifications for treatment.</li> </ul> <p>Verify that the generator or treatability sample collector applies to the Regional Administrator in the Region where the treatability sample is collected and provide in writing the following information:</p> <ul style="list-style-type: none"> <li>– the reason why the generator or sample collector requires additional time or quantity of sample for treatability study evaluation and the additional time or quantity needed</li> <li>– documentation accounting for all samples of hazardous waste from the waste stream which have been sent for or undergone treatability studies including the date each previous sample from the waste stream was shipped, the quantity of each previous shipment, the laboratory or testing facility to which it was shipped, what treatability study processes were conducted on each sample shipped, and the available results on each treatability study</li> <li>– a description of the technical modifications or change in specifications which will be evaluated and the expected results</li> <li>– if such further study is being required due to equipment or mechanical failure, the applicant includes information regarding the reason for the failure or breakdown and also includes what procedures or equipment improvements have been made to protect against further breakdowns</li> <li>– such other information that the Regional Administrator considers necessary.</li> </ul> <p>Verify that, in order to not have to be handled as hazardous waste, samples undergoing treatability studies and the laboratory or testing facility conducting such treatability studies (to the extent such facilities are not otherwise subject to RCRA requirements) meet the following:</p> <ul style="list-style-type: none"> <li>– no less than 45 days before conducting treatability studies, the facility notifies the Regional Administrator, or State Director (if located in an authorized State), in writing that it intends to conduct treatability studies under this regulation</li> <li>– the laboratory or testing facility conducting the treatability study has an EPA identification number</li> <li>– no more than a total of 10,000 kg of “as received” media contaminated with non-acute hazardous waste, 2500 kg of media contaminated with acute hazardous waste or 250 kg of other “as received” hazardous waste is subject to initiation of treatment in all treatability studies in any single day (NOTE: “As received” waste refers to the waste as received in the shipment from the generator or sample collector.)</li> <li>– the quantity of “as received” hazardous waste stored at the facility for the purpose of evaluation in treatability studies does not exceed 10,000 kg, the</li> </ul>

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	<p>total of which can include 10,000 kg of media contaminated with non-acute hazardous waste, 2500 kg of media contaminated with acute hazardous waste, 1000 kg of non-acute hazardous wastes other than contaminated media, and 1 kg of acute hazardous waste (NOTE: This quantity limitation does not include treatment materials (including nonhazardous solid waste) added to “as received” hazardous waste)</p> <ul style="list-style-type: none"> <li>– no more than 90 days have elapsed since the treatability study for the sample was completed, or no more than 1 yr (2 yr for treatability studies involving bioremediation) have elapsed since the generator or sample collector shipped the sample to the laboratory or testing facility, whichever date first occurs (NOTE: Up to 500 kg of treated material from a particular waste stream from treatability studies may be archived for future evaluation up to 5 yr from the date of initial receipt. Quantities of materials archived are counted against the total storage limit for the facility.)</li> <li>– the treatability study does not involve the placement of hazardous waste on the land or open burning of hazardous waste</li> <li>– the facility maintains records for 3 yr following completion of each study that show compliance with the treatment rate limits and the storage time and quantity limits with the following specific information included for each treatability study conducted: <ul style="list-style-type: none"> <li>– the name, address, and EPA identification number of the generator or sample collector of each waste sample</li> <li>– the date the shipment was received</li> <li>– the quantity of waste accepted</li> <li>– the quantity of “as received” waste in storage each day</li> <li>– the date the treatment study was initiated and the amount of “as received” waste introduced to treatment each day</li> <li>– the date the treatability study was concluded</li> <li>– the date any unused sample or residues generated from the treatability study were returned to the generator or sample collector or, if sent to a designated facility, the name of the facility and the EPA identification number</li> </ul> </li> <li>– the facility keeps, onsite, a copy of the treatability study contract and all shipping papers associated with the transport of treatability study samples to and from the facility for a period ending 3 yr from the completion date of each treatability study</li> <li>– the facility prepares and submits a report to the Regional Administrator, or State Director (if located in an authorized State), by March 15 of each year that includes the following information for the previous calendar year: <ul style="list-style-type: none"> <li>– the name, address, and EPA identification number of the facility conducting the treatability studies</li> <li>– the types (by process) of treatability studies conducted</li> <li>– the names and addresses of persons for whom studies have been conducted (including their EPA identification numbers)</li> <li>– the total quantity of waste in storage each day</li> <li>– the quantity and types of waste subjected to treatability studies</li> </ul> </li> </ul>

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<p><b>HW.10.9.US.</b> Used, broken CRTs are not considered solid waste, and so not handled as hazardous waste, if certain conditions are met (40 CFR 261.39(a)) [Added July 2006; Revised January 2017; Revised January 2018; Revised October 2018].</p>	<ul style="list-style-type: none"> <li>– when each treatability study was conducted</li> <li>– the final disposition of residues and unused sample from each treatability study</li> <li>– the facility determines whether any unused sample or residues generated by the treatability study are hazardous waste under 40 CFR 261.3 and, if so, are subject to 40 CFR 261 through 268, and 40 CFR 270, unless the residues and unused samples are returned to the sample originator</li> <li>– the facility notifies the Regional Administrator, or State Director (if located in an authorized State), by letter when the facility is no longer planning to conduct any treatability studies at the site.</li> </ul> <p>(NOTE: A mobile treatment unit (MTU) may qualify as a testing facility subject to the above Verify statement. Where a group of MTUs are located at the same site, the above limitations apply to the entire group of MTUs collectively as if the group were one MTU.)</p> <p>Verify that, in order for used, broken CRTs to not be classified as solid wastes prior to processing if they are destined for recycling, broken CRTs must be either:</p> <ul style="list-style-type: none"> <li>– stored in a building with a roof, floor, and walls</li> <li>– placed in a container (i.e., a package or a vehicle) that is constructed, filled, and closed to minimize releases to the environment of CRT glass (including fine solid materials).</li> </ul> <p>Verify that each container in which the used, broken CRT is contained is labeled or marked clearly with one of the following phrases:</p> <ul style="list-style-type: none"> <li>– used cathode ray tube(s)-contains leaded glass</li> <li>– leaded glass from televisions or computers.</li> </ul> <p>Verify that each container in which the used, broken CRT is contained is labeled or marked clearly “Do not mix with other glass materials.”</p> <p>(NOTE: The used, broken CRTs are subject to the limitations on speculative accumulation. If they are used in a manner constituting disposal, they must comply with the applicable requirements of 40 CFR 266, subpart C instead of the requirements of this checklist item. A material is “accumulated speculatively” if it is accumulated before being recycled. A material is not accumulated speculatively, however, if the person accumulating it can show that the material is potentially recyclable and has a feasible means of being recycled; and that--during the calendar year (commencing on January 1)--the amount of material that is recycled, or transferred to a different site for recycling, equals at least 75 percent by weight or volume of the amount of that material accumulated at the beginning of the period.)</p>

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	<p>Verify that exporters of used, broken CRTs also notify EPA, in writing, of an intended export sixty (60) days before the initial shipment is intended to be shipped off-site of the following information:</p> <ul style="list-style-type: none"> <li>– name, mailing address, telephone number and EPA ID number (if applicable) of the exporter of the CRTs</li> <li>– the estimated frequency or rate at which the CRTs are to be exported and the period of time over which they are to be exported</li> <li>– the estimated total quantity of CRTs specified in kilograms</li> <li>– all points of entry to and departure from each foreign country through which the CRTs will pass</li> <li>– a description of the means by which each shipment of the CRTs will be transported (e.g., mode of transportation vehicle (air, highway, rail, water, etc.), type(s) of container (drums, boxes, tanks, etc.))</li> <li>– the name and address of the recycler and any alternate recycler</li> <li>– a description of the manner in which the CRTs will be recycled in the foreign country that will be receiving the CRTs</li> <li>– the name of any transit country through which the CRTs will be sent and a description of the approximate length of time the CRTs will remain in such country and the nature of their handling while there.</li> </ul> <p>(NOTE: This notification may cover export activities extending over a 12 mo or lesser period.)</p> <p>Verify that the notification is in writing and signed by the exporter.</p> <p>Verify that notifications are submitted electronically using EPA's Waste Import Export Tracking System (WIETS), or its successor system.</p> <p>(NOTE: Upon request by EPA, the exporter shall furnish to EPA any additional information which a receiving country requests in order to respond to a notification. EPA will provide a complete notification to the receiving country and any transit countries. A notification is complete when EPA receives a notification which EPA determines satisfies the requirements listed in this checklist item.)</p> <p>Verify that CRTs are not exported unless all of the following occur:</p> <ul style="list-style-type: none"> <li>– the receiving country consents to the intended export and upon consent in writing to the receipt of the CRTs, EPA forwards an Acknowledgment of Consent to Export CRTs to the exporter</li> <li>– on or after the AES filing compliance date, the exporter or a U.S. authorized agent: <ul style="list-style-type: none"> <li>– submits Electronic Export Information (EEI) for each shipment to the Automated Export System (AES) or its successor system, under the</li> </ul> </li> </ul>

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	<p>International Trade Data System (ITDS) platform, in accordance with 15 CFR 30.4(b)</p> <ul style="list-style-type: none"> <li>– includes the following items in the EEI, along with the other information required under 15 CFR 30.6: <ul style="list-style-type: none"> <li>– EPA license code</li> <li>– Commodity classification code per 15 CFR 30.6(a)(12)</li> <li>– EPA consent number</li> <li>– Country of ultimate destination per 15 CFR 30.6(a)(5)</li> <li>– Date of export per 15 CFR 30.6(a)(2);</li> <li>– Quantity of waste in shipment and units for reported quantity, if required reporting units established by value for the reported commodity classification number are in units of weight or volume per 15 CFR 30.6(a)(15) or EPA net quantity reported in units of kilograms, if required reporting units established by value for the reported commodity classification number are not in units of weight or volume.</li> </ul> </li> </ul> <p>Verify that, when the conditions specified on the original notification change, the exporter provides EPA with a written renotification of the change using WEITs.</p> <p>(NOTE: The shipment cannot take place until consent of the receiving country to the changes has been obtained (except for changes to information about points of entry and departure and transit countries) and the exporter of CRTs receives from EPA a copy of the Acknowledgment of Consent to Export CRTs reflecting the receiving country's consent to the changes.)</p> <p>Verify that a copy of the Acknowledgment of Consent to Export CRTs accompanies the shipment of CRTs and the shipment conforms to the terms of the Acknowledgment.</p> <p>Verify that, if a shipment of CRTs cannot be delivered for any reason to the recycler or the alternate recycler, the exporter of CRTs renotifies EPA of a change in the conditions of the original notification to allow shipment to a new recycler and obtains another Acknowledgment of Consent to Export CRTs.</p> <p>Verify that exporters keep copies of notifications and Acknowledgments of Consent to Export CRTs for a period of 3 yr following receipt of the Acknowledgment.</p> <p>(NOTE: Exporters may satisfy the 3 yr requirement by retaining electronically submitted notifications or electronically generated Acknowledgements in the CRT exporter's account on EPA's WIETS, or its successor system, provided that such copies are readily available for viewing and production if requested by any EPA or authorized state inspector. No CRT exporter may be held liable for the inability to produce a notification or Acknowledgement for inspection under this section if the CRT exporter can demonstrate that the inability to produce such copies are due</p>

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<p><b>HW.10.10.US.</b> Used, broken CRTs are not considered solid waste, and so not handled as hazardous waste, if certain conditions are met (40 CFR 261.39(b) through 261.39(d)) [Added July 2006].</p>	<p>exclusively to technical difficulty with EPA's WIETS, or its successor system for which the CRT exporter bears no responsibility.)</p> <p>Verify that, prior to one year after the AES filing compliance date, annual reports must be sent to the following mailing address: Office of Land and Emergency Management, Office of Resource Conservation and Recovery, Materials Recovery and Waste Management Division, International Branch (Mail Code 2255A), Environmental Protection Agency, 1200 Pennsylvania Ave. NW, Washington, DC 20460. Hand-delivered annual reports on used CRTs exported during 2016 should be sent to: Office of Land and Emergency Management, Office of Resource Conservation and Recovery, Materials Recovery and Waste Management Division, International Branch (Mail Code 2255A), Environmental Protection Agency, William Jefferson Clinton South Building, Room 6144, 1200 Pennsylvania Ave. NW, Washington, DC 20004.</p> <p>(NOTE: Subsequently, annual reports must be submitted to the office listed using WIETS) or its successor system.)</p> <p>Verify that exporters keep copies of the annual report for a period of at least 3 yr from the due date of the report.</p> <p>(NOTE: Exporters may satisfy this recordkeeping requirement by retaining electronically submitted annual reports in the CRT exporter's account on WIETS, or its successor system, provided that a copy is readily available for viewing and production if requested by any EPA or authorized state inspector.)</p> <p>(NOTE: No CRT exporter may be held liable for the inability to produce an annual report for inspection under this section if the CRT exporter can demonstrate that the inability to produce the annual report is due exclusively to technical difficulty with EPA's WIETS, or its successor system for which the CRT exporter bears no responsibility.)</p> <p>(NOTE: CRT Processing is defined as conducting all of the following activities:</p> <ul style="list-style-type: none"> <li>– receiving broken or intact CRTs</li> <li>– intentionally breaking intact CRTs or further breaking or separating broken CRTs</li> <li>– sorting or otherwise managing glass removed from CRT monitors.)</li> </ul> <p>Verify that the following activities of CRT processing are performed within a building with a roof, floor, and walls:</p> <ul style="list-style-type: none"> <li>– intentionally breaking intact CRTs or further breaking or separating broken CRTs</li> <li>– sorting or otherwise managing glass removed from CRT monitors.</li> </ul>

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<p><b>HW.10.11.US.</b> Used, intact CRTs being exported for reuse must meet certain notification and recordkeeping requirements (40 CFR 261.40 and 261.41) [Added July 2006].</p>	<p>Verify that no activities are performed that use temperatures high enough to volatilize lead from CRTs.</p> <p>(NOTE: Glass from used CRTs that is destined for recycling at a CRT glass manufacturer or a lead smelter after processing is not a solid waste unless it is speculatively accumulated. A material is “accumulated speculatively” if it is accumulated before being recycled. A material is not accumulated speculatively, however, if the person accumulating it can show that the material is potentially recyclable and has a feasible means of being recycled; and that--during the calendar year (commencing on January 1)--the amount of material that is recycled, or transferred to a different site for recycling, equals at least 75 percent by weight or volume of the amount of that material accumulated at the beginning of the period.)</p> <p>Verify that glass from used CRTs used in a manner constituting disposal is managed in a manner complying with the 40 CFR 266, subpart C.</p> <p>(NOTE: Used, intact CRTs exported for recycling are not solid wastes if they meet the notice and consent conditions of 40 CFR 261.39(a)(5) for exports (see checklist item HW.10.9.US), and if they are not speculatively accumulated. A material is “accumulated speculatively” if it is accumulated before being recycled. A material is not accumulated speculatively, however, if the person accumulating it can show that the material is potentially recyclable and has a feasible means of being recycled; and that--during the calendar year (commencing on January 1)--the amount of material that is recycled, or transferred to a different site for recycling, equals at least 75 percent by weight or volume of the amount of that material accumulated at the beginning of the period.)</p> <p>Verify that exporters of used, intact CRTs for reuse send a one-time notification to the Regional Administrator which includes a statement that the notifier plans to export used, intact CRTs for reuse, the notifier's name, address, and EPA ID number (if applicable) and the name and phone number of a contact person.</p> <p>Verify that exporters of used, intact CRTs for reuse keep copies of normal business records, such as contracts, demonstrating that each shipment of exported CRTs will be reused.</p> <p>Verify that the documentation demonstrating that each shipment of exported CRTs will be reused is retained for at least 3 yr from the date the CRTs were exported.</p>
<p><b>HW.10.12.US.</b> In order to not be considered solid waste under RCRA, the management of hazardous secondary material must meet specific parameters (40 CFR</p>	<p>(NOTE: See also HW.10.18.US for requirements related to the export of hazardous secondary material.)</p> <p>Verify that facilities managing hazardous secondary materials as follows send a notification prior to operating under the solid waste exclusion and by March 1 of</p>

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260.42, 260.43, 261.4(a)(23), and 261.4(a)(24)) <b>[Added January 2009; Revised April 2015; Revised July 2018].</b>		<p>each even numbered year to the Regional Administrator using EPA Form 8700-12:</p> <ul style="list-style-type: none"> <li>– facilities where the Administrator has determined on a case-by-case basis that certain recycled materials are not solid wastes (40 CFR 260.30)</li> <li>– hazardous secondary material generated and legitimately reclaimed within the U.S. or its territories and under the control of the generator and the parameters of 40 CFR 261.4(a)(23) are met</li> <li>– hazardous secondary material generated and then transferred to another person for the purpose of reclamation and the parameters of 40 CFR 261.4(a)(24) are met</li> <li>– hazardous secondary material exportation from the U.S. and reclaimed at a reclamation facility in a foreign country and the parameters of 40 CFR 261.4(a)(25) are met</li> <li>– hazardous secondary material that is generated and then transferred to another person for the purpose of remanufacturing and the parameters of 40 CFR 261.4(a)(27) are met.</li> </ul> <p>Verify that, if a facility managing hazardous secondary materials has submitted a notification, but then subsequently stops managing hazardous secondary materials in accordance with the regulation, the facility notifies the Regional Administrator within 30 days using EPA Form 8700-12.</p> <p>(NOTE: For purposes of this checklist item, a facility has stopped managing hazardous secondary materials if the facility no longer generates, manages and/or reclaims hazardous secondary materials under the regulation(s) and does not expect to manage any amount of hazardous secondary materials for at least 1 yr.).</p> <p>(NOTE: Hazardous secondary material that is not legitimately recycled is discarded material and is a solid waste. In determining if recycling is legitimate the following must be considered:</p> <ul style="list-style-type: none"> <li>– legitimate recycling involves a hazardous secondary material that provides a useful contribution to the recycling process or to a product or intermediate of the recycling process such as: <ul style="list-style-type: none"> <li>– contributing valuable ingredients to a product or intermediate</li> <li>– replacing a catalyst or carrier in the recycling process</li> <li>– it is the source of a valuable constituent recovered in the recycling process</li> <li>– it is recovered or regenerated by the recycling process</li> <li>– it is used as an effective substitute for a commercial product</li> </ul> </li> <li>– the recycling process produces a valuable product or intermediate; for example: <ul style="list-style-type: none"> <li>– it is sold to a third party</li> <li>– it is used by the recycler or the generator as an effective substitute for a commercial product or as an ingredient or intermediate in an industrial process.</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– the generator and the recycler manage the hazardous secondary material as a valuable commodity when it is under their control:               <ul style="list-style-type: none"> <li>– where there is an analogous raw material, the hazardous secondary material is managed, at a minimum, in a manner consistent with the management of the raw material or in an equally protective manner</li> <li>– where there is no analogous raw material, the hazardous secondary material is contained and hazardous secondary materials released to the environment and not immediately recovered is discarded.</li> </ul> </li> </ul> <p>When making a determination as to the overall legitimacy of a specific recycling activity, the product of the recycling process must not meet any of the following parameters:</p> <ul style="list-style-type: none"> <li>– contain significant concentrations of any hazardous constituents found in appendix VIII of 40 CFR 261 that are not found in analogous products</li> <li>– contain concentrations of hazardous constituents found in appendix VIII of 40 CFR 261 at levels that are significantly elevated from those found in analogous products</li> <li>– exhibit a hazardous characteristic (as defined in 40 CFR 261 subpart C) that analogous products do not exhibit.)</li> </ul> <p>Verify that, hazardous secondary material generated and legitimately reclaimed within the United States or its territories and under the control of the generator is managed as follows:</p> <ul style="list-style-type: none"> <li>– the hazardous secondary material is contained and a hazardous secondary material released to the environment is discarded and a solid waste unless it is immediately recovered for the purpose of reclamation (NOTE: Hazardous secondary material managed in a unit with leaks or other continuing or intermittent unpermitted releases is discarded and a solid waste.)</li> <li>– the hazardous secondary material is not speculatively accumulated, as defined in 40 CFR 261.1(c)(8)</li> <li>– the material is not otherwise subject to material-specific management conditions under 40 CFR 261.4(a) when reclaimed, and it is not a spent lead-acid battery (see 40 CFR 266.80 and 273.2)</li> <li>– the emergency preparedness and response requirements found in 40 CFR 261.400 through 261.420 (see text) are met.</li> </ul> <p>Verify that, persons generating hazardous secondary material and legitimately reclaiming it within the United States or its territories and under the control of the generator maintain written documentation of legitimacy determination on-site for 3 yr after the recycling operation has stopped; including:</p> <ul style="list-style-type: none"> <li>– a description of how the recycling meets all three factors in 40 CFR 260.43(a) (i.e., useful contribution, valuable commodity [see NOTE above])</li> <li>– a description of how the factors concerning constituents and characteristics in 40 CFR 260.43(b) (see NOTE above) was considered.</li> </ul>

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	<p>Verify that hazardous secondary material that is generated and then transferred to another person for the purpose of reclamation is managed as follows in order to not be classed as a solid waste:</p> <ul style="list-style-type: none"> <li>– the material is not speculatively accumulated</li> <li>– the material is not handled by any person or facility other than the hazardous secondary material generator, the transporter, an intermediate facility or a reclaimer, and, while in transport, is not stored for more than 10 days at a transfer facility, and is packaged according to applicable DOT regulations at 49 CFR 173, 178, and 179 while in transport</li> <li>– the material is not otherwise subject to material specific management conditions found in 40 CFR 261.4(a) when reclaimed and is not a spent lead-acid battery (see 40 CFR 266.80 and 273.2)</li> <li>– the reclamation of the material is legitimate</li> <li>– the hazardous secondary material generator satisfies all of the following conditions: <ul style="list-style-type: none"> <li>– the material is contained and a hazardous secondary material released to the environment is discarded and a solid waste unless it is immediately recovered for the purpose of reclamation (NOTE: Hazardous secondary material managed in a unit with leaks or other continuing or intermittent unpermitted releases is discarded and a solid waste.)</li> </ul> </li> <li>– prior to arranging for transport of hazardous secondary materials to a reclamation facility (or facilities) where the management of the hazardous secondary materials is not addressed under a RCRA Part B permit or interim status standards, the hazardous secondary material generator makes reasonable efforts to ensure that each reclaimer intends to properly and legitimately reclaim the hazardous secondary material and not discard it, and that each reclaimer will manage the hazardous secondary material in a manner that is protective of human health and the environment (NOTE: If the hazardous secondary material will be passing through an intermediate facility where the management of the hazardous secondary materials is not addressed under a RCRA Part B permit or interim status standards, the hazardous secondary material generator must make contractual arrangements with the intermediate facility to ensure that the hazardous secondary material is sent to the reclamation facility identified by the hazardous secondary material generator, and the hazardous secondary material generator must perform reasonable efforts to ensure that the intermediate facility will manage the hazardous secondary material in a manner that is protective of human health and the environment)</li> <li>– reasonable efforts are repeated at a minimum of every 3 yr for the hazardous secondary material generator to claim the exclusion and to send the hazardous secondary materials to each reclaimer and any intermediate facility (NOTE: In making these reasonable efforts, the generator may use any credible evidence available, including information gathered by the hazardous secondary material generator,</li> </ul>

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	<p>provided by the reclaimer or intermediate facility, and/or provided by a third party</p> <p>– emergency preparedness and response requirements found in 40 CFR 261.400 through 261.420 [see text] are met.)</p> <p>(NOTE: See the text of 40 CFR 261.4(a)(24)(v)(B) for a list of questions which need to be answered for each reclamation facility and any intermediate facility.)</p> <p>Verify that the hazardous secondary material generator maintains for a minimum of 3 yr documentation and certification that reasonable efforts were made for each reclamation facility and, if applicable, intermediate facility where the management of the hazardous secondary materials is not addressed under a RCRA Part B permit or interim status standards prior to transferring hazardous secondary material.</p> <p>(NOTE: Documentation and certification must be made available upon request by a regulatory authority within 72 h, or within a longer period of time as specified by the regulatory authority. Language for the certification statement can be found at 40 CFR 261.4(a)(24)(v)(C).)</p> <p>Verify that the hazardous secondary material generator maintains at the generating facility for no less than 3 yr the following records of all off-site shipments of hazardous secondary materials:</p> <ul style="list-style-type: none"> <li>– name of the transporter and date of the shipment</li> <li>– name and address of each reclaimer and, if applicable, the name and address of each intermediate facility to which the hazardous secondary material was sent</li> <li>– the type and quantity of hazardous secondary material in the shipment.</li> </ul> <p>Verify that the hazardous secondary material generator maintains at the generating facility for no less than 3 yr confirmations of receipt from each reclaimer and, if applicable, each intermediate facility for all off-site shipments of hazardous secondary materials.</p> <p>Verify that confirmations of receipt include:</p> <ul style="list-style-type: none"> <li>– the name and address of the reclaimer (or intermediate facility)</li> <li>– the type and quantity of the hazardous secondary materials received</li> <li>– the date which the hazardous secondary materials were received.</li> </ul> <p>(NOTE: The confirmations of receipt requirements may be satisfied by routine business records (e.g., financial records, bills of lading, copies of DOT shipping papers, or electronic confirmations of receipt).)</p> <p>Verify that, if the facility is a reclaimer or intermediate facility they maintain at the facility for no less than 3 yr records of all shipments of hazardous secondary material that were received at the facility and, if applicable, for all shipments of</p>

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	<p>hazardous secondary materials that were received and subsequently sent off-site from the facility for further reclamation.</p> <p>Verify that, for each shipment related to a reclaimer or intermediate facility, the records, at a minimum, contain the following information:</p> <ul style="list-style-type: none"> <li>– name of the transporter and date of the shipment</li> <li>– name and address of the hazardous secondary material generator and, if applicable, the name and address of the reclaimer or intermediate facility which the hazardous secondary materials were received from</li> <li>– the type and quantity of hazardous secondary material in the shipment</li> <li>– for hazardous secondary materials that, after being received by the reclaimer or intermediate facility, were subsequently transferred off-site for further reclamation, the name and address of the (subsequent) reclaimer and, if applicable, the name and address of each intermediate facility to which the hazardous secondary material was sent.</li> </ul> <p>Verify that an intermediate facility sends the hazardous secondary material to the reclaimer(s) designated by the hazardous secondary materials generator.</p> <p>Verify that the reclaimer and intermediate facility send to the hazardous secondary material generator confirmations of receipt for all off-site shipments of hazardous secondary materials.</p> <p>Verify that confirmations of receipt include the name and address of the reclaimer (or intermediate facility), the type and quantity of the hazardous secondary materials received and the date which the hazardous secondary materials were received.</p> <p>(NOTE: The confirmation of receipt requirement may be satisfied by routine business records (e.g., financial records, bills of lading, copies of DOT shipping papers, or electronic confirmations of receipt).)</p> <p>Verify that the reclaimer and intermediate facility manage the hazardous secondary material in a manner that is at least as protective as that employed for analogous raw material and must be contained. An “analogous raw material” is a raw material for which a hazardous secondary material is a substitute and serves the same function and has similar physical and chemical properties as the hazardous secondary material.)</p> <p>Verify that any residuals generated from reclamation processes are managed in a manner that is protective of human health and the environment.</p> <p>(NOTE: If any residuals exhibit a hazardous characteristic, or if they themselves are specifically listed as a hazardous waste, such residuals are hazardous wastes and must be managed in accordance with the applicable requirements of 40 CFR 260 through 272.)</p>

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<p><b>HW.10.13.US.</b> When eligible academic entities choose to comply with the alternate requirements of 40 CFR 262, Subpart K in relation to hazardous waste from its laboratories, certain notification parameters must be met (40 CFR 262.202 through 262.205 and 262.216) [Added January 2009; Revised January 2017].</p>	<p>(NOTE: The reclaimer and intermediate facility must have financial assurance as required under subpart H of 40 CFR 261.)</p> <p>(NOTE: Eligible academic entities have the option of complying with 40 CFR 262, Subpart K [see checklist items HW.10.13.US through HW.10.16.US] with respect to its laboratories as an alternative to complying with the requirements of 40 CFR 262.11[determination of hazardous waste] and 262.15 [satellite accumulation points (SAPs), see HW.35.1.US for SAPs at SQGs and HW.75.1.US for SAPs at LQGs].)</p> <p>(NOTE: Eligible academic entities have the option of complying with 40 CFR 262, Subpart K [see checklist items HW.10.13.US through HW.10.16.US] with respect to its laboratories as an alternative to complying with the conditional exemption of 40 CFR 262.14 [see checklist item HW.15.1.US concerning VSQGs].)</p> <p>(NOTE: Eligible academic entities that generate hazardous waste outside of a laboratory are not eligible to manage that hazardous waste under 40 CFR 262, Subpart K [see checklist items HW.10.13.US through HW.10.16.US]; and they fall into one of the following categories:</p> <ul style="list-style-type: none"> <li>– remain subject to the generator requirements of 40 CFR 262.11 and 262.15 for LQGs and SQGs (if the hazardous waste is managed in a satellite accumulation area), and all other applicable generator requirements of 40 CFR 262, with respect to that hazardous waste</li> <li>– remain subject to the conditional exemption of 40 CFR 262.14 for VSQGs, with respect to that hazardous waste.)</li> </ul> <p>Verify that, if an eligible academic entity chooses to comply with 40 CFR 262, Subpart K [see checklist items HW.10.13.US through HW.10.16.US], the entity notifies the appropriate EPA Regional Administrator in writing, using the RCRA Subtitle C Site Identification Form (EPA Form 8700-12), that it is electing to be subject to the requirements of 40 CFR 262, Subpart K for all the laboratories owned by the eligible academic entity under the same EPA Identification Number.</p> <p>(NOTE: An eligible academic entity that is a VSQG and does not have an EPA Identification Number must notify that it is electing to be subject to the requirements of 40 CFR 262, Subpart K [see checklist items HW.10.13.US through HW.10.16.US] for all the laboratories owned by the eligible academic entity that are on-site, as defined by 40 CFR 260.10.)</p> <p>Verify that an eligible academic entity submits a separate notification (Site Identification Form) for each EPA Identification Number (or site, for VSQGs) that is electing to be subject to 40 CFR 262, Subpart K [see checklist items HW.10.13.US through HW.10.16.US] and submits the Site Identification Form before it begins operating under the alternatives of 40 CFR 262, Subpart K.</p>

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	<p>Verify that, when submitting the Site Identification Form, the eligible academic entity, at a minimum, fills out the following fields on the form:</p> <ul style="list-style-type: none"> <li>– reason for submittal</li> <li>– site EPA ID number (except for VSQGs)</li> <li>– site name</li> <li>– site location information</li> <li>– site land type</li> <li>– North American Industry Classification System (NAICS) Code(s) for the site</li> <li>– site mailing address</li> <li>– site contact person</li> <li>– operator and legal owner of the site</li> <li>– type of regulated waste activity</li> <li>– certification.</li> </ul> <p>Verify that the eligible academic entity keeps a copy of the notification on file at the eligible academic entity for as long as its laboratories are subject to 40 CFR 262, Subpart K (see checklist items HW.10.13.US through HW.10.16.US).</p> <p>Verify that a teaching hospital that is not owned by a college or university keeps a copy of its formal written affiliation agreement with a college or university on file at the teaching hospital for as long as its laboratories are subject to 40 CFR 262, Subpart K (see checklist items HW.10.13.US through HW.10.16.US).</p> <p>Verify that a non-profit research institute that is not owned by a college or university keeps a copy of its formal written affiliation agreement with a college or university on file at the non-profit research institute for as long as its laboratories are subject to 40 CFR 262, Subpart K (see checklist items HW.10.13.US through HW.10.16.US).</p> <p>Verify that, an eligible academic entity notifies the appropriate EPA Regional Administrator in writing, using the RCRA Subtitle C Site Identification Form (EPA Form 8700-12), that it is electing to no longer be subject to the requirements of 40 CFR 262, Subpart K (see checklist items HW.10.13.US through HW.10.16.US) for all the laboratories owned by the eligible academic entity under the same EPA Identification Number and that it will comply with the requirements of 40 CFR 262.11 and 262.15 for SQGs and LQGs.</p> <p>Verify that, an eligible academic entity that is a VSQG and does not have an EPA Identification Number notifies that it is withdrawing from the requirements of 40 CFR 262, Subpart K (see checklist items HW.10.13.US through HW.10.16.US) for all the laboratories owned by the eligible academic entity that are on-site and that it will comply with the conditional exemption in 40 CFR 262.14 (see checklist item HW.15.1.US for VSQGs).</p>

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<p><b>HW.10.14.US.</b> When eligible academic entities choose to comply with the alternate requirements of 40 CFR 262, Subpart K in relation to hazardous waste from its laboratories, certain waste determination, training, and handling parameters must be met (40 CFR 262.207, 262.209 through 262.212 and 262.215) [Added January 2009; Revised January</p>	<p>Verify that an eligible academic entity submits a separate notification (Site Identification Form) for each EPA Identification Number (or site, for VSQGs) that is withdrawing from the requirements of 40 CFR 262, Subpart K (see checklist items HW.10.13.US through HW.10.16.US) and submits the Site Identification Form before it begins operating under the requirements of 40 CFR 262.11 and 262.15 for SQGs and LQGs, or 40 CFR 262.14 for VSQGs.</p> <p>Verify that, when submitting the Site Identification Form for eligible academic entity withdrawing from the requirements of 40 CFR 262, Subpart K, at a minimum, fills out the following fields on the form:</p> <ul style="list-style-type: none"> <li>– reason for submittal</li> <li>– site EPA ID number (except for VSQGs)</li> <li>– site name</li> <li>– site location information</li> <li>– site land type</li> <li>– NAICS Code(s) for the site</li> <li>– site mailing address</li> <li>– site contact person</li> <li>– operator and legal owner of the site</li> <li>– type of regulated waste activity</li> <li>– certification.</li> </ul> <p>Verify that an eligible academic entity keeps a copy of the withdrawal notice on file at the eligible academic entity for 3 yr from the date of the notification.</p> <p>(NOTE: An eligible academic entity that chooses to be subject 40 CFR 262, Subpart K (see checklist items HW.10.13.US through HW.10.16.US) is not required to have interim status or a RCRA Part B permit for the accumulation of unwanted material and hazardous waste in its laboratories, provided the laboratories comply with the provisions of 40 CFR 262, Subpart K.)</p> <p>(NOTE: If an unwanted material does not meet the definition of solid waste in 40 CFR 261.2, it is no longer subject to 40 CFR 262, Subpart K [see checklist items HW.10.13.US through HW.10.16.US] or to the RCRA hazardous waste regulations. If an unwanted material does not meet the definition of hazardous waste in 40 CFR 261.3, it is no longer subject to 40 CFR 262, Subpart K or to the RCRA hazardous waste regulations, but must be managed in compliance with any other applicable regulations and/or conditions.)</p> <p>Verify that, for LQGs and SQGs, an eligible academic entity ensures that a trained professional makes a hazardous waste determination (see 40 CFR 262.11), for unwanted material in any of the following areas:</p>

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<b>2011; Revised January 2017].</b>	<ul style="list-style-type: none"> <li>– in the laboratory before the unwanted material is removed from the laboratory</li> <li>– within 4 calendar days of arriving at an on-site central accumulation area, in accordance</li> <li>– within 4 calendar days of arriving at an on-site interim status or permitted treatment, storage or disposal facility.</li> </ul> <p>Verify that, for a VSQG, an eligible academic entity must ensure that a trained professional makes a hazardous waste determination for unwanted material in the laboratory before the unwanted material is removed from the laboratory.</p> <p>Verify that the eligible academic entity provide training for laboratory workers and students commensurate with their duties so they understand the requirements and can implement them.</p> <p>(NOTE: The eligible academic entity can provide training for laboratory workers and students in a variety of ways, including, but not limited to:</p> <ul style="list-style-type: none"> <li>– instruction by the professor or laboratory manager before or during an experiment</li> <li>– formal classroom training</li> <li>– electronic/written training</li> <li>– on-the-job training</li> <li>– written or oral exams.)</li> </ul> <p>Verify that, if the eligible academic entity is a LQG, they maintain documentation for the durations specified in 40 CFR 265.16(e) (see checklist item HW.60.2.US) demonstrating training for all laboratory workers that is sufficient to determine whether laboratory workers have been trained.</p> <p>(NOTE: Examples of documentation demonstrating training can include, but are not limited to, the following:</p> <ul style="list-style-type: none"> <li>– sign-in/attendance sheet(s) for training session(s)</li> <li>– syllabus for training session</li> <li>– certificate of training completion</li> <li>– test results.)</li> </ul> <p>Verify that a trained professional accompany the transfer of unwanted material and hazardous waste when the unwanted material and hazardous waste is removed from the laboratory.</p> <p>Verify that a trained professional makes the hazardous waste determination for unwanted material.</p> <p>Verify that, if an eligible academic entity makes the hazardous waste determination for unwanted material in the laboratory, it complies with the following:</p>

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	<ul style="list-style-type: none"> <li>– a trained professional makes the hazardous waste determination before the unwanted material is removed from the laboratory</li> <li>– if an unwanted material is a hazardous waste, the eligible academic entity:               <ul style="list-style-type: none"> <li>– writes the words “hazardous waste” on the container label that is affixed or attached to the container, before the hazardous waste may be removed from the laboratory</li> <li>– writes the appropriate hazardous waste code(s) on the label that is associated with the container (or on the label that is affixed or attached to the container, if that is preferred) before the hazardous waste is transported off-site</li> <li>– counts the hazardous waste toward the eligible academic entity's generator status in the calendar month that the hazardous waste determination was made.</li> </ul> </li> </ul> <p>Verify that a trained professional accompanies all hazardous waste that is transferred from the laboratory(ies) to an on-site central accumulation area or on-site interim status or permitted treatment, storage or disposal facility.</p> <p>Verify that, when hazardous waste is removed from the laboratory:</p> <ul style="list-style-type: none"> <li>– LQGs and SQGs ensure it is taken directly from the laboratory(ies) to an on-site central accumulation area, or on-site interim status or permitted treatment, storage or disposal facility, or transported off-site</li> <li>– VSQGS ensure it is taken directly from the laboratory(ies) to an onsite facility, or off-site TSDF for hazardous waste.</li> </ul> <p>(NOTE: An unwanted material that is a hazardous waste is subject to all applicable hazardous waste regulations when it is removed from the laboratory.)</p> <p>Verify that, if an eligible academic entity makes the hazardous waste determination for unwanted material at an on-site central accumulation area, it meets the following:</p> <ul style="list-style-type: none"> <li>– a trained professional accompanies all unwanted material that is transferred from the laboratory(ies) to an on-site central accumulation area.</li> <li>– all unwanted material removed from the laboratory(ies) is taken directly from the laboratory(ies) to the on-site central accumulation area</li> <li>– the unwanted material becomes subject to the generator accumulation regulations of 40 CFR 262.17 (see checklist items HW.55.1.US through HW.85.7.US) for LQGs or 40 CFR 262.16 (see checklist items HW.20.2.US through HW.40.3.US) for SQGs as soon as it arrives in the central accumulation area, except for the “hazardous waste” labeling requirements of 40 CFR 262.16(b)(6) (see checklist item HW.20.1.US) and 262.17(a)(5) (see checklist item HW.55.1.US))</li> </ul>

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	<ul style="list-style-type: none"> <li>– a trained professional determines if the unwanted material is a hazardous waste within 4 calendar days of the unwanted materials' arrival at the on-site central accumulation area.</li> </ul> <p>Verify that, if the unwanted material at the onsite central accumulation area is a hazardous waste, the eligible academic entity:</p> <ul style="list-style-type: none"> <li>– writes the words "hazardous waste" on the container label that is affixed or attached to the container, within 4 calendar days of arriving at the on-site central accumulation area and before the hazardous waste may be removed from the on-site central accumulation area</li> <li>– writes the appropriate hazardous waste code(s) on the container label that is associated with the container (or on the label that is affixed or attached to the container, if that is preferred) before the hazardous waste may be treated or disposed of on-site or transported off-site</li> <li>– counts the hazardous waste toward the eligible academic entity's generator status in the calendar month that the hazardous waste determination was made</li> <li>– manages the hazardous waste according to all applicable hazardous waste regulations.</li> </ul> <p>Verify that, if an eligible academic entity makes the hazardous waste determination for unwanted material at an on-site interim status or permitted treatment, storage or disposal facility, it complies with the following:</p> <ul style="list-style-type: none"> <li>– a trained professional accompanies all unwanted material that is transferred from the laboratory(ies) to an on-site interim status or permitted treatment, storage or disposal facility</li> <li>– all unwanted material removed from the laboratory(ies) is taken directly from the laboratory(ies) to the on-site interim status or permitted TSDF</li> <li>– the unwanted material becomes subject to the terms of the eligible academic entity's hazardous waste permit or interim status as soon as it arrives in the on-site TSDF</li> <li>– a trained professional determines if the unwanted material is a hazardous waste within 4 calendar days of the unwanted materials' arrival at an on-site interim status or permitted TSDF</li> <li>– if the unwanted material is a hazardous waste, the eligible academic entity: <ul style="list-style-type: none"> <li>– writes the words "hazardous waste" on the container label that is affixed or attached to the container (or on the label that is affixed or attached to the container, if that is preferred) within 4 calendar days of arriving at the on-site interim status or permitted TSDF and before the hazardous waste may be removed from the on-site interim status or permitted TSDF</li> <li>– writes the words "hazardous waste" on the container label that is affixed or attached to the container within 4 calendar days of arriving at the on-site interim status or permitted treatment, storage or disposal</li> </ul> </li> </ul>

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<p><b>HW.10.15.US.</b> When eligible academic entities choose to comply with the alternate requirements of 40 CFR 262, Subpart K in relation to hazardous waste from its laboratories, certain container management parameters must be met (40 CFR 262.206, 262.208, and 262.13) [Added January 2009; Revised January 2011; Revised January 2017].</p>	<p>facility and before the hazardous waste may be removed from the on-site interim status or permitted treatment, storage or disposal facility</p> <ul style="list-style-type: none"> <li>– writes the appropriate hazardous waste code(s) on the container label that is associated with the container (or on the label that is affixed or attached to the container, if that is preferred) before the hazardous waste may be treated or disposed on-site or transported off-site</li> <li>– counts the hazardous waste toward the eligible academic entity's generator status in the calendar month that the hazardous waste determination was made, and</li> <li>– manages the hazardous waste according to all applicable hazardous waste regulations.</li> </ul> <p>Verify that an eligible academic entity labels containers of unwanted material while in the laboratory as follows:</p> <ul style="list-style-type: none"> <li>– the following information is affixed or attached to the container: <ul style="list-style-type: none"> <li>– the words “unwanted material” or another equally effective term that is to be used consistently by the eligible academic entity and that is identified in Part I of the Laboratory Management Plan (see checklist item HW.10.16.US)</li> <li>– sufficient information to alert emergency responders to the contents of the container</li> </ul> </li> <li>– the following information is affixed or attached to the container, but is at a minimum be associated with the container: <ul style="list-style-type: none"> <li>– the date that the unwanted material first began accumulating in the container</li> <li>– information sufficient to allow a trained professional to properly identify whether an unwanted material is a solid and hazardous waste and to assign the proper hazardous waste code(s).</li> </ul> </li> </ul> <p>(NOTE: Examples of information that would be sufficient to alert emergency responders to the contents of the container include, but are not limited to:</p> <ul style="list-style-type: none"> <li>– the name of the chemical(s)</li> <li>– the type or class of chemical, such as organic solvents or halogenated organic solvents.)</li> </ul> <p>(NOTE: Examples of information that would allow a trained professional to properly identify whether an unwanted material is a solid or hazardous waste include, but are not limited to:</p> <ul style="list-style-type: none"> <li>– the name and/or description of the chemical contents or composition of the unwanted material, or, if known, the product of the chemical reaction</li> <li>– whether the unwanted material has been used or is unused</li> <li>– a description of the manner in which the chemical was produced or processed, if applicable.)</li> </ul>

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	<p>Verify that an eligible academic entity properly manages containers of unwanted material in the laboratory to assure safe storage of the unwanted material, to prevent leaks, spills, emissions to the air, adverse chemical reactions, and dangerous situations that may result in harm to human health or the environment.</p> <p>Verify that proper container management includes the following:</p> <ul style="list-style-type: none"> <li>– containers are maintained and kept in good condition and damaged containers are replaced, overpacked, or repaired</li> <li>– containers are compatible with their contents to avoid reactions between the contents and the container; and are made of, or lined with, material that is compatible with the unwanted material so that the container's integrity is not impaired</li> <li>– containers must be kept closed at all times, except: <ul style="list-style-type: none"> <li>– when adding, removing or bulking unwanted material</li> <li>– a working container may be open until the end of the procedure or work shift, or until it is full, whichever comes first, at which time the working container must either be closed or the contents emptied into a separate container that is then closed</li> <li>– when venting of a container is necessary or the proper operation of laboratory equipment, such as with in-line collection of unwanted materials from high performance liquid chromatographs, or to prevent dangerous situations, such as build-up of extreme pressure.</li> </ul> </li> </ul> <p>Verify that containers of unwanted material are removed from each laboratory according to one of the following schedules:</p> <ul style="list-style-type: none"> <li>– on a regular interval, not to exceed 12 mo</li> <li>– within 12 mo of each container's accumulation start date.</li> </ul> <p>(NOTE: The eligible academic entity must specify in Part I of its Laboratory Management Plan whether it will comply removal of unwanted material on a regular interval or removal within 6 mo of each container's accumulation start date. In Part II of the Laboratory Management Plan, the entity must specify how container removal will be done.)</p> <p>Verify that, if a laboratory accumulates a total volume of unwanted material (including reactive acutely hazardous unwanted material) in excess of 55 gal before the regularly scheduled removal, the eligible academic entity ensures that all containers of unwanted material in the laboratory (including reactive acutely hazardous unwanted material):</p> <ul style="list-style-type: none"> <li>– are marked on the label that is associated with the container (or on the label that is affixed or attached to the container, if that is preferred) with the date that 55 gal is exceeded</li> </ul>

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	<ul style="list-style-type: none"> <li>– are removed from the laboratory within 10 calendar days of the date that 55 gallons was exceeded, or at the next regularly scheduled removal, whichever comes first.</li> </ul> <p>Verify that, if a laboratory accumulates more than 1 qt of liquid reactive acutely hazardous unwanted material or more than 1 kg (2.2 lbs) of solid reactive acutely hazardous unwanted material before the regularly scheduled removal, then the eligible academic entity ensures that all containers of reactive acutely hazardous unwanted material:</p> <ul style="list-style-type: none"> <li>– are marked on the label that is associated with the container (or on the label that is affixed or attached to the container, if that is preferred) with the date that 1 qt or 1 kg is exceeded</li> <li>– are removed from the laboratory within 10 calendar days of the date that 1 qt or 1 kg was exceeded, or at the next regularly scheduled removal, whichever comes first.</li> </ul> <p>(NOTE: One time per 12 mo period for each laboratory, an eligible academic entity may opt to conduct a laboratory clean-out that is subject to all the applicable requirements of 40 CFR 262, Subpart K [see checklist items HW.10.13.US through HW.10.16.US], except that:</p> <ul style="list-style-type: none"> <li>– if the volume of unwanted material in the laboratory exceeds 55 gal (or 1 quart of liquid reactive acutely hazardous unwanted material or 1 kg (2.2 lbs) of solid reactive acutely hazardous unwanted material), the eligible academic entity must remove all unwanted materials from the lab within 30 calendar days from the start of the lab cleanout instead of within 10 calendar days of exceeding 55 gal (or 1 quart of reactive acutely hazardous unwanted material or 1 kg (2.2 lbs) of solid reactive acutely hazardous unwanted material)</li> <li>– for the purposes of on-site accumulation, an eligible academic entity is not required to count a hazardous waste that is an unused commercial chemical product (either a listed or characteristic hazardous waste) generated solely during the laboratory clean-out toward its hazardous waste generator status</li> <li>– an unwanted material that is generated prior to the beginning of the laboratory clean-out and is still in the laboratory at the time the laboratory clean-out commences is counted toward hazardous waste generator status if it is determined to be hazardous waste</li> <li>– for the purposes of off-site management, an eligible academic entity must count all its hazardous waste, regardless of whether the hazardous waste was counted toward generator status or not, and if it generates more than 1 kg/month of acute hazardous waste or more than 100 kg/month of hazardous waste (i.e., the VSQG limits), the hazardous waste is subject to all applicable hazardous waste regulations when it is transported off-site.)</li> </ul> <p>Verify that the activities of a laboratory clean-out are documented with the documentation including, at a minimum:</p> <ul style="list-style-type: none"> <li>– identity of the laboratory being cleaned out</li> </ul>

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<p><b>HW.10.16.US.</b> When eligible academic entities choose to comply with the alternate requirements of 40 CFR 262, Subpart K in relation to hazardous waste from its laboratories, it must develop and maintain a Laboratory Management Plan (40 CFR 262.214) [Added January 2009; Citation Revised July 2014].</p>	<ul style="list-style-type: none"> <li>– the date the laboratory clean-out begins and ends</li> <li>– the volume of hazardous waste generated during the laboratory clean-out.</li> </ul> <p>Verify that laboratory clean-out documentation is maintained for a period of 3 yr from the date the clean-out ends.</p> <p>(NOTE: For all other laboratory clean-outs conducted during the same 12-mo period, an eligible academic entity is subject to all the applicable requirements of 40 CFR 262, Subpart K, including, but not limited to:</p> <ul style="list-style-type: none"> <li>– the requirement to remove all unwanted materials from the laboratory within 10 calendar days of exceeding 55 gal (or 1 qt of reactive acutely hazardous unwanted material)</li> <li>– the requirement to count all hazardous waste, including unused hazardous waste, generated during the laboratory clean-out toward its hazardous waste generator status.)</li> </ul> <p>Verify that an eligible academic entity has developed and retained a written Laboratory Management Plan, or revised an existing written plan.</p> <p>(NOTE: The Laboratory Management Plan is a site-specific document that describes how the eligible academic entity will manage unwanted materials in compliance with 40 CFR 262, Subpart K [see checklist items HW.10.13.US through HW.10.16.US]. An eligible academic entity may write one Laboratory Management Plan for all the laboratories owned by the eligible academic entity that have opted into 40 CFR 262, Subpart K, even if the laboratories are located at sites with different EPA Identification Numbers.)</p> <p>Verify that, in Part I of its Laboratory Management Plan, an eligible academic entity describes its procedures for each of the following elements:</p> <ul style="list-style-type: none"> <li>– description of the procedures for container labeling in accordance with 40 CFR 262.206(a), including: <ul style="list-style-type: none"> <li>– identifying whether the eligible academic entity will use the term “unwanted material” on the containers in the laboratory.</li> <li>– if not using the term “unwanted material,” identification of an equally effective term that will be used in lieu of “unwanted material” and consistently by the eligible academic entity (NOTE: The equally effective term, if used, has the same meaning and is subject to the same requirements as “unwanted material.”)</li> <li>– identification of the manner in which information that is “associated with the container” will be imparted.</li> </ul> </li> <li>– identification of whether the eligible academic entity will comply with the requirements for removals of unwanted materials from the laboratory</li> </ul> <p>Verify that the eligible academic entity implements and complies with the specific provisions that it develops to address the elements in Part I of the Laboratory Management Plan.</p>

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	<p>Verify that, in Part II of its Laboratory Management Plan, an eligible academic entity:</p> <ul style="list-style-type: none"> <li>– describes its intended best practices for container labeling and management, including how the eligible academic entity will manage containers used for in-line collection of unwanted materials, such as with high performance liquid chromatographs and other laboratory equipment</li> <li>– describes its intended best practices for providing training for laboratory workers and students commensurate with their duties</li> <li>– describes its intended best practices for providing training to ensure safe on-site transfers of unwanted material and hazardous waste by trained professionals</li> <li>– describes its intended best practices for removing unwanted material from the laboratory, including: <ul style="list-style-type: none"> <li>– developing a regular schedule for identifying and removing unwanted materials from its laboratories</li> <li>– for removals when maximum volumes are exceeded: <ul style="list-style-type: none"> <li>– describing its intended best practices for removing unwanted materials from the laboratory within 10 calendar days when unwanted materials have exceeded their maximum volumes</li> <li>– describing its intended best practices for communicating that unwanted materials have exceeded their maximum volumes</li> </ul> </li> </ul> </li> <li>– describes its intended best practices for making hazardous waste determinations, including specifying the duties of the individuals involved in the process</li> <li>– describe its intended best practices for laboratory clean-outs, if the eligible academic entity plans to use the incentives for laboratory clean-outs, including: <ul style="list-style-type: none"> <li>– procedures for conducting laboratory clean-outs</li> <li>– procedures for documenting laboratory clean-outs</li> </ul> </li> <li>– describes its intended best practices for emergency prevention, including: <ul style="list-style-type: none"> <li>– procedures for emergency prevention, notification, and response, appropriate to the hazards in the laboratory</li> <li>– a list of chemicals that the eligible academic entity has, or is likely to have, that become more dangerous when they exceed their expiration date and/or as they degrade</li> <li>– procedures to safely dispose of chemicals that become more dangerous when they exceed their expiration date and/or as they degrade</li> <li>– procedures for the timely characterization of unknown chemicals.</li> </ul> </li> </ul> <p>(NOTE: The specific actions taken by an eligible academic entity to implement each element in Part II of its Laboratory Management Plan may vary from the procedures described in the eligible academic entity's Laboratory Management Plan, without constituting a violation. An eligible academic entity may include</p>

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<p><b>HW.10.17.US.</b> Conditionally excluded solvent wipes must be managed according to specific parameters to not be considered solid waste at the point of generation (40 CFR 261.4(a)(26)) [Added July 2013; Citation Revised October 2013].</p>	<p>additional elements and best management practices in Part II of its Laboratory Management Plan if it chooses.)</p> <p>Verify that an eligible academic entity makes its Laboratory Management Plan available to laboratory workers, students, or any others at the eligible academic entity who request it.)</p> <p>Verify that an eligible academic entity reviews and revises its Laboratory Management Plan, as needed.</p> <p>(NOTE: The requirements related to conditionally excluded solvent wipes are effective as of 31 January 2014.)</p> <p>Verify that, in order to not be considered solid wastes from the point of generation and therefore excluded from being managed as a hazardous waste, solvent contaminated wipes are managed according to the requirements detailed in this checklist item.</p> <p>(NOTE: This checklist item addresses requirements pertinent to both of the following situations:</p> <ul style="list-style-type: none"> <li>– solvent-contaminated wipes that are sent for cleaning</li> <li>– solvent-contaminated wipes, except for wipes that are hazardous waste due to the presence of trichloroethylene, that are sent for disposal.)</li> </ul> <p>(NOTE: Wipes contaminated with solvent containing trichloroethylene and being sent for disposal must be handled as hazardous waste and are not eligible for the conditional exclusion.)</p> <p>Verify that when solvent-contaminated wipes that are sent for cleaning or disposal are accumulated, stored, and transported, they are contained in non-leaking, closed containers that are labeled “Excluded Solvent-Contaminated Wipes.”</p> <p>(NOTE: The containers must be able to contain free liquids, should free liquids occur. Additionally, during accumulation, a container is considered closed when there is complete contact between the fitted lid and the rim, except when it is necessary to add or remove solvent-contaminated wipes.)</p> <p>Verify that, for solvent-contaminated wipes sent for cleaning or disposal, when the container is full, or when the solvent-contaminated wipes are no longer being accumulated, or when the container is being transported, the container is sealed with all lids properly and securely affixed to the container and all openings tightly bound or closed sufficiently to prevent leaks and emissions.</p> <p>Verify that, for solvent-contaminated wipes sent for cleaning or disposal, the solvent-contaminated wipes are not accumulated by any size generator for more than 180 days from the start date of accumulation for each container prior to being sent for cleaning.</p>

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<p><b>HW.10.18.US.</b> In order to not be considered solid waste under RCRA, hazardous secondary material exported from the U.S. and reclaimed at a reclamation facility in a</p>	<p>Verify that, for solvent-contaminated wipes sent for cleaning, at the point of being sent for cleaning on-site or at the point of being transported off-site for cleaning or disposal, the solvent-contaminated wipes contain no free liquids.</p> <p>(NOTE: “No free liquids” is defined as “solvent-contaminated wipes may not contain free liquids as determined by Method 9095B (Paint Filter Liquids Test), included in “Test Methods for Evaluating Solid Waste, Physical/Chemical Methods” [EPA Publication SW-846], and that there is no free liquid in the container holding the wipes. No free liquids may also be determined using another standard or test method as defined by an authorized state.”)</p> <p>Verify that free liquids removed from solvent-contaminated wipes or from the container holding the wipes are managed according to the applicable hazardous waste regulations.</p> <p>Verify that generators of solvent-contaminated wipes sent for cleaning maintain the following records:</p> <ul style="list-style-type: none"> <li>– the name and address of the laundry or dry cleaner that is receiving the solvent-contaminated wipes when wipes are being cleaned</li> <li>– name and address of the landfill or combustor that is receiving the solvent-contaminated wipes when they are being sent for disposal</li> <li>– documentation that the 180-day accumulation time limit is being met</li> <li>– a description of the process the generator is using to ensure the solvent-contaminated wipes contain no free liquids at the point of being laundered or dry cleaned on-site or at the point of being transported off-site for laundering, dry cleaning, or disposal</li> <li>– that, when wipes are sent for cleaning, the solvent-contaminated wipes are sent to a laundry or dry cleaner whose discharge, if any, is regulated under sections 301 and 402 or section 307 of the Clean Water Act</li> <li>– that, when wipes are sent for disposal, the solvent-contaminated wipes are sent to one of the following: <ul style="list-style-type: none"> <li>– to a municipal solid waste landfill regulated under 40 CFR 258, including 40 CFR 258.40, or to a hazardous waste landfill regulated under 40 CFR 264 or 265</li> <li>– to a municipal waste combustor or other combustion facility regulated under section 129 of the Clean Air Act or to a hazardous waste combustor, boiler, or industrial furnace regulated under 40 CFR 264, 265, or 266 subpart H.</li> </ul> </li> </ul> <p>(NOTE: See also HW.10.12.US for requirements related to management of hazardous secondary material.)</p> <p>Verify that, if hazardous secondary material is exported from the U.S. and reclaimed at a reclamation facility located in a foreign country, the hazardous secondary material generator complies with the applicable requirements of 40</p>

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<p>foreign country must be managed according to specific parameters (40 CFR 261.4(a)(25)) [Added July 2018].</p>	<p>CFR 261.4 (a)(24)(i)–(v) [see checklist item HW.10.12.US] (excepting paragraph (a)(24)(v)(B)(2) concerning reviewing publically available information for foreign reclaimers and foreign intermediate facilities).</p> <p>Verify that, if hazardous secondary material is exported from the U.S. and reclaimed at a reclamation facility located in a foreign country, the hazardous secondary material generator provides written and signed notification to EPA of an intended export before the hazardous secondary material is scheduled to leave the United States and at least 60 days before the initial shipment is intended to be shipped off-site.</p> <p>(NOTE: Notification may cover export activities extending over a 12 mo or lesser period. See the text of 40 CFR 261.4(a)(25)((i) for a detailed list of information required to be included in the written and signed notification to EPA.)</p> <p>Verify that written notifications are submitted electronically using EPA’s Waste Import Export Tracking System (WIETS), or its successor system.</p> <p>Verify that, except for changes to the telephone number and decreases in the quantity of hazardous secondary material, when the conditions specified on the original notification change (including any exceedance of the estimate of the quantity of hazardous secondary material specified in the original notification), the hazardous secondary material generator provides EPA with a written renotification of the change.</p> <p>(NOTE: The shipment cannot take place until consent of the country of import to the changes has been obtained and the hazardous secondary material generator receives from EPA an EPA Acknowledgment of Consent reflecting the country of import’s consent to the changes.</p> <p>(NOTE: The export of hazardous secondary material under 40 CFR 261.4(a)(25) is prohibited unless the country of import consents to the intended export in writing to the receipt of the hazardous secondary material. Upon receipt of consent, EPA will send an EPA Acknowledgment of Consent to the hazardous secondary material generator. Where the country of import objects to receipt of the hazardous secondary material or withdraws a prior consent, EPA will notify the hazardous secondary material generator in writing. EPA will also notify the hazardous secondary material generator of any responses from countries of transit.)</p> <p>(NOTE: For exports to OECD Member countries, the receiving country may respond to the notification using tacit consent. If no objection has been lodged by any country of import or countries of transit to a notification within 30 days after the date of issuance of the acknowledgement of receipt of notification by the competent authority of the country of import, the transboundary movement may commence.)</p>

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	<p>Verify that a copy of the EPA Acknowledgment of Consent accompanies the shipment and the shipment conforms to the terms of the EPA Acknowledgment of Consent.</p> <p>Verify that, if a shipment cannot be delivered for any reason to the reclaimer, intermediate facility or the alternate reclaimer or alternate intermediate facility, the hazardous secondary material generator must re-notifies EPA of a change in the conditions of the original notification to allow shipment to a new reclaimer and obtain another EPA Acknowledgment of Consent.</p> <p>Verify that hazardous secondary material generators keep a copy of each notification of intent to export and each EPA Acknowledgment of Consent for 3 yr following receipt of the EPA Acknowledgment of Consent.</p> <p>(NOTE: This recordkeeping requirement may be satisfied by retaining electronically submitted notifications or electronically generated Acknowledgements in their account on EPA's WIETS, or its successor system provided that such copies are readily available for viewing and production if requested by any EPA or authorized state inspector. No hazardous secondary material generator may be held liable for the inability to produce a notification or Acknowledgement for inspection if they can demonstrate that the inability to produce such copies are due exclusively to technical difficulty with EPA's WIETS, or its successor system for which the hazardous secondary material generator bears no responsibility.)</p> <p>Verify that hazardous secondary material generators file with the Administrator no later than March 1 of each year, a report summarizing the types, quantities, frequency and ultimate destination of all hazardous secondary materials exported during the previous calendar year using EPA's WIETS), or its successor system.</p>

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<p><b>HW.15.</b></p> <p><b>VERY SMALL QUANTITY GENERATORS (VSQGs)</b></p> <p><b>HW.15.1.US.</b> Generators of less than or equal to 100 kg/mo of hazardous waste or less than or equal to 1 kg of acute hazardous waste may qualify as VSQGs when they meet specific requirements (40 CFR 262.14) [Revised June 1998; Reviewed October 2001; Revised October 2002; Revised January 2009; Revised July 2010; Revised April 2012; Revised January 2017].</p>	<p>Verify that the VSQG determined if their solid waste is hazardous waste as outlined in 40 CFR 262.11(a) through (e) (see checklist item HW.10.1.US).</p> <p>Verify that the following generation parameters are met:</p> <ul style="list-style-type: none"> <li>– less than or equal to 100 kg [approx. 220 lb] of hazardous waste is generated in a calendar month</li> <li>– less than or equal to 1 kg [approx. 2 lb] of acute hazardous waste (see 40 CFR 261.33(a) through 261.33(e) at <a href="http://www.ecfr.gov">www.ecfr.gov</a> for the most current list) is generated in a calendar month</li> <li>– less than or equal to 100 kg [approx. 220 lb] of residues from a cleanup of any acute hazardous wastes generated in a calendar month.</li> </ul> <p>(NOTE: See checklist item HW.10.2.US for information on determining the amount of hazardous waste or acute hazardous waste being generated in 1 calendar month.)</p> <p>(NOTE: If a hazardous waste generator meets all of the conditions in this checklist item, they are not required to meet any of the standards outlined in 40 CFR 124, 262 [except 262.10 – 262.14] through 268, 270, and the notification requirements of section 3010 of RCRA.)</p> <p>Verify that, if the VSQG accumulates at any time greater than 1 kg (2.2 lbs) of acute hazardous waste or 100 kg (220 lbs) of any residue or contaminated soil, water, or other debris resulting from the cleanup of a spill, into or on any land or water, of any acute hazardous waste, all quantities of that acute hazardous waste are managed according to the following additional conditions to maintain status as a VSQG:</p> <ul style="list-style-type: none"> <li>– the waste is held on site for no more than 90 days beginning on the date when the accumulated wastes exceed the amounts provided above</li> <li>– the conditions for exemption in 262.17(a) through 262.17(g) (see checklist items pertaining to LQGs)</li> </ul> <p>Verify that, if the VSQG accumulates at any time 1,000 kilograms (2,200 lbs) or greater of non-acute hazardous waste, all quantities of that hazardous waste are managed according to all of the following additional conditions:</p>

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	<ul style="list-style-type: none"> <li>– such waste is held on site for no more than 180 days, or 270 days, if applicable, beginning on the date when the accumulated waste exceed the provided amount above</li> <li>– the quantity of waste accumulated on site never exceeds 6,000 kilograms (13,200 lbs)</li> <li>– the conditions for exemption in 40 CFR 262.16(b)(2) through (f) (see checklist items pertaining to SQGs).</li> </ul> <p>Verify that, when the VSQG is meeting the generation parameters, hazardous wastes are either treated or disposed of in an onsite facility or delivered to an offsite TSDF, either of which, if located in the U.S., is one of the following:</p> <ul style="list-style-type: none"> <li>– permitted</li> <li>– operating under interim status</li> <li>– authorized to manage hazardous waste by a state with an approved hazardous waste management program</li> <li>– permitted, licensed, or registered by a state to manage municipal or industrial solid waste and, if managed in a municipal solid waste landfill, is subject to 40 CFR 258</li> <li>– permitted, licensed, or registered by a state to manage non-municipal non-hazardous waste and, if managed in a non-municipal non-hazardous waste disposal unit, is subject to 40 CFR 257.5 through 257.30 (see section <i>Solid Waste Management</i>)</li> <li>– a facility that does one of the following: <ul style="list-style-type: none"> <li>– beneficially uses or reuses, or legitimately recycles or reclaims, its waste</li> <li>– treats its waste prior to beneficial use or reuse, or legitimate recycling or reclamation</li> <li>– for universal waste, a universal waste handler or destination facility for universal waste</li> </ul> </li> <li>– a LQG under the control of the same person (see NOTE below) as the VSQG if the following conditions are met: <ul style="list-style-type: none"> <li>– the VSQG marks its containers with the words “Hazardous Waste”</li> <li>– the VSQG marks its containers with an indication of the hazards of the contents; examples include, but are not limited to: <ul style="list-style-type: none"> <li>– the applicable hazardous waste characteristic(s) (<i>i.e.</i>, ignitable, corrosive, reactive, toxic)</li> <li>– hazard communication consistent with the Department of Transportation requirements at 49 CFR 172 subpart E (labeling) or subpart F (placarding)</li> <li>– a hazard statement or pictogram consistent with the OSHA Hazard Communication Standard at 29 CFR 1910.1200</li> <li>– a chemical hazard label consistent with the NFPA code 704.</li> </ul> </li> </ul> </li> </ul> <p>(NOTE: “Control,” for the purposes of this requirement, means the power to direct the policies of the generator, whether by the ownership of stock, voting rights, or otherwise, except that contractors who operate generator facilities on behalf of a</p>

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<b>HW.15.2.US.</b> VSQGs may maintain their VSQG status during an episodic event if certain requirements are met (40 CFR 262.232(a)) [ <b>Added January 2017</b> ].	<p>different person as defined in 40 CFR 260.10 shall not be deemed to “control” such generators.)</p> <p>Verify that the VSQG does not place bulk or noncontainerized liquid hazardous waste or hazardous waste containing free liquids (whether or not sorbents have been added) in any landfill.</p> <p>(NOTE: A VSQG experiencing an episodic event may generate and accumulate hazardous waste in accordance with 40 CFR 262, subpart L (see checklist item HW.15.2.US) instead of meeting the requirements for SQGs and LQGs.</p> <p>(NOTE: Even though a VSQG is not legally required to use a manifest or obtain a hazardous waste identification number, many hazardous waste haulers will not transport hazardous waste from a facility without a manifest or identification number. If VSQG personnel sign a hazardous waste manifest, they are considered a person who is offering hazardous materials for transportation. See HM.50.8.US for the additional training requirements applicable individuals signing hazardous waste manifests.)</p> <p>(NOTE: This checklist item details the actions required of a VSQG in order to maintain its status as a VSQG during a planned or unplanned episodic event.)</p> <p>Verify that the VSQG only has one episodic event per calendar year, unless a petition is granted by the Regional Administrator.</p> <p>Verify that the VSQG notifies EPA no later than thirty (30) calendar days prior to initiating a planned episodic event using EPA Form 8700–12.</p> <p>Verify that, in the event of an unplanned episodic event, the VSQG notifies EPA within 72 h of the unplanned event via phone, email, or fax and subsequently submits EPA Form 8700–12.</p> <p>Verify that the VSQG includes the start date and end date of the episodic event, the reason(s) for the event, types and estimated quantities of hazardous waste expected to be generated as a result of the episodic event, and identifies a facility contact and emergency coordinator with 24-h telephone access to discuss the notification submittal or respond to an emergency.</p> <p>Verify that the VSQG has an EPA identification number or obtains an EPA identification number using EPA Form 8700–12.</p> <p>Verify that the VSQG does not accumulate hazardous waste generated from an episodic event on drip pads and in containment buildings.</p> <p>Verify that, when the VSQG is accumulating hazardous waste in containers they are marked or labeled with the following:</p>

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	<ul style="list-style-type: none"> <li>– the words “Episodic Hazardous Waste”</li> <li>– an indication of the hazards of the contents; examples include, but are not limited to:               <ul style="list-style-type: none"> <li>– the applicable hazardous waste characteristic(s) (<i>i.e.</i>, ignitable, corrosive, reactive, toxic)</li> <li>– hazard communication consistent with the Department of Transportation requirements at 49 CFR 172 subpart E (labeling) or subpart F (placarding)</li> <li>– a hazard statement or pictogram consistent with the OSHA Hazard Communication Standard at 29 CFR 1910.1200</li> <li>– a chemical hazard label consistent with the NFPA code 704</li> </ul> </li> <li>– the date upon which the episodic event began, clearly visible for inspection on each container.</li> </ul> <p>Verify that, when the VSQG is accumulating hazardous waste in tanks they are marked or labeled with the following:</p> <ul style="list-style-type: none"> <li>– the words “Episodic Hazardous Waste”</li> <li>– an indication of the hazards of the contents; examples include, but are not limited to:               <ul style="list-style-type: none"> <li>– the applicable hazardous waste characteristic(s) (<i>i.e.</i>, ignitable, corrosive, reactive, toxic)</li> <li>– hazard communication consistent with the Department of Transportation requirements at 49 CFR 172 subpart E (labeling) or subpart F (placarding)</li> <li>– a hazard statement or pictogram consistent with the OSHA Hazard Communication Standard at 29 CFR 1910.1200</li> <li>– a chemical hazard label consistent with the NFPA code 704.</li> </ul> </li> </ul> <p>Verify that, for tanks, the VSQG uses inventory logs, monitoring equipment or other records to identify the date upon which each episodic event begins.</p> <p>Verify that, for tanks, the VSQG keeps inventory logs or records with the above information on site and readily available for inspection.</p> <p>Verify that hazardous waste is managed in a manner that minimizes the possibility of a fire, explosion, or release of hazardous waste or hazardous waste constituents to the air, soil, or water.</p> <p>Verify that containers are in good condition and compatible with the hazardous waste being accumulated in them.</p> <p>Verify that containers are kept closed except to add or remove waste.</p>

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<p><b>HW.15.3.US.</b> Checklist item deleted <b>[Deleted October 2011]</b>.</p> <p><b>HW.15.4.US.</b> Empty containers at VSQGs previously holding hazardous wastes must meet the regulatory definition of empty before they are exempted from hazardous waste requirements</p>	<p>Verify that tanks are in good condition and compatible with the hazardous waste accumulated in them.</p> <p>Verify that tanks have procedures in place to prevent the overflow (e.g., be equipped with a means to stop inflow with systems such as a waste feed cutoff system or bypass system to a standby tank when hazardous waste is continuously fed into the tank).</p> <p>Verify that tanks are inspected at least once each operating day to ensure all applicable discharge control equipment, such as waste feed cutoff systems, bypass systems, and drainage systems are in good working order and to ensure the tank is operated according to its design by reviewing the data gathered from monitoring equipment such as pressure and temperature gauges from the inspection.</p> <p>Verify that the VSQG complies with the hazardous waste manifest provisions of 40 CFR, Subpart B when it sends its episodic event hazardous waste off site to a designated facility.</p> <p>Verify that the VSQG manifests and sends the hazardous waste generated from the episodic event to a designated facility within sixty (60) calendar days from the start of the episodic event.</p> <p>Verify that VSQGs maintain the following records for 3 yr from the end date of the episodic event:</p> <ul style="list-style-type: none"> <li>– beginning and end dates of the episodic event</li> <li>– a description of the episodic event</li> <li>– a description of the types and quantities of hazardous wastes generated during the event</li> <li>– a description of how the hazardous waste was managed as well as the name of the RCRA-designated facility that received the hazardous waste</li> <li>– name(s) of hazardous waste transporters</li> <li>– an approval letter from EPA if the generator petitioned to conduct one additional episodic event per calendar year.</li> </ul> <p>(NOTE: To document inadequate management practices (MP) at VSQGs use checklist item number HW.2.1.US.)</p> <p>Verify that, for containers or inner liners holding hazardous wastes:</p> <ul style="list-style-type: none"> <li>– wastes are removed that can be removed using common practices and no more than 2.5 cm [1 in.] of residue remains</li> <li>– no more than 3 percent by weight of the total capacity of the container remains in the container or inner liner if the container is less than or equal to 119 gal in size</li> </ul>

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<p>(40 CFR 261.7) [<b>Reviewed October 2001; Revised April 2005</b>].</p> <p><b>HW.15.5.US.</b> Checklist item deleted [<b>Deleted October 2011</b>].</p> <p><b>HW.15.6.US.</b> Checklist item deleted [<b>Deleted October 2011</b>].</p>	<p>– no more than 0.3 percent by weight of the total capacity of the container remains in the container or inner liner if the container is greater than 119 gal in size.</p> <p>Verify that, for containers that hold a compressed gas, the pressure in the container approaches atmosphere.</p> <p>Verify that, for containers or inner liners which held an acute hazardous waste listed in Appendix 4-5, that one of the following is done:</p> <ul style="list-style-type: none"> <li>– it is triple rinsed</li> <li>– it is cleaned by another method identified through the literature or testing as achieving equivalent removal</li> <li>– the inner liner is removed.</li> </ul> <p>(NOTE: To document inadequate management practices (MP) at VSQGs use checklist item number HW.2.1.US.)</p> <p>(NOTE: To document inadequate management practices (MP) at VSQGs use checklist item number HW.2.1.US.)</p>

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<p><b>SMALL QUANTITY GENERATORS (SQGs)</b></p> <p><b>HW.20. General</b></p> <p><b>HW.20.1.US.</b> Generators of more than 100 kg but less than 1000 kg of hazardous waste per month may qualify as an SQG that can accumulate hazardous waste onsite for 180 days without a permit if specific conditions are met (40 CFR 262.16(a), 262.16(b)(1), 262.16(b)(6)(i), 262.16(c) through 262.16(e), and 262.35) [Reviewed October 2001; Revised April 2005; Revised January 2017].</p>	<p>Verify that generators operating as SQGs generate:</p> <ul style="list-style-type: none"> <li>– less than 1,000 kilograms (2200 lbs) of non-acute hazardous waste in a calendar month</li> <li>– less than or equal to 1 kilogram (2.2 lbs) of acute hazardous waste</li> <li>– less than or equal to 100 kilograms (220 lbs) of any residue or contaminated soil, water, or other debris resulting from the cleanup of a spill, into or on any land or water, of any acute hazardous waste listed in 40 CFR 261.31 or 40 CFR 261.33(e) (see <a href="http://www.ecfr.gov">www.ecfr.gov</a> for the current list of acute hazardous waste).</li> </ul> <p>Verify that the onsite accumulation time does not exceed 180 days unless the generator has been granted an extension or received a shipment back as a rejected load (see below in this checklist item for details on handling rejected shipments).</p> <p>(NOTE: For an SQG, the accumulation start date begins when the first waste is poured/placed into the waste container, except for at satellite accumulation points.)</p> <p>(NOTE: The 180-day time period is extended to 270 days if the generator must transport its waste, or offer its waste for transportation over a distance of 200 mi or more. This extension does not apply if a TSDF is available within 200 mi and the SQG chooses to transport the waste to a farther away TSDF.)</p> <p>Verify that the quantity of hazardous waste accumulated onsite never exceeds 6000 kg (13,200 lb).</p> <p>Verify that every container is marked with:</p> <ul style="list-style-type: none"> <li>– the words “Hazardous Waste”</li> <li>– an indication of the hazards of the contents; examples include, but are not limited to: <ul style="list-style-type: none"> <li>– the applicable hazardous waste characteristic(s) (<i>i.e.</i>, ignitable, corrosive, reactive, toxic)</li> <li>– hazard communication consistent with the Department of Transportation requirements at 49 CFR 172 subpart E (labeling) or subpart F (placarding)</li> <li>– a hazard statement or pictogram consistent with the OSHA Hazard Communication Standard at 29 CFR 1910.1200</li> <li>– a chemical hazard label consistent with the NFPA code 704</li> </ul> </li> </ul>

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<p><b>HW.20.2.US.</b> SQGs that generate, transport, or handle hazardous wastes must obtain an USEPA identification number and renotify EPA every 4 yr (40 CFR 262.18(a), 262.18(b), and 262.18(d)(1)) [Reviewed October 2001; Revised January 2017].</p> <p><b>HW.20.3.US.</b> An SQG must not offer its hazardous waste to transporters or to TSDFs that have not received an USEPA identification number (40 CFR 262.18(c))) [Reviewed</p>	<p>– the date on which each period of accumulation begins so that it is clearly visible for inspection.</p> <p>(NOTE: The container marking/labeling for preparing containers for transportation offsite are covered in checklist item HW.20.7.US.)</p> <p>Verify that the containers and the areas at which containers are stored meet the requirements outlined in the subsections pertaining to SQGs (see checklist items in the HW.30 and HW.40.)</p> <p>(NOTE: When an SQG exceeds the quantity generation or amount accumulation, it becomes subject to either Generator or TSDF requirements. When an SQG exceeds the storage time limitation, the SQG becomes subject to permitting requirements.)</p> <p>Verify that, upon receipt of a returned shipment, the generator signs one of the following:</p> <ul style="list-style-type: none"> <li>– Item 18c of the manifest, if the transporter returned the shipment using the original manifest</li> <li>– Item 20 of the manifest, if the transporter returned the shipment using a new manifest.</li> </ul> <p>Verify that the SQG does not place bulk or non-containerized liquid hazardous waste or hazardous waste containing free liquids (whether or not sorbents have been added) in any landfill.</p> <p>(NOTE: Prior to disposal in a hazardous waste landfill, liquids must meet additional requirements as specified in the requirements for hazardous waste landfill operation in 40 CFR 264.314 and 265.314.)</p> <p>Verify that the SQG has obtained an identification number.</p> <p>Verify that the correct identification number is used on all appropriate documentation (i.e., manifests).</p> <p>Verify that, starting in 2021, the SQG re-notifies EPA every 4 yr using EPA Form 8700-12 and submitting the form by 1 September of each year in which re-notifications are required.</p> <p>Verify that all transporters of hazardous waste of TSDFs have an USEPA identification number by examining records pertaining to these services.</p> <p>(NOTE: Examples of such records could include sales agreements or vendor contracts.)</p>

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<p><b>October 2001; Citation Revised January 2017].</b></p> <p><b>HW.20.4.US.</b> SQGs of hazardous waste are required to use manifests and maintain associated records (40 CFR 262.20, 262.22, 262.23, 262.27, 262.40(a), 262.40(d) 262.42(b), and 262.44) [Revised October 2001; Revised October 2002; Revised January 2003; Revised April 2005; Revised July 2005; Revised July 2010; Revised July 2011; Revised April 2014].</p>	<p>Verify that a SQG who transports, or offers for transport a hazardous waste for offsite treatment, storage, or disposal, or a treatment, storage, and disposal facility who offers for transport a rejected hazardous waste load, prepares a Manifest (OMB Control number 2050-0039) on EPA Form 8700-22, and, if necessary, EPA Form 8700-22A.</p> <p>(NOTE: The State may use a different form including the same information.)</p> <p>Verify that the generator designates on the manifest one facility that is permitted to handle the waste described on the manifest.</p> <p>(NOTE: A generator may also designate on the manifest one alternate facility which is permitted to handle his waste in the event an emergency prevents delivery of the waste to the designated facility.)</p> <p>(NOTE: The manifest consists of at least the number of copies which will provide the SQG, each transporter, and the owner or operator of the designated facility with one copy each for their records and another copy to be returned to the SQG.)</p> <p>Verify that the SQG:</p> <ul style="list-style-type: none"> <li>– signs the manifest certification by hand</li> <li>– obtains the handwritten signature of the initial transporter and date of acceptance on the manifest</li> <li>– retains one copy.</li> </ul> <p>Verify that a SQG who initiates a shipment of hazardous waste certifies the following statement in Item 15 of the uniform hazardous waste manifest: “I am a small quantity generator. I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.”</p> <p>Verify that the SQG gives the transporter the remaining copies of the manifest.</p> <p>Verify that, for shipments of hazardous waste within the United States solely by water (bulk shipments only), the SQG sends 3 copies of the manifest dated and signed to the owner or operator of the designated facility or the last water (bulk shipment) transporter to handle the waste in the United States if exported by water.</p> <p>(NOTE: For shipments of hazardous waste within the United States solely by water (bulk shipments), copies of the manifest are not required for each transporter.)</p>

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	<p>Verify that, for rail shipments of hazardous waste within the United States which originate at the site of generation, the SQG sends at least 3 copies of the manifest dated and signed to one of the following:</p> <ul style="list-style-type: none"> <li>– the next non-rail transporter, if any</li> <li>– the designated facility if transported solely by rail</li> <li>– the last rail transporter to handle the waste in the United States if exported by rail.</li> </ul> <p>(NOTE: For shipments of hazardous waste to a designated facility in an authorized State which has not yet obtained authorization to regulate that particular waste as hazardous, the generator must assure that the designated facility agrees to sign and return the manifest to the generator, and that any out-of-state transporter signs and forwards the manifest to the designated facility.)</p> <p>Verify that, if the transporter is unable to deliver the hazardous waste to the designated facility or the alternate facility, the generator either designates another facility or instructs the transporter to return the waste.</p> <p>(NOTE: The requirement to prepare a manifest does not apply if:</p> <ul style="list-style-type: none"> <li>– the waste is reclaimed under contractual agreement and: <ul style="list-style-type: none"> <li>– the type of waste and frequency of shipments are specified in the agreement</li> <li>– the vehicle used to transport the waste to the recycling facility and to deliver regenerated material back to the generator is owned and operated by the reclaimer</li> </ul> </li> <li>– the generator maintains a copy of the reclamation agreement for at least 3 yr after termination of the agreement.)</li> </ul> <p>(NOTE: The requirement to use a manifest does not apply to the transport of hazardous wastes on a public or private right-of-way within or along the border of contiguous property under the control of the same person, even if such contiguous property is divided by a public or private right-of-way. The generator or transporter must comply with the requirements for transporters set forth in 40 CFR 263.30 and 263.31 (see checklist item HW.100.3.US) in the event of a discharge of hazardous waste on a public or private right-of-way.)</p> <p>Verify that a SQG who does not receive a copy of the manifest with the handwritten signature of the owner or operator of the designated facility within 60 days of the date the waste was accepted by the initial transporter submits a legible copy of the manifest, with some indication that the generator has not received confirmation of delivery, to the USEPA Regional Administrator for the Region in which the generator is located.</p> <p>(NOTE: The submission to USEPA need only be a handwritten or typed note on the manifest itself, or on an attached sheet of paper, stating that the return copy was not received.)</p>

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	<p>Verify that the generator keeps a copy of each signed manifest for 3 yr or until he receives a signed copy from the designated facility which received the waste.</p> <p>Verify that the returned signed copy is retained as a record for at least 3 yr from the date the waste was accepted by the initial transporter.</p> <p>(NOTE: Any requirement to keep or retain a copy of each manifest is satisfied by the retention of the facility's electronic manifest copies in its account on the e-Manifest system, provided that such copies are readily available for viewing and production if requested by any EPA or authorized state inspector. No owner or operator may be held liable for the inability to produce an electronic manifest for inspection if the owner or operator can demonstrate that the inability to produce the electronic manifest is due exclusively to a technical difficulty with the EPA system for which the owner or operator bears no responsibility.)</p> <p>(NOTE: Periods of retention for records may be extended automatically during the course of any unresolved enforcement action or at the request of the USEPA administrator.)</p> <p>Verify that, for rejected shipments of hazardous waste or container residues contained in non-empty containers that are returned to the SQG by the designated facility, the SQG:</p> <ul style="list-style-type: none"> <li>– signs either: <ul style="list-style-type: none"> <li>– Item 20 of the new manifest if a new manifest is used for the returned shipment</li> <li>– Item 18c of the original manifest if the original manifest is used for the returned shipment</li> </ul> </li> <li>– provides the transporter a copy of the manifest</li> <li>– within 30 days of delivery of the rejected shipment or container residues contained in non-empty containers, sends a copy of the manifest to the designated facility that returned the shipment to the generator</li> <li>– retains at the generator's site a copy of each manifest for at least 3 yr from the date of delivery.</li> </ul> <p>(NOTE: In the 7 February 2014 Federal Register the EPA authorized the use of electronic manifests (or e-Manifests) as a means to track off-site shipments of hazardous waste from a generator's site to the site of the receipt and disposition of the hazardous waste. EPA is establishing a national electronic manifest system (or e-Manifest system.) Upon completion of the e-Manifest system, the electronic manifest documents will be available to manifest users as an alternative to the paper manifest forms, to comply with federal and state requirements respecting the use of the hazardous waste manifest. Users who elect to opt out of the electronic submittal to the e-Manifest system may continue to use the paper manifest to track their shipments during transportation, which then will be submitted by the designated facility for inclusion in the e-Manifest system.)</p>

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<p><b>HW.20.5.US.</b> SQGs are required to meet emergency procedure requirements (40 CFR 262.16(b)(9)) <b>[Reviewed October 2001; Revised January 2017]</b>.</p>	<p>(NOTE: The emergency procedure requirements apply all areas of the generator facility where hazardous waste is generated and accumulated.)</p> <p>Verify that there is at least one emergency coordinator who is either on the premises or on call at all times with the responsibility for coordinating all emergency response measures.</p> <p>(NOTE: “On call” is further explained as “available to respond to an emergency by reaching the facility within a short period of time.”)</p> <p>Verify that the following emergency information is posted next to telephones or in areas directly involved in the generation and accumulation of hazardous waste:</p> <ul style="list-style-type: none"> <li>– name and emergency telephone number of emergency coordinator</li> <li>– location of fire extinguishers and spill control materials</li> <li>– location of fire alarms (if present)</li> <li>– telephone number of fire department unless the facility has a direct alarm.</li> </ul> <p>(NOTE: Personnel training is a part of the required emergency procedures, see checklist item HW.25.1.US.)</p>
<p><b>HW.20.6.US.</b> SQGs are required to keep records of waste analyses, tests, and waste determinations (40 CFR 262.11(f), 262.40(c) and 262.44) <b>[Added October 2002; Revised January 2017]</b>.</p>	<p>Verify that the SQG maintains records supporting its hazardous waste determinations, including records that identify whether a solid waste is a hazardous waste, as defined by 40 CFR 261.3.</p> <p>Verify that the appropriate records are kept for 3 yr from the date the waste was last sent to the onsite or offsite TSDF.</p> <p>(NOTE: These records must comprise the generator’s knowledge of the waste and support the generator’s determination. The records must include, but are not limited to, the following types of information:</p> <ul style="list-style-type: none"> <li>– the results of any tests, sampling, waste analyses, or other determinations made in accordance with 40 CFR 262.11</li> <li>– records documenting the tests, sampling, and analytical methods used to demonstrate the validity and relevance of such tests</li> <li>– records consulted in order to determine the process by which the waste was generated, the composition of the waste, and the properties of the waste</li> <li>– records which explain the knowledge basis for the generator’s determination.)</li> </ul> <p>(NOTE: Periods of retention for reports may be extended automatically during the course of any unresolved enforcement action or at the request of the USEPA Administrator.)</p>
<p><b>HW.20.7.US.</b> Before transporting hazardous waste</p>	<p>Determine what pretransport procedures for hazardous waste are used.</p>

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<p>or offering hazardous waste for transportation offsite, SQGs must package and label the waste according to specific requirements (40 CFR 262.11(f) and 262.30 through 262.33) <b>[Moved January 2003; Revised April 2005; Revised January 2017]</b>.</p>	<p>Verify that the waste is packaged in accordance with 49 CFR 173, 178, and 179 (see checklist items under the topic heading HM.50: Hazardous Materials Transportation in the <i>Hazardous Materials Management</i> section of the U.S. TEAM Guide).</p> <p>Verify that containers are properly constructed and contain no leaks, corrosion, or bulges before transporting inspecting a sample of containers awaiting transport.</p> <p>Examine end-seams for minor weeping that indicates drum failure.</p> <p>Verify that packages are labeled in accordance with the applicable regulations on hazardous materials under 49 CFR 172 (see checklist items under the topic heading HM.50: Hazardous Materials Transportation in the <i>Hazardous Materials Management</i> section of the U.S. TEAM Guide).</p> <p>Verify that labeling and marking on each container is appropriate for the contents.</p> <p>Verify that, before transporting hazardous waste or offering hazardous waste for transportation off-site, a SQG marks each container of 119 gal or less used in transportation with the following words and information in accordance with the requirements of 49 CFR 172.304:</p> <p><b>HAZARDOUS WASTE--Federal Law Prohibits Improper Disposal.</b> If found, contact the nearest police or public safety authority or the U.S. Environmental Protection Agency.</p> <p>Generator's Name and Address -----.</p> <p>Generator's EPA Identification Number-----.</p> <p>Manifest Tracking Number -----.</p> <p>EPA Hazardous Waste Number _____.</p> <p>(NOTE: An SQG may use a nationally recognized electronic system, such as bar coding, to identify the EPA Hazardous Waste Numbers.)</p> <p>(NOTE: Lab packs that will be incinerated in compliance with 40 CFR 268.42(c) are not required to be marked with EPA Hazardous Waste Numbers except D004, D005, D006, D007, D008, D010, and D011, where applicable.)</p> <p>Verify that, before transporting hazardous waste or offering hazardous waste for transportation off-site, a generator placards or offers the initial transporter the appropriate placards according to DOT regulations for hazardous materials under 49 CFR 172, subpart F.</p> <p>(NOTE: If placards are not required, a generator must mark each motor vehicle according to 49 CFR 171.3(b)(1).)</p> <p>(NOTE: This was formerly checklist item HW.100.2.US.)</p>

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<b>HW.20.8.US.</b> SQGs may maintain their SQG status during an episodic event if certain requirements are met (40 CFR 262.232(b)) <b>[Added January 2017]</b> .	<p>(NOTE: This checklist item details the actions required of a SQG in order to maintain its status as a SQG during a planned or unplanned episodic event.)</p> <p>Verify that the SQG only has one episodic event per calendar year, unless a petition is granted by the Regional Administrator.</p> <p>Verify that the SQG notifies EPA no later than thirty (30) calendar days prior to initiating a planned episodic event using EPA Form 8700–12.</p> <p>Verify that, in the event of an unplanned episodic event, the SQG notifies EPA within 72 hours of the unplanned event via phone, email, or fax and subsequently submits EPA Form 8700–12.</p> <p>Verify that the SQG includes the start date and end date of the episodic event, the reason(s) for the event, types and estimated quantities of hazardous waste expected to be generated as a result of the episodic event, and identify a facility contact and emergency coordinator with 24-h telephone access to discuss the notification submittal or respond to an emergency.</p> <p>Verify that the SQG has an EPA identification number or obtains an EPA identification number using EPA Form 8700–12.</p> <p>Verify that the SQG does not accumulate hazardous waste generated from an episodic event on drip pads and in containment buildings.</p> <p>Verify that, when the SQG is accumulating hazardous waste in containers they are marked or labeled with the following:</p> <ul style="list-style-type: none"> <li>– the words “Episodic Hazardous Waste”</li> <li>– an indication of the hazards of the contents; examples include, but are not limited to:             <ul style="list-style-type: none"> <li>– the applicable hazardous waste characteristic(s) (i.e., ignitable, corrosive, reactive, toxic)</li> <li>– hazard communication consistent with the Department of Transportation requirements at 49 CFR 172 subpart E (labeling) or subpart F (placarding)</li> <li>– a hazard statement or pictogram consistent with the OSHA Hazard Communication Standard at 29 CFR 1910.1200</li> <li>– a chemical hazard label consistent with the NFPA code 704</li> </ul> </li> <li>– the date upon which the episodic event began, clearly visible for inspection on each container.</li> </ul> <p>Verify that, when the SQG is accumulating hazardous waste in tanks they are marked or labeled with the following:</p>

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	<ul style="list-style-type: none"> <li>– the words “Episodic Hazardous Waste”</li> <li>– an indication of the hazards of the contents; examples include, but are not limited to:               <ul style="list-style-type: none"> <li>– the applicable hazardous waste characteristic(s) (i.e., ignitable, corrosive, reactive, toxic)</li> <li>– hazard communication consistent with the Department of Transportation requirements at 49 CFR 172 subpart E (labeling) or subpart F (placarding)</li> <li>– a hazard statement or pictogram consistent with the OSHA Hazard Communication Standard at 29 CFR 1910.1200</li> <li>– a chemical hazard label consistent with the NFPA code 704.</li> </ul> </li> </ul> <p>Verify that, for tanks, the SQG uses inventory logs, monitoring equipment or other records to identify the date upon which each episodic event begins.</p> <p>Verify that, for tanks, the SQG keeps inventory logs or records with the above information on site and readily available for inspection.</p> <p>Verify that the SQG manifests and sends the hazardous waste generated from the episodic event to a designated facility within sixty (60) calendar days from the start of the episodic event.</p> <p>Verify that SQGs maintain the following records for 3 yr from the end date of the episodic event:</p> <ul style="list-style-type: none"> <li>– beginning and end dates of the episodic event</li> <li>– a description of the episodic event</li> <li>– a description of the types and quantities of hazardous wastes generated during the event</li> <li>– a description of how the hazardous waste was managed as well as the name of the RCRA-designated facility that received the hazardous waste</li> <li>– name(s) of hazardous waste transporters</li> <li>– an approval letter from EPA if the generator petitioned to conduct one additional episodic event per calendar year.</li> </ul>



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<b>SMALL QUANTITY GENERATORS (SQGs)</b>  <b>HW.25. Personnel Training</b>  <b>HW.25.1.US.</b> SQG personnel are required to be thoroughly familiar with proper waste handling and emergency procedures relevant to their responsibilities during normal facility operations and emergencies (40 CFR 262.16(b)(9)(iii)) [Revised February 1995; Reviewed October 2001; Revised July 2004; Revised April 2012; Revised January 2017].  <b>HW.25.2.US.</b> Checklist item deleted [Deleted October 2011].	<p>Verify that personnel are thoroughly familiar with waste handling and emergency procedures relevant to their responsibilities during normal facility operations and emergencies.</p> <p>(NOTE: SQG personnel signing hazardous waste manifests are considered a person who is offering hazardous materials for transportation. See HM.50.8.US for the additional training requirements applicable to individuals signing hazardous waste manifests.)</p> <p>(NOTE: To document inadequate management practices (MP) at SQGs use checklist item number HW.2.1.US.)</p>





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<p><b>HW.30.4.US.</b> Containers of hazardous waste at SQGs must be closed during storage and handled in a safe manner (40 CFR 262.16(b)(2)(iii)) [Reviewed October 2001; Revised October 2005; Revised January 2017].</p> <p><b>HW.30.5.US.</b> The handling of incompatible wastes, or incompatible wastes and materials in containers at SQGs, must comply with safe management practices (40 CFR 262.16(b)(2)(v)) [Reviewed October 2001; Revised January 2017].</p> <p><b>HW.30.6.US.</b> Checklist item deleted [Deleted October 2011].</p>	<p>Verify that containers holding hazardous waste are always closed during accumulation, except when it is necessary to add or remove waste (check bungs on drums).</p> <p>Verify that a container holding hazardous waste is not opened, handled, or accumulated in a manner that may rupture the container or cause it to leak.</p> <p>Verify that incompatible wastes or incompatible wastes and materials are not placed in the same containers unless it is done so that it does not:</p> <ul style="list-style-type: none"> <li>– generate extreme heat or pressure, fire, or explosion, or violent reaction</li> <li>– produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health</li> <li>– produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions</li> <li>– damage the structural integrity of the device or facility</li> <li>– by any other like means threaten human health.</li> </ul> <p>(NOTE: Incompatible wastes as listed in Appendix 4-6 should not be placed in the same container.)</p> <p>Verify that hazardous wastes are not placed in an unwashed container that previously held an incompatible waste or material unless it is done so that it does not:</p> <ul style="list-style-type: none"> <li>– generate extreme heat or pressure, fire, or explosion, or violent reaction</li> <li>– produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health</li> <li>– produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions</li> <li>– damage the structural integrity of the device or facility</li> <li>– by any other like means threaten human health.</li> </ul> <p>Verify that a container accumulating hazardous wastes incompatible with any wastes or other materials accumulated or stored nearby in other containers, piles, open tanks, or surface impoundments are separated from the other materials or protected from them by means of a dike, berm, wall, or other device.</p> <p>(NOTE: To document inadequate management practices (MP) at SQGs use checklist item number HW.2.1.US.)</p>

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<p><b>SMALL QUANTITY GENERATORS (SQGs)</b></p> <p><b>HW.35. Satellite Accumulation Points</b></p> <p><b>HW.35.1.US.</b> All SQGs may accumulate as much as 55 gal of non-acute hazardous waste and/or either 1 qt of liquid acute hazardous waste or 1 kg (2.2 lb) of solid acute hazardous waste in containers at or near any point of generation where wastes initially accumulate without complying with the requirements for central accumulation area storage if specific standards are met (40 CFR 262.15) <b>[Reviewed October 2001; Revised July 2004; Revised January 2017]</b>.</p>	<p>(NOTE: This type of storage is often referred to as a satellite accumulation area or a satellite accumulation point. If an SAA is not managed and operated according to the requirements of this checklist item, it must be considered a central accumulation area and meet the requirements in 40 CFR 262.16(b) (see checklist items in HW.30 and HW.40).)</p> <p>Verify that the satellite accumulation area is at or near any point of generation where wastes initially accumulate and is under the control of the operator of process generating the waste.</p> <p>(NOTE: In the Preamble to the November 2016 rule revision, page 85767 [Column 1], EPA stated that it would not consider a shed outside a building where the waste is initially generated to be “at or near the point of generation.” But, implementing regulatory agencies retain the authority in determining what they consider “at or near the point of generation.”)</p> <p>(NOTE: In the Preamble to the November 2016 rule revision, page 85767, there is a lengthy discussion about the meaning of the phrase “under the control of the operator.” EPA believes that there can be more than one operator per SAA over time. For example, as employees change shifts over the course of a day, the role of the operator can be transferred from one employee to another. Likewise, the EPA believes that there can also be more than one operator per SAA at the same time. For example, multiple operators may be running laboratory equipment in the same room and share hazardous waste containers located in a single SAA. However, the term operator does refer to an individual or individuals responsible for the equipment or processes generating the hazardous waste and does not refer to a company or entity as a whole. In relationship to what constitutes “control,” EPA stated that the intent of the term is to ensure that someone familiar with the operations generating the hazardous waste is aware of and able to attend to the operations, if needed, while also providing some measure of controlled access.)</p> <p>Verify that the satellite accumulation area does not exceed the following:</p> <ul style="list-style-type: none"> <li>– 55 gal of non-acute hazardous waste in containers</li> <li>– either 1 qt of liquid acute hazardous waste or 1 kg (2.2 lb) of solid acute hazardous waste in containers</li> </ul> <p>Verify that, if a container holding hazardous waste is not in good condition, or if it begins to leak, the generator immediately transfers the hazardous waste from this container to a container that is in good condition and does not leak, or immediately</p>

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	<p>transfers and manages the waste in a compliant central accumulation area (i.e., 180-day storage area).</p> <p>Verify that the generator uses containers made of or lined with materials that will not react with, and are otherwise compatible with, the hazardous waste to be accumulated, so that the ability of the container to contain the waste is not impaired.</p> <p>Verify that incompatible wastes, or incompatible wastes and materials are not placed in the same container unless an extension has been granted by the Regional Administrator.</p> <p>Verify that hazardous waste is not placed in an unwashed container that previously held an incompatible waste or material unless an extension has been granted by the Regional Administrator</p> <p>Verify that a container holding a hazardous waste that is incompatible with any waste or other materials accumulated nearby in other containers is separated from the other materials or protected from them by any practical means.</p> <p>Verify that satellite accumulation area containers holding hazardous waste are closed at all times during accumulation except in one of the following situations:</p> <ul style="list-style-type: none"> <li>– when adding, removing, or consolidating waste</li> <li>– when temporary venting of a container is necessary on one of the following situations: <ul style="list-style-type: none"> <li>– for the proper operation of equipment</li> <li>– to prevent dangerous situations, such as build-up of extreme pressure.</li> </ul> </li> </ul> <p>(NOTE: In the Preamble to the November 2016 rule revision, page 85764, EPA stresses it does not intend to create a loophole to the closed container requirement or to allow intentional evaporation of hazardous waste. Rather, the intent of the flexibility is to address the limited cases in which strict adherence to the container closure requirements could substantially increase a risk of a hazardous waste incident rather than decrease it. The flexibility for containers to remain open in specific situations applies only to containers in SAAs.)</p> <p>Verify that containers at a satellite accumulation area are marked:</p> <ul style="list-style-type: none"> <li>– with the words “Hazardous Waste”</li> <li>– with an indication of the hazards of the contents; examples include, but are not limited to: <ul style="list-style-type: none"> <li>– the applicable hazardous waste characteristic(s) (i.e., ignitable, corrosive, reactive, toxic)</li> <li>– hazard communication consistent with the DoT requirements at 49 CFR 172 subpart E (labeling) or subpart F (placarding)</li> <li>– a hazard statement or pictogram consistent with the OSHA Hazard Communication Standard at 29 CFR 1910.1200</li> </ul> </li> </ul>

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	<p>– a chemical hazard label consistent with the NFPA code 704.</p> <p>Verify that, when hazardous waste or acute hazardous waste is accumulated in excess of quantity limitations at or near the point of generation, the following actions are taken by interviewing the shop managers:</p> <ul style="list-style-type: none"> <li>– within 3 consecutive calendar days, comply with the applicable central accumulation area (i.e. 180-day storage area) in 40 CFR 262.16(b) (see checklist items in HW.30 and HW.40)</li> <li>– the container holding the excess is marked or labeled with the date the excess amount began accumulating</li> <li>– the excess waste is removed from the satellite accumulation area within 3 days to one of the following locations: <ul style="list-style-type: none"> <li>– a central accumulation area (i.e. 180-day storage area) operated in accordance with 40 CFR 262.16(b) (see checklist items in HW.30 and HW.40)</li> <li>– an onsite interim status or permitted treatment, storage, or disposal facility (TSDF)</li> <li>– an off-site designated facility.</li> </ul> </li> </ul> <p>(NOTE: During the 3-consecutive day period the generator must continue to comply with all of the requirements outlines in this checklist item.)</p> <p>Verify that satellite accumulation areas at SQGs meet the preparedness and prevention regulations found in 40 CFR 262.16(b)(8) (see checklist item HW.40.2.US).</p> <p>Verify that satellite accumulation areas at SQGs meet the emergency procedure requirements found in 40 CFR 262.16(b)(9) (see checklist items HW.20.5.US and HW.25.1.US).</p>



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<p><b>SMALL QUANTITY GENERATORS (SQGs)</b></p> <p><b>HW.40.</b>  <b>Container Storage Areas</b></p> <p><b>HW.40.1.US.</b> Checklist item deleted <b>[Deleted October 2011]</b>.</p> <p><b>HW.40.2.US.</b> SQG facilities must be maintained and operated to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment (40 CFR 262.16(b)(8)) <b>[Revised October 2001; Revised January 2017]</b>.</p>	<p>(NOTE: To document inadequate management practices (MP) at SQGs use checklist item number HW.2.1.US.)</p> <p>Verify that the SQG maintains and operates its facility to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.</p> <p>Verify that all areas where hazardous waste is either generated or accumulated are equipped with the following unless none of the hazards posed by the waste handled at the facility could require a particular kind of equipment specified below or the actual waste generation or accumulation area does not lend itself for safety reasons to have a particular kind of equipment specified below:</p> <ul style="list-style-type: none"> <li>– an internal communications or alarm system capable of providing immediate emergency instruction (voice or signal) to facility personnel</li> <li>– a device, such as a telephone (immediately available at the scene of operations) or a hand-held two-way radio, capable of summoning emergency assistance from local police departments, fire departments, or State or local emergency response teams</li> <li>– portable fire extinguishers and fire control equipment, including special extinguishing equipment (foam, inert gas, or dry chemicals)</li> <li>– spill control equipment</li> <li>– decontamination equipment</li> <li>– water at adequate volume and pressure to supply water hose streams, or foam producing equipment, or automatic sprinklers, or water spray systems.</li> </ul> <p>(NOTE: An SQG may determine the most appropriate locations to locate equipment necessary to prepare for and respond to emergencies.)</p> <p>Verify that all communications or alarm systems, fire protection equipment, spill control equipment, and decontamination equipment (where required) is tested and maintained as necessary to ensure proper operation in an emergency.</p> <p>Verify that, whenever hazardous waste is being poured, mixed, spread, or otherwise handled, all personnel involved in the operation have immediate access (e.g., direct or unimpeded access) to an internal alarm or emergency communication device, either directly or through visual or voice contact with another employee, unless such</p>

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	<p>a device is not required because the generation or accumulation area does not lend itself for safety reasons to have a particular kind of equipment.</p> <p>(NOTE: In the event there is just one employee on the premises while the facility is operating, the employee must have immediate access (e.g., direct or unimpeded access) to a device, such as a telephone (immediately available at the scene of operation) or a hand-held two-way radio, capable of summoning external emergency assistance, unless such a device is not required because the generation or accumulation area does not lend itself for safety reasons to have a particular kind of equipment.)</p> <p>Verify that sufficient aisle space is maintained to allow unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of the operation in an emergency unless aisle space is not needed for any of these purposes.</p> <p>Verify that the SQG has attempted to make arrangements with the local police department, fire department, other emergency response teams, emergency response contractors, equipment suppliers and local hospitals, taking into account the types and quantities of hazardous wastes handled at the facility.</p> <p>(NOTE: Arrangements may be made with the Local Emergency Planning Committee (LEPC), if it is determined to be the appropriate organization with which to make arrangements.)</p> <p>Verify that, as part of attempting to make arrangements with the local fire department, the SQG has determined the potential need for the services of the local police department, other emergency response teams, emergency response contractors, equipment suppliers and local hospitals.</p> <p>(NOTE: As part of this coordination, the SQG shall attempt to make arrangements, as necessary, to familiarize the above organizations with the layout of the facility, the properties of hazardous waste handled at the facility and associated hazards, places where facility personnel would normally be working, entrances to roads inside the facility, and possible evacuation routes as well as the types of injuries or illnesses that could result from fires, explosions, or releases at the facility.)</p> <p>Verify that, where more than one police or fire department might respond to an emergency, the SQG has attempted to make arrangements designating primary emergency authority to a specific fire or police department, and arrangements with any others to provide support to the primary emergency authority.</p> <p>Verify that a SQG maintains records documenting the arrangements with the local fire department as well as any other organization necessary to respond to an emergency and the documentation includes documentation in the operating record that either confirms such arrangements actively exist or, in cases where no arrangements exist, confirms that attempts to make such arrangements were made.</p>

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<b>HW.40.3.US.</b> SQGs must conduct inspections of central accumulation areas at least weekly (40 CFR 262.16(b)(2)(iv)) [Reviewed October 2001; Revised July 2006; Revised January 2007; Revised January 2017].	<p>(NOTE: A facility possessing 24-h response capabilities may seek a waiver from the authority having jurisdiction (AHJ) over the fire code within the facility's state or locality as far as needing to make arrangements with the local fire department as well as any other organization necessary to respond to an emergency, provided that the waiver is documented in the operating record.)</p> <p>Verify that central accumulation areas (i.e. 180-day storage areas) are inspected at least weekly.</p> <p>Verify that the SQG looks for leaking containers and for deterioration of containers caused by corrosion or other factors.</p>



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<p><b>SMALL QUANTITY GENERATORS (SQGs)</b></p> <p><b>HW.42. Drip Pads</b></p> <p><b>HW.42.1.US.</b> SQGs accumulating hazardous waste on drip pads must meet specific operational requirements (40 CFR 262.16(b)(4)(ii) and 262.16(b)(4)(iii)) <b>[Added January 2017]</b>.</p> <p><b>HW.42.2.US.</b> SQGs with existing drip pads must be assessed for integrity (40 CFR 262.16(b)(4)(i), 265.440(a), 265.440(c), and 265.441) <b>[Added January 2017]</b>.</p>	<p>(NOTE: According to 40 CFR 260.10, a “drip pad” is an engineered structure consisting of a curbed, free-draining base, constructed of non-earthen materials and designed to convey preservative kick-back or drippage from treated wood, precipitation, and surface water run-on to an associated collection system at wood preserving plants.)</p> <p>Verify that the SQG removes all wastes from the drip pad at least once every 90 days.</p> <p>(NOTE: Any hazardous wastes that are removed from the drip pad at least once every 90 days are then subject to the 180-day accumulation limit if hazardous wastes are being managed in satellite accumulation areas prior to being moved to the central accumulation area.)</p> <p>Verify that the SQG maintains on site at the facility the following records readily available for inspection:</p> <ul style="list-style-type: none"> <li>– a written description of procedures that are followed to ensure that all wastes are removed from the drip pad and associated collection system at least once every 90 days</li> <li>– documentation of each waste removal, including the quantity of waste removed from the drip pad and the sump or collection system and the date and time of removal.</li> </ul> <p>(NOTE: According to 40 CFR 260.10, a “drip pad” is an engineered structure consisting of a curbed, free-draining base, constructed of non-earthen materials and designed to convey preservative kick-back or drippage from treated wood, precipitation, and surface water run-on to an associated collection system at wood preserving plants.)</p> <p>(NOTE: The requirements of this checklist item apply to owners and operators of facilities that use new or existing drip pads to convey treated wood drippage, precipitation, and/or surface water run-off to an associated collection system. Existing drip pads are those constructed before 6 December 1990 and those for which the owner or operator has a design and has entered into binding financial or other agreements for construction prior to 6 December 1990. All other drip pads are new drip pads.)</p> <p>(NOTE: This checklist item does not apply to the management of infrequent and incidental drippage in storage yards provided that the owner or operator maintains</p>

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	<p>and complies with a written contingency plan that describes how the owner or operator will respond immediately to the discharge of such infrequent and incidental drippage and at a minimum, the contingency plan describes how the facility will do the following:</p> <ul style="list-style-type: none"> <li>– clean up the drippage</li> <li>– document the cleanup of the drippage</li> <li>– retain documents regarding cleanup for 3 yr</li> <li>– manage the contaminated media in a manner consistent with Federal regulations.)</li> </ul> <p>Verify that, for each existing drip pad, the owner or operator has evaluated the drip pad and determined if it meets all of the requirements of 40 CFR 265, Subpart W, except the requirements for liners and leak detection systems of 40 CFR 265.443(b).</p> <p>Verify that the owner or operator keeps on file at the facility a written assessment of the drip pad, reviewed and certified by a qualified Professional Engineer that attests to the results of the evaluation.</p> <p>Verify that the assessment is reviewed, updated, and re-certified annually until all upgrades, repairs, or modifications necessary to achieve compliance with all the standards of 40 CFR 265.443 are complete.</p> <p>Verify that the evaluation documents the extent to which the drip pad meets each of the design and operating standards of 40 CFR 265.443, except the standards for liners and leak detection systems, specified in 40 CFR 265.443(b).</p> <p>Verify that the owner or operator has a written plan for upgrading, repairing, and modifying the drip pad to meet the requirements of 40 CFR 265.443(b), and submits the plan to the Regional Administrator no later than 2 yr before the date that all repairs, upgrades, and modifications are complete.</p> <p>Verify that the written plan describes all changes to be made to the drip pad in sufficient detail to document compliance with all the requirements of 40 CFR 265.443.</p> <p>Verify that the plan is reviewed and certified by a qualified Professional Engineer.</p> <p>Verify that, upon completion of all repairs and modifications, the owner or operator submits to the Regional Administrator or State Director, the as-built drawings for the drip pad together with a certification by a qualified Professional Engineer attesting that the drip pad conforms to the drawings.</p> <p>Verify that, if the drip pad is found to be leaking or unfit for use, the owner or operator must comply with the provisions of 40 CFR 265.443(m) or close the drip pad in accordance with 40 CFR 265.445.</p>

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<p><b>HW.42.3.US.</b> New drip pads at SQGs must meet certain design and operating requirements when the owner/operator has chosen to comply with 40 CFR 265.443, except 265.443(a)(4)) (40 CFR 262.16(b)(4)(i), 265.440, 265.442(a), 265.443(a)(1) through 265.443(a)(3), 265.443(b) through 265.443(n)) <b>[Added January 2017]</b>.</p>	<p>(NOTE: According to 40 CFR 260.10, a “drip pad” is an engineered structure consisting of a curbed, free-draining base, constructed of non-earthen materials and designed to convey preservative kick-back or drippage from treated wood, precipitation, and surface water run-on to an associated collection system at wood preserving plants.)</p> <p>(NOTE: The requirements of this checklist item apply to owners and operators of facilities that use new or existing drip pads to convey treated wood drippage, precipitation, and/or surface water run-off to an associated collection system. Existing drip pads are those constructed before 6 December 1990 and those for which the owner or operator has a design and has entered into binding financial or other agreements for construction prior to 6 December 1990. All other drip pads are new drip pads.)</p> <p>(NOTE: This checklist item does not apply to the management of infrequent and incidental drippage in storage yards provided that the owner or operator maintains and complies with a written contingency plan that describes how the owner or operator will respond immediately to the discharge of such infrequent and incidental drippage and at a minimum, the contingency plan describes how the facility will do the following:</p> <ul style="list-style-type: none"> <li>– clean up the drippage</li> <li>– document the cleanup of the drippage</li> <li>– retain documents regarding cleanup for 3 yr</li> <li>– manage the contaminated media in a manner consistent with Federal regulations.)</li> </ul> <p>Verify that drip pads:</p> <ul style="list-style-type: none"> <li>– are constructed of non-earthen materials, excluding wood and non-structurally supported asphalt</li> <li>– are sloped to free-drain treated wood drippage, rain and other waters, or solutions of drippage and water or other wastes to the associated collection system</li> <li>– have a curb or berm around the perimeter.</li> </ul> <p>Verify that the owner or operator has obtained and keeps on file at the facility a written assessment of the drip pad, reviewed and certified by a qualified Professional Engineer that attests to the results of the evaluation.</p> <p>Verify that the assessment is reviewed, updated and recertified annually.</p> <p>Verify that the evaluation documents the extent to which the drip pad meets the applicable design and operating standards.</p> <p>Verify that the drip pad is of sufficient structural strength and thickness to prevent failure due to physical contact, climatic conditions, the stress of installation, and</p>

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	<p>the stress of daily operations, e.g., variable and moving loads such as vehicle traffic, movement of wood, etc.</p> <p>(NOTE: EPA will generally consider applicable standards established by professional organizations generally recognized by industry such as the American Concrete Institute (ACI) and the American Society of Testing Materials (ASTM) in judging the structural integrity requirement.)</p> <p>Verify that the drip pad has:</p> <ul style="list-style-type: none"> <li>– a synthetic liner installed below the drip pad that is designed, constructed, and installed to prevent leakage from the drip pad into the adjacent subsurface soil or groundwater or surface water at any time during the active life (including the closure period) of the drip pad, and: <ul style="list-style-type: none"> <li>– the liner is constructed of materials that will prevent waste from being absorbed into the liner and prevent releases into the adjacent subsurface soil or ground water or surface water during the active life of the facility</li> <li>– the liner is constructed of materials that have appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the waste or drip pad leakage to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation (including stresses from vehicular traffic on the drip pad)</li> <li>– the liner is placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the liner to prevent failure of the liner due to settlement, compression or uplift</li> <li>– the liner is installed to cover all surrounding earth that could come in contact with the waste or leakage</li> </ul> </li> <li>– a leakage detection system immediately above the liner that is designed, constructed, maintained and operated to detect leakage from the drip pad, and: <ul style="list-style-type: none"> <li>– the leakage detection system is constructed of materials that are chemically resistant to the waste managed in the drip pad and the leakage that might be generated; and of sufficient strength and thickness to prevent collapse under the pressures exerted by overlaying materials and by any equipment used at the drip pad</li> <li>– designed and operated to function without clogging through the scheduled closure of the drip pad</li> <li>– designed so that it will detect the failure of the drip pad or the presence of a release of hazardous waste or accumulated liquid at the earliest practicable time</li> </ul> </li> <li>– a leakage collection system immediately above the liner that is designed, constructed, maintained and operated to collect leakage from the drip pad such that it can be removed from below the drip pad.</li> </ul>

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	<p>(NOTE: The requirement to install a leak collection system applies only to those drip pads that are constructed after 24 December 1992 except for those constructed after 24 December 1992 for which the owner or operator has a design and has entered into binding financial or other agreements for construction prior to 24 December 1992.)</p> <p>Verify that the date, time, and quantity of any leakage collected in this system and removed is documented in the operating log.</p> <p>Verify that drip pads are maintained such that they remain free of cracks, gaps, corrosion, or other deterioration that could cause hazardous waste to be released from the drip pad.</p> <p>Verify that the drip pad and associated collection system are designed and operated to convey, drain, and collect liquid resulting from drippage or precipitation in order to prevent run-off.</p> <p>Verify that, unless protected by a structure or cover, the owner or operator designs, constructs, operates and maintains a run-on control system capable of preventing flow onto the drip pad during peak discharge from at least a 24-h, 25-yr storm unless the system has sufficient excess capacity to contain any run-on that might enter the system.</p> <p>Verify that, unless protected by a structure or cover, the owner or operator must design, construct, operate and maintain a run-off management system to collect and control at least the water volume resulting from a 24-h, 25-yr storm.</p> <p>Verify that the drip pad is must be evaluated to determine that it meets the requirements pertaining to construction and operation and the owner or operator must obtain a statement from a qualified Professional Engineer certifying that the drip pad design meets the applicable requirements.</p> <p>Verify that drippage and accumulated precipitation are removed from the associated collection system as necessary to prevent overflow onto the drip pad.</p> <p>Verify that the drip pad surface is cleaned thoroughly in a manner and frequency such that accumulated residues of hazardous waste or other materials are removed, with residues being properly managed as hazardous waste, so as to allow weekly inspections of the entire drip pad surface without interference or hindrance from accumulated residues of hazardous waste or other materials on the drip pad.</p> <p>Verify that the owner or operator documents the date and time of each cleaning and the cleaning procedure used in the facility's operating log.</p> <p>Verify that drip pads are operated and maintained in a manner to minimize tracking of hazardous waste or hazardous waste constituents off the drip pad as a result of activities by personnel or equipment.</p>

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	<p>Verify that, after being removed from the treatment vessel, treated wood from pressure and non-pressure processes is held on the drip pad until drippage has ceased.</p> <p>Verify that the owner or operator maintains records sufficient to document that all treated wood is held on the pad following treatment.</p> <p>Verify that collection and holding units associated with run-on and run-off control systems are emptied or otherwise managed as soon as possible after storms to maintain design capacity of the system.</p> <p>Verify that, throughout the active life of the drip pad, if the owner or operator detects a condition that may have caused or has caused a release of hazardous waste, the condition is repaired within a reasonably prompt period of time following discovery, in accordance with the following procedures, upon detection of a condition that may have caused or has caused a release of hazardous waste (e.g., upon detection of leakage by the leak detection system), the owner or operator:</p> <ul style="list-style-type: none"> <li>– enters a record of the discovery in the facility operating log</li> <li>– immediately remove the portion of the drip pad affected by the condition from service</li> <li>– determines what steps must be taken to repair the drip pad, remove any leakage from below the drip pad, and establish a schedule for accomplishing the clean up and repairs</li> <li>– within 24 h after discovery of the condition, notifies the Regional Administrator of the condition and, within 10 working days, provides a written notice to the Regional Administrator with a description of the steps that will be taken to repair the drip pad, and clean up any leakage, and the schedule for accomplishing this work.</li> </ul> <p>(NOTE: The Regional Administrator will review the information submitted, make a determination regarding whether the pad must be removed from service completely or partially until repairs and clean up are complete, and notify the owner or operator of the determination and the underlying rationale in writing.)</p> <p>Verify that, upon completing all repairs and clean up, the owner or operator notifies the Regional Administrator in writing and provides a certification, signed by an independent qualified, registered professional engineer, that the repairs and cleanup have been completed according to the written plan submitted.</p> <p>Verify that, the owner or operator maintains, as part of the facility operating log, documentation of past operating and waste handling practices, including identification of preservative formulations used in the past, a description of drippage management practices, and a description of treated wood storage and handling practices.</p>

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<p><b>HW.42.4.US.</b> New drip pads at SQGs must meet certain design and operating requirements when the owner/operator has chosen to comply with 40 CFR 265.443, except 265.443(b)) (40 CFR 262.16(b)(4)(i), 265.440, 265.442(a), 265.443(a), 265.443(c) through 265.443(n)) <b>[Added January 2017]</b>.</p>	<p>(NOTE: According to 40 CFR 260.10, a “drip pad” is an engineered structure consisting of a curbed, free-draining base, constructed of non-earthen materials and designed to convey preservative kick-back or drippage from treated wood, precipitation, and surface water run-on to an associated collection system at wood preserving plants.)</p> <p>(NOTE: The requirements of this checklist item apply to owners and operators of facilities that use new or existing drip pads to convey treated wood drippage, precipitation, and/or surface water run-off to an associated collection system. Existing drip pads are those constructed before 6 December 1990 and those for which the owner or operator has a design and has entered into binding financial or other agreements for construction prior to 6 December 1990. All other drip pads are new drip pads.)</p> <p>(NOTE: This checklist item does not apply to the management of infrequent and incidental drippage in storage yards provided that the owner or operator maintains and complies with a written contingency plan that describes how the owner or operator will respond immediately to the discharge of such infrequent and incidental drippage and at a minimum, the contingency plan describes how the facility will do the following:</p> <ul style="list-style-type: none"> <li>– clean up the drippage</li> <li>– document the cleanup of the drippage</li> <li>– retain documents regarding cleanup for 3 yr</li> <li>– manage the contaminated media in a manner consistent with Federal regulations.)</li> </ul> <p>Verify that drip pads:</p> <ul style="list-style-type: none"> <li>– are constructed of non-earthen materials, excluding wood and non-structurally supported asphalt</li> <li>– are sloped to free-drain treated wood drippage, rain and other waters, or solutions of drippage and water or other wastes to the associated collection system</li> <li>– have a curb or berm around the perimeter.</li> </ul> <p>Verify that the drip pad has a hydraulic conductivity of less than or equal to <math>1 \times 10^{-7}</math> centimeters per second, (e.g., existing concrete drip pads must be sealed, coated, or covered with a surface material with a hydraulic conductivity of less than or equal to <math>1 \times 10^{-7}</math> centimeters per second) such that the entire surface where drippage occurs or may run across is capable of containing such drippage and mixtures of drippage and precipitation, materials, or other wastes while being routed to an associated collection system.</p> <p>Verify that the surface material is maintained free of cracks and gaps that could adversely affect its hydraulic conductivity, and the material is chemically compatible with the preservatives that contact the drip pad.</p>

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	<p>Verify that the owner or operator has obtained and keeps on file at the facility a written assessment of the drip pad, reviewed and certified by a qualified Professional Engineer that attests to the results of the evaluation.</p> <p>Verify that the assessment is reviewed, updated and recertified annually.</p> <p>Verify that the evaluation documents the extent to which the drip pad meets the applicable design and operating standards.</p> <p>Verify that the drip pad is of sufficient structural strength and thickness to prevent failure due to physical contact, climatic conditions, the stress of installation, and the stress of daily operations, e.g., variable and moving loads such as vehicle traffic, movement of wood, etc.</p> <p>(NOTE: EPA will generally consider applicable standards established by professional organizations generally recognized by industry such as the American Concrete Institute (ACI) and the American Society of Testing Materials (ASTM) in judging the structural integrity requirement.)</p> <p>Verify that drip pads are maintained such that they remain free of cracks, gaps, corrosion, or other deterioration that could cause hazardous waste to be released from the drip pad.</p> <p>Verify that the drip pad and associated collection system are designed and operated to convey, drain, and collect liquid resulting from drippage or precipitation in order to prevent run-off.</p> <p>Verify that, unless protected by a structure or cover, the owner or operator designs, constructs, operates and maintains a run-on control system capable of preventing flow onto the drip pad during peak discharge from at least a 24-hour, 25-year storm unless the system has sufficient excess capacity to contain any run-on that might enter the system.</p> <p>Verify that, unless protected by a structure or cover, the owner or operator must design, construct, operate and maintain a run-off management system to collect and control at least the water volume resulting from a 24-h, 25-yr storm.</p> <p>Verify that the drip pad is evaluated to determine that it meets the requirements pertaining to construction and operation and the owner or operator must obtain a statement from a qualified Professional Engineer certifying that the drip pad design meets the applicable requirements.</p> <p>Verify that drippage and accumulated precipitation are removed from the associated collection system as necessary to prevent overflow onto the drip pad.</p>

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	<p>Verify that the drip pad surface is cleaned thoroughly in a manner and frequency such that accumulated residues of hazardous waste or other materials are removed, with residues being properly managed as hazardous waste, so as to allow weekly inspections of the entire drip pad surface without interference or hindrance from accumulated residues of hazardous waste or other materials on the drip pad.</p> <p>Verify that the owner or operator documents the date and time of each cleaning and the cleaning procedure used in the facility's operating log.</p> <p>Verify that drip pads are operated and maintained in a manner to minimize tracking of hazardous waste or hazardous waste constituents off the drip pad as a result of activities by personnel or equipment.</p> <p>Verify that, after being removed from the treatment vessel, treated wood from pressure and non-pressure processes is held on the drip pad until drippage has ceased.</p> <p>Verify that the owner or operator maintains records sufficient to document that all treated wood is held on the pad following treatment.</p> <p>Verify that collection and holding units associated with run-on and run-off control systems are emptied or otherwise managed as soon as possible after storms to maintain design capacity of the system.</p> <p>Verify that, throughout the active life of the drip pad, if the owner or operator detects a condition that may have caused or has caused a release of hazardous waste, the condition is repaired within a reasonably prompt period of time following discovery, in accordance with the following procedures, upon detection of a condition that may have caused or has caused a release of hazardous waste (e.g., upon detection of leakage by the leak detection system), the owner or operator:</p> <ul style="list-style-type: none"> <li>– enters a record of the discovery in the facility operating log</li> <li>– immediately remove the portion of the drip pad affected by the condition from service</li> <li>– determines what steps must be taken to repair the drip pad, remove any leakage from below the drip pad, and establish a schedule for accomplishing the clean up and repairs</li> <li>– within 24 h after discovery of the condition, notifies the Regional Administrator of the condition and, within 10 working days, provides a written notice to the Regional Administrator with a description of the steps that will be taken to repair the drip pad, and clean up any leakage, and the schedule for accomplishing this work.</li> </ul> <p>(NOTE: The Regional Administrator will review the information submitted, make a determination regarding whether the pad must be removed from service completely or partially until repairs and clean up are complete, and notify the owner or operator of the determination and the underlying rationale in writing.)</p>

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<b>HW.42.5.US.</b> SQG drip pads must be inspected according to specific parameters (40 CFR 262.16(b)(4)(i), 265.440, and 265.444) [Added January 2017].	<p>Verify that, upon completing all repairs and clean up, the owner or operator notifies the Regional Administrator in writing and provide a certification, signed by an independent qualified, registered professional engineer, that the repairs and clean up have been completed according to the written plan submitted.</p> <p>Verify that, the owner or operator maintains, as part of the facility operating log, documentation of past operating and waste handling practices, including identification of preservative formulations used in the past, a description of drippage management practices, and a description of treated wood storage and handling practices.</p> <p>(NOTE: According to 40 CFR 260.10, a “drip pad” is an engineered structure consisting of a curbed, free-draining base, constructed of non-earthen materials and designed to convey preservative kick-back or drippage from treated wood, precipitation, and surface water run-on to an associated collection system at wood preserving plants.)</p> <p>(NOTE: The requirements of this checklist item apply to owners and operators of facilities that use new or existing drip pads to convey treated wood drippage, precipitation, and/or surface water run-off to an associated collection system. Existing drip pads are those constructed before 6 December 1990 and those for which the owner or operator has a design and has entered into binding financial or other agreements for construction prior to 6 December 1990. All other drip pads are new drip pads.)</p> <p>(NOTE: This checklist item does not apply to the management of infrequent and incidental drippage in storage yards provided that the owner or operator maintains and complies with a written contingency plan that describes how the owner or operator will respond immediately to the discharge of such infrequent and incidental drippage and at a minimum, the contingency plan describes how the facility will do the following:</p> <ul style="list-style-type: none"> <li>– clean up the drippage</li> <li>– document the cleanup of the drippage</li> <li>– retain documents regarding cleanup for 3 yr</li> <li>– manage the contaminated media in a manner consistent with Federal regulations.)</li> </ul> <p>Verify that, during construction or installation, liners and cover systems (e.g., membranes, sheets, or coatings) are inspected for uniformity, damage and imperfections (e.g., holes, cracks, thin spots, or foreign materials).</p> <p>Verify that, immediately after construction or installation, liners are inspected and certified as meeting the requirements of 40 CFR 265.443 by a qualified Professional Engineer.</p> <p>Verify that the certification is maintained at the facility as part of the facility operating record.</p>

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<p><b>HW.42.6.US.</b> The closure of SQG drip pads must be done according to specific criteria (40 CFR 262.16(b)(4)(i), 265.440, 265.445(a), and 265.445(b)) [Added January 2017].</p>	<p>Verify that, after installation, liners and covers are inspected to ensure tight seams and joints and the absence of tears, punctures, or blisters.</p> <p>Verify that, while a drip pad is in operation, it is inspected weekly and after storms to detect evidence of any of the following:</p> <ul style="list-style-type: none"> <li>– deterioration, malfunctions or improper operation of run-on and run-off control systems</li> <li>– the presence of leakage in and proper functioning of leakage detection system</li> <li>– deterioration or cracking of the drip pad surface.</li> </ul> <p>(NOTE: According to 40 CFR 260.10, a “drip pad” is an engineered structure consisting of a curbed, free-draining base, constructed of non-earthen materials and designed to convey preservative kick-back or drippage from treated wood, precipitation, and surface water run-on to an associated collection system at wood preserving plants.)</p> <p>(NOTE: The requirements of this checklist item apply to owners and operators of facilities that use new or existing drip pads to convey treated wood drippage, precipitation, and/or surface water run-off to an associated collection system. Existing drip pads are those constructed before 6 December 1990 and those for which the owner or operator has a design and has entered into binding financial or other agreements for construction prior to 6 December 1990. All other drip pads are new drip pads.)</p> <p>(NOTE: This checklist item does not apply to the management of infrequent and incidental drippage in storage yards provided that the owner or operator maintains and complies with a written contingency plan that describes how the owner or operator will respond immediately to the discharge of such infrequent and incidental drippage and at a minimum, the contingency plan describes how the facility will do the following:</p> <ul style="list-style-type: none"> <li>– clean up the drippage</li> <li>– document the cleanup of the drippage</li> <li>– retain documents regarding cleanup for 3 yr</li> <li>– manage the contaminated media in a manner consistent with Federal regulations.)</li> </ul> <p>Verify that, at closure, the owner or operator removes or decontaminates all waste residues, contaminated containment system components (pad, liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leakage, and manages them as hazardous waste.</p> <p>Verify that, if, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment, the owner or operator finds that</p>

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	<p>not all contaminated subsoils can be practically removed or decontaminated, the owner/operator closes the facilities and performs post-closure care in accordance with closure and post-closure care requirements that apply to landfills.</p> <p>(NOTE: For permitted units, the requirement to have a permit continues throughout the post-closure period.)</p>

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<p><b>SMALL QUANTITY GENERATORS (SQGs)</b></p> <p><b>HW.43.</b> <b>Containment Buildings</b></p> <p><b>HW.43.1.US.</b> SQGs with hazardous waste containment buildings must meet certain management requirements (40 CFR 262.16(b)(5)) [Added January 2017].</p>	<p>(NOTE: According to the Background Information published on page 37211 of the 18 August 1992 edition of the Federal Register, a hazardous waste containment building involves “the management of a hazardous waste inside a unit designed and operated to contain the hazardous waste within the unit”. This is not a building that holds drums or tanks filled with hazardous waste but a building that holds the hazardous waste itself.)</p> <p>Verify that SQGs label containment buildings with the words “Hazardous Waste” in a conspicuous place easily visible to employees, visitors, emergency responders, waste handlers, or other persons on site.</p> <p>Verify that SQGs also provide, in a conspicuous place, an indication of the hazards of the contents (examples include, but are not limited to, the applicable hazardous waste characteristic(s) (<i>i.e.</i>, ignitable, corrosive, reactive, toxic); hazard communication consistent with the DoT requirements at 49 CFR 172 subpart E (labeling) or subpart F (placarding); a hazard statement or pictogram consistent with the OSHA Hazard Communication Standard at 29 CFR 1910.1200; or a chemical hazard label consistent with the NFPA code 704.</p> <p>Verify that the SQG also maintains the professional engineer certification that the building complies with the design standards specified in 40 CFR 265.1101.</p> <p>(NOTE: This certification must be in the SQGs files prior to operation of the unit.)</p> <p>Verify that the SQG maintains one of the following records by use of inventory logs, monitoring equipment, or any other effective means:</p> <ul style="list-style-type: none"> <li>– a written description of procedures to ensure that each waste volume remains in the unit for no more than 90 days, a written description of the waste generation and management practices for the facility showing that the generator is consistent with maintaining the 90 day limit, and documentation that the procedures are complied with</li> <li>– documentation that the unit is emptied at least once every 90 days</li> <li>– inventory logs or records with the above information must be maintained on site and readily available for inspection.</li> </ul>
<p><b>HW.43.2.US.</b> SQGs with containment buildings that are in compliance are not subject</p>	<p>(NOTE: According to the Background Information published on page 37211 of the 18 August 1992 edition of the Federal Register, a hazardous waste containment building involves “the management of a hazardous waste inside a unit designed and</p>

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<p>to the definition of land disposal if specific requirements are met (40 CFR 262.16(b)(5) and 265.1100) [Added January 2017].</p> <p><b>HW.43.3.US.</b> SQG containment buildings are required to be designed according to specific standards (40 CFR 262.16(b)(5), 265.1101(a)(1) through 265.1101(a)(2), 265.1101(a)(4), and 265.1101(b)) [Added January 2017].</p>	<p>operated to contain the hazardous waste within the unit”. This is not a building that holds drums or tanks filled with hazardous waste but a building that holds the hazardous waste itself.)</p> <p>Verify that the containment building meets the following:</p> <ul style="list-style-type: none"> <li>– it is a completely enclosed, self-supporting structure that is designed and constructed of manmade materials of sufficient strength and thickness to support themselves, the waste contents, and any personnel and heavy equipment that operate within the unit</li> <li>– it is designed to prevent failure due to pressure gradients, settlement, compression or uplift, physical contact with the hazardous wastes, climatic conditions, and the stress of daily operations</li> <li>– it has a primary barrier that is designed to be sufficiently durable to withstand the movement of personnel, wastes, and handling of equipment within the unit</li> <li>– if the unit is used to manage liquids: <ul style="list-style-type: none"> <li>– there is a primary barrier designed and constructed of materials to prevent migration of hazardous constituents into the barrier</li> <li>– there is a liquid collection system designed and constructed of materials to minimize the accumulation of liquid on the primary barrier</li> <li>– there is a secondary containment system designed and constructed of materials to prevent migration of hazardous constituents into the barrier, with a leak detection and liquid collection system capable of detecting, collecting, and removing leaks of hazardous constituents at the earliest practicable time</li> </ul> </li> <li>– it has controls sufficient to prevent fugitive dust emissions</li> <li>– it is designed and operated to ensure containment and prevent the tracking of materials from the unit by personnel and equipment.</li> </ul> <p>(NOTE: According to the Background Information published on page 37211 of the 18 August 1992 edition of the Federal Register, a hazardous waste containment building involves “the management of a hazardous waste inside a unit designed and operated to contain the hazardous waste within the unit”. This is not a building that holds drums or tanks filled with hazardous waste but a building that holds the hazardous waste itself.)</p> <p>Verify that the containment building meet the following design standards:</p> <ul style="list-style-type: none"> <li>– it is completely enclosed with a floor, walls, and a roof to prevent exposure to the elements and to assure containment of wastes</li> <li>– the floor and containment walls, including any required secondary containment system, are designed and constructed of man-made materials of sufficient strength and thickness to support themselves, the waste contents, and any personnel and heavy equipment that operate within the unit</li> </ul>

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	<ul style="list-style-type: none"> <li>– it is designed to prevent failure due to pressure gradients, settlement, compression or uplift, physical contact with the hazardous wastes, climatic conditions, and the stress of daily operations</li> <li>– it has sufficient structural strength to prevent collapse or other failure</li> <li>– all surfaces in contact with hazardous wastes are compatible with the wastes</li> <li>– it has a primary barrier that is designed to be sufficiently durable to withstand the movement of personnel, wastes, and handling of equipment within the unit and is appropriate for the chemical and physical characteristics of the waste.</li> </ul> <p>Verify that, if the containment building is going to manage hazardous wastes with free liquids or be treated with free liquids, the following design requirements are also met:</p> <ul style="list-style-type: none"> <li>– there is a primary barrier designed and constructed of materials to prevent migration of hazardous constituents into the barrier (e.g., a geomembrane covered by a concrete wear surface)</li> <li>– there is a liquid collection and removal system designed and constructed of materials to minimize the accumulation of liquid on the primary barrier: <ul style="list-style-type: none"> <li>– the primary barrier is sloped to drain liquids to the associated collection system</li> <li>– liquids and wastes are collected and removed to minimize hydraulic head on the containment system at the earliest practicable time</li> </ul> </li> <li>– there is a secondary containment system, including a secondary barrier, designed and constructed of materials to prevent migration of hazardous constituents into the barrier, with a leak detection and liquid collection system capable of detecting, collecting, and removing leaks of hazardous constituents at the earliest practicable time</li> <li>– the leak detection component of the secondary containment system meets the following: <ul style="list-style-type: none"> <li>– it is constructed with a bottom slope of 1 percent or more</li> <li>– it is constructed of a granular drainage material with a hydraulic conductivity of <math>1 \times 10^{-2}</math> cm/s or more and a thickness of 12 in. (30.5 cm) or more, or constructed of synthetic or geonet drainage materials with a transmissivity of <math>3 \times 10^{-5}</math> m<sup>2</sup>/s or more</li> </ul> </li> <li>– if treatment is to be conducted in the building, the treatment area is designed to prevent the release of liquids, wet materials, or liquid aerosols to other portions of the building</li> <li>– the secondary containment system is constructed of materials that are chemically resistant to the waste and liquids managed in the building and of sufficient strength and thickness to prevent collapse under pressure exerted by overlaying materials and by any equipment used.</li> </ul> <p>(NOTE: An exception to the structural strength requirement may be made for light-weight doors and windows based on the nature of the waste management operations if the following criteria are met:</p>

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<p><b>HW.43.4.US.</b> SQGs must operate containment buildings according to specific standards (40 CFR 262.16(b)(5), 265.1101(a)(3), 265.1101(c)(1), and 265.1101(c)(4)) <b>[Added January 2017]</b>.</p>	<ul style="list-style-type: none"> <li>– the doors and windows provide an effective barrier against fugitive dust emissions</li> <li>– the unit is designed and operated in a manner that ensures the waste will not come in contact with the doors or windows.)</li> </ul> <p>(NOTE: A containment building can serve as an external liner or a secondary containment system for tanks within the building if:</p> <ul style="list-style-type: none"> <li>– it meets the requirements of 265.193(e)(1) (see Storage Tank Management)</li> <li>– it meets the requirements of 265.193(b), 265.193(c)(1), and 265.193(c)(2) (see Storage Tank Management.)</li> </ul> <p>(NOTE: According to the Background Information published on page 37211 of the 18 August 1992 edition of the Federal Register, a hazardous waste containment building involves “the management of a hazardous waste inside a unit designed and operated to contain the hazardous waste within the unit”. This is not a building that holds drums or tanks filled with hazardous waste but a building that holds the hazardous waste itself.)</p> <p>Verify that incompatible wastes or treatment reagents are not placed in the building or its secondary containment system if they could cause the unit or the secondary containment system to leak, corrode, or otherwise fail.</p> <p>Verify that the following operational procedures are done:</p> <ul style="list-style-type: none"> <li>– controls and practices are used to ensure the containment of the waste within the building</li> <li>– the primary barrier is maintained so it is free of significant cracks, gaps, corrosion, or other deterioration that could cause hazardous waste to be released from the primary barrier</li> <li>– the level of the stored/treated hazardous waste is maintained so the height of any containment wall is not exceeded</li> <li>– measures are implemented to prevent the tracking of hazardous waste out of the unit by personnel or equipment used in the handling of the waste</li> <li>– there is a designated area for the decontamination of equipment and collection of rinsate</li> <li>– any collected rinsate is managed as needed according to its constituents</li> <li>– measures are implemented to control fugitive dust emissions so that no openings exhibit visible emissions</li> <li>– particulate collection devices are maintained and operated according to sound air pollution control practices.</li> </ul> <p>Verify that SQGs inspect and record in the facility operating record, at least once every seven days, data gathered from monitoring and leak detection equipment as well as the containment building and the area immediately surrounding the containment building</p>

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<p><b>HW.43.5.US.</b> SQG Containment buildings are required to be certified by a registered professional engineer (40 CFR 262.16(b)(5) and 265.1101(c)(2)) <b>[Added January 2017]</b>.</p> <p><b>HW.43.6.US.</b> Leaks in SQG containment buildings must be repaired and reported (40 CFR 262.16(b)(5) and 265.1101(c)(3)) <b>[Added January 2017]</b>.</p> <p><b>HW.43.7.US.</b> Containment buildings at SQGs that contain both areas with and without secondary containment must meet specific requirements (40 CFR 262.16(b)(5) and 265.1101(d)) <b>[Added January 2017]</b>.</p>	<p>Verify that there is a written description of procedures to ensure that waste does not remain in the building for more than 90 days.</p> <p>Verify that there is documentation that the waste does not remain for more than 90 days.</p> <p>Verify that the building has been certified by reviewing the documentation.</p> <p>(NOTE: According to the Background Information published on page 37211 of the 18 August 1992 edition of the Federal Register, a hazardous waste containment building involves “the management of a hazardous waste inside a unit designed and operated to contain the hazardous waste within the unit”. This is not a building that holds drums or tanks filled with hazardous waste but a building that holds the hazardous waste itself.)</p> <p>Verify that, if a condition is detected which could lead to a leak or has already caused a leak, it is repaired promptly.</p> <p>Verify that, when a leak is discovered:</p> <ul style="list-style-type: none"> <li>– the discovery is recorded in the operating record</li> <li>– the portion of the containment building that is affected is immediately removed from service</li> <li>– a cleanup and repair schedule is established</li> <li>– within 7 days the Regional Administrator is notified and within 14 working days written notice is provided to the Regional Administrator</li> <li>– the Regional Administrator is notified upon the completion of all repairs, and that certification from a registered professional engineer is also submitted.</li> </ul> <p>(NOTE: According to the Background Information published on page 37211 of the 18 August 1992 edition of the Federal Register, a hazardous waste containment building involves “the management of a hazardous waste inside a unit designed and operated to contain the hazardous waste within the unit”. This is not a building that holds drums or tanks filled with hazardous waste but a building that holds the hazardous waste itself.)</p> <p>Verify that each area is designed and operated according to the appropriate requirements.</p> <p>Verify that measures are taken to prevent the release of liquids or wet materials into areas without secondary containment.</p> <p>Verify that a written description is maintained in the operating log of operating procedures used to maintain the integrity of areas without secondary containment.</p>

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<p><b>HW.43.8.US.</b> When a containment building at an SQG is closed, specific requirements must be met (40 CFR 262.16(b)(5) and 265.1102) [Added January 2017].</p>	<p>(NOTE: According to the Background Information published on page 37211 of the 18 August 1992 edition of the Federal Register, a hazardous waste containment building involves “the management of a hazardous waste inside a unit designed and operated to contain the hazardous waste within the unit”. This is not a building that holds drums or tanks filled with hazardous waste but a building that holds the hazardous waste itself.)</p> <p>Determine if a containment building has been closed recently.</p> <p>Verify that, at closure, all waste residues, contaminated containment system components, contaminated subsoils, and structures and equipment contaminated with waste and leachate were removed or decontaminated.</p> <p>Verify that the containment building is closed in accordance with closure and post-closure requirements for TSDFs as outlined in the sections titled Closure and Documentation Requirements.</p> <p>Verify that, if it is found that not all contaminated subsoils can be practicably removed or decontaminated, the site is closed and landfill postclosure requirements are implemented.</p> <p>(NOTE: According to the Background Information published on page 37211 of the 18 August 1992 edition of the Federal Register, a hazardous waste containment building involves “the management of a hazardous waste inside a unit designed and operated to contain the hazardous waste within the unit”. This is not a building that holds drums or tanks filled with hazardous waste but a building that holds the hazardous waste itself.)</p>

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<p><b>SMALL QUANTITY GENERATORS (SQGs)</b></p> <p><b>HW.45.</b> <b>Disposal of Restricted Wastes</b></p> <p><b>HW.45.1.US.</b> SQGs must test their wastes or use process knowledge to determine if they are restricted from land disposal (40 CFR 262.16(b)(7) and 268.7(a)(1)) <b>[Revised June 1998; Reviewed October 2001; Revised July 2006; Citation Revised January 2017].</b></p> <p><b>HW.45.2.US.</b> When an SQG is managing a restricted waste; a written notice must be issued to the TSDF of the appropriate treatment standards and prohibition levels (40 CFR 262.16(b)(7), 268.7(a)(2) through 268.7(a)(4), 268.7(a)(10)) <b>[Revised January 2000; Revised October 2001; Revised July</b></p>	<p>(NOTE: See Appendix 4-7 for a summary of recordkeeping and notification requirements.)</p> <p>Determine whether the SQG determines if wastes have to be treated prior to disposal.</p> <p>(NOTE: Determination can be made by testing the waste or using knowledge of the waste. Determination can be made concurrently with the hazardous waste determination.)</p> <p>Determine if land disposal restricted wastes are generated by reviewing test results (see Appendix 4-8).</p> <p>Verify that, if the SQG does not do the determination, the waste is sent to a RCRA-permitted hazardous waste treatment facility where the waste treatment facility tests the waste according to 40 CFR 264.13 (see checklist item HW.145.1.US) and 268.7(b) (see text).</p> <p>(NOTE: If a generator determines they are managing a waste or soils contaminated with a waste, that displays a hazardous characteristic of ignitability, corrosivity, reactivity, or toxicity, they must comply with the special requirements of 40 CFR 268.9 in addition to any applicable requirements in 40 CFR 268.7.)</p> <p>(NOTE: See Appendix 4-7 for a summary of recordkeeping and notification requirements.)</p> <p>Verify that, if the waste or contaminated soil does not meet the treatment standards, or if the generator chooses not to make the determination of whether his waste must be treated, with the initial shipment of waste to each treatment or storage facility, the generator sends a one-time written notice to each treatment or storage facility receiving the waste, and places a copy in the file.</p> <p>Verify that the notice includes the following information:</p> <ul style="list-style-type: none"> <li>– EPA Hazardous Waste Numbers and Manifest Number of first shipment</li> <li>– statement: this waste is not prohibited from land disposal</li> </ul>

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<p><b>2006; Citation Revised January 2017].</b></p>	<ul style="list-style-type: none"> <li>– the waste is subject to the LDRs, the constituents of concern for F001-F005, and F039, and underlying hazardous constituents in characteristic wastes, unless the waste will be treated and monitored for all constituents (NOTE: If all constituents will be treated and monitored, there is no need to put them all on the LDR notice.)</li> <li>– the applicable wastewater/nonwastewater category (see 40 CFR 268.2(d) and(f)) and subdivisions made within a waste code based on waste-specific criteria (such as D003 reactive cyanide)</li> <li>– waste analysis data (when available)</li> <li>– date the waste is subject to the prohibition</li> <li>– for hazardous debris, when treating with the alternative treatment technologies provided by 40 CFR 268.45: the contaminants subject to treatment, as described in 40 CFR 268.45(b); and an indication that these contaminants are being treated to comply with 40 CFR 268.45</li> <li>– for contaminated soil subject to LDRs as provided in 40 CFR 268.49(a), the constituents subject to treatment as described in 40 CFR 268.49(d), and the following statement: This contaminated soil [does/does not] contain listed hazardous waste and [does/does not] exhibit a characteristic of hazardous waste and [is subject to/complies with the soil treatment standards as provided by 40 CFR 268.49(c) or the universal treatment standards.</li> </ul> <p>Verify that, if the generator chooses not to make the determination of whether the waste must be treated, the notification includes the EPA Hazardous Waste Numbers and Manifest Number of the first shipment and states “This hazardous waste may or may not be subject to the LDR treatment standards. The treatment facility must make the determination.”</p> <p>(NOTE: No further notification is necessary until such time that the waste or facility change, in which case a new notification must be sent and a copy placed in the generator's file.)</p> <p>Verify that, for waste or contaminated soil which meets the treatment standard at the original point of generation, the notice includes:</p> <ul style="list-style-type: none"> <li>– USEPA hazardous waste numbers and manifest number of first shipment</li> <li>– the waste is subject to the LDRs (NOTE: The notice must also include constituents of concern for F001-F005, and F039, and underlying hazardous constituents in characteristic wastes, unless the waste will be treated and monitored for all constituents. If all constituents will be treated and monitored, there is no need to put them all on the LDR notice.)</li> <li>– the applicable wastewater/nonwastewater category (see 40 CFR 268.2(d) and 268.2(f)) and subdivisions made within a waste code based on waste-specific criteria (such as D003 reactive cyanide)</li> <li>– waste analysis data</li> <li>– for contaminated soil subject to LDRs as provided in 40 CFR 268.49(a), the constituents subject to treatment as described in 40 CFR 268.49(d), and the</li> </ul>

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<p><b>HW.45.3.US.</b> SQGs that are managing hazardous wastes in tanks, containers, or containment buildings and treating the waste to meet applicable treatment standards must develop and follow a written waste analysis plan (40 CFR 262.16(b)(7), 268.7(a)(5) and 268.7(a)(10)) <b>[Citation Revised June 1998;</b></p>	<p>following statement: “This contaminated soil [does/does not] contain listed hazardous waste and [does/does not] exhibit a characteristic of hazardous waste and [is subject to/complies with the soil treatment standards as provided by 40 CFR 268.49(c) or the universal treatment standards”</p> <ul style="list-style-type: none"> <li>– the signature of an authorized representative certifying that the waste complies with the treatment standards of 40 CFR 268 (the text of the required certification statement can be found in 40 CFR 268.7(a)(3)(i).)</li> </ul> <p>Verify that, for waste or contaminated soil that meets the treatment standard at the original point of generation, if the waste changes, the generator sends a new notice and certification to the receiving facility and placed a copy in their files.</p> <p>(NOTE: Generators of hazardous debris excluded from the definition of hazardous waste under 40 CFR 261.3(f) are not subject to the requirements for waste or contaminated soil which meets the treatment standard at the original point of generation.)</p> <p>Verify that, for restricted waste subject to an exemption from a prohibition of the type of land disposal used, the notice states that the waste is not prohibited from land disposal and includes:</p> <ul style="list-style-type: none"> <li>– USEPA hazardous waste numbers and manifest number of first shipment</li> <li>– statement: this waste is not prohibited from land disposal</li> <li>– waste analysis data, when available</li> <li>– date the waste is subject to the prohibition</li> <li>– for hazardous debris, when treating with the alternative treatment technologies provided by 40 CFR 268.45: the contaminants subject to treatment, as described in 40 CFR 268.45(b); and an indication that these contaminants are being treated to comply with 40 CFR 268.45.</li> </ul> <p>(NOTE: SQGs with tolling agreements are required to comply with notification and certification requirements for the initial shipment of waste subject to the agreement. The SQG will retain an on-site copy of the notification and certification along with the tolling agreement for at least three years after the termination or expiration of the agreement.)</p> <p>Verify that if a SQG is managing and treating prohibited waste or contaminated soil in tanks, containers, or containment buildings to meet applicable LDR treatment standards, the SQG has developed and follows a written waste analysis plan which describes the procedures they will carry out to comply with treatment standards.</p> <p>(NOTE: SQGs treating hazardous debris under the alternative treatment standards in Table 1 of 40 CFR 268.7(a)(4) are not required to conduct waste analysis.)</p> <p>Verify that the plan is kept onsite and:</p>

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<p><b>Reviewed October 2001; Revised January 2017].</b></p>	<ul style="list-style-type: none"> <li>– the plan is based on a detailed chemical and physical analysis of representative sample of the prohibited waste being treated</li> <li>– contains all information necessary to treat the wastes in accordance with regulatory requirements, including the selected testing frequency</li> <li>– the plan is filed with the USEPA Regional Administrator or state-authorized official at least 30 days prior to the treatment activity, with delivery verified.</li> </ul> <p>(NOTE: SQGs with tolling agreements are required to comply with notification and certification requirements for the initial shipment of waste subject to the agreement. The SQG will retain an onsite copy of the notification and certification along with the tolling agreement for at least 3 yr after the termination or expiration of the agreement.)</p> <p>(NOTE: See text of 40 CFR 268, Appendix X [www.ecfr.gov] for a summary of recordkeeping and notification requirements.)</p>
<p><b>HW.45.4.US.</b> SQGs are required to keep specific documents pertaining to restricted wastes onsite (40 CFR 262.16(b)(7), 268.7(a)(4) through 268.7(a)(7) and 268.7(a)(10)) <b>[Revised June 1998; Citation Revised October 2001; Revised January 2017].</b></p>	<p>Verify that, if generator knowledge is used to determine whether a waste or contaminated soil meets land disposal restriction requirements, the supporting data used in making this determination is retained onsite in the operating files.</p> <p>Verify that, when it is determined whether a waste or contaminated soil is restricted using appropriate test methods, the waste analysis data are retained onsite in the files.</p> <p>Verify that, when managing a prohibited waste that is excluded from the definition of a hazardous waste or solid waste or exempt from RCRA Subtitle C, a one-time notice is placed in the files stating that the generated waste is excluded.</p> <p>Verify that a copy of all notices, certifications, demonstrations, waste analysis data, and other documentation is kept for at least 3 yr from the date the waste was last sent to onsite or offsite treatment, storage, or disposal.</p> <p>Verify that SQGs with a tolling agreement retain the agreement and copies of notification and certification for at least 3 yr after the agreement expires.</p> <p>(NOTE: See text of 40 CFR 268, Appendix X [www.ecfr.gov] for a summary of recordkeeping and notification requirements.)</p>
<p><b>HW.45.5.US.</b> The storage of hazardous waste that is restricted from land disposal is not allowed unless specific conditions are met (40 CFR 262.16(b)(7) and 268.50)</p>	<p>Verify that land-disposal restricted waste is not stored at the SQG unless the SQG is storing the wastes in tanks, containers, or containment buildings in order to accumulate the necessary quantities for proper recovery, treatment, or disposal.</p> <p>Verify that each container is clearly marked to identify its contents with:</p> <ul style="list-style-type: none"> <li>– the words “Hazardous Waste”</li> <li>– the applicable EPA hazardous waste number(s)</li> </ul>

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<p><b>[Reviewed October 2001; Revised January 2017].</b></p>	<ul style="list-style-type: none"> <li>– an indication of the hazards of the contents; examples include, but are not limited to:               <ul style="list-style-type: none"> <li>– the applicable hazardous waste characteristic(s) (i.e., ignitable, corrosive, reactive, toxic)</li> <li>– hazard communication consistent with the Department of Transportation requirements at 49 CFR 172 subpart E (labeling) or subpart F (placarding)</li> <li>– a hazard statement or pictogram consistent with the OSHA Hazard Communication Standard at 29 CFR 1910.1200</li> <li>– a chemical hazard label consistent with the NFPA code 704</li> </ul> </li> <li>– the date each period of accumulation begins.</li> </ul> <p>(NOTE: The prohibition on storage does not apply to hazardous wastes that have met treatment standards.)</p> <p>Verify that liquid hazardous wastes containing PCBs at concentrations greater than 50 ppm are stored at a site that meets the requirements of 40 CFR 761.65(b) (see the section of the U.S. TEAM Guide titled Toxic Substances Management) and is removed from storage within 1 yr of the date it was first placed into storage.</p> <p>(NOTE: See text of 40 CFR 268, Appendix X [<a href="http://www.ecfr.gov">www.ecfr.gov</a>] for a summary of recordkeeping and notification requirements.)</p>



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<b>GENERATORS</b>  <b>HW.55.</b> <b>General</b>  <b>HW.55.1.US.</b> Generators (i.e., LQGs) may accumulate hazardous waste onsite for 90 days or less without a permit or interim status provided they meet certain conditions (40 CFR 262.17(a), 262.17(a)(5), 262.17(b), 262.17(g), and 262.35) [Reviewed October 2001; Revised April 2005; Revised January 2017].	<p>Verify that every container is marked with:</p> <ul style="list-style-type: none"> <li>– the words “Hazardous Waste”</li> <li>– an indication of the hazards of the contents; examples include, but are not limited to:             <ul style="list-style-type: none"> <li>– the applicable hazardous waste characteristic(s) (i.e., ignitable, corrosive, reactive, toxic)</li> <li>– hazard communication consistent with the Department of Transportation requirements at 49 CFR 172 subpart E (labeling) or subpart F (placarding)</li> <li>– a hazard statement or pictogram consistent with the OSHA Hazard Communication Standard at 29 CFR 1910.1200</li> <li>– a chemical hazard label consistent with the NFPA code 704</li> </ul> </li> <li>– the date on which each period of accumulation begins so that it is clearly visible for inspection.</li> </ul> <p>(NOTE: The container marking/labeling for preparing containers for transportation offsite are covered in checklist item HW.55.9.US.)</p> <p>Verify that hazardous waste does not accumulate onsite for more than 90 days unless they are in compliance with the accumulation time limit extension or F006 accumulation conditions (see HW.55.8.US for time limits related to F006).</p> <p>(NOTE: For a LQG, the accumulation start date begins when the first waste is poured/placed into the waste container, except for at satellite accumulation points.)</p> <p>(NOTE: A LQG who accumulates hazardous waste for more than 90 days (without an extension) is subject to all TSDF and permitting requirements.)</p> <p>(NOTE: A LQG who sends a shipment of hazardous waste to a designated facility with the understanding that the designated facility can accept and manage the waste and later receives that shipment back as a rejected load or residue in accordance with the manifest discrepancy may accumulate the returned waste onsite in accordance with the requirements for LQGs.)</p> <p>Verify that, upon receipt of a returned shipment, the LQG signs one of the following:</p> <ul style="list-style-type: none"> <li>– Item 18c of the manifest, if the transporter returned the shipment using the original manifest</li> </ul>

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<p><b>HW.55.2.US.</b> A LQG that generates, transports, or handles hazardous wastes must obtain an USEPA identification number (40 CFR 262.18(a) and 262.18(b)) [Reviewed October 2001; Revised January 2017].</p> <p><b>HW.55.3.US.</b> LQGs must not offer their waste to transporters or TSDFs that have not received an USEPA identification number (40 CFR 262.18(c)) [Reviewed October 2001; Citation Revised January 2017].</p> <p><b>HW.55.4.US.</b> LQGs must submit a biennial report to the Regional Administrator and re-notify EPA by 1 March of even numbered years (40 CFR 262.18(d)(2), 262.40(b), 262.40(d), and 262.41) [Reviewed October 2001; Revised October 2002; Revised January 2017].</p>	<p>– Item 20 of the manifest, if the transporter returned the shipment using a new manifest.</p> <p>Verify that the LQG does not place bulk or non-containerized liquid hazardous waste or hazardous waste containing free liquids (whether or not sorbents have been added) in any landfill.</p> <p>(NOTE: Prior to disposal in a hazardous waste landfill liquids must meet additional requirements as specified in the requirements for hazardous waste landfill operation in 40 CFR 264.314 and 265.314.)</p> <p>Verify that the LQG does not treat, store, dispose of, transport, or offer for transportation, hazardous waste without having received an EPA identification number.</p> <p>Verify that the correct identification number is used on all appropriate documentation (i.e., manifests).</p> <p>(NOTE: A generator who has not received an EPA identification number must obtain one by applying to the Administrator using EPA Form 8700–12. Upon receiving the request the Administrator will assign an EPA identification number to the generator.)</p> <p>Verify that all transporters of hazardous wastes or TSDFs used by the generator have an USEPA identification number by examining records pertaining to disposal contract awards.</p> <p>Verify that the LQG re-notifies EPA by March 1 of each even-numbered year using EPA Form 8700-12 starting in 2022.</p> <p>(NOTE: This re-notification may submitted as part of the Biennial Report.)</p> <p>Verify that a generator who is a LQG for at least one month of an odd-numbered year (reporting year) who ships any hazardous waste off-site to a TSDF within the United States completes and submits EPA Form 8700–13 A/B to the Regional Administrator by March 1 of the following even-numbered year and cover generator activities during the previous year.</p> <p>Verify that any generator who is a LQG for at least one month of an odd-numbered year (reporting year) who treats, stores, or disposes of hazardous waste on site</p>

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<p><b>HW.55.5.US.</b> Generators are required to use manifests, file manifest exception reports, and maintain associated records (40 CFR 262.20(a) through 262.20(d), 262.20(f),</p>	<p>completes and submits EPA Form 8700–13 A/B to the Regional Administrator by March 1 of the following even-numbered year covering those wastes in accordance with the provisions of 40 CFR parts 264, 265, 266, 267 and 270.</p> <p>(NOTE: This requirement also applies to large quantity generators that receive hazardous waste from VSQGs)</p> <p>(NOTE: USEPA Form 8700-13A requires the following information, state forms may require additional information:</p> <ul style="list-style-type: none"> <li>– the USEPA identification number, name, and address of the generator;</li> <li>– the calendar year covered by the report;</li> <li>– the USEPA identification number, name, and address for each off-site treatment, storage, or disposal facility in the United States to which waste was shipped during the year;</li> <li>– the name and USEPA identification number of each transporter used during the reporting year for shipments to a treatment, storage or disposal facility within the United States</li> <li>– a description, USEPA hazardous waste number (from 40 CFR 261, subpart C or D), DOT hazard class, and quantity of each hazardous waste shipped off-site for shipments to a treatment, storage or disposal facility within the United States. This information must be listed by USEPA identification number of each such off-site facility to which waste was shipped.</li> <li>– a description of the efforts undertaken during the year to reduce the volume and toxicity of waste generated.</li> <li>– a description of the changes in volume and toxicity of waste actually achieved during the year in comparison to previous years to the extent such information is available for years prior to 1984.</li> <li>– the certification signed by the generator or authorized representative.)</li> </ul> <p>Verify that copies are kept for 3 yr.</p> <p>(NOTE: Reporting for exports of hazardous waste to foreign countries is not required.)</p> <p>(NOTE: This may not apply if an annual report was submitted to the state depending on the state requirements.)</p> <p>(NOTE: Periods of retention of records may be extended automatically during the course of any unresolved enforcement action or at the request of the USEPA Administrator.)</p> <p>Verify that a LQG who transports, or offers for transport a hazardous waste for offsite treatment, storage, or disposal, or a treatment, storage, and disposal facility who offers for transport a rejected hazardous waste load, prepares a Manifest (OMB Control number 2050-0039) on EPA Form 8700-22, and, if necessary, EPA Form 8700-22A.</p>

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262.22, 262.23, 262.27, 262.40(a), 262.40(d), and 262.42(a) [Citation Revised October 2001; Revised October 2002; Revised January 2003; Revised April 2005; Revised July 2005; Revised July 2010; Revised October 2011; Revised April 2014].	<p>(NOTE: The State may use a different form including the same information.)</p> <p>Verify that the generator designates on the manifest one facility that is permitted to handle the waste described on the manifest.</p> <p>(NOTE: A generator may also designate on the manifest one alternate facility which is permitted to handle his waste in the event an emergency prevents delivery of the waste to the designated facility.)</p> <p>(NOTE: The manifest consists of at least the number of copies which will provide the generator, each transporter, and the owner or operator of the designated facility with one copy each for their records and another copy to be returned to the SQG.)</p> <p>Verify that the generator:</p> <ul style="list-style-type: none"> <li>– signs the manifest certification by hand</li> <li>– obtains the handwritten signature of the initial transporter and date of acceptance on the manifest</li> <li>– retains one copy.</li> </ul> <p>Verify that a generator who initiates a shipment of hazardous waste certifies the following statement in Item 15 of the uniform hazardous waste manifest: “I am a large quantity generator. I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment.”</p> <p>Verify that the generator gives the transporter the remaining copies of the manifest.</p> <p>Verify that, for shipments of hazardous waste within the United States solely by water (bulk shipments only), the generator sends 3 copies of the manifest dated and signed to the owner or operator of the designated facility or the last water (bulk shipment) transporter to handle the waste in the United States if exported by water.</p> <p>(NOTE: For shipments of hazardous waste within the United States solely by water [bulk shipments], copies of the manifest are not required for each transporter.)</p> <p>Verify that, for rail shipments of hazardous waste within the United States which originate at the site of generation, the SQG sends at least 3 copies of the manifest dated and signed to one of the following:</p> <ul style="list-style-type: none"> <li>– the next non-rail transporter, if any</li> <li>– the designated facility if transported solely by rail</li> <li>– the last rail transporter to handle the waste in the United States if exported by rail.</li> </ul>

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	<p>(NOTE: For shipments of hazardous waste to a designated facility in an authorized State which has not yet obtained authorization to regulate that particular waste as hazardous, the generator must assure that the designated facility agrees to sign and return the manifest to the generator, and that any out-of-state transporter signs and forwards the manifest to the designated facility.)</p> <p>Verify that, if the transporter is unable to deliver the hazardous waste to the designated facility or the alternate facility, the generator either designates another facility or instructs the transporter to return the waste.</p> <p>Verify that a generator who does not receive a copy of the manifest with the handwritten signature of the owner or operator of the designated facility within 35 days of the date the waste was accepted by the initial transporter contacts the transporter and/or the owner or operator of the designated facility to determine the status of the hazardous waste.</p> <p>Verify that the generator keeps a copy of each signed manifest for 3 yr or until he receives a signed copy from the designated facility which received the waste.</p> <p>Verify that the returned signed copy is retained as a record for at least 3 yr from the date the waste was accepted by the initial transporter.</p> <p>(NOTE: Any requirement to keep or retain a copy of each manifest is satisfied by the retention of the facility's electronic manifest copies in its account on the e-Manifest system, provided that such copies are readily available for viewing and production if requested by any EPA or authorized state inspector. No owner or operator may be held liable for the inability to produce an electronic manifest for inspection if the owner or operator can demonstrate that the inability to produce the electronic manifest is due exclusively to a technical difficulty with the EPA system for which the owner or operator bears no responsibility.)</p> <p>(NOTE: The requirement to use a manifest does not apply to the transport of hazardous wastes on a public or private right-of-way within or along the border of contiguous property under the control of the same person, even if such contiguous property is divided by a public or private right-of-way. The generator or transporter must comply with the requirements for transporters set forth in 40 CFR 263.30 and 263.31 (see checklist item HW.100.3.US) in the event of a discharge of hazardous waste on a public or private right-of-way.)</p> <p>Verify that exception reports are filed with the USEPA Regional Administrator if a copy of the manifest with the handwritten signature of the owner or operator of the designated facility is not received within 45 days after the waste is accepted by the initial transporter.</p> <p>Verify that manifests and exception reports are kept for 3 yr.</p>

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	<p>(NOTE: Periods of retention for records may be extended automatically during the course of any unresolved enforcement action or at the request of the USEPA administrator.)</p> <p>Verify that, for rejected shipments of hazardous waste or container residues contained in non-empty containers that are returned to the Generator by the designated facility, the Generator:</p> <ul style="list-style-type: none"> <li>– signs either: <ul style="list-style-type: none"> <li>– Item 20 of the new manifest if a new manifest is used for the returned shipment</li> <li>– Item 18c of the original manifest if the original manifest is used for the returned shipment</li> </ul> </li> <li>– provides the transporter a copy of the manifest</li> <li>– within 30 days of delivery of the rejected shipment or container residues contained in non-empty containers, sends a copy of the manifest to the designated facility that returned the shipment to the generator</li> <li>– retains at the generator's site a copy of each manifest for at least 3 yr from the date of delivery.</li> </ul> <p>(NOTE: For rejected shipments of hazardous waste or container residues contained in non-empty containers that are forwarded to an alternate facility by a designated facility using a new manifest the generator must comply with 35 day, 45 day, and 60 day notification requirements, as applicable, for the shipment forwarding the material from the designated facility to the alternate facility instead of for the shipment from the generator to the designated facility. For a shipment forwarding such waste to an alternate facility by a designated facility:</p> <ul style="list-style-type: none"> <li>– the copy of the manifest received by the generator must have the handwritten signature of the owner or operator of the alternate facility in place of the signature of the owner or operator of the designated facility</li> <li>– the 35/45/60-day timeframes begin the date the waste was accepted by the initial transporter forwarding the hazardous waste shipment from the designated facility to the alternate facility.)</li> </ul> <p>(NOTE: In the 7 February 2014 Federal Register the EPA authorized the use of electronic manifests [or e-Manifests] as a means to track off-site shipments of hazardous waste from a generator's site to the site of the receipt and disposition of the hazardous waste. EPA is establishing a national electronic manifest system [or e-Manifest system]. Upon completion of the e-Manifest system, the electronic manifest documents will be available to manifest users as an alternative to the paper manifest forms, to comply with federal and state requirements respecting the use of the hazardous waste manifest. Users who elect to opt out of the electronic submittal to the e-Manifest system may continue to use the paper manifest to track their shipments during transportation, which then will be submitted by the designated facility for inclusion in the e-Manifest system.)</p>

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<p><b>HW.55.6.US.</b> LQGs are required to keep records of waste analyses, tests, and waste determinations (40 CFR 262.11(f), 262.40(c), and 262.40(d)) <b>[Reviewed October 2001; Citation Revised January 2003; Revised January 2017].</b></p>	<p>Verify that the LQG maintains records supporting its hazardous waste determinations, including records that identify whether a solid waste is a hazardous waste, as defined by 40 CFR 261.3.</p> <p>Verify that the appropriate records are kept for 3 yr from the date the waste was last sent to the onsite or offsite TSDF.</p> <p>(NOTE: These records must comprise the generator's knowledge of the waste and support the generator's determination. The records must include, but are not limited to, the following types of information:</p> <ul style="list-style-type: none"> <li>– the results of any tests, sampling, waste analyses, or other determinations made in accordance with 40 CFR 262.11</li> <li>– records documenting the tests, sampling, and analytical methods used to demonstrate the validity and relevance of such tests</li> <li>– records consulted in order to determine the process by which the waste was generated, the composition of the waste, and the properties of the waste</li> <li>– records which explain the knowledge basis for the generator's determination.)</li> </ul> <p>(NOTE: Periods of retention for reports may be extended automatically during the course of any unresolved enforcement action or at the request of the USEPA Administrator.)</p>
<p><b>HW.55.7.US.</b> Checklist item deleted <b>[Deleted December 1997].</b></p>	<p>Checklist item deleted because it is a duplicate of HW.80.4.US.</p>
<p><b>HW.55.8.US.</b> Generators of hazardous waste who also generate F006 wastewater treatment sludges from electroplating operations may accumulate the F006 waste onsite for more than 90 days if certain parameter are met (40 CFR 262.17(c)) <b>[Added October 2002; Revised January 2017].</b></p>	<p>Verify that if generators who generates F006 wastewater treatment sludges from electroplating operations accumulate F006 waste on-site for more than 90 days, the F006 waste is not accumulated more than 180 days without a permit or without having interim status provided that:</p> <ul style="list-style-type: none"> <li>– the LQG has implemented pollution prevention practices that reduce the amount of any hazardous substances, pollutants or contaminants entering F006 or otherwise released to the environment prior to its recycling</li> <li>– the F006 waste is legitimately recycled through metals recovery</li> <li>– no more than 20,000 kg of F006 waste is accumulated onsite at any one time</li> <li>– the F006 waste is placed in containers and the generator complies with the applicable requirements of subparts AA, BB, and CC of 40 CFR 265</li> <li>– the F006 waste is placed in tanks and the generator complies with the applicable requirements of subpart J of 40 CFR 265, except 40 CFR 265.197(c) and 265.200</li> <li>– the F006 waste is placed in containment buildings and the LQG complies with subpart DD of 40 CFR 265, and has placed its professional engineer certification that the building complies with the design standards specified in 40 CFR 265.1101 in the facility's operating record prior to operation of the unit and one of the following records are maintained:</li> </ul>

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	<ul style="list-style-type: none"> <li>– a written description of procedures to ensure that the F006 waste remains in the unit for no more than 180 days and a written description of the waste generation and management practices for the facility showing that they are consistent with the 180-day limit, and documentation that the generator is complying with the procedures</li> <li>– documentation that the unit is emptied at least once every 180 days.</li> </ul> <p>(NOTE: Such a LQG is exempt from all the requirements in subparts G and H of 40 CFR 265, except for 40 CFR 265.111 and 265.114.)</p> <p>Verify that the date upon which each period of accumulation begins is clearly marked and visible for inspection on each container.</p> <p>Verify that each container and tank are labeled or marked clearly:</p> <ul style="list-style-type: none"> <li>– with the words “Hazardous Waste”</li> <li>– with an indication of the hazards of the contents; examples include, but are not limited to: <ul style="list-style-type: none"> <li>– the applicable hazardous waste characteristic(s) (i.e., ignitable, corrosive, reactive, toxic)</li> <li>– hazard communication consistent with the DoT requirements at 49 CFR 172 subpart E (labeling) or subpart F (placarding)</li> <li>– a hazard statement or pictogram consistent with the OSHA Hazard Communication Standard at 29 CFR 1910.1200</li> <li>– a chemical hazard label consistent with the NFPA code 704.</li> </ul> </li> </ul> <p>Verify that the LQG complies with the requirements in 40 CFR 262.17(a)(6) (see checklist items HW.65.1. through HW.65.4.US and HW.80.4.US) and 262.17(a)(7) (see checklist items HW.60.1.US and HW.60.2.US).</p> <p>(NOTE: A LQG who also generates wastewater treatment sludges from electroplating operations that meet the listing description for the EPA hazardous waste number F006, and who must transport this waste, or offer this waste for transportation, over a distance of 200 miles or more for off-site metals recovery, may accumulate F006 waste on site for more than 90 days, but not more than 270 days without being subject to parts 124, 264 through 267, 270, and the notification requirements of section 3010 of RCRA, if the large quantity generator complies with all of the conditions for exemption in this checklist item.)</p> <p>(NOTE: A LQG accumulating F006 in accordance with this checklist item who accumulates F006 waste on site for more than 180 days (or for more than 270 days if the generator must transport this waste, or offer this waste for transportation, over a distance of 200 miles or more), or who accumulates more than 20,000 kilograms of F006 waste on site is an operator of a storage facility and is subject to the requirements of 40 CFR 124, 264, 265, 267, and 270, and the notification requirements of section 3010 of RCRA, unless the generator has been granted an extension to the 180-day (or 270-day if applicable) period or an exception to the</p>

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<p><b>HW.55.9.US.</b> Before transporting hazardous waste or offering hazardous waste for transportation offsite, LQGs must package and label the waste according to specific requirements (40 CFR 262.11(f) and 262.30 through 262.33) <b>[Moved January 2003; Revised April 2005; Revised January 2017].</b></p>	<p>20,000 kilogram accumulation limit. Such extensions and exceptions may be granted by EPA if F006 waste must remain on site for longer than 180 days (or 270 days if applicable) or if more than 20,000 kilograms of F006 waste must remain on site due to unforeseen, temporary, and uncontrollable circumstances. An extension of up to 30 days or an exception to the accumulation limit may be granted at the discretion of the Regional Administrator on a case-by-case basis.)</p> <p>Determine what pretransport procedures for hazardous waste are used.</p> <p>Verify that the waste is packaged in accordance with 49 CFR 173, 178, and 179 (see checklist items under the topic heading HM.50: Hazardous Materials Transportation in the <i>Hazardous Materials Management</i> section of the U.S. TEAM Guide).</p> <p>Verify that containers are properly constructed and contain no leaks, corrosion, or bulges by inspecting a sample of containers awaiting transport.</p> <p>Examine end-seams for minor weeping that indicates drum failure.</p> <p>Verify that packages are labeled in accordance with the applicable regulations on hazardous materials under 49 CFR 172 (see checklist items under the topic heading HM.50: Hazardous Materials Transportation in the <i>Hazardous Materials Management</i> section of the U.S. TEAM Guide).</p> <p>Verify that labeling and marking on each container is appropriate for the contents.</p> <p>Verify that, before transporting hazardous waste or offering hazardous waste for transportation off-site, a large quantity generator marks each container of 119 gal or less used transportation with the following words and information in accordance with the requirements of 49 CFR 172.304:</p> <p>HAZARDOUS WASTE--Federal Law Prohibits Improper Disposal. If found, contact the nearest police or public safety authority or the U.S. Environmental Protection Agency.</p> <p>Generator's Name and Address -----.</p> <p>Generator's EPA Identification Number-----.</p> <p>Manifest Tracking Number -----.</p> <p>EPA Hazardous Waste Number -----.</p> <p>(NOTE: A LQG may use a nationally recognized electronic system, such as bar coding, to identify the EPA Hazardous Waste Numbers.)</p> <p>(NOTE: Lab packs that will be incinerated in compliance with 40 CFR 268.42(c) are not required to be marked with EPA Hazardous Waste Numbers except D004, D005, D006, D007, D008, D010, and D011, where applicable.)</p>

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<p><b>HW.55.10.US.</b> If a LQG accumulates onsite hazardous waste received from VSQGs under the control of the same person, specific requirements must be met (40 CFR 262.17(f)) [Added January 2017].</p>	<p>Verify that, before transporting hazardous waste or offering hazardous waste for transportation off-site, a generator placards or offers the initial transporter the appropriate placards according to DOT regulations for hazardous materials under 49 CFR 172, subpart F.</p> <p>(NOTE: If placards are not required, a generator must mark each motor vehicle according to 49 CFR 171.3(b)(1).)</p> <p>(NOTE: This was formerly checklist item HW.100.2.US.)</p> <p>(NOTE: “Control,” for the purposes of this checklist item, means the power to direct the policies of the generator, whether by the ownership of stock, voting rights, or otherwise, except that contractors who operate generator facilities on behalf of a different person shall not be deemed to “control” such generators.)</p> <p>Verify that the LQG notifies EPA at least thirty (30) days prior to receiving the first shipment from a VSQG using EPA Form 8700–12.</p> <p>Verify that, on the form, the LQG identifies the name(s) and site address(es) for the VSQGs as well as the name and business telephone number for a contact person for the VSQGs.</p> <p>Verify that the LQG submits an updated Site ID form (EPA Form 8700–12) within 30 days after a change in the name or site address for the VSQG.</p> <p>Verify that the LQG maintains records of shipments for 3 yr from the date the hazardous waste was received from the VSQG and these records identify the name, site address, and contact information for the VSQG and include a description of the hazardous waste received, including the quantity and the date the waste was received.</p> <p>Verify that the LQG complies with the following independent requirements identified and the conditions for exemption in this checklist item for all hazardous waste received from a VSQG:</p> <ul style="list-style-type: none"> <li>– 40 CFR 262.11 Hazardous waste determination and recordkeeping (see checklist item HW.10.1.US)</li> <li>– 40 CFR 262.13 Generator category determination (see checklist item HW.10.2.US)</li> <li>– 40 CFR 262.18 EPA identification numbers and re-notification</li> <li>– 40 CFR 262 subpart B: Manifest requirements</li> <li>– 40 CFR 262 subpart C: Pre-transport requirements</li> <li>– 40 CFR 262 subpart D: Recordkeeping and reporting</li> <li>– 40 CFR 262 subpart H: Transboundary movements of hazardous waste for recovery or disposal.</li> </ul>

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<p><b>HW.55.11.US.</b> LQGs are required to meet specific closure requirements for central accumulation areas (40 CFR 262.17(a)(8)(i) through 262.17(a)(8)(iii)) <b>[Added January 2017]</b>.</p>	<p>Verify that, the LQG labels the container or unit with the date accumulation started (i.e., the date the hazardous waste was received from the VSQG).</p> <p>(NOTE: If the LQG is consolidating incoming hazardous waste from a VSQG with either its own hazardous waste or with hazardous waste from other VSQGs, the LQG must label each container or unit with the earliest date any hazardous waste in the container was accumulated on site.)</p> <p>(NOTE: This checklist item does not apply to satellite accumulation points/areas. It does apply to central accumulation areas [i.e. 90-day storage areas].)</p> <p>Verify that, when closing a waste accumulation unit, the LQG does the following:</p> <ul style="list-style-type: none"> <li>– place a notice in the operating record within 30 days after closure identifying the location of the unit within the facility</li> <li>– meet the closure performance standards for container, tank, and containment building waste accumulation units or for drip pads.</li> </ul> <p>Verify that, when closing the facility, the LQG does one of the following:</p> <ul style="list-style-type: none"> <li>– notifies EPA using form 8700-12 no later than 30 days prior to closing the facility</li> <li>– notifies EPA using form 8700-12 within 90 days after closing the facility that it has complied with the closure performance standards.</li> </ul> <p>Verify that, if the facility cannot meet the closure performance standards they notify EPA using form 8700-12 that it will close as a landfill under 40 CFR 265.310 of this chapter in the case of a container, tank or containment building unit(s), or for a facility with drip pads, notify using form 8700-12 that it will close under the standards of 40 CFR 265.445(b) (see checklist item HW.83.6.US).</p> <p>(NOTE: A LQG may request additional time to clean close, but it must notify EPA using form 8700-12 within 75 days after the date of initial notification to request an extension and provide an explanation as to why the additional time is required.)</p> <p>Verify that, at closure, the LQG meets the following closure performance standards for container, tank systems, and containment building waste accumulation units:</p> <ul style="list-style-type: none"> <li>– minimizes the need for further maintenance by controlling, minimizing, or eliminating, to the extent necessary to protect human health and the environment, the post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated run-off, or hazardous waste decomposition products to the ground or surface waters or to the atmosphere</li> <li>– removes or decontaminates all contaminated equipment, structures and soil and any remaining hazardous waste residues from waste accumulation units including containment system components (pads, liners, etc.), contaminated</li> </ul>

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	<p>soils and subsoils, bases, and structures and equipment contaminated with waste, unless 40 CFR 261.3(d) concerning samples applies</p> <ul style="list-style-type: none"> <li>– any hazardous waste generated in the process of closing either the generator's facility or unit(s) accumulating hazardous waste are managed according to regulatory requirements, including removing any hazardous waste contained in these units within 90 days of generating it and managing these wastes in a RCRA Subtitle C hazardous waste permitted treatment, storage and disposal facility or interim status facility.</li> </ul> <p>(NOTE: If the generator demonstrates that any contaminated soils and wastes cannot be practicably removed or decontaminated, then the waste accumulation unit is considered to be a landfill and the generator must close the waste accumulation unit and perform post-closure care in accordance with the closure and post-closure care requirements that apply to landfills (40 CFR 265.310). In addition, for the purposes of closure, post-closure, and financial responsibility, such a waste accumulation unit is then considered to be a landfill, and the generator must meet all of the requirements for landfills specified in subparts G and H of 40 CFR 265.)</p>

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<p><b>GENERATORS</b></p> <p><b>HW.60.</b>  <b>Personnel Training</b></p> <p><b>HW.60.1.US.</b> LQG personnel who handle hazardous waste must meet certain training requirements for generators of hazardous waste (40 CFR 262.17(a)(7)(i) through 262.17(a)(7)(iii)) <b>[Reviewed October 2001; Revised July 2004, Revised July 2006; Revised October 2009; Revised April 2012; Revised January 2017].</b></p>	<p>(NOTE: Per the discussion in the preamble of the 28 November 2016 revision of the hazardous waste generator rules, page 85797 of the Federal Register, the U.S. EPA has decided not to revise this regulation to identify areas of hazardous waste management for which personnel training and a written job description are required or to specifically require training for staff at satellite accumulation areas/points (SAAs/SAPs). However, EPA encourages all generators to take appropriate steps to ensure that all employees who work at areas where hazardous waste is accumulated, including at SAAs/SAPs, or are otherwise involved in hazardous waste management receive sufficient training to ensure that they are familiar with proper handling and emergency procedures.)</p> <p>Verify that the facility personnel have successfully completed a program of classroom instruction, online training (e.g., computer-based or electronic), or on-the-job training that teaches them to perform their duties in a way that ensures compliance.</p> <p>Verify that the training program is directed by a person trained in hazardous waste management procedures and includes instruction which teaches facility personnel hazardous waste management procedures (including contingency plan implementation) relevant to the positions in which they are employed.</p> <p>Verify that, at a minimum, the training program is designed to ensure that facility personnel are able to respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment, and emergency systems, including where applicable:</p> <ul style="list-style-type: none"> <li>– procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment</li> <li>– key parameters for automatic waste feed cut-off systems</li> <li>– communications or alarm systems</li> <li>– response to fires or explosions</li> <li>– response to ground-water contamination incidents</li> <li>– shutdown of operations.</li> </ul> <p>(NOTE: For facility employees that receive emergency response training pursuant to Occupational Safety and Health Administration (OSHA) regulations 29 CFR 1910.120(p)(8) and 1910.120(q), the LQG is not required to provide separate emergency response training, provided that the overall facility training meets all the requirements of this checklist item.)</p>

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<p><b>HW.60.2.US.</b> Records must be maintained for all LQG personnel who manage hazardous waste (40 CFR 262.17(a)(7)(iv)) [Reviewed October 2001; Revised October 2009; Revised January 2017].</p>	<p>Verify that facility personnel successfully complete the required training within 6 mo after the date of their employment or assignment to the facility, or to a new position at the facility, whichever is later.</p> <p>Verify that an annual review of initial training is provided.</p> <p>Verify that employees do not work unsupervised until training is completed.</p> <p>Verify that the LQG maintains the following documents and records at the facility:</p> <ul style="list-style-type: none"> <li>– the job title for each position at the facility related to hazardous waste management, and the name of the employee filling each job;</li> <li>– a written job description for each position listed (NOTE: This description may be consistent in its degree of specificity with descriptions for other similar positions in the same company location or bargaining unit, but must include the requisite skill, education, or other qualifications, and duties of facility personnel assigned to each position)</li> <li>– a written description of the type and amount of both introductory and continuing training that will be given to each person filling a listed position</li> <li>– records that document that the required training or job experience has been given to, and completed by, facility personnel.</li> </ul> <p>Verify that training records on current personnel are kept until closure of the facility.</p> <p>Verify that training records on former employees are kept for at least 3 yr from the date the employee last worked at the facility.</p> <p>(NOTE: Personnel training records may accompany personnel transferred within the same company.)</p> <p>(NOTE: LQG personnel signing hazardous waste manifests are considered a person who is offering hazardous materials for transportation. See HM.50.8.US for the additional training requirements applicable to individuals signing hazardous waste manifests.)</p> <p>Verify that the LQG maintains the following documents and records at the facility:</p> <ul style="list-style-type: none"> <li>– the job title for each position at the facility related to hazardous waste management, and the name of the employee filling each job;</li> <li>– a written job description for each position listed</li> <li>– a written description of the type and amount of both introductory and continuing training that will be given to each person filling a listed position</li> <li>– records that document that the required training or job experience has been given to, and completed by, facility personnel.</li> </ul>

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	<p>(NOTE: This description may be consistent in its degree of specificity with descriptions for other similar positions in the same company location or bargaining unit, but must include the requisite skill, education, or other qualifications, and duties of facility personnel assigned to each position)</p> <p>Verify that training records on current personnel are kept until closure of the facility.</p> <p>Verify that training records on former employees are kept for at least 3 yr from the date the employee last worked at the facility.</p> <p>(NOTE: Personnel training records may accompany personnel transferred within the same organization.)</p>



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<b>GENERATORS</b>  <b>HW.65.</b> <b>Contingency Plans and</b> <b>Emergency Coordinators</b>  <b>HW.65.1.US.</b> Generators must have a contingency plan (40 CFR 262.17(a)(6), 262.260 through 262.263) [Reviewed October 2001; Revised July 2006; Revised July 2010; Revised January 2017].	<p>Verify that the contingency plan is designed to minimize hazards to human health or the environment from fires, explosions, or any unplanned sudden or nonsudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water.</p> <p>Verify that the provisions of the plan are carried out immediately whenever there is a fire, explosion, or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment.</p> <p>Verify that the contingency plan describes the actions facility personnel must take to comply the contingency plan and emergency procedures (40 CFR 262.265, see checklist item HW.65.3.US) in response to fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water at the facility.</p> <p>(NOTE: If the generator has already prepared a Spill Prevention, Control, and Countermeasures (SPCC) Plan in accordance with 40 CFR 112, or some other emergency or contingency plan, it need only amend that plan to incorporate hazardous waste management provisions that are sufficient to comply with the standards of 40 CFR 262. The generator may develop one contingency plan that meets all regulatory standards. EPA recommends that the plan be based on the National Response Team's Integrated Contingency Plan Guidance ("One Plan").</p> <p>Verify that the plan describes arrangements agreed to with the local police department, fire department, other emergency response teams, emergency response contractors, equipment suppliers, local hospitals or, if applicable, the Local Emergency Planning Committee.</p> <p>Verify that the contingency plan lists names and emergency telephone numbers of all persons qualified to act as emergency coordinator, and this list is kept up to date.</p> <p>Verify that, where more than one person is listed, one person is named as primary emergency coordinator and others are listed in the order in which they will assume responsibility as alternates.</p> <p>(NOTE: In situations where the generator facility has an emergency coordinator continuously on duty because it operates 24 hours per day, every day of the year, the plan may list the staffed position (e.g., operations manager, shift coordinator,</p>

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	<p>shift operations supervisor) as well as an emergency telephone number that can be guaranteed to be answered at all times.)</p> <p>Verify that the plan includes a list of all emergency equipment at the facility (such as fire extinguishing systems, spill control equipment, communications and alarm systems (internal and external), and decontamination equipment), where this equipment is required.</p> <p>Verify that the list of emergency equipment is kept up to date.</p> <p>Verify that the plan includes the location and a physical description of each item of emergency equipment on the list, and a brief outline of its capabilities.</p> <p>Verify that the plan includes an evacuation plan for generator personnel where there is a possibility that evacuation could be necessary.</p> <p>Verify that the evacuation plan describes signal(s) to be used to begin evacuation, evacuation routes, and alternate evacuation routes (in cases where the primary routes could be blocked by releases of hazardous waste or fires).</p> <p>Verify that a copy of the contingency plan and all revisions to the plan are maintained at the LQG and the LQG submits a copy of the contingency plan and all revisions to all local emergency responders (i.e., police departments, fire departments, hospitals and State and local emergency response teams that may be called upon to provide emergency services).</p> <p>(NOTE: The contingency plan may also be submitted to the Local Emergency Planning Committee (LEPC), as appropriate.)</p> <p>Verify that LQGs that first have to comply with these provisions after 30 May 2017 and LQGs which are otherwise amending their contingency plans submit a quick reference guide to the local emergency responders or, as appropriate, to the LEPC.</p> <p>Verify that the quick reference guide includes the following elements:</p> <ul style="list-style-type: none"> <li>– the types/names of hazardous wastes in layman’s terms and the associated hazard associated with each hazardous waste present at any one time (e.g., toxic paint wastes, spent ignitable solvent, corrosive acid)</li> <li>– the estimated maximum amount of each hazardous waste that may be present at any one time</li> <li>– the identification of any hazardous wastes where exposure would require unique or special treatment by medical or hospital staff</li> <li>– a map of the facility showing where hazardous wastes are generated, accumulated and treated and routes for accessing these wastes</li> <li>– a street map of the facility in relation to surrounding businesses, schools and residential areas to understand how best to get to the facility and also evacuate citizens and workers</li> </ul>

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<p><b>HW.65.2.US.</b> Each LQG must have an emergency coordinator on the premises or on call at all times (40 CFR 262.17(a)(6) and 262.264) [Reviewed October 2001; Revised January 2017].</p>	<ul style="list-style-type: none"> <li>– the locations of water supply (e.g., fire hydrant and its flow rate)</li> <li>– the identification of on-site notification systems (e.g., a fire alarm that rings off site, smoke alarms)</li> <li>– the name of the emergency coordinator(s) and 7/24-hour emergency telephone number(s) or, in the case of a facility where an emergency coordinator is continuously on duty, the emergency telephone number for the emergency coordinator.</li> </ul> <p>Verify that LQGs update, if necessary, their quick reference guides, whenever the contingency plan is amended and submit these documents to the local emergency responders or, as appropriate, the LEPC.</p> <p>Verify that the contingency plan is reviewed, and immediately amended, if necessary, whenever:</p> <ul style="list-style-type: none"> <li>– applicable regulations are revised</li> <li>– the plan fails in an emergency</li> <li>– the generator facility changes - in its design, construction, operation, maintenance, or other circumstances - in a way that materially increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency</li> <li>– the list of emergency coordinators changes</li> <li>– the list of emergency equipment changes.</li> </ul> <p>Verify that, at all times, there is at least one employee on the LQG's premises or on call (i.e. available to respond to an emergency by reaching the facility within a short period of time) with responsibility for coordinating all emergency response measures and implementing the necessary emergency procedures outlined in 40 CFR 262.265 (see checklist item HW.65.3.US).</p> <p>Verify that the emergency coordinator is thoroughly familiar with all aspects of the generator's contingency plan, all operations and activities at the facility, the location and characteristics of hazardous waste handled, the location of all records within the facility, and the facility's layout.</p> <p>(NOTE: Responsibilities may vary depending on factors such as type and variety of hazardous waste(s) handled by the facility, as well as type and complexity of the facility.)</p> <p>Verify that the emergency coordinator has the authority to commit the resources needed to carry out the contingency plan.</p>

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<p><b>HW.65.3.US.</b> Emergency coordinators at LQGs must follow certain emergency procedures whenever there is an imminent or actual emergency situation (40 CFR 262.17(a)(6), and 262.265(a) through 262.265(h)) [Reviewed October 2001; Revised July 2006; Revised January 2017].</p>	<p>Verify that, whenever there is an imminent or actual emergency situation, the emergency coordinator (or their designee when the emergency coordinator is on call) immediately:</p> <ul style="list-style-type: none"> <li>– activates internal facility alarms or communication systems, where applicable, and notifies all facility personnel</li> <li>– notifies appropriate state or local agencies with designated response roles if their help is needed.</li> </ul> <p>Verify that, whenever there is a release, fire, or explosion, the emergency coordinator immediately identifies the character, exact source, amount, and areal extent of any released materials.</p> <p>(NOTE: The emergency coordinator may do this by observation or review of the facility records or manifests, and it necessary, by chemical analysis.)</p> <p>Verify that the emergency coordinator is concurrently assessing possible hazards to human health or the environment that may result from the release, fire, or explosion.</p> <p>(NOTE: The hazard assessment needs to include direct and indirect effects (e.g., effects of any toxic, irritating, or asphyxiating gases that are generated, or the effects of any hazardous surface water run-offs from water or chemical agents used to control fire and heat-induced explosions).)</p> <p>Verify that, if the emergency coordinator determines that the facility has had a release, fire, or explosion which could threaten human health, or the environment, outside the facility, the emergency coordinator reports the findings as follows:</p> <ul style="list-style-type: none"> <li>– if the assessment indicates that evacuation of local areas may be advisable, immediately notify appropriate local authorities and be available to help appropriate officials decide whether local areas should be evacuated</li> <li>– immediately notify either the government official designated as the on-scene coordinator for that geographical area, or the National Response Center (using their 24-hour toll free number 800/424-8802).</li> </ul> <p>(NOTE: The report to the on-scene coordinator or the NRC must include:</p> <ul style="list-style-type: none"> <li>– name and telephone number of reporter</li> <li>– name and address of the generator</li> <li>– time and type of incident (e.g., release, fire)</li> <li>– name and quantity of material(s) involved, to the extent known</li> <li>– the extent of injuries, if any</li> <li>– the possible hazards to human health, or the environment, outside the facility.)</li> </ul> <p>Verify that the emergency coordinator takes all reasonable measures necessary to ensure that fires, explosions and releases do not occur, recur, or spread to other hazardous waste at the facility.</p>

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<p><b>HW.65.4.US.</b> LQGs must record the time, date, and details of any incident that requires implementing the contingency plan (40 CFR 262.17(a)(6) and 262.265(i)) [Reviewed October 2001; Citation Revised July 2006; Revised January 2017].</p>	<p>(NOTE: These measures must include, where applicable:</p> <ul style="list-style-type: none"> <li>– stopping processes and operations</li> <li>– collecting and contain released hazardous waste</li> <li>– removing or isolating containers.</li> </ul> <p>Verify that, if the LQG stops operations in response to fire, explosion, or release, the emergency coordinator monitors for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment whenever appropriate.</p> <p>Verify that, immediately after an emergency, the emergency coordinator provides for treatment, storage, or disposal of recovered waste, contaminated soil, surface water, or any other material that results from a release, fire, or explosion at the facility.</p> <p>(NOTE: Unless the generator can demonstrate that the recovered material is not a hazardous waste, it is a newly generated hazardous waste.)</p> <p>Verify that the emergency coordinator ensures that, in the affected area of the facility:</p> <ul style="list-style-type: none"> <li>– no hazardous waste which may be incompatible with the released material is treated, stored, or disposed of until cleanup procedures are completed</li> <li>– all emergency equipment listed in the contingency plan is cleaned and fit for its intended use before operations are resumed.</li> </ul> <p>Verify that the generator notes in the operating record the time, date, and details of any incident that requires implementing the contingency plan.</p> <p>Verify that written reports have been submitted to the USEPA Regional Administrator within 15 days after the incident.</p> <p>Verify that the report includes:</p> <ul style="list-style-type: none"> <li>– name, address, and telephone number of the generator</li> <li>– date, time, and type of incident (e.g., fire, explosion)</li> <li>– name and quantity of material(s) involved</li> <li>– the extent of injuries, if any</li> <li>– an assessment of actual or potential hazards to human health or the environment, where this is applicable</li> <li>– estimated quantity and disposition of recovered material that resulted from the incident.</li> </ul>



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<p><b>GENERATORS</b></p> <p><b>HW.70. Containers</b></p> <p><b>HW.70.1.US.</b> Empty containers at generators previously holding hazardous wastes must meet the regulatory definition of empty before they are exempted from hazardous waste requirements (40 CFR 261.7) [<b>Revised May 1997; Reviewed October 2001; Revised April 2005</b>].</p> <p><b>HW.70.2.US.</b> Containers used to store hazardous waste at LQGs must be in good condition and not leaking (40 CFR 262.17(a)(1)(ii)) [<b>Reviewed October 2001; Revised July 2008; Revised January 2017</b>].</p> <p><b>HW.70.3.US.</b> Containers used at LQGs must be made of or lined with materials</p>	<p>Verify that, for containers or inner liners holding hazardous wastes, one of the following is met:</p> <ul style="list-style-type: none"> <li>– wastes are removed that can be removed using common practices and no more than 2.5 cm [1 in.] of residue remains</li> <li>– no more than 3 percent by weight of the total capacity of the container remains in the container or inner liner if the container is less than or equal to 119 gal in size</li> <li>– no more than 0.3 percent by weight of the total capacity of the container remains in the container or inner liner if the container is greater than 119 gal in size.</li> </ul> <p>Verify that, for containers that held a compressed gas, the pressure in the container approaches atmospheric.</p> <p>(NOTE: Some states require a treatment permit when returning compressed gas cylinders and aerosol cans to atmospheric by puncturing or physically altering the container.)</p> <p>Verify that, for containers or inner liners which held an acute hazardous waste listed in Appendix 4-5, one of the following is done:</p> <ul style="list-style-type: none"> <li>– it is triple rinsed</li> <li>– it is cleaned by another method identified through the literature or testing as achieving equivalent removal</li> <li>– the inner liner is removed.</li> </ul> <p>Verify that the rinsate has been disposed of as necessary according to its properties.</p> <p>Verify that hazardous waste is put into containers.</p> <p>Verify that containers are not leaking, bulging, rusting, damaged, or dented.</p> <p>Verify that waste is immediately transferred to a new container in good condition or immediately manage the waste in some other way that complies.</p> <p>Verify that containers are compatible with the waste in them.</p>

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<p>compatible with the waste stored in them (40 CFR 262.17(a)(1)(iii)) [Reviewed October 2001; Revised January 2017].</p> <p><b>HW.70.4.US.</b> Containers at LQGs must be closed during storage and handled in a safe manner (40 CFR 262.17(a)(1)(iv)) [Reviewed October 2001; Revised October 2005; Revised January 2017].</p> <p><b>HW.70.5.US.</b> The handling of incompatible wastes, or incompatible wastes and materials in containers at LQGs must comply with safe management practices (40 CFR 262.17(a)(1)(vii)) [Reviewed October 2001; Revised January 2017].</p>	<p>Verify that the ability of the container to contain the waste is not impaired by incompatibility.</p> <p>Verify that containers are closed, except when it is necessary to add or remove waste (check bungs on drums, look for funnels).</p> <p>Verify that a container holding hazardous waste is not opened, handled, or stored in a manner that may rupture the container or cause it to leak.</p> <p>Verify that incompatible wastes or incompatible wastes and materials are not placed in the same containers unless it is done so that it does not:</p> <ul style="list-style-type: none"> <li>– generate extreme heat or pressure, fire, or explosion, or violent reaction</li> <li>– produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health</li> <li>– produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions</li> <li>– damage the structural integrity of the device or facility by any other like means threaten human health or the environment.</li> </ul> <p>(NOTE: Incompatible wastes as listed in Appendix 4-6 should not be placed in the same drum.)</p> <p>Verify that hazardous wastes are not placed in an unwashed container that previously held an incompatible waste or material unless it is done so that it does not:</p> <ul style="list-style-type: none"> <li>– generate extreme heat or pressure, fire, or explosion, or violent reaction</li> <li>– produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health</li> <li>– produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions</li> <li>– damage the structural integrity of the device or facility</li> <li>– by any other like means threaten human health.</li> </ul> <p>Verify that a container accumulating hazardous wastes incompatible with any wastes or other materials accumulated or stored nearby in other containers, piles, open tanks, or surface impoundments are separated from the other materials or protected from them by means of a dike, berm, wall, or other device.</p>

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<p><b>HW.70.6.US.</b> Checklist item deleted [Deleted October 2011].</p> <p><b>HW.70.7.US.</b> Containers with design capacities greater than 0.1 m<sup>3</sup> and less than or equal to 0.46 m<sup>3</sup> into which hazardous waste is placed at LQGs are required to meet specific design and operating standards (40 CFR 262.17(a)(1)(i), 265.178, 265.1087(a) through 265.1087(b)(1)(i), and 265.1087(c)) [Added December 1996; Revised October 2001; Citation Revised January 2017].</p>	<p>(NOTE: To document inadequate management practices (MP) at LQGs use checklist item number HW.2.1.US.)</p> <p>(NOTE: These requirements do not apply to a container that has a design capacity less than or equal to 0.1 m<sup>3</sup> [approx. 26 gal.] (40 CFR 265.1080(b)(2)) or to containers of any size at satellite accumulation points. See the definition of Exempted Hazardous Waste Containers and Surface Impoundments and Exempted Hazardous Waste Management Units. There are documentation requirements for exempted containers.)</p> <p>(NOTE: Standards for containers used in waste stabilization processes (40 CFR 265.1087(b)(2)) are in checklist item HW.70.9.US.)</p> <p>Verify that, for containers with a design capacity greater than 0.1 m<sup>3</sup> [approx. 26 gal] and less than or equal to 0.46 m<sup>3</sup> [approx. 122 gal], air emissions are controlled according to the following Container Level 1 standards:</p> <ul style="list-style-type: none"> <li>– a container that meets applicable U.S. DOT regulations on the packaging of hazardous materials for transportation</li> <li>– a container that is equipped with a cover and closure devices that form a continuous barrier over the container openings so that when the cover and closure devices are secured in the closed position there are not visible holes, gaps, or other open spaces into the interior of the container</li> <li>– an open-top container in which an organic vapor-suppressing barrier is placed on or over the hazardous waste in the container so that no hazardous waste is exposed to the atmosphere.</li> </ul> <p>Verify that, when a container using Level 1 standards, other than DOT approved containers, is used, it is equipped with covers and closure devices composed of suitable materials to minimize exposure of the hazardous waste to the atmosphere and to maintain the equipment integrity for as long as it is in service.</p> <p>Verify that, whenever waste is in a container using Level 1 controls, covers and closure devices are installed and closure devices are secured and maintained in the closed position except as follows:</p> <ul style="list-style-type: none"> <li>– opening of a closure device or cover is allowed for adding waste or other material to the container as follows: <ul style="list-style-type: none"> <li>– when the container is filled to the intended final level in one continuous operation, the closure devices is secured in the closed position and the covers installed at the conclusion of the filling operation</li> <li>– when discrete batches or quantities of material are added intermittently to the container over a period of time, the closure devices are secured in the closed position and covers installed upon either the container being filled to the intended final level, the completion of a batch loading after which no additional material will be added to the container within 15</li> </ul> </li> </ul>

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<p><b>HW.70.8.US.</b> Containers with design capacities greater than 0.46 m<sup>3</sup> into which hazardous waste is placed at LQs are required to meet specific design and operating standards (40 CFR 262.17(a)(1)(i), 265.178, and 265.1087(a) through 265.1087(b)(1)(ii), 265.1087(b)(1)(iii), 265.1087(c), and 265.1087(d)) [Added December 1996; Revised October 2001; Citation Revised January 2017].</p>	<p>min, the person performing the loading operation leaving the immediate vicinity of the container, or the shutdown of the process generating the material being added to the container, whichever condition occurs first</p> <ul style="list-style-type: none"> <li>– opening of a closure device or cover is allowed for removing the hazardous waste as follows: <ul style="list-style-type: none"> <li>– in order to meet the requirements for an empty container</li> <li>– when discrete quantities or batches of material are removed from the container but the container is not empty, the closure devices will promptly be returned to the closed position and the covers installed upon completion of batch removal after which no additional material will be removed within 15 min or the person performing the unloading leaves the immediate vicinity, whichever condition occurs first</li> </ul> </li> <li>– opening of a closure device or cover is allowed when access inside the container is needed to perform routine activities other than transfer of hazardous waste</li> <li>– opening of a spring loaded, pressure vacuum relief valve, conservation vent, or similar type of pressure relief device which vents to the atmosphere is allowed during normal operations for the purpose of maintain internal container pressure</li> <li>– opening of a safety device to avoid unsafe conditions.</li> </ul> <p>(NOTE: These requirements do not apply to a container that has a design capacity less than or equal to 0.1 m<sup>3</sup> [approx. 26 gal.] (40 CFR 265.1080(b)(2)) or to containers of any size at satellite accumulation points. See the definition of Exempted Hazardous Waste Containers and Surface Impoundments and Exempted Hazardous Waste Management Units. There are documentation requirements for exempted containers.)</p> <p>(NOTE: Standards for containers used in waste stabilization processes (40 CFR 265.1087(b)(2) are in checklist item HW.70.9.US.)</p> <p>Verify that, for containers with a design capacity greater than 0.46 m<sup>3</sup> [approx. 122 gal] that are not in light material service, air emissions are controlled according to the following Container Level 1 standards:</p> <ul style="list-style-type: none"> <li>– a container is used that meets applicable U.S. DOT regulations on the packaging of hazardous materials for transportation</li> <li>– a container is used that is equipped with a cover and closure devices that form a continuous barrier over the container openings so that when the cover and closure devices are secured in the closed position there are not visible holes, gaps, or other open spaces into the interior of the container</li> <li>– an open-top container is used in which an organic vapor-suppressing barrier is placed on or over the hazardous waste in the container so that no hazardous waste is exposed to the atmosphere.</li> </ul>

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	<p>Verify that, for containers with a design capacity greater than 0.46 m<sup>3</sup> [approx. 122 gal] that are in light material service, air emissions are controlled according to the following Container Level 2 standards:</p> <ul style="list-style-type: none"> <li>– a container is used that meets applicable U.S. DOT regulations on the packaging of hazardous materials for transportation</li> <li>– a container is used that operates with no detectable organic emissions</li> <li>– a container is used that has been demonstrated within the preceding 12 mo to be vapor tight.</li> </ul> <p>(NOTE: Level 2 standards apply only to containers that are in light material service. For the containers that are not in light material service, Level 1 standards apply. (See 40 CFR 265.1087(b)(ii) and (iii).)</p> <p>Verify that, when a container using Level 1 standards, other than DOT approved containers, is used it is equipped with covers and closure devices composed of suitable materials to minimize exposure of the hazardous waste to the atmosphere and to maintain the equipment integrity for as long as it is in service.</p> <p>Verify that, whenever waste is in a container using Level 1 or Level 2 controls, covers and closure devices are installed and closure devices are secured and maintained in the closed position except as follows:</p> <ul style="list-style-type: none"> <li>– opening of a closure device or cover is allowed for adding waste or other material to the container as follows: <ul style="list-style-type: none"> <li>– when the container is filled to the intended final level in one continuous operation, the closure devices are secured in the closed position and the covers installed at the conclusion of the filling operation</li> <li>– when discrete batches or quantities of material are added intermittently to the container over a period of time, the closure devices are promptly secured in the closed position and covers installed upon either: <ul style="list-style-type: none"> <li>– the container being filled to the intended final level</li> <li>– the completion of a batch loading after which no additional material will be added to the container within 15 min</li> <li>– the person performing the loading operation leaving the immediate vicinity of the container</li> <li>– the shutdown of the process generating the material being added to the container, whichever condition occurs first</li> </ul> </li> </ul> </li> <li>– opening of a closure device or cover is allowed for removing the hazardous waste as follows: <ul style="list-style-type: none"> <li>– in order to meet the requirements for an empty container</li> <li>– when discrete quantities or batches of material are removed from the container but the container is not empty, the closure devices are promptly secured in the closed position and the covers installed either: <ul style="list-style-type: none"> <li>– upon completion of batch removal after which no additional material will be removed within 15 min</li> </ul> </li> </ul> </li> </ul>

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<p><b>HW.70.9.US.</b> Containers with design capacities greater than 0.1 m<sup>3</sup> used for the treatment of a hazardous waste by a waste stabilization process at LQGs are required to meet specific design and operating standards (40 CFR 262.17(a)(1)(i), 265.178, and 265.1087(a) through 265.1087(b)(2), and 265.1087(e)(1) through 265.1087(e)(3)) <b>[Added December 1996; Revised October 2001; Citation Revised January 2017].</b></p> <p><b>HW.70.10.US.</b> LQGs are required to have a written plan and schedule for inspection and monitoring requirements</p>	<ul style="list-style-type: none"> <li>– the person performing the unloading leaves the immediate vicinity, whichever condition occurs first</li> <li>– opening of a closure device or cover is allowed when access inside the container is needed to perform routine activities other than transfer of hazardous waste</li> <li>– opening of a spring loaded, pressure vacuum relief valve, conservation vent, or similar type of pressure relief device which vents to the atmosphere is allowed during normal operations for the purpose of maintaining internal container pressure</li> <li>– opening of a safety device to avoid unsafe conditions.</li> </ul> <p>Verify that the transfer of hazardous waste in or out of containers meeting Container Level 2 controls is done in a manner to minimize exposure of the hazardous waste to the atmosphere (i.e., a submerged fill pipe, a vapor balancing system, a vapor recovery system, a fitted opening in the top of the container through which the hazardous waste is filled and subsequently purge the transfer line before removing it).</p> <p>(NOTE: These requirements do not apply to a container that has a design capacity less than or equal to 0.1 m<sup>3</sup> [approx. 26 gal.] (40 CFR 265.1080(b)(2)) or to containers of any size at satellite accumulation points. See the definition of Exempted Hazardous Waste Containers and Surface Impoundments and Exempted Hazardous Waste Management Units. There are documentation requirements for exempted containers.)</p> <p>(NOTE: Safety devices may be installed and operated as necessary.)</p> <p>Verify that containers with design capacities greater than 0.1 m<sup>3</sup> [approx. 26 gal] used for the treatment of a hazardous waste by a waste stabilization process meet the following Container Level 3 standards at those times during the waste stabilization process when the hazardous waste in the container is exposed to the atmosphere:</p> <ul style="list-style-type: none"> <li>– a container is vented directly through a closed vent system to a control device</li> <li>– a container is vented inside an enclosure that is exhausted through a closed vent system to a control device.</li> <li>– the container enclosure is designed and operated in accordance with the criteria for a permanent total enclosure under 40 CFR 52.741</li> <li>– the closed vent system and control device is designed and operated in accordance with 265.1088 (see checklist item HW.70.12.US).</li> </ul> <p>(NOTE: These requirements do not apply to a container that has a design capacity less than or equal to 0.1 m<sup>3</sup> [approx. 26 gal.] (40 CFR 265.1080(b)(2)) or to containers of any size at satellite accumulation points. See the definition of Exempted Hazardous Waste Containers and Surface Impoundments and Exempted</p>

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<p>for containers and meet specific inspection requirements (40 CFR 262.17(a)(1)(i), 265.178, 265.1087(c)(4), 265.1087(d)(4), and 265.1089) [Added December 1996; Reviewed October 2001; Citation Revised January 2017; Revised January 2018].</p> <p><b>HW.70.11.US.</b> LQGs are required to meet documentation requirements for containers (40 CFR 262.17(a)(1)(i), 265.178, 265.1087(c)(5), 265.1090(a), and 265.1090(d) through 265.1090(i)) [Added December 1996; Reviewed October 2001; Citation Revised January 2017].</p>	<p>Hazardous Waste Management Units. There are documentation requirements for exempted containers.)</p> <p>Verify that the facility has a written plan and schedule for performing inspections and monitoring.</p> <p>Verify that the plan and schedule are being met.</p> <p>Verify that inspections of the containers and their covers and closure devices for containers using Container Level 1 or Level 2 controls are done as follows:</p> <ul style="list-style-type: none"> <li>– when a hazardous waste is already in the container at first acceptance and the container is not emptied within 24 h after it is accepted at the facility, the container and its cover and closure devices are visually inspected on or before the date of acceptance for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position</li> <li>– when a container used for managing hazardous waste for 1 yr or more, it is visually inspected at least once every 12 mo for visible cracks, holes, gaps, or other open spaces when the cover and closure devices are secured in the closed position.</li> </ul> <p>Verify that, when a defect is detected, the first efforts at repairs are within 24 h after detection, and repair is completed as soon as possible but no later than 5 calendar days after detection.</p> <p>(NOTE: If repair cannot be completed within 5 calendar days, the hazardous waste must be removed from the container.)</p> <p>(NOTE: These requirements do not apply to a container that has a design capacity less than or equal to 0.1 m<sup>3</sup> [approx. 26 gal.] (40 CFR 265.1080(b)(2)) or to containers of any size at satellite accumulation points. See the definition of Exempted Hazardous Waste Containers and Surface Impoundments and Exempted Hazardous Waste Management Units. There are documentation requirements for exempted containers.)</p> <p>Verify that a copy of the procedure used to determine that containers with a capacity of 0.46 m<sup>3</sup> [approx. 122 gal] or greater which do not meet DOT standards are not managing hazardous waste in light material service is available.</p> <p>Verify that if using Container Level 3 air emissions controls, the facility prepares and maintains records that:</p> <ul style="list-style-type: none"> <li>– include the most recent set of calculations and measurements performed by the owner/operator to verify that the enclosure meets the criteria of a permanent total enclosure as specified in 40 CFR 52.741, Appendix B</li> <li>– the same records as required for closed vent systems.</li> </ul>

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	<p>Verify that if using a closed-vent system and control device, the following records are maintained:</p> <ul style="list-style-type: none"> <li>– certification that is signed and dated by the owner/operator stating that the control device is designed to operate at the performance level documented by a design analysis or by performance tests when the container is operating at capacity or the highest level reasonably expected to occur</li> <li>– design documents if design analysis is used, including information describing the control device design and certification that the equipment meets the applicable specification</li> <li>– a performance test plan if performance tests are used and all test results</li> <li>– description and date of each modification, as applicable</li> <li>– identification of operating parameters, description of monitoring devices, and diagrams of monitoring sensor locations, as applicable</li> <li>– semiannual records of the following for those planned routine maintenance operations that would require the control device to exceed limitations: <ul style="list-style-type: none"> <li>– a description of the planned routine maintenance that is anticipated to be performed for the control device during the next 6-mo period, including the type of maintenance needed, planned frequency, and lengths of maintenance periods</li> <li>– a description of the planned routine maintenance that was performed for the control device during the previous 6-mo period, including the type of maintenance performed and the total number of hours during those 6 mo that the control device did not meet applicable requirements</li> </ul> </li> <li>– records of the following for those unexpected control device system malfunctions that would cause the control device to not meet specifications: <ul style="list-style-type: none"> <li>– the occurrence and duration of each malfunction of the control device system</li> <li>– the duration of each period during a malfunction when gases, vapors, or fumes are vented from the waste management unit through the closed vent system to the control device while the control device is not properly functioning</li> <li>– actions taken during periods of malfunction to restore a malfunctioning control device to its normal or usual manner of operation</li> <li>– records of the management of the carbon removed from a carbon adsorption system.</li> </ul> </li> </ul> <p>Verify that, for exempted containers (see the definition of Exempted Hazardous Waste Containers and Surface Impoundments), the following records are prepared and maintained as applicable:</p> <ul style="list-style-type: none"> <li>– if exempted under the hazardous waste concentration conditions, information used for the waste determination in the facility operating log and/or the date, time, and location of each waste sample if analysis results for samples are used</li> </ul>

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<p><b>HW.70.12.US.</b> LQGs are required to meet specific requirements for closed vent systems and control devices used to achieve compliance (40 CFR 262.17(a)(1)(i), 265.178, and 265.1088) [Added December 1996; Reviewed October 2001;</p>	<ul style="list-style-type: none"> <li>– if exempted under incineration use or process destruction use, the identification number for the incinerator, boiler, or industrial furnace in which the hazardous waste is treated.</li> </ul> <p>Verify that covers designated as unsafe to monitor are listed in a log kept in the facility operating record with an explanation of why they are unsafe to inspect and monitor and a plan and schedule of inspection and monitoring is recorded.</p> <p>Verify that, for containers not using the air emissions controls specified in 40 CFR 265.1085 through 265.1088 (see checklist items HW.70.7.US through HW.70.12.US), the following information is maintained:</p> <ul style="list-style-type: none"> <li>– a list of the individual organic peroxide compounds manufactured at the facility if it produces more than one functional family of organic peroxides or multiple organic peroxides within one functional family, and one or more of these organic peroxides could potentially undergo self-accelerating thermal decomposition at or below ambient temperatures</li> <li>– a description of how the hazardous waste containing the organic peroxide compounds identified in the above list are managed, including: <ul style="list-style-type: none"> <li>– a facility identification number for the container or group of containers</li> <li>– the purpose and placement of this container or group of containers in the management train of this hazardous waste</li> <li>– the procedures used to ultimately dispose of the hazardous waste handled in the containers</li> </ul> </li> <li>– an explanation why managing these containers would be an undue safety hazard.</li> </ul> <p>Verify that all records, except design information records, are kept for at least 3 yr.</p> <p>Verify that design information records are maintained in the operating record until the air emissions control equipment is replaced or otherwise no longer in service.</p> <p>(NOTE: See also the recordkeeping requirements for carbon adsorption units in checklist item HW.71.3.US.)</p> <p>(NOTE: These requirements do not apply to a container that has a design capacity less than or equal to 0.1 m<sup>3</sup> [approx. 26 gal.] (40 CFR 265.1080(b)(2)) or to containers of any size at satellite accumulation points. See the definition of Exempted Hazardous Waste Containers and Surface Impoundments and Exempted Hazardous Waste Management Units. There are documentation requirements for exempted containers.)</p> <p>Verify that closed vent systems meet the following:</p> <ul style="list-style-type: none"> <li>– it routes the gases, vapors, and fumes emitted from the hazardous waste in the waste management unit to a control device</li> </ul>

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<b>Citation Revised January 2017].</b>	<ul style="list-style-type: none"> <li>– it is designed and operated in accordance with 40 CFR 265.1033(j) (see check list item HW.71.2.US)</li> <li>– if it includes bypass devices that could be used to divert the gas or vapor stream to the atmosphere before entering the control device, one of the following equipment requirements is met for each type of bypass device, (NOTE: Low leg drains, high point bleeds, analyzer vents, open-ended valve or lines, spring loaded pressure relief valves, and other fittings used for safety purposes are not considered bypass devices.): <ul style="list-style-type: none"> <li>– a flow indicator is installed, calibrated, maintained, and operated at the inlet to the bypass line used to divert gases and vapors from the closed-vent system to the atmosphere at a point upstream of the control device inlet</li> <li>– a seal or locking device is placed on the mechanism by which the bypass device position is controlled when the bypass valve is in the closed position so that the bypass device cannot be opened without breaking the seal or removing the lock.</li> </ul> </li> </ul> <p>Verify that the seal or closure mechanism is visually inspected at least once every month.</p> <p>Verify that one of the following control devices are used:</p> <ul style="list-style-type: none"> <li>– a device designed and operated to reduce the total organic content of the inlet vapor stream vented to the control device by at least 95 percent by weight</li> <li>– an enclosed combustion device designed and operated in accordance with 265.1033(c) (see checklist item HW.71.2.US)</li> <li>– a flare designed and operated in accordance with 40 CFR 265.1033(d) (see checklist item HW.71.2.US).</li> </ul> <p>Verify that, when a closed vent system and control device is used, the following are met:</p> <ul style="list-style-type: none"> <li>– periods of planned routine maintenance of the control device during which the device does not meet specifications do not exceed 240 h per year</li> <li>– control device system malfunctions are corrected as soon as practicable</li> <li>– it is operated such that gases, vapors, and/or fumes are not actively vented to the control device during periods of planned maintenance or control device system malfunction, except in cases where it is necessary to do so in order to avoid an unsafe condition or to implement malfunction corrective actions or planned maintenance actions.</li> </ul> <p>Verify that, if a carbon adsorption system is used, the following requirements are met:</p> <ul style="list-style-type: none"> <li>– all activated carbon is replaced with fresh carbon on a regular basis as outlined in 40 CFR 265.1033(g) and 265.1033(h) (see checklist item HW.71.2.US)</li> <li>– all carbon removed from the devices is managed in a correct manner.</li> </ul>

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	<p>Verify that, if a control device other than thermal vapor incinerators, flare, boiler, process heater, condenser, or carbon adsorption systems are used, the requirements in 40 CFR 265.1033(i) are met (see checklist item HW.71.2.US).</p> <p>Verify that, for control devices, it is demonstrated by either a performance test or a design analysis that the device achieves compliance except for the following:</p> <ul style="list-style-type: none"> <li>– a flare</li> <li>– boiler or process heater with a design heat input capacity of 44 MW or greater</li> <li>– a boiler or process heater into which the vent stream is introduced with the primary fuel</li> <li>– a boiler or process heater burning hazardous waste for which the owner or operator has been issued a final permit under 40 CFR 270 and has designed and operates the unit in accordance with the requirements of 40 CFR 266, subpart H</li> <li>– a boiler or industrial furnace burning hazardous waste for which the owner or operator has certified compliance with the interim status requirements of 40 CFR 266, subpart H.</li> </ul> <p>Verify that the readings from each control device are inspected at least once each operating day to check control device operation.</p>



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<p><b>GENERATORS</b></p> <p><b>HW.71.</b>  <b>Emissions From Process Vents</b></p> <p><b>HW.71.1.US.</b> LQGs with process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations, that manage hazardous wastes with organic concentrations of at least 10 ppmw, are required to meet specific standards (40 CFR 262.17(a)(1)(i), 265.178, 265.1030(b), and 265.1032) [Added December 1996; Revised October 2001; Revised January 2017].</p> <p><b>HW.71.2.US.</b> When a LQG uses a closed-vent system and control device to meet the standards for total organic emissions, the closed-vent system and control device must meet certain minimum requirements (40 CFR 262.17(a)(1)(i), 265.178, and 265.1033(b) through 265.1033(k)) [Added December 1996; Reviewed October 2001; Revised January 2017].</p>	<p>(NOTE: This applies only if the operations are conducted in one of the following:</p> <ul style="list-style-type: none"> <li>– a unit that is subject to the permitting requirements of 40 CFR 270</li> <li>– a unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a hazardous waste recycling unit that is not a 90-day tank or container) and that is located at a hazardous waste management facility that is otherwise subject to the permitting requirements of 40 CFR 270</li> <li>– a unit that is exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a 90-day tank or container).)</li> </ul> <p>Verify that one of the following is met:</p> <ul style="list-style-type: none"> <li>– total organic emissions from the process vents do not exceed 1.4 kg/h (3 lb/h) and 2.8 Mg/yr (3.1 tons/yr)</li> <li>– total organic emissions are reduced by use of a control device from all process vents by 95 weight percent.</li> </ul> <p>(NOTE: A process vent is not subject to these standards if the facility owner/operator certifies that all the regulated process vents at the facility are equipped with and operating air emission controls in accordance with the requirements of the Clean Air Act (CAA) 40 CFR Parts 60, 61, and 63.)</p> <p>(NOTE: This applies to LQGs with process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations, that manage hazardous wastes with organic concentrations of at least 10 ppmw, if the operations are conducted in one of the following:</p> <ul style="list-style-type: none"> <li>– a unit that is subject to the permitting requirements of 40 CFR 270</li> <li>– a unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a hazardous waste recycling unit that is not a 90-day tank or container) and that is located at a hazardous waste management facility that is otherwise subject to the permitting requirements of 40 CFR 270</li> <li>– a unit that is exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a 90-day tank or container).)</li> </ul> <p>Verify that control devices involving vapor recovery are designed and operated to recover the organic vapors vented to the air with an efficiency of 95 weight percent or greater, unless the total organic emission limit can be attained at an efficiency of less than 95 weight percent.</p>

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	<p>Verify that, if an enclosed combustion device is used (i.e., vapor incinerator, boiler, or process heater), it is designed and operated to reduce the organic emissions vented to it by 95 weight percent or greater, to achieve a total organic compound concentration of 20 ppmv expressed as the sum of the actual compounds, not carbon equivalents, on a dry basis corrected to 3 percent oxygen, or to provide a minimum residence time of 0.50 s at a minimum temperature of 760 °C [1400 °F].</p> <p>Verify that, if a boiler or process heater is used as the control device, the vent stream is introduced into the flame zone of the boiler or process heater.</p> <p>Verify that, if flares are used:</p> <ul style="list-style-type: none"> <li>– they are designed and operated with no visible emissions except for periods not in excess of 5 min during any 2 consecutive hours</li> <li>– they are operated with a flame present at all times</li> <li>– they are used only if the net heating value of the gas being combusted is 11.2 MJ/scm (300 Btu/scf) or greater if the flare is steam assisted or air assisted</li> <li>– if nonassisted, the net heating value of the gas being combusted is 7.45 MJ/scm (200 Btu/scf) or greater</li> <li>– if nonassisted or steam-assisted, have an exit velocity less than 18.3 m/s (60 ft/s), except when the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1000 Btu/scf) and the exit velocity is equal to or greater than 18.3 m/s (60 ft/s) but less than 122 m/s (400 ft/s).</li> </ul> <p>Verify that each monitor and control device is inspected on a routine basis.</p> <p>Verify that each required control device is installed, calibrated, monitored and inspected as follows:</p> <ul style="list-style-type: none"> <li>– a flow indicator is installed in the vent stream at the nearest feasible point to the control device inlet, but before being combined with other streams, and provides a record of vent stream flow from each affected process vent to the control device at least once every hour</li> <li>– a device to continuously monitor control device operations as specified: <ul style="list-style-type: none"> <li>– a temperature monitoring device equipped with a continuous recorder for a thermal vapor incinerator</li> <li>– a temperature monitoring device equipped with a continuous recorder for a catalytic vapor incinerator</li> <li>– a heat sensing monitor with a continuous recorder for flares</li> <li>– a temperature monitoring device equipped with a continuous recorder to measure parameters that indicate good combustion operating practices are being used for a boiler or process heater having a design heat input capacity less than 44 MW</li> </ul> </li> <li>– for a condenser, one of the following: <ul style="list-style-type: none"> <li>– a monitoring device with a continuous recorder to measure the concentration level of the organic compound in the exhaust vent stream from the condenser</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– a temperature monitoring device equipped with a continuous recorder capable of monitoring temperature in the exhaust vent stream from the condenser with an accuracy of +/- 1 percent of the temperature being monitored in Celsius or in +/- 0.5 °C, whichever is greater</li> <li>– for a carbon adsorption system such as a fixed bed carbon adsorber that regenerates the carbon bed directly in the control device, one of the following:               <ul style="list-style-type: none"> <li>– a monitoring device equipped with a continuous recorder to measure the concentration levels of the organic compounds in the exhaust vent stream from the carbon bed</li> <li>– a monitoring device equipped with a continuous recorder to measure a parameter that indicates the carbon bed is regenerated on a regular, predetermined time cycle.</li> </ul> </li> </ul> <p>Verify that readings from monitoring devices are checked at least once a day.</p> <p>Verify that, if a carbon adsorption system is being used that regenerates the carbon bed directly onsite, the existing carbon in the control device is replaced with fresh carbon at a regular, predetermined time intervals.</p> <p>(NOTE: The predetermined time interval is based on the design analysis required under 40 CFR 265.1035(b)(4)(iii)(F).)</p> <p>Verify that if a carbon adsorption system is being used that does not regenerate the carbon bed directly onsite in the control device, the existing carbon in the control device is replaced on a regular basis.</p> <p>(NOTE: When to replace the carbon is determined by one of the following procedures:</p> <ul style="list-style-type: none"> <li>– monitoring the concentration level of the organic compound in the exhaust vent stream from the carbon adsorption system daily or at an interval no greater than 20 percent of the time required to consume the total carbon working capacity, whichever is longer</li> <li>– replace the carbon at a regular predetermined time interval that is less than the design carbon replacement interval.)</li> </ul> <p>Verify that closed vent systems meet one of the following:</p> <ul style="list-style-type: none"> <li>– are designed and operated with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background as determined by the procedures in 40 CFR 265.1034(b) and by visual inspection</li> <li>– are designed to operate at a pressure below atmospheric pressure and are equipped with at least one pressure gauge or other pressure measurement device that can be read from a readily accessible location.</li> </ul>

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<p><b>HW.71.3.US.</b> Generators are required to maintain specific records pertaining to process vent emissions (40 CFR 262.17(a)(1)(i), 265.178 and 265.1035) [Added December 1996; Reviewed October 2001; Citation Revised January 2017].</p>	<p>Verify that the following information is kept in the operating record:</p> <ul style="list-style-type: none"> <li>– an implementation schedule</li> <li>– up-to-date documentation of compliance</li> <li>– the test plan if test data is used to determine the organic removal efficiency or total organic compound concentration achieved by a control device</li> <li>– documentation of compliance with 40 CFR 265.1033, including: <ul style="list-style-type: none"> <li>– a list of all information references and sources used in preparing the documentation</li> <li>– records, including the dates of required compliance tests</li> <li>– design analysis, specifications, drawing, schematics, and piping and instrumentation diagrams if engineering calculations are used</li> </ul> </li> <li>– a statement signed and dated by the operator or owner certifying that the operating parameters used in the design analysis reasonably represent the conditions which exist when the hazardous waste management unit is or would be operating at the highest load or capacity level reasonably expected</li> <li>– a statement signed and dated by the owner or operator certifying that the control device is designed to operate at an efficiency of 95 percent or greater unless the total organic concentration limit is achieved at an efficiency of less than 95 weight percent, or the total organic emissions limits for affected process vents can be attained by a control device involving vapor recovery at an efficiency less than 95 weight percent.</li> <li>– all performance test results if used to demonstrate compliance</li> <li>– design documentation</li> <li>– monitoring and inspection results</li> <li>– notations of exceedance</li> <li>– explanation for each period of exceedance</li> <li>– for carbon adsorption systems: <ul style="list-style-type: none"> <li>– when the carbon is replaced in carbon adsorption systems</li> <li>– date and time when a control device is monitored for carbon breakthrough</li> </ul> </li> <li>– the date of each control device startup and shutdown.</li> </ul> <p>Verify that records of monitoring operations and inspection information are kept for 3 yr.</p>
<p><b>HW.71.4.US.</b> Closed vent systems are required to be monitored, inspected, and leaks repaired (40 CFR 262.17(a)(1)(i), 265.178, 265.1033(k) and 265.1033(n)) [Added December 1996;</p>	<p>(NOTE: This applies to generators with process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations, that manage hazardous wastes with organic concentrations of at least 10 ppmw, if the operations are conducted in one of the following:</p> <ul style="list-style-type: none"> <li>– a unit that is subject to the permitting requirements of 40 CFR 270</li> <li>– a unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a hazardous waste recycling unit that is not a 90-day tank or container) and that is located at a</li> </ul>

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<b>Reviewed October 2001; Revised January 2017].</b>	<p>hazardous waste management facility that is otherwise subject to the permitting requirements of 40 CFR 270</p> <ul style="list-style-type: none"> <li>– a unit that is exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a 90-day tank or container.)</li> </ul> <p>Verify that closed vents systems designed and operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, are monitored as follows:</p> <ul style="list-style-type: none"> <li>– an initial leak detection monitoring of the closed vent system using the procedures specified in 40 CFR 265.1034(b) on or before the date the system become subject to this section of the CFR</li> <li>– after initial leak detection monitoring: <ul style="list-style-type: none"> <li>– visual inspection at least once a year for closed vent system joints, seams, or other connections that are permanently or semi-permanently sealed (e.g., a welded joint between two sections of hard piping or a bolted and gasketed ducting flange)</li> <li>– whenever a component is repaired or replaced monitor according to 40 CFR 265.1034(b)</li> <li>– annually and at times required by the Regional Administrator for all other parts of the system using the procedures specified in 40 CFR 265.1034(b).</li> </ul> </li> </ul> <p>Verify that closed vent systems designed to operate at no detectable emissions, as indicated by an instrument reading of less than 500 ppmv above background, are monitored as follows:</p> <ul style="list-style-type: none"> <li>– annual visual inspection to check for defects that could result in air pollutant emissions</li> <li>– initial inspection on or before the date the system becomes subject to this section of the CFR.</li> </ul> <p>(NOTE: For closed vent systems designed to operate at no detectable emissions, as indicated by an instrument reading of less than 500 ppmv above background, portions of the system designated as unsafe to monitor are exempt from the visual monitoring if:</p> <ul style="list-style-type: none"> <li>– the components are unsafe to monitor because monitoring personnel would be exposed to an immediate danger</li> <li>– a written plan that requires monitoring as practicable during safe to monitor periods is in place and followed.)</li> </ul> <p>Verify that detectable emissions, as indicated by visual inspection or by an instrument reading of greater than 500 ppmv above background, are controlled as soon as practicable but not later than 15 days after the emissions is detected.</p>

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<p><b>HW.71.5.US.</b> Closed vent systems and control devices used to comply with the provisions of 40 CFR 265.1030 through 265.1035 are required to be operated at all times when emissions may be vented to them (40 CFR 262.17(a)(1)(i), 265.178, 265.1033(l)) [Added December 1996; Reviewed October 2001; Revised January 2017].</p> <p><b>HW.71.6.US.</b> When carbon adsorption systems are used, operators are required to manage all carbon that is a hazardous waste according to specific parameters (40 CFR 262.17(a)(1)(i), 265.178, 265.1033(m)) [Added December 1996; Reviewed October 2001; Revised January 2017].</p>	<p>Verify that a first attempt at repair is made no later than 5 calendar days after the emission is detected.</p> <p>(NOTE: Delay of repair of a closed vent system for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown, or if it is determined that the emissions resulting from the immediate repair would be greater than the fugitive emissions likely to result from delay of repair.)</p> <p>(NOTE: This applies to generators with process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations, that manage hazardous wastes with organic concentrations of at least 10 ppmw, if the operations are conducted in one of the following:</p> <ul style="list-style-type: none"> <li>– a unit that is subject to the permitting requirements of 40 CFR 270</li> <li>– a unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a hazardous waste recycling unit that is not a 90-day tank or container) and that is located at a hazardous waste management facility that is otherwise subject to the permitting requirements of 40 CFR 270</li> <li>– a unit that is exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a 90-day tank or container).)</li> </ul> <p>Verify that closed vent systems and control devices are operated at all times when emissions may be vented to them.</p> <p>(NOTE: This applies to generators with process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations, that manage hazardous wastes with organic concentrations of at least 10 ppmw, if the operations are conducted in one of the following:</p> <ul style="list-style-type: none"> <li>– a unit that is subject to the permitting requirements of 40 CFR 270</li> <li>– a unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a hazardous waste recycling unit that is not a 90-day tank or container) and that is located at a hazardous waste management facility that is otherwise subject to the permitting requirements of 40 CFR 270</li> <li>– a unit that is exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a 90-day tank or container).)</li> </ul> <p>Verify that carbon removed from control devices that is a hazardous waste is managed in one of the following manners, regardless of the average VOC concentration of the carbon:</p> <ul style="list-style-type: none"> <li>– regenerated or reactivated in a thermal treatment unit that meets one of the following: <ul style="list-style-type: none"> <li>– the unit has a final permit under 40 CFR 270 which implements the requirements of 40 CFR 264, subpart X</li> <li>– the unit is equipped with and operating air emission controls in accordance with applicable requirements</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– incinerated in a hazardous waste incinerator for which the operator either: <ul style="list-style-type: none"> <li>– has a final permit under 40 CFR 270 which implement the requirements of 40 CFR 264, subpart O</li> <li>– has designed and operates the incinerator in accordance with the interim status required in 40 CFR 265, subpart O</li> </ul> </li> <li>– burned in a boiler or industrial furnace for which the operator either: <ul style="list-style-type: none"> <li>– has been issued a final permit under 40 CFR 270 implementing 40 CFR 266</li> <li>– has designed and operates the boiler or industrial furnace in accordance with the interim status requirements of 40 CFR 266, Subpart H.</li> </ul> </li> </ul>



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<p><b>GENERATORS</b></p> <p><b>HW.72.</b>  <b>Air Emission Standards for Equipment Leaks</b></p> <p><b>HW.72.1.US.</b> LQGs with pumps in light liquid service, that contain or contact hazardous wastes with organic concentrations of at least 10 percent by weight, are required to meet specific standards (40 CFR 262.17(a)(1)(i), 265.178, and 265.1052) [Added December 1996; Reviewed October 2001; Revised January 2017].</p>	<p>Verify that pumps in light liquid service are monitored monthly according to designated reference methods and inspected visually weekly.</p> <p>(NOTE: A leak is detected if there is an instrument reading of 10,000 ppm or greater or if there is an indication of liquid dripping from the pump seal.)</p> <p>Verify that, when a leak is detected, the first attempt at repair is made within 5 calendar days and repair is completed within 15 calendar days.</p> <p>(NOTE: Pumps equipped with dual mechanical seal systems and pumps designated for no detectable emissions that meet standards outlined here do not have to be monitored monthly or visually checked weekly.)</p> <p>Verify that pumps equipped with a dual mechanical seal system which do not have to be monitored monthly or visually checked weekly, meet the following design and operation requirements:</p> <ul style="list-style-type: none"> <li>– the dual mechanical seal system is operated with barrier fluid at a pressure that is at all times greater than the pump stuffing box, or equipped with a barrier fluid degassing reservoir that is connected by a closed-vent system to a control device, or equipped with a system that purges the barrier fluid into a hazardous waste stream with no detectable emission to the atmosphere</li> <li>– the barrier fluid system has no hazardous waste with organic concentrations 10 percent or greater by weight</li> <li>– the barrier fluid system is equipped with a sensor that will detect failure if the seal is broken</li> <li>– pumps are checked by visual inspection weekly</li> <li>– sensors are checked daily or equipped with an audible alarm that is checked monthly.</li> </ul> <p>(NOTE: Each owner or operator must determine, based on design considerations and operating experience, a criterion that indicate failure of the seal system, the barrier fluid system, or both.)</p> <p>Verify that pumps designated for no detectable emissions, as indicated by an instrument reading of 500 ppm above background or less, meet the following:</p> <ul style="list-style-type: none"> <li>– they are operated with no detectable emissions</li> <li>– they are tested for compliance initially upon designation, annually, and at other times as requested by the Regional Administrator</li> </ul>

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<p><b>HW.72.2.US.</b> LQGs with compressors that contain or contact hazardous wastes with organic concentrations of at least 10 percent by weight are required to meet specific standards (40 CFR 262.17(a)(1)(i), 265.178, and 265.1053) [Added December 1996; Revised October 2001; Revised January 2017].</p>	<p>– no externally actuated shaft penetrates the pump housing.</p> <p>(NOTE: Any pump that is equipped with a closed-vent system capable of capturing and transporting any leakage from the seal or seals to a control device is exempt from these requirements.)</p> <p>(NOTE: This section applies to equipment that contains or contacts hazardous waste with organic concentrations of at least 10 percent by weight that are managed in one of the following (40 CFR 265.1050(b)):</p> <ul style="list-style-type: none"> <li>– a unit that is subject to the permitting requirements of 40 CFR 270</li> <li>– a unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a hazardous waste recycling unit that is not a 90-day tank or container) and that is located at a hazardous waste management facility that is otherwise subject to the permitting requirements of 40 CFR 270</li> <li>– a unit that is exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a 90-day tank or container) and is not a recycling unit under the provisions of 40 CFR 261.6.)</li> </ul> <p>(NOTE: This section does not apply to (40 CFR 265.1050(d) and 265.1050(e)):</p> <ul style="list-style-type: none"> <li>– equipment that is in vacuum service and is identified as such on the required list</li> <li>– equipment that contains or contacts hazardous waste with an organic concentration of at least 10 percent by weight for less than 300 h per calendar year and is identified as such.)</li> </ul> <p>Verify that each compressor is equipped with a seal system which includes a barrier fluid system and prevents leakage of total organic emissions to the atmosphere except if:</p> <ul style="list-style-type: none"> <li>– it is equipped with a closed-vent system capable of capturing and transporting any leakage from the seal to a control device</li> <li>– it is designated for no detectable emission as indicated by an instrument reading of less than 500 ppm above back ground</li> <li>– it is tested for compliance initially upon designation, annually, and at times as requested by the Regional Administrator.</li> </ul> <p>Verify that compressor seal systems meet one of the following:</p> <ul style="list-style-type: none"> <li>– it is operated with the barrier fluid at a pressure that is at all times greater than the compressor stuffing box pressure</li> <li>– it is equipped with a barrier fluid system that is connected to a closed-vent system or a control device</li> <li>– it is equipped with a system that purges the barrier fluid into a hazardous waste stream with no detectable emissions to the atmosphere.</li> </ul>

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<p><b>HW.72.3.US.</b> LQGs with pressure relief devices in gas/vapor service that contain or contact hazardous wastes with organic concentrations of at least 10 percent by weight are required to meet specific standards (40 CFR</p>	<p>Verify that the barrier fluid is not a hazardous waste with organic concentrations 10 percent or greater by weight.</p> <p>Verify that each barrier fluid system is equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both.</p> <p>Verify that each sensor is checked daily or it is equipped with an audible alarm that is checked monthly.</p> <p>(NOTE: Sensors on compressors located within the boundary of an unmanned site must be checked daily.)</p> <p>(NOTE: Each owner or operator must determine, based on design considerations and operating experience, a criterion that indicate failure of the seal system, the barrier fluid system, or both.)</p> <p>Verify that, when a leak is detected, the first attempt at repair is made within 5 calendar days and the repair is made within 15 calendar days.</p> <p>(NOTE: This section applies to equipment that contains or contacts hazardous waste with organic concentrations of at least 10 percent by weight that are managed in one of the following (40 CFR 265.1050(b)):</p> <ul style="list-style-type: none"> <li>– a unit that is subject to the permitting requirements of 40 CFR 270</li> <li>– a unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a hazardous waste recycling unit that is not a 90-day tank or container) and that is located at a hazardous waste management facility that is otherwise subject to the permitting requirements of 40 CFR 270</li> <li>– a unit that is exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a 90-day tank or container) and is not a recycling unit under the provisions of 40 CFR 261.6.)</li> </ul> <p>(NOTE: This section does not apply to (40 CFR 265.1050(d) and 265.1050(e)):</p> <ul style="list-style-type: none"> <li>– equipment that is in vacuum service and is identified as such on the required list</li> <li>– equipment that contains or contacts hazardous waste with an organic concentration of at least 10 percent by weight for less than 300 h per calendar year and is identified as such.)</li> </ul> <p>Verify that, except during pressure releases, each pressure relief device in gas/vapor service is operated with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background.</p> <p>Verify that if there is a pressure release, the device is returned to a no detectable emission status within 5 calendar days and the device is monitored to ensure compliance.</p>

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<p>262.17(a)(1)(i), 265.178, 265.1054) [Added December 1996; Revised October 2001; Revised January 2017].</p> <p><b>HW.72.4.US.</b> LQGs with sampling connecting systems that contain or contact hazardous wastes with organic concentrations of at least 10% by weight are required to meet specific standards (40 CFR 262.17(a)(1)(i), 265.178, and 265.1055) [Added December 1996; Reviewed October 2001; Revised January 2017].</p>	<p>(NOTE: Any pressure relief device that is equipped with a closed-vent system capable of capturing and transporting leakage from the pressure relief device to a control device is exempt from these requirements.)</p> <p>(NOTE: This section applies to equipment that contains or contacts hazardous waste with organic concentrations of at least 10 percent by weight that are managed in one of the following (40 CFR 265.1050(b)):</p> <ul style="list-style-type: none"> <li>– a unit that is subject to the permitting requirements of 40 CFR 270</li> <li>– a unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a hazardous waste recycling unit that is not a 90-day tank or container) and that is located at a hazardous waste management facility that is otherwise subject to the permitting requirements of 40 CFR 270</li> <li>– a unit that is exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a 90-day tank or container) and is not a recycling unit under the provisions of 40 CFR 261.6.)</li> </ul> <p>(NOTE: This section does not apply to (40 CFR 265.1050(d) and 265.1050(e)):</p> <ul style="list-style-type: none"> <li>– equipment that is in vacuum service and is identified as such on the required list</li> <li>– equipment that contains or contacts hazardous waste with an organic concentration of at least 10 percent by weight for less than 300 h per calendar year and is identified as such.)</li> </ul> <p>Verify that each sampling connection system is equipped with a closed-purge, closed loop system or closed-vent system.</p> <p>Verify that each system collects the sample purge for return to the processing or for routing to the appropriate treatment system.</p> <p>(NOTE: Gases displaced through filling of the sample container are not required to be collected or captured.)</p> <p>Verify that each closed-purge, closed-loop system or closed-vent system does one of the following:</p> <ul style="list-style-type: none"> <li>– returns the purged process fluid directly to the process line</li> <li>– collects and recycles the purged process fluid</li> <li>– is designed and operated to capture and transport all the purged process fluid to a waste management unit that is in compliance or a control device that is in compliance.</li> </ul> <p>(NOTE: In-situ sampling systems are exempt from these requirements.)</p> <p>(NOTE: This section applies to equipment that contains or contacts hazardous waste with organic concentrations of at least 10 percent by weight that are managed in one of the following (40 CFR 265.1050(b)):</p>

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<p><b>HW.72.5.US.</b> LQGs with open-ended valves or lines that contain or contact hazardous wastes with organic concentrations of at least 10 percent by weight are required to meet specific operation standards (40 CFR 262.17(a)(1)(i), 265.178, 265.1056) [Added December 1996; Reviewed October 2001; Revised January 2017].</p>	<ul style="list-style-type: none"> <li>– a unit that is subject to the permitting requirements of 40 CFR 270</li> <li>– a unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a hazardous waste recycling unit that is not a 90-day tank or container) and that is located at a hazardous waste management facility that is otherwise subject to the permitting requirements of 40 CFR 270</li> <li>– a unit that is exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a 90-day tank or container) and is not a recycling unit under the provisions of 40 CFR 261.6.)</li> </ul> <p>(NOTE: This section does not apply to (40 CFR 265.1050(d) and 265.1050(e)):</p> <ul style="list-style-type: none"> <li>– equipment that is in vacuum service and is identified as such on the required list</li> <li>– equipment that contains or contacts hazardous waste with an organic concentration of at least 10 percent by weight for less than 300 h per calendar year and is identified as such.)</li> </ul> <p>Verify that each open-ended valve or line is equipped with a cap, blind flange, plug, or a second valve.</p> <p>Verify that the cap, blind flange, plug, or second valve seals the open end at all times, except during operations requiring hazardous waste stream flow through the open-ended valve or line.</p> <p>Verify that each open-ended valve or line equipped with a second valve is operated so the valve on the hazardous waste stream end is closed before the second valve is closed.</p> <p>Verify that, when a double block and bleed system is being used; the bleed valve is shut or plugged except during operations that require venting the line between the block valves.</p> <p>(NOTE: This section applies to equipment that contains or contacts hazardous waste with organic concentrations of at least 10 percent by weight that are managed in one of the following (40 CFR 265.1050(b)):</p> <ul style="list-style-type: none"> <li>– a unit that is subject to the permitting requirements of 40 CFR 270</li> <li>– a unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a hazardous waste recycling unit that is not a 90-day tank or container) and that is located at a hazardous waste management facility that is otherwise subject to the permitting requirements of 40 CFR 270</li> <li>– a unit that is exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a 90-day tank or container) and is not a recycling unit under the provisions of 40 CFR 261.6.)</li> </ul> <p>(NOTE: This section does not apply to (40 CFR 265.1050(d) and 265.1050(e)):</p>

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<p><b>HW.72.6.US.</b> LQGs with valves in gas/vapor service or light liquid service, that contain or contact hazardous wastes with organic concentrations of at least 10 percent by weight, are required to meet specific monitoring and repair standards (40 CFR 262.17(a)(1)(i), 265.178, 265.1057, and 265.1062) [Revised December 1997; Reviewed October 2001; Revised January 2017].</p>	<ul style="list-style-type: none"> <li>– equipment that is in vacuum service and is identified as such on the required list</li> <li>– equipment that contains or contacts hazardous waste with an organic concentration of at least 10 percent by weight for less than 300 h per calendar year and is identified as such.)</li> </ul> <p>Verify that valves in gas/vapor service or light liquid service are monitored monthly to detect leaks.</p> <p>(NOTE: A leak is detected if an instrument reading of 10,000 ppm or greater is measured. But, if a leak is not detected for 2 consecutive months, monitoring may be cut back to quarterly until a leak is detected.)</p> <p>(NOTE: Valves that are designated for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, do not have to be monitored monthly if:</p> <ul style="list-style-type: none"> <li>– the valve has no external actuating mechanism in contact with the hazardous waste stream</li> <li>– the valve is operated with emissions less than 500 ppm above background</li> <li>– the valve is tested initially upon designation, annually, and at the request of the Regional Administrator.)</li> </ul> <p>(NOTE: Valves that are designated as unsafe to monitor are exempt from the requirement for monthly monitoring if:</p> <ul style="list-style-type: none"> <li>– the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger</li> <li>– a written monitoring plan is followed that requires monitoring as often as is reasonably practicable during safe to monitor times.)</li> </ul> <p>(NOTE: The generator may elect to have all valves within a hazardous waste management unit comply with an alternative standard of no greater than 2 percent of the valves to leak; see checklist item HW.72.10.US.)</p> <p>(NOTE: Valves that are designated as difficult to monitor are exempt from monthly monitoring requirements if:</p> <ul style="list-style-type: none"> <li>– the valve cannot be monitored without elevating the monitoring personnel more than 2 m above a support surface</li> <li>– the hazardous waste management unit within which the valve is located was in operation before 21 June 1990</li> <li>– a written monitoring plan is followed that requires the monitoring of the valve at least once per calendar year.)</li> </ul> <p>(NOTE: The following are alternatives to the prescribed monitoring schedule which can be used until the percentage of valves leaking is greater than 2 percent:</p> <ul style="list-style-type: none"> <li>– after 2 consecutive quarterly leak detection periods with the percentage of valves leaking equal to or less than 2 percent, an owner or operator may begin</li> </ul>

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<p><b>HW.72.7.US.</b> LQGs with pumps and valves in heavy liquid service, pressure relief devices in light liquid service or heavy liquid service, and other connectors that contain or contact hazardous wastes with organic concentrations of at least 10% by weight, are required to meet specific monitoring and repair</p>	<p>to skip one of the quarterly leak detection periods for the valves subject to 40 CFR 265.1057</p> <ul style="list-style-type: none"> <li>– after 5 consecutive quarterly leak detection periods with the percentage of valves leaking equal to or less than 2 percent, an owner or operator may begin to skip three of the quarterly leak detection periods for the valves subject to 40 CFR 265.1057.</li> </ul> <p>Verify that the first attempt at repairing a leak is done within 5 calendar days after detection and leak repair is completed within 15 days after detection.</p> <p>(NOTE: First attempts at repair include, but are not limited to:</p> <ul style="list-style-type: none"> <li>– tightening of bonnet bolts</li> <li>– replacement of bonnet bolts</li> <li>– tightening of packing gland nuts</li> <li>– injection of lubricant into lubricated packing.)</li> </ul> <p>(NOTE: This section applies to equipment that contains or contacts hazardous waste with organic concentrations of at least 10 percent by weight that are managed in one of the following (40 CFR 265.1050(b)):</p> <ul style="list-style-type: none"> <li>– a unit that is subject to the permitting requirements of 40 CFR 270</li> <li>– a unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a hazardous waste recycling unit that is not a 90-day tank or container) and that is located at a hazardous waste management facility that is otherwise subject to the permitting requirements of 40 CFR 270</li> <li>– a unit that is exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a 90-day tank or container) and is not a recycling unit under the provisions of 40 CFR 261.6.)</li> </ul> <p>(NOTE: This section does not apply to (40 CFR 265.1050(d) and 265.1050(e)):</p> <ul style="list-style-type: none"> <li>– equipment that is in vacuum service and is identified as such on the required list</li> <li>– equipment that contains or contacts hazardous waste with an organic concentration of at least 10 percent by weight for less than 300 h per calendar year and is identified as such.)</li> </ul> <p>Verify that pumps and valves in heavy liquid service, pressure relief devices in light liquid service or heavy liquid service, and other connectors are monitored within 5 days if evidence of a potential leak is found by visual, olfactory, audible, or other detection method.</p> <p>(NOTE: Any connector that is inaccessible or is ceramic or ceramic lined is exempt from the monitoring requirements.)</p> <p>(NOTE: A leak is detected if an instrument reading of 10,000 ppm or greater is measured.)</p>

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standards (40 CFR 262.17(a)(1)(i), 265.178, and 265.1058) [Added December 1996; Reviewed October 2001; Revised January 2017].	<p>Verify that, when a leak is detected, the first attempt at repair occurs within 5 days and repair is done within 15 days after discovery.</p> <p>(NOTE: First attempts at repair include, but are not limited to:</p> <ul style="list-style-type: none"> <li>– tightening of bonnet bolts</li> <li>– replacement of bonnet bolts</li> <li>– tightening of packing gland nuts</li> <li>– injection of lubricant into lubricated packing.)</li> </ul> <p>(NOTE: This section applies to equipment that contains or contacts hazardous waste with organic concentrations of at least 10 percent by weight that are managed in one of the following (40 CFR 265.1050(b)):</p> <ul style="list-style-type: none"> <li>– a unit that is subject to the permitting requirements of 40 CFR 270</li> <li>– a unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a hazardous waste recycling unit that is not a 90-day tank or container) and that is located at a hazardous waste management facility that is otherwise subject to the permitting requirements of 40 CFR 270</li> <li>– a unit that is exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a 90-day tank or container) and is not a recycling unit under the provisions of 40 CFR 261.6.)</li> </ul> <p>(NOTE: This section does not apply to (40 CFR 265.1050(d) and 265.1050(e)):</p> <ul style="list-style-type: none"> <li>– equipment that is in vacuum service and is identified as such on the required list</li> <li>– equipment that contains or contacts hazardous waste with an organic concentration of at least 10 percent by weight for less than 300 h per calendar year and is identified as such.)</li> </ul> <p>Verify that the following information is maintained in the generator’s operating record:</p> <ul style="list-style-type: none"> <li>– equipment identification number and hazardous management unit identification</li> <li>– approximate locations</li> <li>– type of equipment</li> <li>– percent-by-weight total organics in the hazardous waste stream at the equipment</li> <li>– hazardous waste state at the equipment (gas, liquid, vapor)</li> <li>– method of compliance</li> <li>– implementation schedule if needed</li> <li>– a performance plan for control devices as needed</li> <li>– documentation of compliance</li> <li>– documentation of repair, including: <ul style="list-style-type: none"> <li>– the instrument and operator identification numbers and the equipment identification number</li> </ul> </li> </ul>
<b>HW.72.8.US.</b> LQGs are required to keep specific records pertaining to the valves, pumps, pressure relief devices, and connecting systems being monitored for leaks and submit certain reports (40 CFR 262.17(a)(1)(i), 265.178, 265.1058(e) and 265.1064) [Revised December 1997; Reviewed October 2001; Revised January 2017].	

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	<ul style="list-style-type: none"> <li>– the date evidence of a potential leak was found</li> <li>– the date the leak was detected and the date of each attempt to repair the leak</li> <li>– repair methods applied in each attempt</li> <li>– “Above 10,000” if the maximum instrument reading after each repair attempt is greater than 10,000 ppm</li> <li>– “Repair Delayed” and the reason for delay if the leak is not repaired within 15 calendar days after discovery</li> <li>– documentation supporting the delay of repair of a valve</li> <li>– signature of the owner or operator whose decision it was that repair could not be affected without a hazardous waste management unit shutdown</li> <li>– the expected date of successful repair of the leak when it is not repaired within 15 calendar day</li> <li>– the date of successful repair of the leak</li> <li>– design documentation and monitoring, operating, and inspection information for each closed vent system control device required to comply with the provisions of 40 CFR 265.1060</li> <li>– monitoring and inspection information indicating proper operation and maintenance of the control device for a control device other than a thermal vapor incinerator, catalytic vapor incinerator, flare, boiler, process heater, condenser, or carbon adsorption system</li> <li>– the following information for all equipment subject to 40 CFR 265.1052 through 265.1060: <ul style="list-style-type: none"> <li>– a list of identification numbers for equipment (except welded fittings)</li> <li>– a list of identification numbers for equipment that the owner or operator elects to designate for no detectable emissions</li> <li>– a list of equipment identification numbers for pressure relief devices</li> <li>– the dates of required compliance tests, background levels, and maximum instrument reading measured during the compliance test</li> <li>– a list of identification numbers for equipment in vacuum service</li> <li>– identification either by list or location (area or group) of equipment that contains or contacts hazardous waste with an organic concentration of at least 10 percent by weight for less than 300 h per calendar year.</li> </ul> </li> </ul> <p>Verify that the following information is kept for all valves subject to 40 CFR 265.1057(g) and (h):</p> <ul style="list-style-type: none"> <li>– a list of identification numbers for valves listed as unsafe to monitor, an explanation for each valve stating why it is unsafe to monitor, and the plan for monitoring each valve</li> <li>– a list of identification numbers for valves that are designated as difficult to monitor, an explanation for each valve stating why it is difficult to monitor, and the plan for monitoring each valve</li> <li>– the following for all valves complying with 40 CFR 265.1062: <ul style="list-style-type: none"> <li>– a schedule of monitoring</li> <li>– the percent of valves found leaking in each monitoring period.</li> </ul> </li> </ul>

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<p><b>HW.72.9.US.</b> Each piece of equipment subject to the requirements in 40 CFR 265.1050 through 265.1064 is required to be marked so that it can be distinguished from other equipment (40 CFR 262.17(a)(1)(i), 265.178, and 265.1050(c) [Added December 1996; Reviewed October 2001; Revised January 2017].</p>	<p>Verify that the following information is kept for use in determining exemptions:</p> <ul style="list-style-type: none"> <li>– an analysis determining the design capacity of the unit</li> <li>– a statement listing the hazardous waste influent to and effluent from each unit subject to 40 CFR 265.1052 through 265.1060 and an analysis determining whether these hazardous wastes are heavy liquids</li> <li>– an up-to-date analysis and the supporting information and data used to determine if equipment is subject to the requirements.</li> </ul> <p>(NOTE: Any connector that is inaccessible or is ceramic or ceramic lined is exempt from the recordkeeping requirements.)</p> <p>(NOTE: This section applies to equipment that contains or contacts hazardous waste with organic concentrations of at least 10 percent by weight that are managed in one of the following (40 CFR 265.1050(b)):</p> <ul style="list-style-type: none"> <li>– a unit that is subject to the permitting requirements of 40 CFR 270</li> <li>– a unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a hazardous waste recycling unit that is not a 90-day tank or container) and that is located at a hazardous waste management facility that is otherwise subject to the permitting requirements of 40 CFR 270</li> <li>– a unit that is exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a 90-day tank or container) and is not a recycling unit under the provisions of 40 CFR 261.6.)</li> </ul> <p>(NOTE: This section does not apply to (40 CFR 265.1050(d) and 265.1050(e)):</p> <ul style="list-style-type: none"> <li>– equipment that is in vacuum service and is identified as such on the required list</li> <li>– equipment that contains or contacts hazardous waste with an organic concentration of at least 10 percent by weight for less than 300 h per calendar year and is identified as such.)</li> </ul> <p>Verify that each piece of equipment subject to the requirements in 40 CFR 265.1050 through 265.1064 (see checklist items HW.72.1.US through HW.72.8.US) is marked so that it can be distinguished from other equipment.</p> <p>(NOTE: This section applies to equipment that contains or contacts hazardous waste with organic concentrations of at least 10 percent by weight that are managed in one of the following (40 CFR 265.1050(b)):</p> <ul style="list-style-type: none"> <li>– a unit that is subject to the permitting requirements of 40 CFR 270</li> <li>– a unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a hazardous waste recycling unit that is not a 90-day tank or container) and that is located at a hazardous waste management facility that is otherwise subject to the permitting requirements of 40 CFR 270</li> </ul>

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<p><b>HW.72.10.US.</b> When a generator has elected to comply with alternative standards, specific actions are required (40 CFR 262.17(a)(1)(i) and 265.1061) [Added May 1997; Reviewed October 2001; Revised January 2017].</p>	<p>– a unit that is exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a 90-day tank or container) and is not a recycling unit under the provisions of 40 CFR 261.6.)</p> <p>(NOTE: This section does not apply to (40 CFR 265.1050(d) and 265.1050(e)):</p> <ul style="list-style-type: none"> <li>– equipment that is in vacuum service and is identified as such on the required list</li> <li>– equipment that contains or contacts hazardous waste with an organic concentration of at least 10 percent by weight for less than 300 h per calendar year and is identified as such.)</li> </ul> <p>Determine if the owner/operator subject to 40 CFR 265.1057 (see checklist item HW.72.6.US) has elected to have all valves within a hazardous waste management unit comply with an alternative standard of allowing 2 percent of the valves to leak.</p> <p>Verify that the following actions have been taken if comply with the 2 percent alternative:</p> <ul style="list-style-type: none"> <li>– the Regional Administrator has been notified of the choice to comply with the alternative standards</li> <li>– a performance test was conducted initially upon designation, annually, and at other times as required by the Regional Administrator</li> <li>– if a valve leak is detected, first attempt at repair is within 5 calendar days and leak repair is completed within 15 days after detection.</li> </ul> <p>Verify that if the owner/operator has decided to no longer comply with the 2 percent rule, they have notified the Regional Administrator.</p> <p>(NOTE: This section applies to equipment that contains or contacts hazardous waste with organic concentrations of at least 10 percent by weight that are managed in one of the following (40 CFR 265.1050(b)):</p> <ul style="list-style-type: none"> <li>– a unit that is subject to the permitting requirements of 40 CFR 270</li> <li>– a unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a hazardous waste recycling unit that is not a 90-day tank or container) and that is located at a hazardous waste management facility that is otherwise subject to the permitting requirements of 40 CFR 270</li> <li>– a unit that is exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a 90-day tank or container) and is not a recycling unit under the provisions of 40 CFR 261.6.)</li> </ul> <p>(NOTE: This section does not apply to (40 CFR 265.1050(d) and 265.1050(e)):</p> <ul style="list-style-type: none"> <li>– equipment that is in vacuum service and is identified as such on the required list</li> <li>– equipment that contains or contacts hazardous waste with an organic concentration of at least 10 percent by weight for less than 300 h per calendar year and is identified as such.)</li> </ul>

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<p><b>GENERATORS</b></p> <p><b>HW.75. Satellite Accumulation Points</b></p> <p><b>HW.75.1.US.</b> All LQGs may accumulate as much as 55 gal of non-acute hazardous waste and/or either 1 qt of liquid acute hazardous waste or 1 kg (2.2 lb) of solid acute hazardous waste in containers at or near any point of generation where wastes initially accumulate without complying with the requirements for central accumulation area storage if specific standards are met (40 CFR 262.15) [Reviewed October 2001; Revised July 2004; Revised January 2017].</p>	<p>(NOTE: This type of storage is often referred to as a satellite accumulation area or a satellite accumulation point. If an SAA is not managed and operating according to the requirements of this checklist item, it must be considered a central accumulation area and meet the requirements in 40 CFR 262.17(a) (see checklist items in HW.55, HW.60, HW.65, HW.70, HW.71, HW.72, HW.80, HW.83, HW.85, and HW.90).)</p> <p>Verify that the satellite accumulation area is at or near any point of generation where wastes initially accumulate and is under the control of the operator of process generating the waste.</p> <p>(NOTE: In the Preamble to the November 2016 rule revision, page 85767 [Column 1], EPA stated that it would not consider a shed outside a building where the waste is initially generated to be “at or near the point of generation.” But, implementing regulatory agencies retain the authority in determining what they consider “at or near the point of generation.”)</p> <p>(NOTE: In the Preamble to the November 2016 rule revision, page 85767, there is a lengthy discussion about the meaning of the phrase “under the control of the operator.” EPA believes that there can be more than one operator per SAA over time. For example, as employees change shifts over the course of a day, the role of the operator can be transferred from one employee to another. Likewise, the EPA believes that there can also be more than one operator per SAA at the same time. For example, multiple operators may be running laboratory equipment in the same room and share hazardous waste containers located in a single SAA. However, the term operator does refer to an individual or individuals responsible for the equipment or processes generating the hazardous waste and does not refer to a company or entity as a whole. In relationship to what constitutes “control,” EPA stated that the intent of the term is to ensure that someone familiar with the operations generating the hazardous waste is aware of and able to attend to the operations, if needed, while also providing some measure of controlled access.)</p> <p>Verify that the satellite accumulation area does not exceed the following:</p> <ul style="list-style-type: none"> <li>– 55 gal of non-acute hazardous waste in containers</li> <li>– either 1 qt of liquid acute hazardous waste or 1 kg (2.2 lb) of solid acute hazardous waste in containers</li> </ul> <p>Verify that, if a container holding hazardous waste is not in good condition, or if it begins to leak, the generator immediately transfers the hazardous waste from this</p>

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	<p>container to a container that is in good condition and does not leak, or immediately transfers and manages the waste in a compliant central accumulation area (i.e., 90-day storage area).</p> <p>Verify that the generator uses containers made of or lined with materials that will not react with, and are otherwise compatible with, the hazardous waste to be accumulated, so that the ability of the container to contain the waste is not impaired.</p> <p>Verify that incompatible wastes, or incompatible wastes and materials are not placed in the same container unless an extension has been granted by the Regional Administrator.</p> <p>Verify that hazardous waste is not placed in an unwashed container that previously held an incompatible waste or material unless an extension has been granted by the Regional Administrator</p> <p>Verify that a container holding a hazardous waste that is incompatible with any waste or other materials accumulated nearby in other containers is separated from the other materials or protected from them by any practical means.</p> <p>Verify that satellite accumulation area containers holding hazardous waste are closed at all times during accumulation except in one of the following situations:</p> <ul style="list-style-type: none"> <li>– when adding, removing, or consolidating waste</li> <li>– when temporary venting of a container is necessary on one of the following situations: <ul style="list-style-type: none"> <li>– for the proper operation of equipment</li> <li>– to prevent dangerous situations, such as build-up of extreme pressure.</li> </ul> </li> </ul> <p>(NOTE: In the Preamble to the November 2016 rule revision, page 85764, EPA stresses it does not intend to create a loophole to the closed container requirement or to allow intentional evaporation of hazardous waste. Rather, the intent of the flexibility is to address the limited cases in which strict adherence to the container closure requirements could substantially increase a risk of a hazardous waste incident rather than decrease it. The flexibility for containers to remain open in specific situations applies only to containers in SAAs.)</p> <p>Verify that containers at a satellite accumulation area are marked:</p> <ul style="list-style-type: none"> <li>– with the words “Hazardous Waste”</li> <li>– with an indication of the hazards of the contents; examples include, but are not limited to: <ul style="list-style-type: none"> <li>– the applicable hazardous waste characteristic(s) (i.e., ignitable, corrosive, reactive, toxic)</li> <li>– hazard communication consistent with the DoT requirements at 49 CFR 172 subpart E (labeling) or subpart F (placarding)</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– a hazard statement or pictogram consistent with the OSHA Hazard Communication Standard at 29 CFR 1910.1200</li> <li>– a chemical hazard label consistent with the NFPA code 704.</li> </ul> <p>Verify that, when hazardous waste or acute hazardous waste is accumulated in excess of quantity limitations at or near the point of generation, the following actions are taken by interviewing the shop managers:</p> <ul style="list-style-type: none"> <li>– within 3 consecutive calendar days, comply with the applicable central accumulation area (i.e. 180-day storage area) in 40 CFR 262.17(a) (see checklist items in HW.55, HW.60, HW.65, HW.70, HW.71, HW.72, HW.80, HW.83, HW.85, and HW.90.)</li> <li>– the container holding the excess is marked or labeled with the date the excess amount began accumulating</li> <li>– the excess waste is removed from the satellite accumulation area within 3 days to one of the following locations: <ul style="list-style-type: none"> <li>– a central accumulation area (i.e. 90-day storage area) operated in accordance with 40 CFR 262.17(a) (see checklist items in HW.55, HW.60, HW.65, HW.70, HW.71, HW.72, HW.80, HW.83, HW.85, and HW.90.)</li> <li>– an onsite interim status or permitted treatment, storage, or disposal facility (TSDF)</li> <li>– an off-site designated facility.</li> </ul> </li> </ul> <p>(NOTE: During the 3-consecutive day period the generator must continue to comply with all of the requirements outlines in this checklist item.)</p> <p>Verify that satellite accumulation areas at LQGs meet the preparedness and prevention regulations found in 40 CFR 262 Subpart M (40 CFR 262.250 – 262.265) (see checklist items HW.65.1.US through HW.65.4.US and HW.80.4.US.)).</p>



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<p><b>GENERATORS</b></p> <p><b>HW.80.</b> <b>Container Storage Areas</b></p> <p><b>HW.80.1.US.</b> Checklist item deleted [Deleted October 2011].</p> <p><b>HW.80.2.US.</b> The storage of containers holding ignitable or reactive hazardous waste must meet certain parameters (40 CFR 262.17(a)(1)(vi)) [Reviewed October 2001; Revised January 2017].</p>	<p>(NOTE: To document inadequate management practices (MP) at LQGs use checklist item number HW.2.1.US.)</p> <p>Verify that containers holding ignitable or reactive waste are located 15 m (50 ft) from the property line.</p> <p>(NOTE: Containers of ignitable or reactive waste may be located less than 15 m (50 ft) from the property line if written approval is obtained from the authority having jurisdiction (AHJ) over the local fire code allowing hazardous waste accumulation to occur in this location.)</p> <p>Verify that a record of written approval is maintained as long as ignitable or reactive waste is accumulated in this area.</p> <p>Verify that the LQG takes precautions to prevent accidental ignition or reaction of ignitable or reactive waste.</p> <p>Verify that ignitable or reactive waste is separated and protected from sources of ignition or reaction including but not limited to the following:</p> <ul style="list-style-type: none"> <li>– open flames</li> <li>– smoking</li> <li>– cutting and welding</li> <li>– hot surfaces</li> <li>– frictional heat</li> <li>– sparks (static, electrical, or mechanical)</li> <li>– spontaneous ignition (<i>e.g.</i>, from heat-producing chemical reactions)</li> <li>– radiant heat.</li> </ul> <p>Verify that, while ignitable or reactive waste is being handled, the LQG confines smoking and open flame to specially designated locations.</p> <p>Verify that “No Smoking” signs are conspicuously placed wherever there is a hazard from ignitable or reactive waste.</p>
<p><b>HW.80.3.US.</b> Generator personnel must conduct weekly inspections of</p>	<p>Verify that the central accumulation areas (<i>i.e.</i>, 90-day storage) are inspected at least weekly.</p>

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<p>container storage areas (40 CFR 262.17(a)(1)(v)) [Reviewed October 2001; Revised July 2006; Revised January 2017].</p> <p><b>HW.80.4.US.</b> LQG storage areas for hazardous waste must be designed, constructed, maintained, and operated to meet certain parameters (40 CFR 262.17(a)(6), 262.250 through 262.256) [Revised October 2001; Revised January 2017].</p>	<p>Verify that the owner or operator looks for leaking containers and for deterioration of containers caused by corrosion or other factors.</p> <p>Verify that the LQG maintains and operates its facility to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.</p> <p>Verify that all areas where hazardous waste is either generated or accumulated are equipped with the following unless none of the hazards posed by the waste handled at the facility could require a particular kind of equipment specified below or the actual waste generation or accumulation area does not lend itself for safety reasons to have a particular kind of equipment specified below:</p> <ul style="list-style-type: none"> <li>– internal communications or alarm system capable of providing immediate emergency instruction (voice or signal) to facility personnel</li> <li>– a device, such as a telephone (immediately available at the scene of operations) or a hand-held two-way radio capable of summoning emergency assistance from local police departments, fire departments, or state or local emergency response teams</li> <li>– portable fire extinguishers, fire control equipment (including special extinguishing equipment such as that using foam, inert gas, or dry chemicals)</li> <li>– spill control equipment</li> <li>– decontamination equipment</li> <li>– water at adequate volume and pressure to supply water hose streams or foam producing equipment, or automatic sprinklers, or water spray systems.</li> </ul> <p>(NOTE: A LQG may determine the most appropriate locations within its facility to locate equipment necessary to prepare for and respond to emergencies.)</p> <p>Verify that all communications or alarm systems, fire protection equipment, spill control equipment, and decontamination equipment, where required, is tested and maintained as necessary to insure proper operation in an emergency.</p> <p>Verify that, whenever hazardous waste is being poured, mixed, spread, or otherwise handled, all personnel involved in the operation have immediate access (e.g., direct or unimpeded access) to an internal alarm or emergency communication device, either directly or through visual or voice contact with another employee, unless such a device is not required because of one of the following:</p> <ul style="list-style-type: none"> <li>– none of the hazards posed by the waste handled at the facility could require a particular kind of equipment</li> <li>– the actual waste generation or accumulation area does not lend itself for safety reasons to have a particular kind of equipment.</li> </ul>

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	<p>Verify that, in the event there is just one employee on the premises while the facility is operating, the employee must have immediate access (e.g., direct or unimpeded access) to a device, such as a telephone (immediately available at the scene of operation) or a hand-held two-way radio, capable of summoning external emergency assistance, unless such a device is not required because of one of the following:</p> <ul style="list-style-type: none"> <li>– none of the hazards posed by the waste handled at the facility could require a particular kind of equipment</li> <li>– the actual waste generation or accumulation area does not lend itself for safety reasons to have a particular kind of equipment.</li> </ul> <p>Verify that sufficient aisle space is maintained to allow unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of facility operation unless aisle space is not needed for any of these purposes.</p> <p>Verify that the LQG has attempted to make arrangements with the local police department, fire department, other emergency response teams, emergency response contractors, equipment suppliers and local hospitals, taking into account the types and quantities of hazardous wastes handled at the facility.</p> <p>(NOTE: Arrangements may be made with the Local Emergency Planning Committee (LEPC), if it is determined to be the appropriate organization with which to make arrangements.)</p> <p>Verify that, as part of attempting to make arrangements with the local fire department, the LQG has determined the potential need for the services of the local police department, other emergency response teams, emergency response contractors, equipment suppliers and local hospitals.</p> <p>(NOTE: As part of this coordination, the LQG shall attempt to make arrangements, as necessary, to familiarize the above organizations with the layout of the facility, the properties of hazardous waste handled at the facility and associated hazards, places where facility personnel would normally be working, entrances to roads inside the facility, and possible evacuation routes as well as the types of injuries or illnesses that could result from fires, explosions, or releases at the facility.)</p> <p>Verify that, where more than one police or fire department might respond to an emergency, the LQG has attempted to make arrangements designating primary emergency authority to a specific fire or police department, and arrangements with any others to provide support to the primary emergency authority.</p> <p>Verify that a LQG maintains records documenting the arrangements with the local fire department as well as any other organization necessary to respond to an emergency and the documentation includes documentation in the operating record</p>

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	<p>that either confirms such arrangements actively exist or, in cases where no arrangements exist, confirms that attempts to make such arrangements were made.</p> <p>(NOTE: A facility possessing 24-h response capabilities may seek a waiver from the authority having jurisdiction (AHJ) over the fire code within the facility's state or locality as far as needing to make arrangements with the local fire department as well as any other organization necessary to respond to an emergency, provided that the waiver is documented in the operating record.)</p>

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<p><b>LARGE QUANTITY GENERATORS (LQGs)</b></p> <p><b>HW.83. Drip Pads</b></p> <p><b>HW.83.1.US.</b> LQGs accumulating hazardous waste on drip pads must meet specific operational requirements (40 CFR 262.17(a)(3)(ii) and 262.17(a)(3)(iii)) <b>[Added January 2017]</b>.</p> <p><b>HW.83.2.US.</b> Existing drip pads must be assessed for integrity (40 CFR 262.17(a)(3)(i), 265.440(a), 265.440(c), and 265.441) <b>[Added January 2017]</b>.</p>	<p>(NOTE: According to 40 CFR 260.10, a “drip pad” is an engineered structure consisting of a curbed, free-draining base, constructed of non-earthen materials and designed to convey preservative kick-back or drippage from treated wood, precipitation, and surface water run-on to an associated collection system at wood preserving plants.)</p> <p>Verify that the LQG removes all wastes from the drip pad at least once every 90 days.</p> <p>(NOTE: Any hazardous wastes that are removed from the drip pad at least once every 90 days are then subject to the 90-day accumulation limit if hazardous wastes are being managed in satellite accumulation areas prior to being moved to the central accumulation area.)</p> <p>Verify that the LQG maintains on site at the facility the following records readily available for inspection:</p> <ul style="list-style-type: none"> <li>– a written description of procedures that are followed to ensure that all wastes are removed from the drip pad and associated collection system at least once every 90 days</li> <li>– documentation of each waste removal, including the quantity of waste removed from the drip pad and the sump or collection system and the date and time of removal.</li> </ul> <p>(NOTE: According to 40 CFR 260.10, a “drip pad” is an engineered structure consisting of a curbed, free-draining base, constructed of non-earthen materials and designed to convey preservative kick-back or drippage from treated wood, precipitation, and surface water run-on to an associated collection system at wood preserving plants.)</p> <p>(NOTE: The requirements of this checklist item apply to owners and operators of facilities that use new or existing drip pads to convey treated wood drippage, precipitation, and/or surface water run-off to an associated collection system. Existing drip pads are those constructed before 6 December 1990 and those for which the owner or operator has a design and has entered into binding financial or other agreements for construction prior to 6 December 1990. All other drip pads are new drip pads.)</p>

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	<p>(NOTE: This checklist item does not apply to the management of infrequent and incidental drippage in storage yards provided that the owner or operator maintains and complies with a written contingency plan that describes how the owner or operator will respond immediately to the discharge of such infrequent and incidental drippage and at a minimum, the contingency plan describes how the facility will do the following:</p> <ul style="list-style-type: none"> <li>– clean up the drippage</li> <li>– document the cleanup of the drippage</li> <li>– retain documents regarding cleanup for 3 yr</li> <li>– manage the contaminated media in a manner consistent with Federal regulations.)</li> </ul> <p>Verify that, for each existing drip pad, the owner or operator has evaluated the drip pad and determined if it meets all of the requirements of 40 CFR 265, Subpart W, except the requirements for liners and leak detection systems of 40 CFR 265.443(b).</p> <p>Verify that the owner or operator keeps on file at the facility a written assessment of the drip pad, reviewed and certified by a qualified Professional Engineer that attests to the results of the evaluation.</p> <p>Verify that the assessment is reviewed, updated, and re-certified annually until all upgrades, repairs, or modifications necessary to achieve compliance with all the standards of 40 CFR 265.443 are complete.</p> <p>Verify that the evaluation documents the extent to which the drip pad meets each of the design and operating standards of 40 CFR 265.443, except the standards for liners and leak detection systems, specified in 40 CFR 265.443(b).</p> <p>Verify that the owner or operator has a written plan for upgrading, repairing, and modifying the drip pad to meet the requirements of 40 CFR 265.443(b), and submits the plan to the Regional Administrator no later than 2 yr before the date that all repairs, upgrades, and modifications are complete.</p> <p>Verify that the written plan describes all changes to be made to the drip pad in sufficient detail to document compliance with all the requirements of 40 CFR 265.443.</p> <p>Verify that the plan is reviewed and certified by a qualified Professional Engineer.</p> <p>Verify that, upon completion of all repairs and modifications, the owner or operator submits to the Regional Administrator or State Director, the as-built drawings for the drip pad together with a certification by a qualified Professional Engineer attesting that the drip pad conforms to the drawings.</p> <p>Verify that, if the drip pad is found to be leaking or unfit for use, the owner or operator must comply with the provisions of 40 CFR 265.443(m) of this subpart or</p>

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<p><b>HW.83.3.US.</b> New drip pads must meet certain design and operating requirements when the owner/operator has chosen to comply with 40 CFR 262.17(a)(3)(i), 265.443, except 265.443(a)(4)) (40 CFR 265.440, 265.442(a), 265.443(a)(1) through 265.443(a)(3), 265.443(b) through 265.443(n)) [<b>Added January 2017</b>].</p>	<p>close the drip pad in accordance with 40 CFR 265.445 [see checklist item HW.83.6.US].</p> <p>(NOTE: According to 40 CFR 260.10, a “drip pad” is an engineered structure consisting of a curbed, free-draining base, constructed of non-earthen materials and designed to convey preservative kick-back or drippage from treated wood, precipitation, and surface water run-on to an associated collection system at wood preserving plants.)</p> <p>(NOTE: The requirements of this checklist item apply to owners and operators of facilities that use new or existing drip pads to convey treated wood drippage, precipitation, and/or surface water run-off to an associated collection system. Existing drip pads are those constructed before 6 December 1990 and those for which the owner or operator has a design and has entered into binding financial or other agreements for construction prior to 6 December 1990. All other drip pads are new drip pads.)</p> <p>(NOTE: This checklist item does not apply to the management of infrequent and incidental drippage in storage yards provided that the owner or operator maintains and complies with a written contingency plan that describes how the owner or operator will respond immediately to the discharge of such infrequent and incidental drippage and at a minimum, the contingency plan describes how the facility will do the following:</p> <ul style="list-style-type: none"> <li>– clean up the drippage</li> <li>– document the cleanup of the drippage</li> <li>– retain documents regarding cleanup for 3 yr</li> <li>– manage the contaminated media in a manner consistent with Federal regulations.)</li> </ul> <p>Verify that drip pads:</p> <ul style="list-style-type: none"> <li>– are constructed of non-earthen materials, excluding wood and non-structurally supported asphalt</li> <li>– are sloped to free-drain treated wood drippage, rain and other waters, or solutions of drippage and water or other wastes to the associated collection system</li> <li>– have a curb or berm around the perimeter.</li> </ul> <p>Verify that the owner or operator has obtained and keeps on file at the facility a written assessment of the drip pad, reviewed and certified by a qualified Professional Engineer that attests to the results of the evaluation.</p> <p>Verify that the assessment is reviewed, updated and recertified annually.</p>

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	<p>Verify that the evaluation documents the extent to which the drip pad meets the applicable design and operating standards.</p> <p>Verify that the drip pad is of sufficient structural strength and thickness to prevent failure due to physical contact, climatic conditions, the stress of installation, and the stress of daily operations, e.g., variable and moving loads such as vehicle traffic, movement of wood, etc.</p> <p>(NOTE: EPA will generally consider applicable standards established by professional organizations generally recognized by industry such as the American Concrete Institute (ACI) and the American Society of Testing Materials (ASTM) in judging the structural integrity requirement.)</p> <p>Verify that the drip pad has:</p> <ul style="list-style-type: none"> <li>– a synthetic liner installed below the drip pad that is designed, constructed, and installed to prevent leakage from the drip pad into the adjacent subsurface soil or groundwater or surface water at any time during the active life (including the closure period) of the drip pad, and: <ul style="list-style-type: none"> <li>– the liner is constructed of materials that will prevent waste from being absorbed into the liner and prevent releases into the adjacent subsurface soil or ground water or surface water during the active life of the facility</li> <li>– the liner is constructed of materials that have appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the waste or drip pad leakage to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation (including stresses from vehicular traffic on the drip pad)</li> <li>– the liner is placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the liner to prevent failure of the liner due to settlement, compression or uplift</li> <li>– the liner is installed to cover all surrounding earth that could come in contact with the waste or leakage</li> </ul> </li> <li>– a leakage detection system immediately above the liner that is designed, constructed, maintained and operated to detect leakage from the drip pad, and: <ul style="list-style-type: none"> <li>– the leakage detection system is constructed of materials that are chemically resistant to the waste managed in the drip pad and the leakage that might be generated; and of sufficient strength and thickness to prevent collapse under the pressures exerted by overlaying materials and by any equipment used at the drip pad</li> <li>– designed and operated to function without clogging through the scheduled closure of the drip pad</li> <li>– designed so that it will detect the failure of the drip pad or the presence of a release of hazardous waste or accumulated liquid at the earliest practicable time</li> </ul> </li> </ul>

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	<p>– a leakage collection system immediately above the liner that is designed, constructed, maintained and operated to collect leakage from the drip pad such that it can be removed from below the drip pad.</p> <p>(NOTE: The requirement to install a leak collection system applies only to those drip pads that are constructed after 24 December 1992 except for those constructed after 24 December 1992 for which the owner or operator has a design and has entered into binding financial or other agreements for construction prior to 24 December 1992.)</p> <p>Verify that the date, time, and quantity of any leakage collected in this system and removed is documented in the operating log.</p> <p>Verify that drip pads are maintained such that they remain free of cracks, gaps, corrosion, or other deterioration that could cause hazardous waste to be released from the drip pad.</p> <p>Verify that the drip pad and associated collection system are designed and operated to convey, drain, and collect liquid resulting from drizzle or precipitation in order to prevent run-off.</p> <p>Verify that, unless protected by a structure or cover, the owner or operator designs, constructs, operates and maintains a run-on control system capable of preventing flow onto the drip pad during peak discharge from at least a 24-hour, 25-year storm unless the system has sufficient excess capacity to contain any run-on that might enter the system.</p> <p>Verify that, unless protected by a structure or cover, the owner or operator must design, construct, operate and maintain a run-off management system to collect and control at least the water volume resulting from a 24-hour, 25-year storm.</p> <p>Verify that the drip pad be evaluated to determine that it meets the requirements pertaining to construction and operation and the owner or operator must obtain a statement from a qualified Professional Engineer certifying that the drip pad design meets the applicable requirements.</p> <p>Verify that drizzle and accumulated precipitation are removed from the associated collection system as necessary to prevent overflow onto the drip pad.</p> <p>Verify that the drip pad surface is cleaned thoroughly in a manner and frequency such that accumulated residues of hazardous waste or other materials are removed, with residues being properly managed as hazardous waste, so as to allow weekly inspections of the entire drip pad surface without interference or hindrance from accumulated residues of hazardous waste or other materials on the drip pad.</p> <p>Verify that the owner or operator documents the date and time of each cleaning and the cleaning procedure used in the facility's operating log.</p>

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	<p>Verify that drip pads are operated and maintained in a manner to minimize tracking of hazardous waste or hazardous waste constituents off the drip pad as a result of activities by personnel or equipment.</p> <p>Verify that, after being removed from the treatment vessel, treated wood from pressure and non-pressure processes is held on the drip pad until drippage has ceased.</p> <p>Verify that the owner or operator maintains records sufficient to document that all treated wood is held on the pad following treatment.</p> <p>Verify that collection and holding units associated with run-on and run-off control systems are emptied or otherwise managed as soon as possible after storms to maintain design capacity of the system.</p> <p>Verify that, throughout the active life of the drip pad, if the owner or operator detects a condition that may have caused or has caused a release of hazardous waste, the condition is repaired within a reasonably prompt period of time following discovery, in accordance with the following procedures, upon detection of a condition that may have caused or has caused a release of hazardous waste (e.g., upon detection of leakage by the leak detection system), the owner or operator:</p> <ul style="list-style-type: none"> <li>– enters a record of the discovery in the facility operating log</li> <li>– immediately remove the portion of the drip pad affected by the condition from service</li> <li>– determines what steps must be taken to repair the drip pad, remove any leakage from below the drip pad, and establish a schedule for accomplishing the clean up and repairs</li> <li>– within 24 h after discovery of the condition, notifies the Regional Administrator of the condition and, within 10 working days, provides a written notice to the Regional Administrator with a description of the steps that will be taken to repair the drip pad, and clean up any leakage, and the schedule for accomplishing this work.</li> </ul> <p>(NOTE: The Regional Administrator will review the information submitted, make a determination regarding whether the pad must be removed from service completely or partially until repairs and clean up are complete, and notify the owner or operator of the determination and the underlying rationale in writing.)</p> <p>Verify that, upon completing all repairs and clean up, the owner or operator notifies the Regional Administrator in writing and provide a certification, signed by an independent qualified, registered professional engineer, that the repairs and cleanup have been completed according to the written plan submitted.</p> <p>Verify that, the owner or operator maintains, as part of the facility operating log, documentation of past operating and waste handling practices, including</p>

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<p><b>HW.83.4.US.</b> New drip pads must meet certain design and operating requirements when the owner/operator has chosen to comply with 40 CFR 265.443, except 265.443(b)) (40 CFR 262.17(a)(3)(i), 265.440, 265.442(a), 265.443(a), 265.443(c) through 265.443(n)) [Added January 2017].</p>	<p>identification of preservative formulations used in the past, a description of drippage management practices, and a description of treated wood storage and handling practices.</p> <p>(NOTE: According to 40 CFR 260.10, a “drip pad” is an engineered structure consisting of a curbed, free-draining base, constructed of non-earthen materials and designed to convey preservative kick-back or drippage from treated wood, precipitation, and surface water run-on to an associated collection system at wood preserving plants.)</p> <p>(NOTE: The requirements of this checklist item apply to owners and operators of facilities that use new or existing drip pads to convey treated wood drippage, precipitation, and/or surface water run-off to an associated collection system. Existing drip pads are those constructed before 6 December 1990 and those for which the owner or operator has a design and has entered into binding financial or other agreements for construction prior to 6 December 1990. All other drip pads are new drip pads.)</p> <p>(NOTE: This checklist item does not apply to the management of infrequent and incidental drippage in storage yards provided that the owner or operator maintains and complies with a written contingency plan that describes how the owner or operator will respond immediately to the discharge of such infrequent and incidental drippage and at a minimum, the contingency plan describes how the facility will do the following:</p> <ul style="list-style-type: none"> <li>– clean up the drippage</li> <li>– document the cleanup of the drippage</li> <li>– retain documents regarding cleanup for 3 yr</li> <li>– manage the contaminated media in a manner consistent with Federal regulations.)</li> </ul> <p>Verify that drip pads:</p> <ul style="list-style-type: none"> <li>– are constructed of non-earthen materials, excluding wood and non-structurally supported asphalt</li> <li>– are sloped to free-drain treated wood drippage, rain and other waters, or solutions of drippage and water or other wastes to the associated collection system</li> <li>– have a curb or berm around the perimeter.</li> </ul> <p>Verify that the drip pad has a hydraulic conductivity of less than or equal to <math>1 \times 10^{-7}</math> centimeters per second, (e.g., existing concrete drip pads must be sealed, coated, or covered with a surface material with a hydraulic conductivity of less than or equal to <math>1 \times 10^{-7}</math> centimeters per second) such that the entire surface where drippage occurs or may run across is capable of containing such drippage and mixtures of drippage and precipitation, materials, or other wastes while being routed to an associated collection system.</p>

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	<p>Verify that the surface material is maintained free of cracks and gaps that could adversely affect its hydraulic conductivity, and the material is chemically compatible with the preservatives that contact the drip pad.</p> <p>Verify that the owner or operator has obtained and keeps on file at the facility a written assessment of the drip pad, reviewed and certified by a qualified Professional Engineer that attests to the results of the evaluation.</p> <p>Verify that the assessment is reviewed, updated and recertified annually.</p> <p>Verify that the evaluation documents the extent to which the drip pad meets the applicable design and operating standards.</p> <p>Verify that the drip pad is of sufficient structural strength and thickness to prevent failure due to physical contact, climatic conditions, the stress of installation, and the stress of daily operations, e.g., variable and moving loads such as vehicle traffic, movement of wood, etc.</p> <p>(NOTE: EPA will generally consider applicable standards established by professional organizations generally recognized by industry such as the American Concrete Institute (ACI) and the American Society of Testing Materials (ASTM) in judging the structural integrity requirement.)</p> <p>Verify that drip pads are maintained such that they remain free of cracks, gaps, corrosion, or other deterioration that could cause hazardous waste to be released from the drip pad.</p> <p>Verify that the drip pad and associated collection system are designed and operated to convey, drain, and collect liquid resulting from drippage or precipitation in order to prevent run-off.</p> <p>Verify that, unless protected by a structure or cover, the owner or operator designs, constructs, operates and maintains a run-on control system capable of preventing flow onto the drip pad during peak discharge from at least a 24-hour, 25-year storm unless the system has sufficient excess capacity to contain any run-on that might enter the system.</p> <p>Verify that, unless protected by a structure or cover, the owner or operator must design, construct, operate and maintain a run-off management system to collect and control at least the water volume resulting from a 24-hour, 25-year storm.</p> <p>Verify that the drip pad is evaluated to determine that it meets the requirements pertaining to construction and operation and the owner or operator must obtain a statement from a qualified Professional Engineer certifying that the drip pad design meets the applicable requirements.</p>

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	<p>Verify that drippage and accumulated precipitation are removed from the associated collection system as necessary to prevent overflow onto the drip pad.</p> <p>Verify that the drip pad surface is cleaned thoroughly in a manner and frequency such that accumulated residues of hazardous waste or other materials are removed, with residues being properly managed as hazardous waste, so as to allow weekly inspections of the entire drip pad surface without interference or hindrance from accumulated residues of hazardous waste or other materials on the drip pad.</p> <p>Verify that the owner or operator documents the date and time of each cleaning and the cleaning procedure used in the facility's operating log.</p> <p>Verify that drip pads are operated and maintained in a manner to minimize tracking of hazardous waste or hazardous waste constituents off the drip pad as a result of activities by personnel or equipment.</p> <p>Verify that, after being removed from the treatment vessel, treated wood from pressure and non-pressure processes is held on the drip pad until drippage has ceased.</p> <p>Verify that the owner or operator maintains records sufficient to document that all treated wood is held on the pad following treatment.</p> <p>Verify that collection and holding units associated with run-on and run-off control systems are emptied or otherwise managed as soon as possible after storms to maintain design capacity of the system.</p> <p>Verify that, throughout the active life of the drip pad, if the owner or operator detects a condition that may have caused or has caused a release of hazardous waste, the condition is repaired within a reasonably prompt period of time following discovery, in accordance with the following procedures, upon detection of a condition that may have caused or has caused a release of hazardous waste (e.g., upon detection of leakage by the leak detection system), the owner or operator:</p> <ul style="list-style-type: none"> <li>– enters a record of the discovery in the facility operating log</li> <li>– immediately remove the portion of the drip pad affected by the condition from service</li> <li>– determines what steps must be taken to repair the drip pad, remove any leakage from below the drip pad, and establish a schedule for accomplishing the clean up and repairs</li> <li>– within 24 h after discovery of the condition, notifies the Regional Administrator of the condition and, within 10 working days, provides a written notice to the Regional Administrator with a description of the steps that will be taken to repair the drip pad, and clean up any leakage, and the schedule for accomplishing this work.</li> </ul>

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<p><b>HW.83.5.US.</b> Drip pads must be inspected according to specific parameters (40 CFR 262.17(a)(3)(i), 265.440 and 265.444) [Added January 2017].</p>	<p>(NOTE: The Regional Administrator will review the information submitted, make a determination regarding whether the pad must be removed from service completely or partially until repairs and clean up are complete, and notify the owner or operator of the determination and the underlying rationale in writing.)</p> <p>Verify that, upon completing all repairs and clean up, the owner or operator notifies the Regional Administrator in writing and provide a certification, signed by an independent qualified, registered professional engineer, that the repairs and clean up have been completed according to the written plan submitted.</p> <p>Verify that, the owner or operator maintains, as part of the facility operating log, documentation of past operating and waste handling practices, including identification of preservative formulations used in the past, a description of drippage management practices, and a description of treated wood storage and handling practices.</p> <p>(NOTE: According to 40 CFR 260.10, a “drip pad” is an engineered structure consisting of a curbed, free-draining base, constructed of non-earthen materials and designed to convey preservative kick-back or drippage from treated wood, precipitation, and surface water run-on to an associated collection system at wood preserving plants.)</p> <p>(NOTE: The requirements of this checklist item apply to owners and operators of facilities that use new or existing drip pads to convey treated wood drippage, precipitation, and/or surface water run-off to an associated collection system. Existing drip pads are those constructed before 6 December 1990 and those for which the owner or operator has a design and has entered into binding financial or other agreements for construction prior to 6 December 1990. All other drip pads are new drip pads.)</p> <p>(NOTE: This checklist item does not apply to the management of infrequent and incidental drippage in storage yards provided that the owner or operator maintains and complies with a written contingency plan that describes how the owner or operator will respond immediately to the discharge of such infrequent and incidental drippage and at a minimum, the contingency plan describes how the facility will do the following:</p> <ul style="list-style-type: none"> <li>– clean up the drippage</li> <li>– document the cleanup of the drippage</li> <li>– retain documents regarding cleanup for 3 yr</li> <li>– manage the contaminated media in a manner consistent with Federal regulations.)</li> </ul> <p>Verify that, during construction or installation, liners and cover systems (e.g., membranes, sheets, or coatings) are inspected for uniformity, damage and imperfections (e.g., holes, cracks, thin spots, or foreign materials).</p>

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<p><b>HW.83.6.US.</b> The closure of drip pads must be done according to specific criteria (40 CFR 262.17(a)(3)(i), 262.17(a)(8)(iv), 265.440, and 265.445) [Added January 2017].</p>	<p>Verify that, immediately after construction or installation, liners are inspected and certified as meeting the requirements of 40 CFR 265.443 by a qualified Professional Engineer.</p> <p>Verify that the certification is maintained at the facility as part of the facility operating record.</p> <p>Verify that, after installation, liners and covers are inspected to ensure tight seams and joints and the absence of tears, punctures, or blisters.</p> <p>Verify that, while a drip pad is in operation, it is inspected weekly and after storms to detect evidence of any of the following:</p> <ul style="list-style-type: none"> <li>– deterioration, malfunctions or improper operation of run-on and run-off control systems</li> <li>– the presence of leakage in and proper functioning of leakage detection system</li> <li>– deterioration or cracking of the drip pad surface.</li> </ul> <p>(NOTE: According to 40 CFR 260.10, a “drip pad” is an engineered structure consisting of a curbed, free-draining base, constructed of non-earthen materials and designed to convey preservative kick-back or drippage from treated wood, precipitation, and surface water run-on to an associated collection system at wood preserving plants.)</p> <p>(NOTE: The requirements of this checklist item apply to owners and operators of facilities that use new or existing drip pads to convey treated wood drippage, precipitation, and/or surface water run-off to an associated collection system. Existing drip pads are those constructed before 6 December 1990 and those for which the owner or operator has a design and has entered into binding financial or other agreements for construction prior to 6 December 1990. All other drip pads are new drip pads.)</p> <p>(NOTE: This checklist item does not apply to the management of infrequent and incidental drippage in storage yards provided that the owner or operator maintains and complies with a written contingency plan that describes how the owner or operator will respond immediately to the discharge of such infrequent and incidental drippage and at a minimum, the contingency plan describes how the facility will do the following:</p> <ul style="list-style-type: none"> <li>– clean up the drippage</li> <li>– document the cleanup of the drippage</li> <li>– retain documents regarding cleanup for 3 yr</li> <li>– manage the contaminated media in a manner consistent with Federal regulations.)</li> </ul> <p>Verify that, at closure, the owner or operator removes or decontaminates all waste residues, contaminated containment system components (pad, liners, etc.),</p>

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	<p>contaminated subsoils, and structures and equipment contaminated with waste and leakage, and manages them as hazardous waste.</p> <p>Verify that, if, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment, the owner or operator finds that not all contaminated subsoils can be practically removed or decontaminated, the owner/operator closes the facilities and performs post-closure care in accordance with closure and post-closure care requirements that apply to landfills.</p> <p>(NOTE: For permitted units, the requirement to have a permit continues throughout the post-closure period.)</p> <p>Verify that the owner or operator of an existing drip pad that does not comply with the liner requirements of 40 CFR 265.443(b)(1):</p> <ul style="list-style-type: none"> <li>– includes in the closure plan for the drip pad both a plan for complying with the cleanup and decontamination requirements of this checklist item in case not all contaminated subsoils can be practicably removed at closure</li> <li>– prepares a contingent post-closure plan in case not all contaminated subsoils can be practicably removed at closure.</li> </ul> <p>(NOTE: The cost estimates calculated for closure and post-closure care of a drip pad must include the cost of complying with the contingent closure plan and the contingent post-closure plan, but are not required to include the cost of expected closure.)</p>

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<p><b>GENERATORS</b></p> <p><b>HW.85.</b> <b>Containment Buildings</b></p> <p><b>HW.85.1.US.</b> LQGs with containment buildings that are in compliance are not subject to the definition of land disposal if specific requirements are met (40 CFR 262.17(a)(4) and 265.1100) [Reviewed October 2001; Revised January 2017].</p>	<p>(NOTE: According to the Background Information published on page 37211 of the 18 August 1992 edition of the Federal Register, a hazardous waste containment building involves “the management of a hazardous waste inside a unit designed and operated to contain the hazardous waste within the unit”. This is not a building that holds drums or tanks filled with hazardous waste but a building that holds the hazardous waste itself.)</p> <p>Verify that the containment building meets the following:</p> <ul style="list-style-type: none"> <li>– it is a completely enclosed, self-supporting structure that is designed and constructed of manmade materials of sufficient strength and thickness to support themselves, the waste contents, and any personnel and heavy equipment that operate within the unit</li> <li>– it is designed to prevent failure due to pressure gradients, settlement, compression or uplift, physical contact with the hazardous wastes, climatic conditions, and the stress of daily operations</li> <li>– it has a primary barrier that is designed to be sufficiently durable to withstand the movement of personnel, wastes, and handling of equipment within the unit</li> <li>– if the unit is used to manage liquids: <ul style="list-style-type: none"> <li>– there is a primary barrier designed and constructed of materials to prevent migration of hazardous constituents into the barrier</li> <li>– there is a liquid collection system designed and constructed of materials to minimize the accumulation of liquid on the primary barrier</li> <li>– there is a secondary containment system designed and constructed of materials to prevent migration of hazardous constituents into the barrier, with a leak detection and liquid collection system capable of detecting, collecting, and removing leaks of hazardous constituents at the earliest practicable time</li> </ul> </li> <li>– it has controls sufficient to prevent fugitive dust emissions</li> <li>– it is designed and operated to ensure containment and prevent the tracking of materials from the unit by personnel and equipment.</li> </ul> <p>Verify that the containment building is conspicuously labeled in a place visible to employees, visitors, emergency responders, waste handlers, or other persons onsite as follows::</p> <ul style="list-style-type: none"> <li>– with the words “Hazardous Waste”</li> <li>– with an indication of the hazards of the contents; examples include, but are not limited to:</li> </ul>

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<p><b>HW.85.2.US.</b> Containment buildings are required to be designed according to specific standards (40 CFR 262.17(a)(4), 265.1101(a)(1) through 265.1101(a)(2), 265.1101(a)(4), and 265.1101(b)) [Citation Revised October 2001; Citation Revised January 2017].</p>	<ul style="list-style-type: none"> <li>–the applicable hazardous waste characteristic(s) (i.e., ignitable, corrosive, reactive, toxic)</li> <li>–hazard communication consistent with the DoT requirements at 49 CFR 172 subpart E (labeling) or subpart F (placarding)</li> <li>–a hazard statement or pictogram consistent with the OSHA Hazard Communication Standard at 29 CFR 1910.1200</li> <li>–a chemical hazard label consistent with the NFPA code 704.</li> </ul> <p>(NOTE: According to the Background Information published on page 37211 of the 18 August 1992 edition of the Federal Register, a hazardous waste containment building involves “the management of a hazardous waste inside a unit designed and operated to contain the hazardous waste within the unit”. This is not a building that holds drums or tanks filled with hazardous waste but a building that holds the hazardous waste itself.)</p> <p>Verify that the containment building meet the following design standards:</p> <ul style="list-style-type: none"> <li>–it is completely enclosed with a floor, walls, and a roof to prevent exposure to the elements and to assure containment of wastes</li> <li>–the floor and containment walls, including any required secondary containment system, are designed and constructed of man-made materials of sufficient strength and thickness to support themselves, the waste contents, and any personnel and heavy equipment that operate within the unit</li> <li>–it is designed to prevent failure due to pressure gradients, settlement, compression or uplift, physical contact with the hazardous wastes, climatic conditions, and the stress of daily operations</li> <li>–it has sufficient structural strength to prevent collapse or other failure</li> <li>–all surfaces in contact with hazardous wastes are compatible with the wastes</li> <li>–it has a primary barrier that is designed to be sufficiently durable to withstand the movement of personnel, wastes, and handling of equipment within the unit and is appropriate for the chemical and physical characteristics of the waste.</li> </ul> <p>Verify that, if the containment building is going to manage hazardous wastes with free liquids or be treated with free liquids, the following design requirements are also met:</p> <ul style="list-style-type: none"> <li>–there is a primary barrier designed and constructed of materials to prevent migration of hazardous constituents into the barrier (e.g., a geomembrane covered by a concrete wear surface)</li> <li>–there is a liquid collection and removal system designed and constructed of materials to minimize the accumulation of liquid on the primary barrier: <ul style="list-style-type: none"> <li>–the primary barrier is sloped to drain liquids to the associated collection system</li> <li>–liquids and wastes are collected and removed to minimized hydraulic head on the containment system at the earliest practicable time</li> </ul> </li> <li>–there is a secondary containment system, including a secondary barrier, designed and constructed of materials to prevent migration of hazardous</li> </ul>

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<p><b>HW.85.3.US.</b> Operate containment buildings according to specific standards (40 CFR 262.17(a)(4)(ii), 265.1101(a)(3), 265.1101(c)(1), and 265.1101(c)(4)) [Reviewed October 2001; Revised January 2017].</p>	<p>constituents into the barrier, with a leak detection and liquid collection system capable of detecting, collecting, and removing leaks of hazardous constituents at the earliest practicable time</p> <ul style="list-style-type: none"> <li>– the leak detection component of the secondary containment system meets the following: <ul style="list-style-type: none"> <li>– it is constructed with a bottom slope of 1 percent or more</li> <li>– it is constructed of a granular drainage materials with a hydraulic conductivity of <math>1 \times 10^{-2}</math> cm/s or more and a thickness of 12 in. (30.5 cm) or more, or constructed of synthetic or geonet drainage materials with a transmissivity of <math>3 \times 10^{-5}</math> m<sup>2</sup>/s or more</li> </ul> </li> <li>– if treatment is to be conducted in the building, the treatment area is designed to prevent the release of liquids, wet materials, or liquid aerosols to other portions of the building</li> <li>– the secondary containment system is constructed of materials that are chemically resistant to the waste and liquids managed in the building and of sufficient strength and thickness to prevent collapse under pressure exerted by overlaying materials and by any equipment used.</li> </ul> <p>(NOTE: An exception to the structural strength requirement may be made for light-weight doors and windows based on the nature of the waste management operations if the following criteria are met:</p> <ul style="list-style-type: none"> <li>– the doors and windows provide an effective barrier against fugitive dust emissions</li> <li>– the unit is designed and operated in a manner that ensures the waste will not come in contact with the doors or windows.)</li> </ul> <p>(NOTE: A containment building can serve as an external liner or a secondary containment system for tanks within the building if:</p> <ul style="list-style-type: none"> <li>– it meets the requirements of 265.193(e)(1) (see Storage Tank Management)</li> <li>– it meets the requirements of 265.193(b), 265.193(c)(1), and 265.193(c)(2) (see Storage Tank Management.)</li> </ul> <p>(NOTE: According to the Background Information published on page 37211 of the 18 August 1992 edition of the Federal Register, a hazardous waste containment building involves “the management of a hazardous waste inside a unit designed and operated to contain the hazardous waste within the unit”. This is not a building that holds drums or tanks filled with hazardous waste but a building that holds the hazardous waste itself.)</p> <p>Verify that incompatible wastes or treatment reagents are not placed in the building or its secondary containment system if they could cause the unit or the secondary containment system to leak, corrode, or otherwise fail.</p> <p>Verify that the following operational procedures are done:</p> <ul style="list-style-type: none"> <li>– controls and practices are used to ensure the containment of the waste within the building</li> </ul>

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<p><b>HW.85.4.US.</b> Containment buildings are required to be certified by a registered professional engineer (40 CFR 262.17(a)(4)(i) and 265.1101(c)(2)) <b>[Reviewed October 2001; Revised January 2017].</b></p>	<ul style="list-style-type: none"> <li>– the primary barrier is maintained so it is free of significant cracks, gaps, corrosion, or other deterioration that could cause hazardous waste to be released from the primary barrier</li> <li>– the level of the stored/treated hazardous waste is maintained so the height of any containment wall is not exceeded</li> <li>– measures are implemented to prevent the tracking of hazardous waste out of the unit by personnel or equipment used in the handling of the waste</li> <li>– there is a designated area for the decontamination of equipment and collection of rinsate</li> <li>– any collected rinsate is managed as needed according to its constituents</li> <li>– measures are implemented to control fugitive dust emissions so that no openings exhibit visible emissions</li> <li>– particulate collection devices are maintained and operated according to sound air pollution control practices.</li> </ul> <p>Verify that LQGs inspect and record in the facility operating record, at least once every seven days, data gathered from monitoring and leak detection equipment as well as the containment building and the area immediately surrounding the containment building.</p> <p>Verify that there is a written description of procedures to ensure that each waste volume does not remain in the unit for more than 90 days.</p> <p>Verify that there is a written description of the waste generation and management practices for the facility showing that the LQG is consistent with respecting the 90 day limit.</p> <p>Verify that, by the use of inventory logs, monitoring equipment, or any other effective means there is documentation that the unit is emptied at least once every 90 days.</p> <p>Verify that inventory logs or records with the required information are maintained onsite and readily available for inspection.</p> <p>Verify that the building has been certified by reviewing the documentation.</p> <p>Verify that the certification is in the LQGs files prior to operation of the containment building.</p> <p>(NOTE: According to the Background Information published on page 37211 of the 18 August 1992 edition of the Federal Register, a hazardous waste containment building involves “the management of a hazardous waste inside a unit designed and operated to contain the hazardous waste within the unit”. This is not a building that holds drums or tanks filled with hazardous waste but a building that holds the hazardous waste itself.)</p>

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<p><b>HW.85.5.US.</b> Leaks in containment buildings must be repaired and reported (40 CFR 262.17(a)(4) and 265.1101(c)(3)) <b>[Reviewed October 2001, Revised July 2011; Citation Revised January 2017].</b></p>	<p>Verify that, if a condition is detected which could lead to a leak or has already caused a leak, it is repaired promptly.</p> <p>Verify that, when a leak is discovered:</p> <ul style="list-style-type: none"> <li>– the discovery is recorded in the operating record</li> <li>– the portion of the containment building that is affected is immediately removed from service</li> <li>– a cleanup and repair schedule is established</li> <li>– within 7 days the Regional Administrator is notified and within 14 working days written notice is provided to the Regional Administrator</li> <li>– the Regional Administrator is notified upon the completion of all repairs, and that certification from a registered professional engineer is also submitted.</li> </ul> <p>(NOTE: According to the Background Information published on page 37211 of the 18 August 1992 edition of the Federal Register, a hazardous waste containment building involves “the management of a hazardous waste inside a unit designed and operated to contain the hazardous waste within the unit”. This is not a building that holds drums or tanks filled with hazardous waste but a building that holds the hazardous waste itself.)</p>
<p><b>HW.85.6.US.</b> Containment buildings that contain both areas with and without secondary containment must meet specific requirements (40 CFR 262.17(a)(4) and 265.1101(d)) <b>[Reviewed October 2001; Citation Revised January 2017].</b></p>	<p>Verify that each area is designed and operated according to the appropriate requirements.</p> <p>Verify that measures are taken to prevent the release of liquids or wet materials into areas without secondary containment.</p> <p>Verify that a written description is maintained in the operating log of operating procedures used to maintain the integrity of areas without secondary containment.</p> <p>(NOTE: According to the Background Information published on page 37211 of the 18 August 1992 edition of the Federal Register, a hazardous waste containment building involves “the management of a hazardous waste inside a unit designed and operated to contain the hazardous waste within the unit”. This is not a building that holds drums or tanks filled with hazardous waste but a building that holds the hazardous waste itself.)</p>
<p><b>HW.85.7.US.</b> When a containment building is closed, specific requirements must be met (40 CFR 262.17(a)(4) and 265.1102) <b>[Reviewed October 2001; Citation Revised January 2017].</b></p>	<p>Determine if a containment building has been closed recently.</p> <p>Verify that, at closure, all waste residues, contaminated containment system components, contaminated subsoils, and structures and equipment contaminated with waste and leachate were removed or decontaminated.</p> <p>Verify that the containment building is closed in accordance with closure and post-closure requirements for TSDFs as outlined in the sections titled Closure and Documentation Requirements.</p>

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	<p>Verify that, if it is found that not all contaminated subsoils can be practicably removed or decontaminated, the site is closed and landfill postclosure requirements are implemented.</p> <p>(NOTE: According to the Background Information published on page 37211 of the 18 August 1992 edition of the Federal Register, a hazardous waste containment building involves “the management of a hazardous waste inside a unit designed and operated to contain the hazardous waste within the unit”. This is not a building that holds drums or tanks filled with hazardous waste but a building that holds the hazardous waste itself.)</p>

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<p><b>GENERATORS</b></p> <p><b>HW.90.</b>  <b>Disposal of Restricted Waste</b></p> <p><b>HW.90.1.US.</b> Generators must test their wastes or use process knowledge to determine if the wastes are restricted from land disposal (40 CFR 262.17(a)(9) and 268.7(a)(1)) [Revised June 1998; Reviewed October 2001; Revised July 2006; Citation Revised January 2017].</p> <p><b>HW.90.2.US.</b> When a generator is managing a waste or contaminated soil that does not meet treatment standards, a written notice must be issued to the TSDF stating the appropriate treatment standards and prohibition levels (40 CFR 262.17(a)(9), 268.7(a)(2), and 268.7(a)(3)) [Revised January 2000; Revised October 2001; Revised July 2006; Citation Revised January 2017].</p>	<p>(NOTE: See Appendix 4-7 for a summary of recordkeeping and notification requirements.)</p> <p>Determine whether the generator tests for restricted wastes.</p> <p>(NOTE: Determination can be made by testing the waste or using knowledge of the waste. Determination can be made concurrently with the hazardous waste determination.)</p> <p>Verify that, if the generator does not do the determination, the waste is sent to a RCRA-permitted hazardous waste treatment facility where the waste treatment facility tests the waste according to 40 CFR 264.13 (see checklist item HW.145.1.US) and 268.7(b) (see text).</p> <p>Determine if land disposal restricted wastes are generated by reviewing test results (see Appendix 4-8).</p> <p>(NOTE: If a generator determines they are managing a waste or soil contamination with a waste, that displays a hazardous characteristic of ignitability, corrosivity, reactivity, or toxicity, they must comply with the special requirements of 40 CFR 268.9 in addition to any applicable requirements in 40 CFR 268.7.)</p> <p>(NOTE: See Appendix 4-7 for a summary of recordkeeping and notification requirements.)</p> <p>Verify that, if the waste or contaminated soil does not meet the treatment standards, or if the generator chooses not to make the determination of whether his waste must be treated, with the initial shipment of waste to each treatment or storage facility, the generator sends a one-time written notice to each treatment or storage facility receiving the waste, and places a copy in the file.</p> <p>Verify that the notice includes the following information:</p> <ul style="list-style-type: none"> <li>– EPA Hazardous Waste Numbers and Manifest Number of first shipment</li> <li>– statement: this waste is not prohibited from land disposal</li> <li>– the waste is subject to the LDRs, the constituents of concern for F001-F005, and F039, and underlying hazardous constituents in characteristic wastes, unless the waste will be treated and monitored for all constituents (NOTE: If</li> </ul>

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	<p>all constituents will be treated and monitored, there is no need to put them all on the LDR notice.)</p> <ul style="list-style-type: none"> <li>– the applicable wastewater/nonwastewater category (see 40 CFR 268.2(d) and(f)) and subdivisions made within a waste code based on waste-specific criteria (such as D003 reactive cyanide)</li> <li>– waste analysis data (when available)</li> <li>– date the waste is subject to the prohibition</li> <li>– for hazardous debris, when treating with the alternative treatment technologies provided by 40 CFR 268.45: the contaminants subject to treatment, as described in 40 CFR 268.45(b); and an indication that these contaminants are being treated to comply with 40 CFR 268.45</li> <li>– for contaminated soil subject to LDRs as provided in 40 CFR 268.49(a), the constituents subject to treatment as described in 40 CFR 268.49(d), and the following statement: This contaminated soil [does/does not] contain listed hazardous waste and [does/does not] exhibit a characteristic of hazardous waste and [is subject to/complies with the soil treatment standards as provided by 40 CFR 268.49(c) or the universal treatment standards.</li> </ul> <p>Verify that, if the generator chooses not to make the determination of whether the waste must be treated, the notification includes the EPA Hazardous Waste Numbers and Manifest Number of the first shipment and states “This hazardous waste may or may not be subject to the LDR treatment standards. The treatment facility must make the determination.”</p> <p>(NOTE: No further notification is necessary until such time that the waste or facility change, in which case a new notification must be sent and a copy placed in the generator's file.)</p> <p>Verify that, for waste or contaminated soil <u>which meets</u> the treatment standard at the original point of generation, the notice includes:</p> <ul style="list-style-type: none"> <li>– USEPA hazardous waste numbers and manifest number of first shipment</li> <li>– the waste is subject to the LDRs (NOTE: The notice must also include constituents of concern for F001-F005, and F039, and underlying hazardous constituents in characteristic wastes, unless the waste will be treated and monitored for all constituents. If all constituents will be treated and monitored, there is no need to put them all on the LDR notice.)</li> <li>– the applicable wastewater/nonwastewater category (see 40 CFR 268.2(d) and 268.2(f)) and subdivisions made within a waste code based on waste-specific criteria (such as D003 reactive cyanide)</li> <li>– waste analysis data</li> <li>– for contaminated soil subject to LDRs as provided in 40 CFR 268.49(a), the constituents subject to treatment as described in 40 CFR 268.49(d), and the following statement: “This contaminated soil [does/does not] contain listed hazardous waste and [does/does not] exhibit a characteristic of hazardous waste and [is subject to/complies with the soil treatment standards as provided by 40 CFR 268.49(c) or the universal treatment standards”</li> </ul>

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<p><b>HW.90.3.US.</b> LQGs that are managing prohibited wastes in tanks, containers, or containment buildings and treating the waste to meet applicable treatment standards, must develop and follow a written waste analysis plan (40 CFR 262.17(a)(9) and 268.7(a)(5)) [Revised June 1997; Reviewed October 2001; Revised January 2017].</p>	<ul style="list-style-type: none"> <li>– the signature of an authorized representative certifying that the waste complies with the treatment standards of 40 CFR 268 (the text of the required certification statement can be found in 40 CFR 268.7(a)(3)(i).)</li> </ul> <p>Verify that, for waste or contaminated soil that meets the treatment standard at the original point of generation, if the waste changes, the generator sends a new notice and certification to the receiving facility and placed a copy in their files.</p> <p>(NOTE: Generators of hazardous debris excluded from the definition of hazardous waste under 40 CFR 261.3(f) are not subject to the requirements for waste or contaminated soil which meets the treatment standard at the original point of generation.)</p> <p>Verify that, for restricted waste subject to an exemption from a prohibition of the type of land disposal used, the notice states that the waste is not prohibited from land disposal and includes:</p> <ul style="list-style-type: none"> <li>– USEPA hazardous waste numbers and manifest number of first shipment</li> <li>– statement: this waste is not prohibited from land disposal</li> <li>– waste analysis data, when available</li> <li>– date the waste is subject to the prohibition</li> <li>– for hazardous debris, when treating with the alternative treatment technologies provided by 40 CFR 268.45: the contaminants subject to treatment, as described in 40 CFR 268.45(b); and an indication that these contaminants are being treated to comply with 40 CFR 268.45.</li> </ul> <p>(NOTE: See Appendix 4-7 for a summary of recordkeeping and notification requirements.)</p> <p>Verify that if a LQG is managing and treating prohibited waste or contaminated soil in tanks, containers, or containment buildings to meet applicable LDR treatment standards, the LQG has developed and follows a written waste analysis plan which describes the procedures they will carry out to comply with treatment standards.</p> <p>(NOTE: Generators treating hazardous debris under the alternative treatment standards are not required to conduct waste analysis.)</p> <p>Verify that the plan is kept onsite and:</p> <ul style="list-style-type: none"> <li>– the plan is based on a detailed chemical and physical analysis of a representative sample of the prohibited waste being treated</li> <li>– contains all information necessary to treat the wastes in accordance with regulatory requirements, including the selected testing frequency</li> <li>– the plan is kept in the onsite files and made available to inspectors.</li> </ul>

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<p><b>HW.90.4.US.</b> LQGs are required to keep specific documents pertaining to restricted wastes onsite (40 CFR 262.17(a)(9), 268.7(a)(6) through 268.7(a)(8)) [<b>Revised June 1998; Reviewed October 2001; Citation Revised January 2017</b>].</p>	<p>(NOTE: See text of 40 CFR 268, Appendix X [www.ecfr.gov] for a summary of recordkeeping and notification requirements.)</p> <p>Verify that, if the facility is using generator knowledge to determine whether a waste or contaminated soil meets land disposal restriction requirements, the supporting data used in making this determination is retained onsite.</p> <p>Verify that, if the facility has determined whether a waste or contaminated soil is restricted using appropriate test methods, the waste analysis data is retained onsite.</p> <p>Verify that, if the facility has determined they are managing a restricted waste excluded from the definition of a hazardous waste or solid waste or exempt from RCRA Subtitle C, a one-time notice is placed in the generator's files stating that the generated waste is excluded and the disposition of the waste.</p> <p>Verify that a copy of all notices, certifications, demonstrations, waste analysis data, and other documentation is kept for at least 3 yr from the date the waste was last sent to an onsite or offsite TSDF.</p> <p>(NOTE: See Appendix 4-7 for a summary of recordkeeping and notification requirements.)</p>
<p><b>HW.90.5.US.</b> LQGs who first claim that hazardous debris is excluded from the definition of hazardous waste are required to meet specific notification and certification requirements (40 CFR 262.17(a)(9) and 268.7(d)) [<b>Revised June 1997; Reviewed October 2001; Revised January 2007; Citation Revised January 2017</b>].</p>	<p>Verify that a one-time notification is submitted to the EPA Regional hazardous waste management division director (or their designated representative) or state authorized to implement 40 CFR 268, including the following:</p> <ul style="list-style-type: none"> <li>– the name and address of the Subtitle D facility receiving the treated debris</li> <li>– a description of the hazardous debris as initially generated, including the applicable USEPA hazardous waste number</li> <li>– for excluded debris, the technology used to treat the debris.</li> </ul> <p>Verify that the notification is updated if the debris is shipped to a different facility.</p> <p>Verify that, for debris that is excluded, if a different type of debris is treated or if a different technology is used to treat the debris, the notification is updated.</p> <p>(NOTE: See Appendix 4-7 for a summary of recordkeeping and notification requirements.)</p>
<p><b>HW.90.6.US.</b> The storage of hazardous waste that is restricted from land disposal is not allowed at LQGs unless specific conditions are met (40 CFR 262.17(a)(9) and 268.50)</p>	<p>Verify that land-disposal restricted waste is not stored at the LQG unless the LQG is storing the wastes in tanks, containers, or containment buildings in order to accumulate the necessary quantities for proper recovery, treatment, or disposal.</p> <p>Verify that each container is clearly marked to identify its contents with:</p> <ul style="list-style-type: none"> <li>– the words "Hazardous Waste"</li> <li>– the applicable EPA hazardous waste number(s)</li> </ul>

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<b>[Reviewed October 2001; Revised January 2017].</b>	<ul style="list-style-type: none"> <li>– an indication of the hazards of the contents; examples include, but are not limited to:               <ul style="list-style-type: none"> <li>– the applicable hazardous waste characteristic(s) (i.e., ignitable, corrosive, reactive, toxic)</li> <li>– hazard communication consistent with the Department of Transportation requirements at 49 CFR 172 subpart E (labeling) or subpart F (placarding)</li> <li>– a hazard statement or pictogram consistent with the OSHA Hazard Communication Standard at 29 CFR 1910.1200</li> <li>– a chemical hazard label consistent with the NFPA code 704</li> </ul> </li> <li>– the date each period of accumulation begins.</li> </ul> <p>(NOTE: If the 90-day storage period is exceeded, the generator is required to be permitted as a TSDF.)</p> <p>(NOTE: The prohibition on storage does not apply to hazardous wastes that have met treatment standards.)</p> <p>Verify that liquid hazardous wastes containing PCBs at concentrations greater than 50 ppm are stored at a site which meets the requirements of 40 CFR 761.65(b) (see the section titled Toxic Substances Management) and is removed from storage within 1 yr of the date it was first placed into storage.</p> <p>(NOTE: See text of 40 CFR 268, Appendix X [<a href="http://www.ecfr.gov">www.ecfr.gov</a>] for a summary of recordkeeping and notification requirements.)</p>



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<p><b>HW.95</b></p> <p><b>TRANSFER FACILITIES</b></p> <p><b>HW.95.1.US.</b> If storing hazardous waste at a transfer facility, transporters must meet specific parameters (40 CFR 263.10(a), 263.10(b), 263.10(d), 263.10(e), and 263.12) [Reviewed October 2001; Moved January 2003; Revised October 2006; Revised April 2010; Revised July 2010; Revised July 2015; Revised January 2017].</p>	<p>Determine if there is a transfer facility.</p> <p>Verify the following:</p> <ul style="list-style-type: none"> <li>– transfer facility storage of hazardous waste is for 10 days or less</li> <li>– DOT packaging requirements from 49 CFR 173, 178, and 179 are met for the hazardous waste (see checklist items under the topic heading HM.50: Hazardous Materials Transportation in the Hazardous Materials Management section of the U.S. TEAM Guide).</li> </ul> <p>Verify that, when consolidating the contents of two or more containers with the same hazardous waste into a new container, or when combining and consolidating two different hazardous wastes that are compatible with each other, the transporter marks its containers of 119 gal or less with the following information:</p> <ul style="list-style-type: none"> <li>– the words “Hazardous Waste”</li> <li>– an indication of the hazards of the contents; examples include, but are not limited to: <ul style="list-style-type: none"> <li>– the applicable hazardous waste characteristic(s) (i.e., ignitable, corrosive, reactive, toxic)</li> <li>– hazard communication consistent with the DoT requirements at 49 CFR 172 subpart E (labeling) or subpart F (placarding)</li> <li>– a hazard statement or pictogram consistent with the OSHA Hazard Communication Standard at 29 CFR 1910.1200</li> <li>– a chemical hazard label consistent with the NFPA code 704.</li> </ul> </li> </ul> <p>(NOTE: If storage is for more than 10 days, the transfer facility will become subject to the regulations in 40 CFR 264, 265, 267, 268, and 270 for handling and permitting.)</p> <p>(NOTE: These regulations do not apply to:</p> <ul style="list-style-type: none"> <li>– onsite transportation of hazardous waste by generators or by owners or operators of permitted hazardous waste management facilities.)</li> <li>– transportation during an explosives or munitions emergency response, conducted in accordance with guidance from an explosive or munitions emergency response specialist or a Federal, State, or Tribal official (see checklist item O6.90.1.US in the Other Environmental Issues section of the U.S. TEAM Guide).)</li> </ul>

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	<p>(NOTE: A transporter of hazardous waste subject to the following Federal regulations that is being imported from or exported to designated OECD countries for purposes of recovery is subject to the requirements for transboundary shipments of hazardous waste for recovery within the OECD (see the text of 40 CFR 262.80 through 262.89):</p> <ul style="list-style-type: none"> <li>– manifesting requirements of 40 CFR 262, (see checklist items HW.20.4.US for SQGs and HW.55.5.US for LQGs in the Hazardous Waste Management section of the U.S. TEAM Guide)</li> <li>– waste management standards of 40 CFR 273 for universal waste (see checklist items HW.280.1.US through HW.470.4.US in the Hazardous Waste Management section of the U.S. TEAM Guide)</li> <li>– State requirements analogous to 40 CFR 273.</li> </ul> <p>(NOTE: As specified in 40 CFR 262.58(a)(1), the requirements of 40 CFR 262, Subpart H apply. The designated OECD countries are: Australia, Austria, Belgium, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Poland, Portugal, the Republic of Korea, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States.)</p> <p>(NOTE: This checklist item was moved from HW.100.5.US.)</p>

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<p><b>HW.100.</b></p> <p><b>TRANSPORTATION OF HAZARDOUS WASTE</b></p> <p><b>HW.100.1.US.</b> Transporters of hazardous waste must have an USEPA ID number and must comply with manifest management requirements (40 CFR 263.10(a), 263.10(b), 263.10(d), 263.10(e), 263.11, 263.20, and 263.22) [Revised October 2001; Revised January 2003; Revised April 2005; Revised October 2006; Revised April 2010; Revised July 2015; Revised January 2017; Revised January 2018].</p>	<p>Determine who transports hazardous waste offsite.</p> <p>(NOTE: These regulations do not apply to:</p> <ul style="list-style-type: none"> <li>– onsite transportation of hazardous waste by generators or by owners or operators of permitted hazardous waste management facilities.)</li> <li>– transportation during an explosives or munitions emergency response, conducted in accordance with guidance from an explosive or munitions emergency response specialist or a Federal, State, or Tribal official (see checklist item O6.90.1.US in the Other Environmental Issues section of the U.S. TEAM Guide).)</li> </ul> <p>(NOTE: This checklist item does not apply when transporting non-chemical waste munitions as Conditionally Exempt (CE), see checklist item O6.100.1.US in the Other Environmental Issues section of the U.S. TEAM Guide.)</p> <p>Verify that a transporter does not transport hazardous wastes without having received an USEPA identification number from the Administrator.</p> <p>(NOTE: A transporter who has not received an USEPA identification number may obtain one by applying to the Administrator using USEPA Form 8700-12. Upon receiving the request, the Administrator will assign an USEPA identification number to the transporter.)</p> <p>Verify that a transporter does not accept hazardous waste from a generator unless the transporter is also provided with a manifest signed in accordance with the requirements of 40 CFR 262.23 (see checklist item HW.20.4.US for SQGs and HW.55.5.US for LQGs) or is provided with an electronic manifest that is obtained, completed, and transmitted in accordance with 40 CFR 262.20(a)(3) of this chapter, and signed with a valid and enforceable electronic signature as described in 40 CFR 262.25.</p> <p>Verify that, in the case of exports other than those subject to subpart H of 40 CFR 262, a transporter does not accept hazardous waste without a manifest signed by the generator and for exports occurring under the terms of a consent issued by EPA on or after 31 December 2016, a movement document that includes all information required by 40 CFR 262.83(d).</p> <p>Verify that, before transporting the hazardous waste, the transporter signs and dates the manifest acknowledging acceptance of the hazardous waste from the generator.</p>

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	<p>Verify that the transporter returns a signed copy to the generator before leaving the generator's property.</p> <p>Verify that the transporter ensures that the manifest accompanies the hazardous waste.</p> <p>Verify that, in the case of exports occurring under the terms of a consent issued by EPA to the exporter on or after 31 December 2016, the transporter ensures that a movement document including information required by 40 CFR 262.83(d) also accompanies the hazardous waste.</p> <p>Verify that, in the case of imports occurring under the terms of a consent issued by EPA to the country of export or the importer on or after 31 December 2016, the transporter ensures that a movement document including all information required by 40 CFR 262.84(d) also accompanies the hazardous waste.</p> <p>Verify that a transporter who delivers a hazardous waste to another transporter or to the designated facility:</p> <ul style="list-style-type: none"> <li>– obtains the date of delivery and the handwritten signature of that transporter or of the owner or operator of the designated facility on the manifest</li> <li>– retains one copy of the manifest</li> <li>– gives the remaining copies of the manifest to the accepting transporter or designated facility.</li> </ul> <p>(NOTE: The requirements to ensure the manifest accompanies the hazardous waste, obtaining signatures and maintaining manifest copies, and for rail shipments do not apply to water (bulk shipment) transporters if:</p> <ul style="list-style-type: none"> <li>– the hazardous waste is delivered by water (bulk shipment) to the designated facility; and</li> <li>– a shipping paper containing all the information required on the manifest (excluding the USEPA identification numbers, generator certification, and signatures) and, for exports or imports occurring under the terms of a consent issued by EPA on or after 31 December 2016, a movement document that includes all information required by 40 CFR 262.83(d) or 262.84(d) accompanies the hazardous waste</li> <li>– the delivering transporter obtains the date of delivery and handwritten signature of the owner or operator of the designated facility on either the manifest or the shipping paper</li> <li>– the person delivering the hazardous waste to the initial water (bulk shipment) transporter obtains the date of delivery and signature of the water (bulk shipment) transporter on the manifest and forwards it to the designated facility; and</li> <li>– a copy of the shipping paper or manifest is retained by each water (bulk shipment) transporter.)</li> </ul>

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	<p>(NOTE: For shipments involving rail transportation, the requirements to ensure the manifest accompanies the hazardous waste, obtaining signatures and maintaining manifest copies, and for water (bulk shipment) do not apply and the following requirements do apply:</p> <ul style="list-style-type: none"> <li>– when accepting hazardous waste from a non-rail transporter, the initial rail transporter: <ul style="list-style-type: none"> <li>– signs and dates the manifest acknowledging acceptance of the hazardous waste</li> <li>– returns a signed copy of the manifest to the non-rail transporter</li> <li>– forwards at least three copies of the manifest to one of the following: <ul style="list-style-type: none"> <li>– the next non-rail transporter, if any</li> <li>– the designated facility, if the shipment is delivered to that facility by rail</li> <li>– the last rail transporter designated to handle the waste in the United States</li> </ul> </li> </ul> </li> <li>retains one copy of the manifest and rail shipping paper</li> <li>– rail transporters ensure that a shipping paper containing all the information required on the manifest (excluding the USEPA identification numbers, generator certification, and signatures) and, for exports or imports occurring under the terms of a consent issued by EPA on or after December 31, 2016, a movement document that includes all information required by 40 CFR 262.83(d) or 262.84(d) accompanies the hazardous waste at all times (NOTE: Intermediate rail transporters are not required to sign the manifest, movement document, or shipping paper</li> <li>– when delivering hazardous waste to the designated facility, a rail transporter must: <ul style="list-style-type: none"> <li>– obtains the date of delivery and handwritten signature of the owner or operator of the designated facility on the manifest or the shipping paper (if the manifest has not been received by the facility)</li> <li>– retains a copy of the manifest or signed shipping paper</li> </ul> </li> <li>– when delivering hazardous waste to a non-rail transporter a rail transporter: <ul style="list-style-type: none"> <li>– obtains the date of delivery and the handwritten signature of the next non-rail transporter on the manifest</li> <li>– retains a copy of the manifest</li> </ul> </li> <li>– before accepting hazardous waste from a rail transporter, a non-rail transporter signs and dates the manifest and provides a copy to the rail transporter.)</li> </ul> <p>Verify that transporters who transport hazardous waste out of the United States:</p> <ul style="list-style-type: none"> <li>– sign and date the manifest in the International Shipments block to indicate the date that the shipment left the United States</li> <li>– retain one copy in accordance with 40 CFR 263.22(d)</li> <li>– return a signed copy of the manifest to the generator</li> <li>– for paper manifests only: <ul style="list-style-type: none"> <li>– send a copy of the manifest to the e-Manifest system in accordance with the allowable methods specified in 40 CFR 264.71(a)(2)(v)</li> </ul> </li> </ul>

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	<p>– for shipments initiated prior to the AES filing compliance date, when instructed by the exporter to do so, give a copy of the manifest to a U.S. Customs official at the point of departure from the United States.</p> <p>(NOTE: A transporter transporting hazardous waste from a generator who generates greater than 100 kg but less than 1000 kg of hazardous waste in a calendar month need not comply with the manifest requirements provided that:</p> <ul style="list-style-type: none"> <li>– the waste is being transported pursuant to a reclamation agreement</li> <li>– the transporter records, on a log or shipping paper, the following information for each shipment:</li> <li>– the name, address, and USEPA Identification Number of the generator of the waste <ul style="list-style-type: none"> <li>– the quantity of waste accepted</li> <li>– all DOT-required shipping information</li> <li>– the date the waste is accepted</li> <li>– the transporter carries this record when transporting waste to the reclamation facility</li> <li>– the transporter retains these records for a period of at least 3 yr after termination or expiration of the agreement.)</li> </ul> </li> </ul> <p>Verify that a transporter of hazardous waste keeps a copy of the manifest signed by the generator, himself, and the next designated transporter or the owner or operator of the designated facility for a period of 3 yr from the date the hazardous waste was accepted by the initial transporter.</p> <p>Verify that, for shipments delivered to the designated facility by water (bulk shipment), each water (bulk shipment) transporter retains a copy of the shipping paper containing all the required information required for a period of 3 yr from the date the initial transporter accepted the hazardous waste.</p> <p>Verify that, for shipments of hazardous waste by rail within the United States:</p> <ul style="list-style-type: none"> <li>– the initial rail transporter keeps a copy of the manifest and shipping paper with all the required information for a period of 3 yr from the date the hazardous waste was accepted by the initial transporter</li> <li>– the final rail transporter keeps a copy of the signed manifest (or the shipping paper if signed by the designated facility in lieu of the manifest) for a period of 3 yr from the date the hazardous waste was accepted by the initial transporter.</li> </ul> <p>(NOTE: Intermediate rail transporters are not required to keep the manifest records.)</p> <p>Verify that a transporter who transports hazardous waste out of the United States keeps a copy of the manifest indicating that the hazardous waste left the United</p>

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	<p>States for a period of 3 yr from the date the hazardous waste was accepted by the initial transporter.</p> <p>(NOTE: The periods of retention are extended automatically during the course of any unresolved enforcement action regarding the regulated activity or as requested by the Administrator.)</p> <p>(NOTE: A transporter of hazardous waste subject to the following Federal regulations that is being imported from or exported to designated OECD countries for purposes of recovery is subject to the requirements for transfrontier shipments of hazardous waste for recovery within the OECD (see the text of 40 CFR 262.80 through 262.89):</p> <ul style="list-style-type: none"> <li>– manifesting requirements of 40 CFR 262, (see checklist items HW.20.4.US for SQGs and HW.55.5.US for LQGs in the Hazardous Waste Management section of the U.S. TEAM Guide)</li> <li>– waste management standards of 40 CFR 273 for universal waste (see checklist items HW.280.1.US through HW.470.4.US in the Hazardous Waste Management section of the U.S. TEAM Guide)</li> <li>– state requirements analogous to 40 CFR 273.)</li> </ul> <p>Verify that, in the case of exports other than those subject to subpart H of 40 CFR 262, a transporter does not accept such waste from a primary exporter or other person if he knows the shipment does not conform to the EPA Acknowledgment of Consent; and unless, in addition to a manifest signed by the generator, the transporter is also provided with an EPA Acknowledgment of Consent which, except for shipments by rail, is attached to the manifest (or shipping paper for exports by water (bulk shipment)).</p> <p>(NOTE: For exports of hazardous waste subject to the requirements of subpart H of 40 CFR 262, a transporter may not accept hazardous waste without a tracking document that includes all information required by 40 CFR 262.84 [see text of regulation].)</p> <p>Verify that, before transporting the hazardous waste, the transporter signs and dates the manifest acknowledging acceptance of the hazardous waste from the generator.</p> <p>Verify that the transporter returns a signed copy to the generator before leaving the generator's property.</p> <p>Verify that the transporter ensures that the manifest accompanies the hazardous waste.</p> <p>Verify that a transporter who delivers a hazardous waste to another transporter or to the designated facility:</p> <ul style="list-style-type: none"> <li>– obtains the date of delivery and the handwritten signature of that transporter or of the owner or operator of the designated facility on the manifest</li> </ul>

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	<ul style="list-style-type: none"> <li>– retains one copy of the manifest</li> <li>– gives the remaining copies of the manifest to the accepting transporter or designated facility.</li> </ul> <p>(NOTE: The requirements to ensure the manifest accompanies the hazardous waste, obtaining signatures and maintaining manifest copies, and for rail shipments do not apply to water (bulk shipment) transporters if:</p> <ul style="list-style-type: none"> <li>– the hazardous waste is delivered by water (bulk shipment) to the designated facility; and</li> <li>– a shipping paper containing all the information required on the manifest (excluding the USEPA identification numbers, generator certification, and signatures) and, for exports, an USEPA Acknowledgment of Consent accompanies the hazardous waste; and</li> <li>– the delivering transporter obtains the date of delivery and handwritten signature of the owner or operator of the designated facility on either the manifest or the shipping paper; and</li> <li>– the person delivering the hazardous waste to the initial water (bulk shipment) transporter obtains the date of delivery and signature of the water (bulk shipment) transporter on the manifest and forwards it to the designated facility; and</li> <li>– a copy of the shipping paper or manifest is retained by each water (bulk shipment) transporter.)</li> </ul> <p>(NOTE: For shipments involving rail transportation, the requirements to ensure the manifest accompanies the hazardous waste, obtaining signatures and maintaining manifest copies, and for water (bulk shipment) do not apply and the following requirements do apply:</p> <ul style="list-style-type: none"> <li>– when accepting hazardous waste from a non-rail transporter, the initial rail transporter: <ul style="list-style-type: none"> <li>– signs and dates the manifest acknowledging acceptance of the hazardous waste</li> <li>– returns a signed copy of the manifest to the non-rail transporter</li> <li>– forwards at least three copies of the manifest to one of the following: <ul style="list-style-type: none"> <li>– the next non-rail transporter, if any</li> <li>– the designated facility, if the shipment is delivered to that facility by rail</li> <li>– the last rail transporter designated to handle the waste in the United States</li> </ul> </li> <li>– retain one copy of the manifest and rail shipping paper</li> </ul> </li> <li>– rail transporters ensure that a shipping paper containing all the information required on the manifest (excluding the USEPA identification numbers, generator certification, and signatures) and, for exports an USEPA Acknowledgment of Consent accompanies the hazardous waste at all times (NOTE: Intermediate rail transporters are not required to sign either the manifest or shipping paper)</li> <li>– when delivering hazardous waste to the designated facility, a rail transporter must:</li> </ul>

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	<ul style="list-style-type: none"> <li>– obtains the date of delivery and handwritten signature of the owner or operator of the designated facility on the manifest or the shipping paper (if the manifest has not been received by the facility)</li> <li>– retains a copy of the manifest or signed shipping paper</li> <li>– when delivering hazardous waste to a non-rail transporter a rail transporter: <ul style="list-style-type: none"> <li>– obtains the date of delivery and the handwritten signature of the next non-rail transporter on the manifest</li> <li>– retains a copy of the manifest</li> </ul> </li> <li>– before accepting hazardous waste from a rail transporter, a non-rail transporter signs and dates the manifest and provides a copy to the rail transporter.)</li> </ul> <p>Verify that transporters who transport hazardous waste out of the United States:</p> <ul style="list-style-type: none"> <li>– sign and date the manifest in the International Shipments block to indicate the date that the shipment left the United States</li> <li>– retain one copy in accordance with 40 CFR 263.22(d)</li> <li>– return a signed copy of the manifest to the generator</li> <li>– give a copy of the manifest to a U.S. Customs official at the point of departure from the United States.</li> </ul> <p>(NOTE: A transporter transporting hazardous waste from a generator who generates greater than 100 kg but less than 1000 kg of hazardous waste in a calendar month need not comply with the manifest requirements provided that:</p> <ul style="list-style-type: none"> <li>– the waste is being transported pursuant to a reclamation agreement</li> <li>– the transporter records, on a log or shipping paper, the following information for each shipment: <ul style="list-style-type: none"> <li>– the name, address, and USEPA Identification Number of the generator of the waste</li> <li>– the quantity of waste accepted</li> <li>– all DOT-required shipping information</li> <li>– the date the waste is accepted</li> </ul> </li> <li>– the transporter carries this record when transporting waste to the reclamation facility</li> <li>– the transporter retains these records for a period of at least 3 yr after termination or expiration of the agreement.)</li> </ul> <p>Verify that a transporter of hazardous waste keeps a copy of the manifest signed by the generator, himself, and the next designated transporter or the owner or operator of the designated facility for a period of 3 yr from the date the hazardous waste was accepted by the initial transporter.</p> <p>Verify that, for shipments delivered to the designated facility by water (bulk shipment), each water (bulk shipment) transporter retains a copy of the shipping paper containing all the required information required for a period of 3 yr from the date the initial transporter accepted the hazardous waste.</p>

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	<p>Verify that, for shipments of hazardous waste by rail within the United States:</p> <ul style="list-style-type: none"> <li>– the initial rail transporter keeps a copy of the manifest and shipping paper with all the required information for a period of 3 yr from the date the hazardous waste was accepted by the initial transporter</li> <li>– the final rail transporter keeps a copy of the signed manifest (or the shipping paper if signed by the designated facility in lieu of the manifest) for a period of 3 yr from the date the hazardous waste was accepted by the initial transporter.</li> </ul> <p>(NOTE: Intermediate rail transporters are not required to keep the manifest records.)</p> <p>Verify that a transporter who transports hazardous waste out of the United States keeps a copy of the manifest indicating that the hazardous waste left the United States for a period of 3 yr from the date the hazardous waste was accepted by the initial transporter.</p> <p>(NOTE: The periods of retention are extended automatically during the course of any unresolved enforcement action regarding the regulated activity or as requested by the Administrator.)</p> <p>(NOTE: A transporter of hazardous waste subject to the following Federal regulations that is being imported from or exported to designated OECD countries for purposes of recovery is subject to the requirements for transfrontier shipments of hazardous waste for recovery within the OECD (see the text of 40 CFR 262.80 through 262.89):</p> <ul style="list-style-type: none"> <li>– manifesting requirements of 40 CFR 262, (see checklist items HW.20.4.US for SQGs and HW.55.5.US for LQGs in the Hazardous Waste Management section of the U.S. TEAM Guide)</li> <li>– waste management standards of 40 CFR 273 for universal waste (see checklist items HW.280.1.US through HW.470.4.US in the Hazardous Waste Management section of the U.S. TEAM Guide)</li> <li>– state requirements analogous to 40 CFR 273.)</li> </ul> <p>(NOTE: As specified in 40 CFR 262.58(a)(1), the requirements of 40 CFR 262, Subpart H apply. The designated OECD countries are: Australia, Austria, Belgium, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Poland, Portugal, the Republic of Korea, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States.)</p> <p>(NOTE: In the case of exports other than those subject to the requirements for transfrontier shipments of hazardous waste for recovery within the OECD, a transporter may not accept such waste from a primary exporter or other person if he knows the shipment does not conform to the USEPA Acknowledgement of</p>

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<p><b>HW.100.2.US.</b> Checklist item moved [Reviewed October 2001; Moved January 2003].</p> <p><b>HW.100.3.US.</b> Transporters of hazardous waste must perform immediate notification and clean-up action if a discharge occurs during transport (40 CFR 263.10(a), 263.10(b), 263.10(d), 263.10(e), 263.30, and 263.31) [Reviewed October 2001; Revised January 2003; Revised October 2006; Revised July 2015].</p>	<p>Consent; and unless, in addition to a signed manifest, such waste is also accompanied by an USEPA Acknowledgement of Consent which, except for shipment by rail, is attached to the manifest (or shipping paper for exports by water (bulk shipment)).)</p> <p>(NOTE: For exports of hazardous waste subject to the requirements for transfrontier shipments of hazardous waste for recovery within the OECD, a transporter may not accept hazardous waste without a tracking document that includes all information required by 40 CFR 262.84 (see the text of the regulation).</p> <p>(NOTE: In the case of exports other than those subject to the requirements for transfrontier shipments of hazardous waste for recovery within the OECD, a transporter may not accept such waste from a primary exporter or other person if he knows the shipment does not conform to the USEPA Acknowledgement of Consent; and unless, in addition to a signed manifest, such waste is also accompanied by an USEPA Acknowledgement of Consent which, except for shipment by rail, is attached to the manifest (or shipping paper for exports by water (bulk shipment)).)</p> <p>(NOTE: For exports of hazardous waste subject to the requirements for transfrontier shipments of hazardous waste for recovery within the OECD, a transporter may not accept hazardous waste without a tracking document that includes all information required by 40 CFR 262.84 (see the text of the regulation).</p> <p>(NOTE: Since the contents of this checklist item are applicable to generators of hazardous waste, the contents have been moved to HW.20.7.US and HW.55.9.US.)</p> <p>Verify that, in the event of a discharge of hazardous waste during transportation, the transporter takes appropriate immediate action to protect human health and the environment (e.g., notify local authorities, dike the discharge area).</p> <p>(NOTE: If a discharge of hazardous waste occurs during transportation and an official (State or local government or a Federal Agency) acting within the scope of his official responsibilities determines that immediate removal of the waste is necessary to protect human health or the environment, that official may authorize the removal of the waste by transporters who do not have USEPA identification numbers and without the preparation of a manifest.)</p> <p>Verify that an air, rail, highway, or water transporter who has discharged hazardous waste gives notice to the National Response Center (800-424-8802 or 202-426-2675) in the following situations:</p> <ul style="list-style-type: none"> <li>– as a direct result of hazardous waste one of the following occurs: <ul style="list-style-type: none"> <li>– a person is killed</li> <li>– a person receives injuries requiring his or her hospitalization;</li> <li>– estimated carrier or other property damage exceeds \$50,000</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– an evacuation of the general public occurs lasting one or more hours</li> <li>– one or more major transportation arteries or facilities are closed or shut down for one hour or more</li> <li>– the operational flight pattern or routine of an aircraft is altered</li> <li>– fire, breakage, spillage, or suspected radioactive contamination occurs involving shipment of radioactive material</li> <li>– fire, breakage, spillage, or suspected contamination occurs involving shipment of infectious substances (etiologic agents)</li> <li>– there has been a release of a marine pollutant in a quantity exceeding 450 L (119 gal) for liquids or 400 kg (882 lbs) for solids</li> <li>– a situation exists of such a nature (e.g., a continuing danger to life exists at the scene of the incident) that, in the judgment of the carrier, it should be reported to the National Response Center even though it does not meet the above criteria.</li> </ul> <p>Verify that an air, rail, highway, or water transporter who has discharged hazardous waste reports in writing to the Director, Office of Hazardous Materials Regulations, Materials Transportation Bureau, Department of Transportation, Washington, DC 20590.</p> <p>(NOTE: The written report to the Director, Office of Hazardous Materials Regulations will be done on DOT form F 5800.1 within 30 days of the incident. For hazardous waste, the report will include:</p> <ul style="list-style-type: none"> <li>– a copy of the hazardous waste manifest</li> <li>– an estimate of the quantity of waste removed from the scene, the name and address to which it was taken, and the manner of disposition of any removed waste entered in Section IX of the report.)</li> </ul> <p>Verify that a water (bulk shipment) transporter who has discharged hazardous waste immediately notifies the NRC, U.S. Coast Guard, 2100 Second Street, SW., Washington, DC 20593, toll free telephone number 800-424-8802 (in Washington, DC metropolitan area, (202) 267-2675).</p> <p>(NOTE: For water (bulk shipment) transporters, if direct reporting to the NRC is not practicable, reports may be made to the Coast Guard or USEPA predesignated OSC for the geographic area where the discharge occurs. If it is not possible to notify the NRC or the predesignated OSC immediately, reports may be made immediately to the nearest Coast Guard unit, provided that the person in charge of the vessel or onshore or offshore facility notifies the NRC as soon as possible.</p> <p>Verify that a transporter cleans up any hazardous waste discharge that occurs during transportation or takes such action as may be required or approved by Federal, State, or local officials so that the hazardous waste discharge no longer presents a hazard to human health or the environment.</p> <p>(NOTE: These regulations do not apply to:</p>

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<p><b>HW.100.4.US.</b> Checklist item deleted <b>[Deleted October 2011]</b>.</p> <p><b>HW.100.5.US.</b> Checklist item moved <b>[Reviewed October 2001; Moved January 2003]</b>.</p> <p><b>HW.100.6.US.</b> Transporters of hazardous waste must comply with the contents of the manifest (40 CFR 263.10(a), 263.10(b), 263.10(d), 263.10(e), and 263.21) <b>[Added January 2003; Revised April 2005; Revised January 2018]</b>.</p>	<ul style="list-style-type: none"> <li>– onsite transportation of hazardous waste by generators or by owners or operators of permitted hazardous waste management facilities.)</li> <li>– transportation during an explosives or munitions emergency response, conducted in accordance with guidance from an explosive or munitions emergency response specialist or a Federal, State, or Tribal official (see checklist item O6.90.1.US in the Other Environmental Issues section of the U.S. TEAM Guide).)</li> </ul> <p>(NOTE: A transporter of hazardous waste subject to the following Federal regulations that is being imported from or exported to designated OECD countries for purposes of recovery is subject to the requirements for transfrontier shipments of hazardous waste for recovery within the OECD (see the text of 40 CFR 262.80 through 262.89):</p> <ul style="list-style-type: none"> <li>– manifesting requirements of 40 CFR 262, (see checklist items HW.20.4.US for SQGs and HW.55.5.US for LQGs in the Hazardous Waste Management section of the U.S. TEAM Guide)</li> <li>– waste management standards of 40 CFR 273 for universal waste (see checklist items HW.280.1.US through HW.470.4.US in the Hazardous Waste Management section of the U.S. TEAM Guide)</li> <li>– State requirements analogous to 40 CFR 273.</li> </ul> <p>(NOTE: As detailed in 40 CFR 262.58(a)(1), the designated OECD countries are: Australia, Austria, Belgium, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Poland, Portugal, the Republic of Korea, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States.)</p> <p>(NOTE: To document inadequate management practices (MP) related to the transportation of hazardous waste not on public roads use checklist item number HW.2.1.US.)</p> <p>This checklist item was moved to a more appropriate heading for Transfer Facilities under HW.95.1.US.</p> <p>Verify that the transporter delivers the entire quantity of hazardous waste which he has accepted from a generator or a transporter to one of the following:</p> <ul style="list-style-type: none"> <li>– the designated facility listed on the manifest</li> <li>– alternate designated facility, if the hazardous waste cannot be delivered to the designated facility because an emergency prevents delivery</li> <li>– the next designated transporter</li> <li>– the place outside the United States designated by the generator.</li> </ul> <p>Verify that, if the hazardous waste cannot be delivered because of an emergency condition other than rejection of the waste by the designated facility or alternate</p>

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	<p>designated facility, the transporter contacts the generator for further directions and revises the manifest according to the generator's instructions.</p> <p>Verify that, if the hazardous waste is not delivered to the next designated transporter and the current transporter is without contractual authorization from the generator to act as the generator's agent with respect to transporter additions or substitutions, then the current transporter contacts the generator for further instructions prior to making any revisions to the transporter designations on the manifest.</p> <p>(NOTE: The current transporter without contractual authorization may make revisions after receiving authorization from generator if one of the following is true:</p> <ul style="list-style-type: none"> <li>– the hazardous waste is not delivered to the next designated transporter because of an emergency condition</li> <li>– the current transporter proposes to change the transporter(s) designated on the manifest by the generator, or to add a new transporter during transportation, to respond to an emergency, or for purposes of transportation efficiency, convenience, or safety.</li> </ul> <p>If the hazardous waste is not delivered to the next designated transporter and the current transporter has authorization from the generator to act as the generator's agent, then the current transporter may change the transporter(s) designated on the manifest, or add a new transporter, during transportation without the generator's prior, explicit approval, provided that:</p> <ul style="list-style-type: none"> <li>– the current transporter is authorized by a contractual provision that provides explicit agency authority for the transporter to make such transporter changes on behalf of the generator</li> <li>– the transporter enters in Item 14 of each manifest for which such a change is made, the following statement of its agency authority "Contract retained by generator confers agency authority on initial transporter to add or substitute additional transporters on generator's behalf"</li> <li>– the change in designated transporters is necessary to respond to an emergency, or for purposes of transportation efficiency, convenience, or safety.</li> </ul> <p>The grant by a generator of authority to a transporter to act as the agent of the generator with respect to changes to transporter designations does not affect the generator's liability or responsibility for complying with any applicable requirement under this chapter, or grant any additional authority to the transporter to act on behalf of the generator.)</p> <p>Verify that, if hazardous waste is rejected by the designated facility while the transporter is on the facility's premises, the transporter obtains the following:</p> <ul style="list-style-type: none"> <li>– for a partial load rejection or for regulated quantities of container residues, a copy of the original manifest that includes the facility's date and signature, and the Manifest Tracking Number of the new manifest that will accompany the shipment, and a description of the partial rejection or container residue in the discrepancy block of the original manifest</li> <li>– for a full load rejection that will be taken back by the transporter, a copy of the original manifest that includes the rejecting facility's signature and date</li> </ul>

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<p><b>HW.100.7.US.</b> In specific circumstances, a transporter of hazardous waste must also meet the requirements for generators of hazardous waste (40 CFR 263.10(c)) [Added January 2003; Revised October 2006; Revised July 2015].</p>	<p>attesting to the rejection, the description of the rejection in the discrepancy block of the manifest, and the name, address, phone number, and Identification Number for the alternate facility or generator to whom the shipment must be delivered.</p> <p>Verify that, in both cases, the transporter retains a copy of the manifest and gives a copy of the manifest to the rejecting designated facility.</p> <p>(NOTE: For a full load rejection, if the original manifest is not used, then the transporter must obtain a new manifest for the shipment.)</p> <p>(NOTE: For a partial load, if the transporter is forwarding the rejected part of the shipment or a regulated container residue to an alternate facility or returning it to the generator, the transporter must obtain a new manifest to accompany the shipment.)</p> <p>(NOTE: This checklist item does not apply when transporting non-chemical waste munitions as Conditionally Exempt (CE), see checklist item O6.100.1.US in the Other Environmental Issues section of the U.S. TEAM Guide.)</p> <p>Verify that a transporter of hazardous waste complies with 40 CFR 262, Standards Applicable to Generators of Hazardous Waste, if he does one of the following:</p> <ul style="list-style-type: none"> <li>– transports hazardous waste into the United States from abroad</li> <li>– mixes hazardous wastes of different DOT shipping descriptions by placing them into a single container.</li> </ul> <p>(NOTE: See checklist items in the following categories for requirements related to:</p> <ul style="list-style-type: none"> <li>– all sizes of generators</li> <li>– VSQGs: HW.1 and HW.10</li> <li>– SQGs: HW.20 through HW.50</li> <li>– LQGs: HW.55 through HW.90.)</li> </ul> <p>(NOTE: These regulations do not apply to:</p> <ul style="list-style-type: none"> <li>– onsite transportation of hazardous waste by generators or by owners or operators of permitted hazardous waste management facilities.)</li> <li>– to transportation during an explosives or munitions emergency response, conducted in accordance with guidance from an explosive or munitions emergency response specialist or a Federal, State, or Tribal official (see checklist item O6.90.1.US in the Other Environmental Issues section of the U.S. TEAM Guide).)</li> </ul> <p>(NOTE: A transporter of hazardous waste subject to the following Federal regulations that is being imported from or exported to designated OECD countries for purposes of recovery is subject to the requirements for transfrontier shipments of hazardous waste for recovery within the OECD (see the text of 40 CFR 262.80 through 262.89):</p>

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<p><b>HW.100.8.US.</b> In order for low level mixed waste (LLMW) to not be transported or disposed of as a hazardous waste, certain parameters must be met (40 CFR 266.305 through 266.360) <b>[Added January 2004]</b>.</p>	<ul style="list-style-type: none"> <li>– manifesting requirements of 40 CFR 262, (see checklist items HW.20.4.US for SQGs and HW.55.5.US for LQGs in the Hazardous Waste Management section of the U.S. TEAM Guide)</li> <li>– waste management standards of 40 CFR 273 for universal waste (see checklist items HW.280.1.US through HW.470.4.US in the Hazardous Waste Management section of the U.S. TEAM Guide)</li> <li>– State requirements analogous to 40 CFR 273.</li> </ul> <p>(NOTE: As detailed in 40 CFR 262.58(a)(1), the designated OECD countries are: Australia, Austria, Belgium, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Poland, Portugal, the Republic of Korea, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States.)</p> <p>NOTE: LLMW is exempt from the regulatory definition of hazardous waste in 40 CFR 261.3 if the waste meets the eligibility criteria and conditions in this checklist. This is referred to as a “transportation and disposal conditional exemption”.)</p> <p>(NOTE: Wastes eligible for the transportation and disposal conditional exemption are:</p> <ul style="list-style-type: none"> <li>– an LLMW that meets the waste acceptance criteria of a LLRWDF</li> <li>– an eligible NARM waste.)</li> </ul> <p>Verify that the following conditions are met in order to qualify for and maintain the transportation and disposal conditional exemption:</p> <ul style="list-style-type: none"> <li>– the eligible waste meets or is treated to meet LDR treatment standards (40 CFR 268, Subpart D)</li> <li>– if the facility is not already subject to NRC, or NRC Agreement State equivalent manifest and transportation regulations for the shipment of the waste, the facility manifests and transports the waste according to NRC regulations 10 CFR 20.2006 and 10 CFR 1.5</li> <li>– the exempted waste is in containers when it is disposed of in the LLRWDF</li> <li>– the exempted waste is disposed of at a designated LLRWDF.</li> </ul> <p>(NOTE: The LLMW transportation and disposal conditional exemption becomes effective once all the following have occurred:</p> <ul style="list-style-type: none"> <li>– the eligible waste meets the applicable LDR treatment standards.</li> <li>– return receipts have been received so that the facility has notified USEPA and the LLRWDF</li> <li>– the packaging and preparation for shipment requirements for the waste have been completed according to NRC Packaging and Transportation regulations found under 10 CFR 71 (or NRC Agreement State equivalent regulations)</li> </ul>

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	<ul style="list-style-type: none"> <li>– a manifest has been prepared for the waste according to NRC manifest regulations found under 10 CFR 20 (or NRC Agreement State equivalent regulations)</li> <li>– the waste has been placed on a transportation vehicle destined for an LLRWDF licensed by NRC or an NRC Agreement State.)</li> </ul> <p>Verify that LLMW transportation and disposal conditional exempted waste is disposed of in an LLRWDF that is regulated and licensed by NRC under 10 CFR 61 or by an NRC Agreement State under equivalent State regulations, including State NARM licensing regulations for eligible NARM.</p> <p>Verify that the exempted waste is placed in containers that are one of the following:</p> <ul style="list-style-type: none"> <li>– a carbon steel drum</li> <li>– an alternative container with equivalent containment performance in the disposal environment as a carbon steel drum</li> <li>– a high integrity container as defined by NRC.</li> </ul> <p>Verify that the facility provides a one-time notice to USEPA stating that the facility claims the transportation and disposal conditional exemption prior to the initial shipment of an exempted waste from the facility to an LLRWDF.</p> <p>Verify that the dated written notice includes the facility name, address, telephone number, and RCRA ID number, and is sent by certified delivery.</p> <p>Verify that the facility notifies the LLRWDF receiving their exempted waste by certified delivery before shipment of each exempted waste.</p> <p>(NOTE: The exempted waste can be shipped only after the facility has received the return receipt of the notice to the LLRWDF.)</p> <p>Verify that, in addition to those records required by a NRC or NRC Agreement State license, the facility keeps the following records:</p> <ul style="list-style-type: none"> <li>– the applicable existing recordkeeping requirements under 40 CFR 264.73, 40 CFR 265.73, and 40 CFR 268.7 (see checklist items HW.130.4.US, HW.130.5.US, and HW.145.5.US) to demonstrate that the waste has met LDR treatment standards prior to claiming the exemption</li> <li>– a copy of all notifications and return receipts for 3 yr after the exempted waste is sent for disposal</li> <li>– a copy of all notifications and return receipts for 3 yr after the last exempted waste is sent for disposal</li> <li>– a copy of the notification and return receipt for 3 yr after the exempted waste is sent for disposal.</li> </ul> <p>Verify that, if the facility is not already subject to NRC, or NRC Agreement State equivalent manifest and transportation regulations for the shipment of LLMW</p>

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	<p>waste, the facility also keeps all other documents related to tracking the exempted waste as required under 10 CFR 20.2006 or NRC Agreement State equivalent regulations, including applicable NARM requirements.</p> <p>(NOTE: Any waste will automatically lose the transportation and disposal exemption if the facility fails to manage it in accordance with all of the conditions specified in this checklist item.)</p> <p>Verify that, if the facility fails to meet any of the conditions for any of the wastes, the facility reports to USEPA, in writing by certified delivery, within 30 days of learning of the failure.</p> <p>Verify that the notification of failure report is signed by the authorized representative certifying that the information provided is true, accurate, and complete, and includes:</p> <ul style="list-style-type: none"> <li>– the specific condition(s) that were not met</li> <li>– a description of the waste (including the waste name, hazardous waste codes, and quantity) that lost the exemption</li> <li>– the date(s) on which the condition(s) for the waste were not met.</li> </ul> <p>Verify that, if the failure to meet any of the conditions may endanger human health or the environment, the facility immediately notifies USEPA orally within 24 h and follows up with a written notification within 5 days.</p>



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<b>HW.102.</b>  <b>MILITARY MUNITIONS</b>  <b>HW.102.1.US.</b> Checklist item moved <b>[Revised June 1998; Moved April 2003]</b> .  <b>HW.102.2.US.</b> Checklist item moved <b>[Added February 1997; Moved April 2003]</b> .  <b>HW.102.3.US.</b> Checklist item deleted <b>[Deleted June 1998]</b> .  <b>HW.102.4.US.</b> Checklist item moved <b>[Added February 1997; Revised July 2002; Moved April 2003]</b> .  <b>HW.102.5.US.</b> Checklist item moved <b>[Added July 2002; Moved April 2003]</b> .	<p>This checklist item was deleted due to all the waste munitions questions being moved out of the Hazardous Waste Section and into the Other Environmental Issues section of the U.S. TEAM Guide. Waste munitions are addressed under the O6 headings in the Other Environmental Issues section.</p> <p>This checklist item was deleted due to all the waste munitions questions being moved out of the Hazardous Waste Section and into the Other Environmental Issues section of the U.S. TEAM Guide. Waste munitions are addressed under the O6 headings in the Other Environmental Issues section.</p> <p>Checklist item incorporated into HW.102.1.US.</p> <p>This checklist item was deleted due to all the waste munitions questions being moved out of the Hazardous Waste Section and into the Other Environmental Issues section of the U.S. TEAM Guide. Waste munitions are addressed under the O6 headings in the Other Environmental Issues section.</p> <p>This checklist item was deleted due to all the waste munitions questions being moved out of the Hazardous Waste Section and into the Other Environmental Issues section of the U.S. TEAM Guide. Waste munitions are addressed under the O6 headings in the Other Environmental Issues section.</p>



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<p><b>ALL TSDFs</b></p> <p><b>HW.105. General</b></p> <p><b>HW.105.1.US.</b> All permitted TSDFs are required to meet the hazardous waste management requirements outlined in their permit (40 CFR 270.10 and 270.30 through 270.33).</p> <p><b>HW.105.2.US.</b> All TSDFs that have interim status are required to meet the hazardous waste management requirements of 40 CFR 265 and apply for a Part B permit (40 CFR 270.71 and 270.73(g)).</p> <p><b>HW.105.3.US.</b> All TSDFs that store, treat, transport, or handle hazardous wastes must obtain an USEPA identification number (40 CFR 264.11 and 265.11).</p> <p><b>HW.105.4.US.</b> TSDFs must control entry to the active portion of the TSDF (40 CFR 264.14 and 265.14).</p>	<p>Verify that the TSDF is not treating, storing, or disposing of waste other than those listed in their Part A application, Part A permit, or Part B permit.</p> <p>Verify that the TSDF is meeting the requirements outlined in the permit for the following:</p> <ul style="list-style-type: none"> <li>– reporting and recordkeeping</li> <li>– compliance schedules</li> <li>– allowable wastes</li> <li>– allowable activities.</li> </ul> <p>Determine if the TSDF is an interim status TSDF.</p> <p>Verify that the TSDF is only treating, storing, or disposing of wastes listed in their Part A application.</p> <p>Verify that the TSDF is meeting all applicable requirements for interim status TSDFs outlined in 40 CFR 265.</p> <p>Verify that the TSDF has submitted a Part B permit application.</p> <p>Examine documentation from USEPA for the generator, transporter, or TSDF identification number.</p> <p>Verify that the correct identification number is used on all appropriate documentation (i.e., manifests).</p> <p>Verify that, unless the TSDF can demonstrate physical contact with the waste, structures and equipment within the active portion of the TSDF will not injure unknowing or unauthorized person or livestock, and that the waste would not be disturbed, the following items are in place at the TSDF:</p> <ul style="list-style-type: none"> <li>– a 24-h surveillance system (e.g., television monitors, surveillance by guards) is in place and in operation or the TSDF is surrounded by a fence or natural barrier</li> <li>– controlled entry is provided (an attendant, television monitors, locked entrances, controlled roadway access)</li> </ul>

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<p><b>HW.105.5.US.</b> All TSDFs must be designed, constructed, maintained, and operated to minimize the possibility of a fire, explosion, or any unplanned release of hazardous waste (40 CFR 264.30 through 264.37 and 265.30 through 265.37).</p>	<ul style="list-style-type: none"> <li>– signs with the wording DANGER UNAUTHORIZED PERSONNEL KEEP OUT, are posted at each entrance and other locations as appropriate and are legible from 25 ft</li> <li>– signs are in English and other predominant languages.</li> </ul> <p>(NOTE: The requirement for surveillance systems or a fence and controlled entry are satisfied if the facility or plant within which the active portion is located itself has a surveillance system, or a barrier, and means to control entry.)</p> <p>Determine if the following required equipment is easily accessible and in working condition by inspecting the TSDF:</p> <ul style="list-style-type: none"> <li>– an internal communications or alarm system capable of providing immediate emergency instruction to TSDF personnel</li> <li>– a telephone or hand-held two-way radio</li> <li>– portable fire extinguishers and special extinguishing equipment (foam, inert gas, or dry chemicals)</li> <li>– spill control equipment</li> <li>– decontamination equipment</li> <li>– fire hydrants or another source of water (reservoir, storage tank, etc.) with adequate volume and pressure, foam producing equipment, automatic sprinklers, or water spray systems.</li> </ul> <p>Determine if equipment is tested and maintained as necessary to ensure proper operation in an emergency.</p> <p>Verify that sufficient aisle space is maintained to allow unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of the operation.</p> <p>Verify that police, fire department, and emergency response teams are familiar with the layout of the TSDF, properties of the waste being handled, and general operations, unless they have declined such an arrangement.</p> <p>Verify that the hospital is familiar with the properties of hazardous waste handled and the types of injuries that could result in an emergency.</p> <p>(NOTE: When state or local police, fire departments, emergency response teams, or hospitals decline to enter into arrangements, than the refusal must be documented.)</p>
<p><b>HW.105.6.US.</b> All TSDFs must take precautions to prevent accidental ignition or reaction of ignitable or</p>	<p>Verify from the operating record and/or observation that the following safe management practices are used:</p> <ul style="list-style-type: none"> <li>– wastes are separated and protected from sources of ignition or reaction</li> </ul>

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<p>reactive wastes (40 CFR 264.17(a) and 265.17(a)).</p> <p><b>HW.105.7.US.</b> When TSDFs are required by specific treatment, storage, or disposal sections to prevent reactions from ignitable, reactive, or incompatible wastes, specific standards must be met (40 CFR 264.17(b) and 265.17(b)).</p> <p><b>HW.105.8.US.</b> A detailed chemical and physical analysis of a representative sample, as specified in the waste analysis plan, of the hazardous waste must be obtained prior to treatment, storage or disposal (40 CFR 264.13(a) and 265.13(a)).</p> <p><b>HW.105.9.US.</b> Each TSDF must have an emergency coordinator on the TSDF premises or on call at all times (40 CFR 264.55 and 265.55).</p> <p><b>HW.105.10.US.</b> TSDF emergency coordinators must follow certain emergency procedures whenever there is an imminent or actual emergency situation (40 CFR 264.56(a) through 264.56(h) and 265.56(a) through 265.56(h)) <b>[Revised July 2006]</b>.</p>	<ul style="list-style-type: none"> <li>– smoking and open flame is confined to specially designated locations when ignitable or reactive wastes is handled</li> <li>– NO SMOKING signs are used when necessary.</li> </ul> <p>Verify from the operating record and/or observation that, during treatment, storage, or disposal of ignitable or reactive wastes or during mixing of incompatible wastes and other materials, precautions are taken to prevent the following reactions:</p> <ul style="list-style-type: none"> <li>– generation of extreme heat or pressure, fire or explosions, or violent reactions</li> <li>– production of uncontrolled toxic mists, fumes, dusts, or gases sufficient to threaten human health or the environment</li> <li>– production of uncontrolled flammable fumes or gases sufficient to pose a risk of fire or explosions</li> <li>– damage to the structural integrity of the device or facility</li> <li>– threats to human health or the environment through other like means.</li> </ul> <p>Verify that a detailed physical and chemical analysis is done of a representative sample of the wastes prior to treatment, storage, or disposal.</p> <p>(NOTE: Prior studies or published information may be included as a part of the analysis.)</p> <p>Verify that the analysis is repeated as necessary to ensure it is accurate and up to date, specifically when the process or operation generating the waste has changed.</p> <p>Verify that, at all times, there is at least one employee at the TSDF or on call with responsibility for coordinating all emergency response measures.</p> <p>Verify that the emergency coordinator is thoroughly familiar with the TSDF, the characteristics of the waste handled, and the provisions of the contingency plan.</p> <p>Verify that the emergency coordinator has the authority to commit the resources needed to carry out the contingency plan.</p> <p>Review the contingency plan for the TSDF.</p> <p>Verify that the emergency coordinator is required to follow these emergency procedures:</p> <ul style="list-style-type: none"> <li>– immediately activate TSDF alarms or communication systems and notify appropriate TSDF, state, and local response parties</li> <li>– identify the character, exact source, amount, and real extent of any released materials</li> </ul>

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<p><b>HW.105.11.US.</b> TSDFs are required to take specific actions for a response to an immediate threat to human health, public safety, property, or the environment from known or suspected presence of military munitions, other explosive material, or an explosion device (40 CFR 264.1(g)(8)(i)(D), 264.1(g)(8)(ii), and 264.1(g)(8)(iv); 265.1(c)(11)(i), 265.1(c)(11)(ii), and 265.1(c)(11)(iv) [Added July 2002].</p>	<ul style="list-style-type: none"> <li>– assess possible hazards to human health or the environment, including direct and indirect effects (e.g., release of gases, surface runoff from water or chemicals used to control fire or explosions, etc.)</li> <li>– stop processes and operations at the TSDF when necessary to prevent fires, explosions, or further releases</li> <li>– collect and contain the released waste</li> <li>– remove or isolate containers when necessary</li> <li>– monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment whenever appropriate</li> <li>– provide for treatment, storage, or disposal of recovered waste, contaminated soil or surface water, or other material</li> <li>– ensure that no waste which may be incompatible with the released material is treated, stored, or disposed of until cleanup is completed</li> <li>– ensure that all emergency equipment is cleaned and fit for its intended use before operations are resumed.</li> </ul> <p>(NOTE: TSDFs engaged in treatment or containment activities during immediate response to an immediate threat to human health, public safety, property, or the environment, from the known or suspected presence of military munitions, other explosive material, or an explosive device, as determined by an explosive or munitions emergency response specialist as defined in 40 CFR 260.10 are not required to comply with 40 CFR 264 or 40 CFR 265 except for Subparts C and D of each Part.)</p> <p>Verify that the TSDF is complying with 40 CFR 264.30 through 264.37 and 265.30 through 265.37 on preparedness (see checklist item HW.105.5.US).</p> <p>Verify that the TSDF is complying with 40 CFR 264.30 through 264.37 and 265.50 through 265.56 on contingency plans (see checklist item HW.145.3.US).</p> <p>(NOTE: In the case of an explosives or munitions emergency response, if a Federal, State, Tribal or local official acting within the scope of his or her official responsibilities, or an explosives or munitions emergency response specialist, determines that immediate removal of the material or waste is necessary to protect human health or the environment, that official or specialist may authorize the removal of the material or waste by transporters who do not have USEPA identification numbers and without the preparation of a manifest.)</p> <p>Verify that, in the case of emergencies involving military munitions, the responding military emergency response specialist's organizational unit retains records for 3 yr identifying the dates of the response, the responsible persons responding, the type and description of material addressed, and its disposition.</p>

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<p><b>ALL TSDFs</b></p> <p><b>HW.110. Personnel Training</b></p> <p><b>HW.110.1.US.</b> All TSDF personnel who handle hazardous waste must meet certain training requirements (40 CFR 264.16(a) through 264.16(c) and 265.16(a) through 265.16(c)) <b>[Revised July 2006]</b>.</p> <p><b>HW.110.2.US.</b> Training records must be maintained for all TSDF staff that manages hazardous waste (40 CFR 264.16(d)(3), 264.16(d)(4), 264.16(e), 265.16(d)(3), 265.16(d)(4), and 265.16(e)) <b>[Revised October 2003]</b>.</p>	<p>Verify that a person trained in hazardous waste management procedures directs the training program.</p> <p>Verify that, at a minimum, the training program is designed to ensure that facility personnel are able to respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment, and emergency systems, including, where applicable:</p> <ul style="list-style-type: none"> <li>– procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment</li> <li>– key parameters for automatic waste feed cut-off systems</li> <li>– communications or alarm systems</li> <li>– response to fires or explosions</li> <li>– response to ground-water contamination incidents</li> <li>– shutdown of operations.</li> </ul> <p>(NOTE: For facility employees that receive emergency response training pursuant to Occupational Safety and Health Administration (OSHA) regulations 29 CFR 1910.120(p)(8) and 1910.120(q), the facility is not required to provide separate emergency response training, provided that the overall facility training meets all the requirements of this checklist item.)</p> <p>Verify that new employee training is completed within 6 mo of employment.</p> <p>Verify that an annual review of initial training is provided.</p> <p>Verify that employees do not work unsupervised until training is completed.</p> <p>Verify specifically that accumulation point managers and hazardous waste handlers have been trained.</p> <p>Verify that there is a written description of the type and amount of both introductory and continuing training that will be given to each person filling a listed position.</p> <p>Verify that training records on current personnel are kept until closure of the facility.</p> <p>Verify that training records on former employees are kept for at least 3 yr from the date the employee last worked at the facility.</p>

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	<p>(NOTE: Personnel training records may accompany personnel transferred within the same company.)</p> <p>Verify that records that document that the training or job experience required have been given to, and completed by, facility personnel.</p> <p>(NOTE: For clarification purposes, the segment of this checklist item which previously addressed job descriptions has been moved to HW.145.14.US.)</p>

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<p><b>ALL TSDFs</b></p> <p><b>HW.115. Containers</b></p> <p><b>HW.115.1.US.</b> Empty containers at TSDFs previously holding hazardous wastes must meet the regulatory definition of empty before they are exempted from hazardous waste requirements (40 CFR 261.7).</p> <p><b>HW.115.2.US.</b> Containers used to store hazardous waste at TSDFs must be in good condition and not leaking (40 CFR 264.171 and 265.171).</p> <p><b>HW.115.3.US.</b> Containers used at TSDFs must be made of or lined with materials compatible with the waste</p>	<p>(NOTE: In relation to the requirements for air emissions standard, see the definition of <i>Exempted Hazardous Waste Containers and Surface Impoundments</i> and <i>Exempted Hazardous Waste Management Unit</i>. There are documentation requirements for exempted containers.)</p> <p>Verify that, for containers or inner liners holding hazardous wastes, the following is done:</p> <ul style="list-style-type: none"> <li>– wastes are removed that can be removed using common practices and no more than 2.5 cm [1 in.] of residue remains</li> <li>– if the container is less than or equal to 119 gal, no more than 3 percent by weight of total container capacity remains</li> <li>– when the container is greater than 119 gal, no more than 0.3 percent by weight of the total container capacity remains.</li> </ul> <p>Verify that, for containers that held a compressed gas, the pressure in the container approaches atmospheric.</p> <p>Verify that, for containers or inner liners which hold an acute hazardous waste listed in Appendix 4-5, one of the following is done:</p> <ul style="list-style-type: none"> <li>– it is triple rinsed</li> <li>– it is cleaned by another method identified through the literature or testing as achieving equivalent removal</li> <li>– the inner liner is removed.</li> </ul> <p>Verify that containers are not leaking, bulging, rusting, damaged, or dented.</p> <p>Verify that waste is transferred to a new container or managed in another appropriate manner when necessary.</p> <p>(NOTE: In relation to the requirements for air emissions standard, see the definition of <i>Exempted Hazardous Waste Containers and Surface Impoundments</i> and <i>Exempted Hazardous Waste Management Unit</i>. There are documentation requirements for exempted containers.)</p> <p>Verify that containers are compatible with the waste; in particular, check that strong caustics and acids are not stored in metal drums.</p> <p>(NOTE: In relation to the requirements for air emissions standard, see the definition of <i>Exempted Hazardous Waste Containers and Surface Impoundments</i> and</p>

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<p>stored in them (40 CFR 264.172 and 265.172).</p> <p><b>HW.115.4.US.</b> Containers at TSDFs must be closed during storage and handled in a safe manner (40 CFR 264.173 and 265.173).</p> <p><b>HW.115.5.US.</b> The handling of incompatible wastes, or incompatible wastes and materials in containers at TSDFs must comply with safe management practices (40 CFR 264.17(b), 264.177, 265.17(b), and 265.177).</p> <p><b>HW.115.6.US.</b> Checklist item deleted [Deleted October 2011].</p> <p><b>HW.115.7.US.</b> Containers with design capacities greater than 0.1 m<sup>3</sup> and less than or</p>	<p><i>Exempted Hazardous Waste Management Unit.</i> There are documentation requirements for exempted containers.)</p> <p>Verify that containers are closed except when it is necessary to add or remove waste (check bungs and look for open funnels).</p> <p>Verify that handling and storage practices do not cause damage to the containers or cause them to leak.</p> <p>(NOTE: In relation to the requirements for air emissions standard, see the definition of <i>Exempted Hazardous Waste Containers and Surface Impoundments</i> and <i>Exempted Hazardous Waste Management Unit.</i> There are documentation requirements for exempted containers.)</p> <p>Verify that incompatible wastes or incompatible wastes and materials are not placed in the same containers unless it is done so that it does not:</p> <ul style="list-style-type: none"> <li>– generate extreme heat or pressure, fire, explosion, or violent reaction</li> <li>– produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health</li> <li>– produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions</li> <li>– damage the structural integrity of the device or TSDF by any other like means threaten human health.</li> </ul> <p>(NOTE: Incompatible wastes as listed in Appendix 4-6 should not be placed in the same containers.)</p> <p>Verify that hazardous wastes are not placed in an unwashed container that previously held an incompatible waste or material.</p> <p>Verify that containers holding hazardous wastes incompatible with wastes stored nearby in other containers, open tanks, piles, or surface impoundments are separated or protected from each other by a dike, berm, wall, or other device.</p> <p>(NOTE: In relation to the requirements for air emissions standard, see the definition of <i>Exempted Hazardous Waste Containers and Surface Impoundments</i> and <i>Exempted Hazardous Waste Management Unit.</i> There are documentation requirements for exempted containers.)</p> <p>(NOTE: To document inadequate management practices (MP) at TSDFs use checklist item number HW.2.1.US.)</p> <p>(NOTE: The requirements of 40 CFR 264.1986 and 265.1087 do not apply to containers in which all the hazardous waste entering the container meets one of the</p>

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<p>equal to 0.46 m<sup>3</sup> into which hazardous waste is placed are required to meet specific design and operating standards (40 CFR 264.1086(a) through 264.1086(b)(1)(i), 264.1086(c); 265.1087(a) through 265.1087(b)(1)(i), and 265.1087(c)) <b>[Revised December 1997].</b></p>	<p>following [see also the definition for exempted hazardous waste containers and surface impoundments] (40 CFR 264.1082(c) and 40 CFR 265.1083(c):</p> <ul style="list-style-type: none"> <li>– the average VO concentration of the hazardous waste at the point of waste origination is less than 500 ppmw</li> <li>– the organic content of the hazardous waste has been reduced by an organic destruction or removal process</li> <li>– the waste meets the numerical concentration limits for organic hazardous constituents as specified in 40 CFR 268.40 or has been treated by the treatment technology established by the USEPA for the waste in 268.42(a) or an equivalent method.)</li> </ul> <p>(NOTE: These requirements do not apply to a container that has a design capacity less than or equal to 0.1 m<sup>3</sup> [approx. 26 gal] (40 CFR 264.1080(b)(2) and 40 CFR 265.1080(b)(2).)</p> <p>(NOTE: Standards for containers used in waste stabilization processes (40 CFR 264.1086(b)(2) and 265.1087(b)(2)) are in checklist item HW.115.9.US.)</p> <p>Verify that, for containers with a design capacity greater than 0.1 m<sup>3</sup> and less than or equal to 0.46 m<sup>3</sup> [approx. 122 gal], air emissions are controlled according to the following Container Level 1 standards:</p> <ul style="list-style-type: none"> <li>– a container is used that meets applicable U.S. DOT regulations on the packaging of hazardous materials for transportation</li> <li>– a container is used that is equipped with a cover and closure devices that form a continuous barrier over the container openings so that when the cover and closure devices are secured in the closed position there are not visible holes, gaps, or other open spaces into the interior of the container</li> <li>– an open-top container is used in which an organic vapor-suppressing barrier is placed on or over the hazardous waste in the container so that no hazardous waste is exposed to the atmosphere.</li> </ul> <p>Verify that, when a container using Level 1 standards, other than DOT approved containers, are used, they are equipped with covers and closure devices composed of suitable materials to minimize exposure, to the extent practical, of the hazardous waste to the atmosphere and to maintain the equipment integrity throughout the intended service life.</p> <p>Verify that, whenever waste is in a container using Level 1 controls, covers and closure devices are installed and closure devices are secured and maintained in the closed position except as follows:</p> <ul style="list-style-type: none"> <li>– opening of a closure device or cover is allowed for adding waste or other material to the container as follows: <ul style="list-style-type: none"> <li>– when the container is filled to the intended final level in one continuous operation, the closure devices are secured in the closed position and the covers installed at the conclusion of the filling operation</li> </ul> </li> </ul>

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<p><b>HW.115.8.US.</b> Containers with design capacities greater than 0.46 m<sup>3</sup> into which hazardous waste is placed are required to meet specific design and operating standards (40 CFR 264.1086(a), 264.1087(b)(1)(ii) through 264.1086(b)(1)(iii), 264.1086(c)(1) through 264.1086(c)(3), and 264.1086(d); 265.1087(a),</p>	<ul style="list-style-type: none"> <li>– when discrete batches or quantities of material are added intermittently to the container over a period of time, the closure devices are secured in the closed position and covers installed upon either: <ul style="list-style-type: none"> <li>– the container being filled to the intended final level</li> <li>– the completion of a batch loading after which no additional material will be added to the container within 15 min</li> <li>– the person performing the loading operation leaving the immediate vicinity of the container</li> <li>– the shutdown of the process generating the material being added to the container, whichever condition occurs first</li> </ul> </li> <li>– opening of a closure device or cover is allowed for removing the hazardous waste as follows: <ul style="list-style-type: none"> <li>– in order to meet the requirements for an empty container</li> <li>– when discrete quantities or batches of material are removed from the container but the container is not empty, the closure devices are promptly returned to the closed position and the covers installed upon either: <ul style="list-style-type: none"> <li>– completion of batch removal after which no additional material is removed within 15 min</li> <li>– the person performing the unloading leaves the immediate vicinity, whichever condition occurs first</li> </ul> </li> </ul> </li> <li>– opening of a closure device or cover is allowed when access inside the container is needed to perform routine activities other than transfer of hazardous waste</li> <li>– opening of a spring loaded, pressure vacuum relief valve, conservation vent, or similar type of pressure relief device which vents to the atmosphere is allowed during normal operations for the purpose of maintaining internal container pressure</li> <li>– opening of a safety device to avoid unsafe conditions.</li> </ul> <p>(NOTE: In relation to the requirements for air emissions standard, see the definition of Exempted Hazardous Waste Containers and Surface Impoundments and Exempted Hazardous Waste Management Unit. There are documentation requirements for exempted containers.)</p> <p>(NOTE: The requirements of 40 CFR 264.1086 and 265.1087 do not apply to containers in which all the hazardous waste entering the container meets one of the following [see also the definition for exempted hazardous waste containers and surface impoundments] (40 CFR 264.1082(c) and 40 CFR 265.1083(c)):</p> <ul style="list-style-type: none"> <li>– the average VO concentration of the hazardous waste at the point of waste origination is less than 500 ppmw</li> <li>– the organic content of the hazardous waste has been reduced by an organic destruction or removal process</li> <li>– the waste meets the numerical concentration limits for organic hazardous constituents as specified in 40 CFR 268.40 or has been treated by the treatment technology established by the USEPA for the waste in 268.42(a) or an equivalent method.)</li> </ul>

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<p>265.1087(b)(1)(ii) through  265.1087(b)(1)(iii),  265.1087(c)(1) through  265.1087c(3), and  265.1087(d)) <b>[Added  December 1996].</b></p>	<p>(NOTE: These requirements do not apply to a container that has a design capacity less than or equal to 0.1 m<sup>3</sup> [approx. 26 gal] (40 CFR 264.1080(b)(2) and 40 CFR 265.1080(b)(2)).)</p> <p>(NOTE: Standards for containers used in waste stabilization processes (40 CFR 265.1087(b)(2)) are in checklist item HW.115.9.US.)</p> <p>Verify that, for containers with a design capacity greater than 0.46 m<sup>3</sup> [approx. 122 gal] that are not in light material service, air emissions are controlled according to the following Container Level 1 standards:</p> <ul style="list-style-type: none"> <li>– a container is used that meets applicable U.S. DOT regulations on the packaging of hazardous materials for transportation</li> <li>– a container is used that is equipped with a cover and closure devices that form a continuous barrier over the container openings so that when the cover and closure devices are secured in the closed position there are not visible holes, gaps, or other open spaces into the interior of the container</li> <li>– an open-top container is used in which an organic vapor-suppressing barrier is placed on or over the hazardous waste in the container so that no hazardous waste is exposed to the atmosphere.</li> </ul> <p>Verify that, for containers with a design capacity greater than 0.46 m<sup>3</sup> [approx. 122 gal] that are in light material service, air emissions are controlled according to the following Container Level 2 standards:</p> <ul style="list-style-type: none"> <li>– a container is used that meets applicable U.S. DOT regulations on the packaging of hazardous materials for transportation</li> <li>– a container is used that operates with no detectable organic emissions</li> <li>– a container is used that has been demonstrated within the preceding 12 mo to be vapor tight.</li> </ul> <p>Verify that, when a container using Level 1 standards, other than DOT-approved containers, is used, it is equipped with covers and closure devices composed of suitable materials to minimize exposure of the hazardous waste to the atmosphere and to maintain the equipment integrity for as long as it is in service.</p> <p>Verify that, whenever waste is in a container using Level 1 or Level 2 controls, covers and closure devices are installed and closure devices are secured and maintained in the closed position except as follows:</p> <ul style="list-style-type: none"> <li>– opening of a closure device or cover is allowed for adding waste or other material to the container as follows: <ul style="list-style-type: none"> <li>– when the container is filled to the intended final level in one continuous operation, the closure devices shall be secured in the closed position and the covers installed at the conclusion of the filling operation</li> </ul> </li> </ul>

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<p><b>HW.115.9.US.</b> Containers with design capacities greater than 0.1 m<sup>3</sup> used for the treatment of a hazardous waste by a waste stabilization</p>	<ul style="list-style-type: none"> <li>– when discrete batches or quantities of material are added intermittently to the container, over a period of time, the closure devices are secured in the closed position and covers installed upon either: <ul style="list-style-type: none"> <li>– the container being filled to the intended final level</li> <li>– the completion of a batch loading after which no additional material will be added to the container within 15 min</li> <li>– the person performing the loading operation leaving the immediate vicinity of the container</li> <li>– the shutdown of the process generating the material being added to the container, whichever condition occurs first</li> </ul> </li> <li>– opening of a closure device or cover is allowed for removing the hazardous waste as follows: <ul style="list-style-type: none"> <li>– in order to meet the requirements for an empty container</li> <li>– when discrete quantities or batches of material are removed from the container, but the container is not empty the closure devices will promptly be returned to the closed position and the covers installed upon either: <ul style="list-style-type: none"> <li>– completion of batch removal after which no additional material will be removed within 15 min</li> <li>– the person performing the unloading leaves the immediate vicinity, whichever condition occurs first</li> </ul> </li> </ul> </li> <li>– opening of a closure device or cover is allowed when access inside the container is needed to perform routine activities other than transfer of hazardous waste</li> <li>– opening of a spring loaded, pressure vacuum relief valve, conservation vent, or similar type of pressure relief device which vents to the atmosphere is allowed during normal operations for the purpose of maintaining internal container pressure</li> <li>– opening of a safety device to avoid unsafe conditions.</li> </ul> <p>Verify that the transfer of hazardous waste in or out of containers meeting Container Level 2 controls is done in a manner to minimize exposure of the hazardous waste to the atmosphere (i.e., a submerged fill pipe, a vapor balancing system, a vapor recovery system, a fitted opening in the top of the container through which the hazardous waste is filled; subsequently purge the transfer line before removing it).</p> <p>(NOTE: In relation to the requirements for air emissions standard, see the definition of Exempted Hazardous Waste Containers and Surface Impoundments and Exempted Hazardous Waste Management Unit. There are documentation requirements for exempted containers.)</p> <p>(NOTE: The requirements of 40 CFR 264.1086 and 265.1087 do not apply to containers in which all the hazardous waste entering the container meets one of the following [see also the definition for exempted hazardous waste containers and surface impoundments] (40 CFR 264.1082(c) and 40 CFR 265.1083(c):</p>

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<p>process are required to meet specific design and operating standards (40 CFR 264.1086(a), 264.1086(b)(2), 264.1086(e)(1) through 264.1086(e)(3), 264.1086(e)(6); 265.1087(a), 265.1087(b)(2), 265.1087(e)(1) through 265.1087(e)(3), and 265.1087(e)(6)) [Revised April 1999].</p>	<ul style="list-style-type: none"> <li>– the average VO concentration of the hazardous waste at the point of waste origination is less than 500 ppmw</li> <li>– the organic content of the hazardous waste has been reduced by an organic destruction or removal process</li> <li>– the waste meets the numerical concentration limits for organic hazardous constituents as specified in 40 CFR 268.40 or has been treated by the treatment technology established by the USEPA for the waste in 268.42(a) or an equivalent method.)</li> </ul> <p>(NOTE: These requirements do not apply to a container that has a design capacity less than or equal to 0.1 m<sup>3</sup> [approx. 26 gal] (40 CFR 264.1080(b)(2) and 40 CFR 265.1080(b)(2)).)</p> <p>(NOTE: Safety devices may be installed and operated as necessary.)</p> <p>Verify that containers with design capacities greater than 0.1 m<sup>3</sup> [approx. 26 gal] used for the treatment of a hazardous waste by a waste stabilization process meet the following Container Level 3 standards at those times during the waste stabilization process when the hazardous waste in the container is exposed to the atmosphere:</p> <ul style="list-style-type: none"> <li>– a container is used that is vented directly through a closed vent system to a control device</li> <li>– a container is used that is vented inside an enclosure that is exhausted through a closed vent system to a control device.</li> </ul> <p>Verify that, for Level 3 containers, the following requirements are met:</p> <ul style="list-style-type: none"> <li>– the container enclosure is designed and operated in accordance with the criteria for a permanent total enclosure under 40 CFR 52.741</li> <li>– the closed vent system and control device is designed and operated in accordance with 264.1087 and 265.1088 (see checklist item HW.115.12.US).</li> </ul> <p>Verify that the transfer of hazardous waste in or out of a container using Container Level 3 controls is done in such a manner as to minimize exposure of the hazardous waste to the atmosphere, to the extent practical, considering the physical properties of the hazardous waste and good engineering and safety practices for handling flammable, ignitable, explosive, reactive, or other hazardous materials.</p> <p>(NOTE: Examples of container loading procedures that the USEPA considers to meet these requirements include using any one of the following:</p> <ul style="list-style-type: none"> <li>– a submerged-fill pipe or other submerged-fill method to load liquids into the container</li> <li>– a vapor-balancing system or a vapor-recovery system to collect and control the vapors displaced from the container during filling operations</li> </ul>

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<p><b>HW.115.10.US.</b> Facilities are required to have a written plan and schedule for inspection and monitoring requirements for containers and meet specific inspection requirements (40 CFR 264.1086(c)(4), 264.1086(d)(4), 264.1088; 265.1087(c)(4), 265.1087(d)(4), and 265.1089) [Revised December 1997; Revised January 2018].</p>	<p>– a fitted opening in the top of a container through which the hazardous waste is filled and subsequently purging the transfer line before removing it from the container opening.)</p> <p>(NOTE: In relation to the requirements for air emissions standard, see the definition of <i>Exempted Hazardous Waste Containers and Surface Impoundments</i> and <i>Exempted Hazardous Waste Management Unit</i>. There are documentation requirements for exempted containers.)</p> <p>NOTE: These requirements do not apply to a container that has a design capacity less than or equal to 0.1 m<sup>3</sup> [approx. 26 gal] (40 CFR 264.1080(b)(2) and 40 CFR 265.1080(b)(2)).</p> <p>Verify that the facility has a written plan and schedule for performing inspections and monitoring.</p> <p>Verify that the plan and schedule are being met.</p> <p>Verify that inspections of the containers and their covers and closure devices for containers using Container Level 1 or Level 2 controls are done as follows:</p> <ul style="list-style-type: none"> <li>– when a hazardous waste is already in the container at first acceptance and the container is not emptied within 24 h after it is accepted at the facility, the container and its cover and closure devices are visually inspected on or before the date of acceptance for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position</li> <li>– when a container is used for managing hazardous waste for 1 yr or more, it is visually inspected at least once every 12 mo for visible cracks, holes, gaps, or other open spaces when the cover and closure devices are secured in the closed position.</li> </ul> <p>Verify that, when a defect is detected, the first efforts at repairs are within 24 h after detection and repair is completed as soon as possible but no later than 5 calendar days after detection.</p> <p>(NOTE: If repair cannot be completed within 5 calendar days, the hazardous waste must be removed from the container.)</p> <p>(NOTE: In relation to the requirements for air emissions standard, see the definition of <i>Exempted Hazardous Waste Containers and Surface Impoundments</i> and <i>Exempted Hazardous Waste Management Unit</i>. There are documentation requirements for exempted containers.)</p>

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<p><b>HW.115.11.US.</b> Facilities are required to meet documentation requirements for containers (40 CFR 264.1086(c)(5), 264.1089(a), 264.1089(d) through 264.1089(i); 265.1087(c)(5), 265.1090(a), and 265.1090(d) through 265.1090(i)) [<b>Added December 1996</b>].</p>	<p>(NOTE: These requirements do not apply to a container that has a design capacity less than or equal to 0.1 m<sup>3</sup> [approx. 26 gal] (40 CFR 264.1080(b)(2) and 40 CFR 265.1080(b)(2)).)</p> <p>Verify that a copy of the procedure used to determine that containers with a capacity of 0.46 m<sup>3</sup> [approx. 122 gal] or greater that do not meet DOT standards are not managing hazardous waste in light material service.</p> <p>Verify that, if using Container Level 3 air emissions controls, the facility prepares and maintains records that include:</p> <ul style="list-style-type: none"> <li>– the most recent set of calculations and measurements performed by the owner/operator to verify that the enclosure meets the criteria of a permanent total enclosure as specified in 40 CFR 52.741, Appendix B</li> <li>– all the records required for closed vent systems.</li> </ul> <p>Verify that, if using a closed-vent system and control device, the following records are maintained:</p> <ul style="list-style-type: none"> <li>– certification that is signed and dated by the owner/operator stating that the control device is designed to operate at the performance level documented by a design analysis or by performance tests when the container is operating at capacity or the highest level reasonably expected to occur</li> <li>– design documents if design analysis is used, including information describing the control device design and certification that the equipment meets the applicable specification</li> <li>– a performance test plan if performance tests are used, and all test results</li> <li>– description and date of each modification, as applicable</li> <li>– identification of operating parameters, description of monitoring devices, and diagrams of monitoring sensor locations, as applicable</li> <li>– semiannual records of the following for those planned routine maintenance operations that would require the control device to exceed limitations: <ul style="list-style-type: none"> <li>– a description of the planned routine maintenance that is anticipated to be performed for the control device during the next 6-mo period, including the type of maintenance needed, planned frequency, and lengths of maintenance periods</li> <li>– a description of the planned routine maintenance that was performed for the control device during the previous 6-mo period, including the type of maintenance performed and the total number of hours during those 6 mo that the control device did not meet applicable requirements</li> </ul> </li> <li>– records of the following for those unexpected control device system malfunctions that would cause the control device to not meet specifications: <ul style="list-style-type: none"> <li>– the occurrence and duration of each malfunction of the control device system</li> <li>– the duration of each period during a malfunction when gases, vapors, or fumes are vented from the waste management unit through the closed</li> </ul> </li> </ul>

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	<p>vent system to the control device while the control device is not properly functioning</p> <ul style="list-style-type: none"> <li>– actions taken during periods of malfunction to restore a malfunctioning control device to its normal or usual manner of operation</li> <li>– records of the management of the carbon removed from a carbon adsorption system.</li> </ul> <p>Verify that, for exempted containers (see the definition of Exempted Hazardous Waste Containers and Surface Impoundments), the following records are prepared and maintained as applicable:</p> <ul style="list-style-type: none"> <li>– if exempted under the hazardous waste concentration conditions, information used for the waste determination in the facility operating log and/or the date, time, and location of each waste sample if analysis results for samples are used</li> <li>– if exempted under incineration use or process destruction use, the identification number for the incinerator, boiler, or industrial furnace in which the hazardous waste is treated.</li> </ul> <p>Verify that the covers designated as unsafe to monitor are listed in a log kept in the facility operating record with an explanation of why they are unsafe to inspect and monitor and a plan and schedule of inspection and monitoring is recorded.</p> <p>Verify that, for containers not using the air emissions controls specified in 40 CFR 265.1085 through 265.1088 (see checklist items HW.115.7.US through HW.115.12.US), the following information is maintained:</p> <ul style="list-style-type: none"> <li>– a list of the individual organic peroxide compounds manufactured at the facility if it produces more than one functional family of organic peroxides or multiple organic peroxides within one functional family, and one or more of these organic peroxides could potentially undergo self-accelerating thermal decomposition at or below ambient temperatures</li> <li>– a description of how the hazardous waste containing the organic peroxide compounds identified in the above list are managed, including: <ul style="list-style-type: none"> <li>– a facility identification number for the container or group of containers</li> <li>– the purpose and placement of this container or group of containers in the management train of this hazardous waste</li> <li>– the procedures used to ultimately dispose of the hazardous waste handled in the containers</li> </ul> </li> <li>– an explanation why managing these containers would be an undue safety hazard.</li> </ul> <p>Verify that all records, except design information records, are kept for at least 3 yr.</p> <p>Verify that design information records are maintained in the operating record until the air emissions control equipment is replaced or is otherwise no longer in service.</p>

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<p><b>HW.115.12.US.</b> Facilities are required to meet specific requirements for closed vent systems and control devices used to achieve compliance (40 CFR 264.1087, and 265.1088) [Revised December 1997].</p>	<p>(NOTE: In relation to the requirements for air emissions standard, see the definition of Exempted Hazardous Waste Containers and Surface Impoundments and Exempted Hazardous Waste Management Unit. There are documentation requirements for exempted containers.)</p> <p>(NOTE: The requirements of 40 CFR 264.1087 and 265.1088 do not apply to containers in which all the hazardous waste entering the container meets one of the following (40 CFR 264.1082(c) and 40 CFR 265.1083(c):</p> <ul style="list-style-type: none"> <li>– the average VO concentration of the hazardous waste at the point of waste origination is less than 500 ppmw</li> <li>– the organic content of the hazardous waste has been reduced by an organic destruction or removal process</li> <li>– the waste meets the numerical concentration limits for organic hazardous constituents as specified in 40 CFR 268.40 or has been treated by the treatment technology established by the USEPA for the waste in 268.42(a) or an equivalent method.)</li> </ul> <p>(NOTE: These requirements do not apply to a container that has a design capacity less than or equal to 0.1 m<sup>3</sup> [approx. 26 gal] (40 CFR 264.1080(b)(2) and 40 CFR 265.1080(b)(2)).)</p> <p>Verify that closed vent systems meet the following:</p> <ul style="list-style-type: none"> <li>– it routes the gases, vapors, and fumes emitted from the hazardous waste in the waste management unit to a control device</li> <li>– it is designed and operated in accordance with 40 CFR 264.1033(j) or 265.1033(j) (see checklist item HW.135.2.US)</li> <li>– if it includes bypass devices that could be used to divert the gas or vapor stream to the atmosphere before entering the control device, one of the following equipment requirements is met for each type of bypass device (NOTE: Low leg drains, high point bleeds, analyzer vents, open-ended valve or lines, spring loaded pressure relief valves, and other fittings used for safety purposes are not considered bypass devices): <ul style="list-style-type: none"> <li>– a flow indicator is installed, calibrated, maintained, and operated at the inlet to the bypass line used to divert gases and vapors from the closed-vent system to the atmosphere at a point upstream of the control device inlet</li> <li>– a seal or locking device is placed on the mechanism by which the bypass device position is controlled when the bypass valve is in the closed position so that the bypass device cannot be opened without breaking the seal or removing the lock.</li> </ul> </li> </ul> <p>Verify that the seal or closure mechanism is visually inspected at least once every month.</p> <p>Verify that one of the following control devices are used:</p>

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	<ul style="list-style-type: none"> <li>– a device designed and operated to reduce the total organic content of the inlet vapor stream vented to the control device by at least 95 percent by weight</li> <li>– an enclosed combustion device designed and operated in accordance with 264.1033(c) and 265.1033(c) (see checklist item HW.135.2.US)</li> <li>– a flare designed and operated in accordance with 40 CFR 264.1033(d) and 265.1033(d) (see checklist item HW.135.2.US).</li> </ul> <p>Verify that, when a closed vent system and control device is used, the following are met:</p> <ul style="list-style-type: none"> <li>– periods of planned routine maintenance of the control device during which the device does not meet specifications do not exceed 240 h/yr</li> <li>– control device system malfunctions are corrected as soon as practicable</li> <li>– it is operated such that gases, vapors, and/or fumes are not actively vented to the control device during periods of planned maintenance or control device system malfunction, except in cases where it is necessary to do so in order to avoid an unsafe condition or to implement malfunction corrective actions or planned maintenance actions.</li> </ul> <p>Verify that, if a carbon adsorption system is used, the following requirements are met:</p> <ul style="list-style-type: none"> <li>– all activated carbon is replaced with fresh carbon on a regular basis as outlined in 40 CFR 264.1033(g), 264.1033(h), 265.1033(g) and 265.1033(h) (see checklist item HW.135.2.US)</li> <li>– all carbon that is a hazardous waste and that is removed from the control device is managed according to 264.1033(n) or 265.1033(m) regardless of the average volatile organic concentration.</li> </ul> <p>Verify that, if a control device other than thermal vapor incinerators, flare, boiler, process heater, condenser, or carbon adsorption system are used, the requirements in 40 CFR 264.1033(i) and 265.1033(i) are met (see checklist item HW.135.2.US).</p> <p>Verify that, for control devices, it is demonstrated by either a performance test or a design analysis that the device achieves compliance except for the following:</p> <ul style="list-style-type: none"> <li>– a flare</li> <li>– a boiler or process heater with a design heat input capacity of 44 MW or greater</li> <li>– a boiler or process heater into which the vent stream is introduced with the primary fuel</li> <li>– a boiler or process heater burning hazardous waste for which the owner or operator has been issued a final permit under 40 CFR 270 and has designed and operates the unit in accordance with the requirements of 40 CFR 266, subpart H</li> </ul>

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	<p>– a boiler or industrial furnace burning hazardous waste for which the owner or operator has certified compliance with the interim status requirements of 40 CFR 265, subpart H.</p> <p>Verify that the readings from each control device are inspected at least once each operating day to check control device operation.</p> <p>(NOTE: In relation to the requirements for air emissions standard, see the definition of <i>Exempted Hazardous Waste Containers and Surface Impoundments</i> and <i>Exempted Hazardous Waste Management Unit</i>. There are documentation requirements for exempted containers.)</p>



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<p><b>ALL TSDFs</b></p> <p><b>HW.120.</b> <b>Container Storage Areas</b></p> <p><b>HW.120.1.US.</b> Checklist item deleted <b>[Deleted October 2011]</b>.</p> <p><b>HW.120.2.US.</b> Containers holding ignitable or reactive waste must be located 15 m (50 ft) from the property line of a TSDF (40 CFR 264.176 and 265.176).</p> <p><b>HW.120.3.US.</b> TSDF personnel must conduct weekly inspections of container storage areas (40 CFR 264.174 and 265.174) <b>[Revised July 2006; Revised January 2017]</b>.</p>	<p>(NOTE: To document inadequate management practices (MP) at TSDFs use checklist item number HW.2.1.US.)</p> <p>Determine the distance from any storage containers to the property line.</p> <p>Verify that the owner or operator inspects areas where containers are stored weekly.</p> <p>Verify that the owner or operator looks for leaking containers and for deterioration of containers and the containment system caused by corrosion or other factors.</p>



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<p><b>ALL TSDFs</b></p> <p><b>HW.123</b> <b>Drip Pads</b></p> <p><b>HW.123.1.US.</b> Existing drip pads must be assessed for integrity (40 CFR 264.570(a), 264.570(c), 265.571, 265.440(a), 265.440(c), and 265.441) [Added January 2017].</p>	<p>(NOTE: According to 40 CFR 260.10, a “drip pad” is an engineered structure consisting of a curbed, free-draining base, constructed of non-earthen materials and designed to convey preservative kick-back or drippage from treated wood, precipitation, and surface water run-on to an associated collection system at wood preserving plants.)</p> <p>(NOTE: The requirements of this checklist item apply to owners and operators of facilities that use new or existing drip pads to convey treated wood drippage, precipitation, and/or surface water run-off to an associated collection system. Existing drip pads are those constructed before 6 December 1990 and those for which the owner or operator has a design and has entered into binding financial or other agreements for construction prior to 6 December 1990. All other drip pads are new drip pads.)</p> <p>(NOTE: This checklist item does not apply to the management of infrequent and incidental drippage in storage yards provided that the owner or operator maintains and complies with a written contingency plan that describes how the owner or operator will respond immediately to the discharge of such infrequent and incidental drippage and at a minimum, the contingency plan describes how the facility will do the following:  Code of Federal Regulations / Title 40 - Protection of Environment / Vol. 28 / 2016-07-01761</p> <ul style="list-style-type: none"> <li>– clean up the drippage</li> <li>– document the cleanup of the drippage</li> <li>– retain documents regarding cleanup for 3 yr</li> <li>– manage the contaminated media in a manner consistent with Federal regulations.)</li> </ul> <p>Verify that, for each existing drip pad, the owner or operator has evaluated the drip pad and determined if it meets all of the requirements of 40 CFR 264, Subpart W or 40 CFR 265, Subpart W (as applicable), except the requirements for liners and leak detection systems of 40 CFR 264.573(b) or 40 CFR 265.443(b) (as applicable).</p> <p>Verify that the owner or operator keeps on file at the facility a written assessment of the drip pad, reviewed and certified by a qualified Professional Engineer that attests to the results of the evaluation.</p> <p>Verify that the assessment is reviewed, updated, and re-certified annually until all upgrades, repairs, or modifications necessary to achieve compliance with all the standards of 40 CFR 264.573 or 40 CFR 265.443 (as applicable) are complete.</p>

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<p><b>HW.123.2.US.</b> New drip pads must meet certain design and operating requirements when the owner/operator has chosen to comply with 40 CFR 264.573 or 40 CFR 265.443 (as applicable), except for 40 CFR 264.573(a)(4) or 40 CFR 265.443(a)(4) (as applicable)) (40 CFR 264.570, 264.572(a), 264.573(a)(1) through 264.573(a)(3), 264.573(a)(5), 264.573(b) through 264.573(o), 265.440, 265.442(a), 265.443(a)(1) through 265.443(a)(3), 265.443(a)(5), 265.443(b)</p>	<p>Verify that the evaluation documents the extent to which the drip pad meets each of the design and operating standards of 40 CFR 264.573 or 40 CFR 265.443 (as applicable), except the standards for liners and leak detection systems, specified in 40 CFR 264.573(b) or 40 CFR 265.443(b) (as applicable).</p> <p>Verify that the owner or operator has a written plan for upgrading, repairing, and modifying the drip pad to meet the requirements of 40 CFR 264.573(b) or 40 CFR 265.443(b) (as applicable), and submits the plan to the Regional Administrator no later than 2 yr before the date that all repairs, upgrades, and modifications are complete.</p> <p>Verify that the written plan describes all changes to be made to the drip pad in sufficient detail to document compliance with all the requirements of 40 CFR 264.573 or 40 CFR 265.443 (as applicable),.</p> <p>Verify that the plan is reviewed and certified by a qualified Professional Engineer.</p> <p>Verify that, upon completion of all repairs and modifications, the owner or operator submits to the Regional Administrator or State Director, the as-built drawings for the drip pad together with a certification by a qualified Professional Engineer attesting that the drip pad conforms to the drawings.</p> <p>Verify that, if the drip pad is found to be leaking or unfit for use, the owner or operator complies with the provisions of 40 CFR 264.573(m) or 40 CFR 265.443(m) (as applicable) or close the drip pad in accordance with 40 CFR 264.575 or 40 CFR 265.445 (as applicable).</p> <p>(NOTE: According to 40 CFR 260.10, a “drip pad” is an engineered structure consisting of a curbed, free-draining base, constructed of non-earthen materials and designed to convey preservative kick-back or drippage from treated wood, precipitation, and surface water run-on to an associated collection system at wood preserving plants.)</p> <p>(NOTE: The requirements of this checklist item apply to owners and operators of facilities that use new or existing drip pads to convey treated wood drippage, precipitation, and/or surface water run-off to an associated collection system. Existing drip pads are those constructed before 6 December 1990 and those for which the owner or operator has a design and has entered into binding financial or other agreements for construction prior to 6 December 1990. All other drip pads are new drip pads.)</p> <p>(NOTE: This checklist item does not apply to the management of infrequent and incidental drippage in storage yards provided that the owner or operator maintains and complies with a written contingency plan that describes how the owner or operator will respond immediately to the discharge of such infrequent and</p>

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<p>through 265.443(n)) [Added January 2017].</p>	<p>incidental drippage and at a minimum, the contingency plan describes how the facility will do the following:</p> <ul style="list-style-type: none"> <li>– clean up the drippage</li> <li>– document the cleanup of the drippage</li> <li>– retain documents regarding cleanup for 3 yr</li> <li>– manage the contaminated media in a manner consistent with Federal regulations.)</li> </ul> <p>Verify that drip pads:</p> <ul style="list-style-type: none"> <li>– are constructed of non-earthen materials, excluding wood and non-structurally supported asphalt</li> <li>– are sloped to free-drain treated wood drippage, rain and other waters, or solutions of drippage and water or other wastes to the associated collection system</li> <li>– have a curb or berm around the perimeter.</li> </ul> <p>Verify that the owner or operator has obtained and keeps on file at the facility a written assessment of the drip pad, reviewed and certified by a qualified Professional Engineer that attests to the results of the evaluation.</p> <p>Verify that the assessment is reviewed, updated and recertified annually.</p> <p>Verify that the evaluation documents the extent to which the drip pad meets the applicable design and operating standards.</p> <p>Verify that the drip pad is of sufficient structural strength and thickness to prevent failure due to physical contact, climatic conditions, the stress of installation, and the stress of daily operations, e.g., variable and moving loads such as vehicle traffic, movement of wood, etc.</p> <p>(NOTE: EPA will generally consider applicable standards established by professional organizations generally recognized by industry such as the American Concrete Institute (ACI) and the American Society of Testing Materials (ASTM) in judging the structural integrity requirement.)</p> <p>Verify that the drip pad has:</p> <ul style="list-style-type: none"> <li>a synthetic liner installed below the drip pad that is designed, constructed, and installed to prevent leakage from the drip pad into the adjacent subsurface soil or groundwater or surface water at any time during the active life (including the closure period) of the drip pad, and: <ul style="list-style-type: none"> <li>– the liner is constructed of materials that will prevent waste from being absorbed into the liner and prevent releases into the adjacent subsurface soil or ground water or surface water during the active life of the facility</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– the liner is constructed of materials that have appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the waste or drip pad leakage to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation (including stresses from vehicular traffic on the drip pad)</li> <li>– the liner is placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the liner to prevent failure of the liner due to settlement, compression or uplift</li> <li>– the liner is installed to cover all surrounding earth that could come in contact with the waste or leakage</li> <li>– a leakage detection system immediately above the liner that is designed, constructed, maintained and operated to detect leakage from the drip pad, and: <ul style="list-style-type: none"> <li>– the leakage detection system is constructed of materials that are chemically resistant to the waste managed in the drip pad and the leakage that might be generated; and of sufficient strength and thickness to prevent collapse under the pressures exerted by overlaying materials and by any equipment used at the drip pad</li> <li>– designed and operated to function without clogging through the scheduled closure of the drip pad</li> <li>– designed so that it will detect the failure of the drip pad or the presence of a release of hazardous waste or accumulated liquid at the earliest practicable time</li> </ul> </li> <li>– a leakage collection system immediately above the liner that is designed, constructed, maintained and operated to collect leakage from the drip pad such that it can be removed from below the drip pad.</li> </ul> <p>(NOTE: The requirement at to install a leak collection system applies only to those drip pads that are constructed after 24 December 1992 except for those constructed after 24 December 1992 for which the owner or operator has a design and has entered into binding financial or other agreements for construction prior to 24 December 1992.)</p> <p>Verify that the date, time, and quantity of any leakage collected in this system and removed is documented in the operating log.</p> <p>Verify that drip pads are maintained such that they remain free of cracks, gaps, corrosion, or other deterioration that could cause hazardous waste to be released from the drip pad.</p> <p>Verify that the drip pad and associated collection system are designed and operated to convey, drain, and collect liquid resulting from drippage or precipitation in order to prevent run-off.</p>

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	<p>Verify that, unless protected by a structure or cover, the owner or operator designs, constructs, operates and maintains a run-on control system capable of preventing flow onto the drip pad during peak discharge from at least a 24-h, 25-yr storm unless the system has sufficient excess capacity to contain any run-on that might enter the system.</p> <p>Verify that, unless protected by a structure or cover, the owner or operator must design, construct, operate and maintain a run-off management system to collect and control at least the water volume resulting from a 24-h, 25-yr storm.</p> <p>Verify that the drip pad is evaluated to determine that it meets the requirements pertaining to construction and operation and the owner or operator obtains a statement from a qualified Professional Engineer certifying that the drip pad design meets the applicable requirements.</p> <p>Verify that drippage and accumulated precipitation are removed from the associated collection system as necessary to prevent overflow onto the drip pad.</p> <p>Verify that the drip pad surface is cleaned thoroughly in a manner and frequency such that accumulated residues of hazardous waste or other materials are removed, with residues being properly managed as hazardous waste, so as to allow weekly inspections of the entire drip pad surface without interference or hindrance from accumulated residues of hazardous waste or other materials on the drip pad.</p> <p>Verify that the owner or operator documents the date and time of each cleaning and the cleaning procedure used in the facility's operating log.</p> <p>Verify that drip pads are operated and maintained in a manner to minimize tracking of hazardous waste or hazardous waste constituents off the drip pad as a result of activities by personnel or equipment.</p> <p>Verify that, after being removed from the treatment vessel, treated wood from pressure and non-pressure processes is held on the drip pad until drippage has ceased.</p> <p>Verify that the owner or operator maintains records sufficient to document that all treated wood is held on the pad following treatment.</p> <p>Verify that collection and holding units associated with run-on and run-off control systems are emptied or otherwise managed as soon as possible after storms to maintain design capacity of the system.</p> <p>Verify that, throughout the active life of the drip pad, if the owner or operator detects a condition that may have caused or has caused a release of hazardous waste, the condition is repaired within a reasonably prompt period of time following discovery, in accordance with the following procedures, upon detection of a</p>

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<p><b>HW.123.3.US.</b> New drip pads must meet certain design and operating requirements when the owner/operator has chosen to comply with 40 CFR 264.573 or 40 CFR 265.443 (as applicable), except 40 CFR 264.573(b) or 40 CFR 265.443(b) (as applicable)) (40 CFR 264.570, 264.572(b), 264.573(a), 264.573(c) through 264.573(o), 265.440, 265.442(a), 265.443(a), 265.443(c) through</p>	<p>condition that may have caused or has caused a release of hazardous waste (e.g., upon detection of leakage by the leak detection system), the owner or operator:</p> <ul style="list-style-type: none"> <li>– enters a record of the discovery in the facility operating log</li> <li>– immediately removes the portion of the drip pad affected by the condition from service</li> <li>– determines what steps must be taken to repair the drip pad, remove any leakage from below the drip pad, and establish a schedule for accomplishing the clean up and repairs</li> <li>– within 24 h after discovery of the condition, notifies the Regional Administrator of the condition and, within 10 working days, provides a written notice to the Regional Administrator with a description of the steps that will be taken to repair the drip pad, and clean up any leakage, and the schedule for accomplishing this work.</li> </ul> <p>(NOTE: The Regional Administrator will review the information submitted, make a determination regarding whether the pad must be removed from service completely or partially until repairs and clean up are complete, and notify the owner or operator of the determination and the underlying rationale in writing.)</p> <p>Verify that, upon completing all repairs and clean up, the owner or operator notifies the Regional Administrator in writing and provide a certification, signed by an independent qualified, registered professional engineer, that the repairs and cleanup have been completed according to the written plan submitted.</p> <p>Verify that, the owner or operator maintains, as part of the facility operating log, documentation of past operating and waste handling practices, including identification of preservative formulations used in the past, a description of drippage management practices, and a description of treated wood storage and handling practices.</p> <p>(NOTE: According to 40 CFR 260.10, a “drip pad” is an engineered structure consisting of a curbed, free-draining base, constructed of non-earthen materials and designed to convey preservative kick-back or drippage from treated wood, precipitation, and surface water run-on to an associated collection system at wood preserving plants.)</p> <p>(NOTE: The requirements of this checklist item apply to owners and operators of facilities that use new or existing drip pads to convey treated wood drippage, precipitation, and/or surface water run-off to an associated collection system. Existing drip pads are those constructed before 6 December 1990 and those for which the owner or operator has a design and has entered into binding financial or other agreements for construction prior to 6 December 1990. All other drip pads are new drip pads.)</p> <p>(NOTE: This checklist item does not apply to the management of infrequent and incidental drippage in storage yards provided that the owner or operator maintains</p>

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265.443(n) [Added January 2017].	<p>and complies with a written contingency plan that describes how the owner or operator will respond immediately to the discharge of such infrequent and incidental drippage and at a minimum, the contingency plan describes how the facility will do the following:</p> <ul style="list-style-type: none"> <li>– clean up the drippage</li> <li>– document the cleanup of the drippage</li> <li>– retain documents regarding cleanup for 3 yr</li> <li>– manage the contaminated media in a manner consistent with Federal regulations.)</li> </ul> <p>Verify that drip pads:</p> <ul style="list-style-type: none"> <li>– are constructed of non-earthen materials, excluding wood and non-structurally supported asphalt</li> <li>– are sloped to free-drain treated wood drippage, rain and other waters, or solutions of drippage and water or other wastes to the associated collection system</li> <li>– have a curb or berm around the perimeter.</li> </ul> <p>Verify that the drip pad has a hydraulic conductivity of less than or equal to <math>1 \times 10^{-7}</math> centimeters per second, (e.g., existing concrete drip pads must be sealed, coated, or covered with a surface material with a hydraulic conductivity of less than or equal to <math>1 \times 10^{-7}</math> centimeters per second) such that the entire surface where drippage occurs or may run across is capable of containing such drippage and mixtures of drippage and precipitation, materials, or other wastes while being routed to an associated collection system.</p> <p>Verify that the surface material is maintained free of cracks and gaps that could adversely affect its hydraulic conductivity, and the material is chemically compatible with the preservatives that contact the drip pad.</p> <p>Verify that the owner or operator has obtained and keeps on file at the facility a written assessment of the drip pad, reviewed and certified by a qualified Professional Engineer that attests to the results of the evaluation.</p> <p>Verify that the assessment is reviewed, updated and recertified annually.</p> <p>Verify that the evaluation documents the extent to which the drip pad meets the applicable design and operating standards.</p> <p>Verify that the drip pad is of sufficient structural strength and thickness to prevent failure due to physical contact, climatic conditions, the stress of installation, and the stress of daily operations, e.g., variable and moving loads such as vehicle traffic, movement of wood, etc.</p>

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	<p>(NOTE: EPA will generally consider applicable standards established by professional organizations generally recognized by industry such as the American Concrete Institute (ACI) and the American Society of Testing Materials (ASTM) in judging the structural integrity requirement.)</p> <p>Verify that drip pads are maintained such that they remain free of cracks, gaps, corrosion, or other deterioration that could cause hazardous waste to be released from the drip pad.</p> <p>Verify that the drip pad and associated collection system are designed and operated to convey, drain, and collect liquid resulting from drippage or precipitation in order to prevent run-off.</p> <p>Verify that, unless protected by a structure or cover, the owner or operator designs, constructs, operates and maintains a run-on control system capable of preventing flow onto the drip pad during peak discharge from at least a 24-h, 25-yr storm unless the system has sufficient excess capacity to contain any run-on that might enter the system.</p> <p>Verify that, unless protected by a structure or cover, the owner or operator designs, constructs, operates and maintains a run-off management system to collect and control at least the water volume resulting from a 24-h, 25-yr storm.</p> <p>Verify that the drip pad is evaluated to determine that it meets the requirements pertaining to construction and operation and the owner or operator must obtain a statement from a qualified Professional Engineer certifying that the drip pad design meets the applicable requirements.</p> <p>Verify that drippage and accumulated precipitation are removed from the associated collection system as necessary to prevent overflow onto the drip pad.</p> <p>Verify that the drip pad surface is cleaned thoroughly in a manner and frequency such that accumulated residues of hazardous waste or other materials are removed, with residues being properly managed as hazardous waste, so as to allow weekly inspections of the entire drip pad surface without interference or hindrance from accumulated residues of hazardous waste or other materials on the drip pad.</p> <p>Verify that the owner or operator documents the date and time of each cleaning and the cleaning procedure used in the facility's operating log.</p> <p>Verify that drip pads are operated and maintained in a manner to minimize tracking of hazardous waste or hazardous waste constituents off the drip pad as a result of activities by personnel or equipment.</p> <p>Verify that, after being removed from the treatment vessel, treated wood from pressure and non-pressure processes is held on the drip pad until drippage has ceased.</p>

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<p><b>HW.123.4.US.</b> Drip pads must be inspected according to specific parameters (40 CFR 264.570, 264.574, 265.440,</p>	<p>Verify that the owner or operator maintains records sufficient to document that all treated wood is held on the pad following treatment.</p> <p>Verify that collection and holding units associated with run-on and run-off control systems are emptied or otherwise managed as soon as possible after storms to maintain design capacity of the system.</p> <p>Verify that, throughout the active life of the drip pad, if the owner or operator detects a condition that may have caused or has caused a release of hazardous waste, the condition is repaired within a reasonably prompt period of time following discovery, in accordance with the following procedures, upon detection of a condition that may have caused or has caused a release of hazardous waste (e.g., upon detection of leakage by the leak detection system), the owner or operator:</p> <ul style="list-style-type: none"> <li>– enters a record of the discovery in the facility operating log</li> <li>– immediately remove the portion of the drip pad affected by the condition from service</li> <li>– determines what steps must be taken to repair the drip pad, remove any leakage from below the drip pad, and establish a schedule for accomplishing the clean up and repairs</li> <li>– within 24 h after discovery of the condition, notifies the Regional Administrator of the condition and, within 10 working days, provides a written notice to the Regional Administrator with a description of the steps that will be taken to repair the drip pad, and clean up any leakage, and the schedule for accomplishing this work.</li> </ul> <p>(NOTE: The Regional Administrator will review the information submitted, make a determination regarding whether the pad must be removed from service completely or partially until repairs and clean up are complete, and notify the owner or operator of the determination and the underlying rationale in writing.)</p> <p>Verify that, upon completing all repairs and clean up, the owner or operator notifies the Regional Administrator in writing and provide a certification, signed by an independent qualified, registered professional engineer, that the repairs and cleanup have been completed according to the written plan submitted.</p> <p>Verify that, the owner or operator maintains, as part of the facility operating log, documentation of past operating and waste handling practices, including identification of preservative formulations used in the past, a description of drippage management practices, and a description of treated wood storage and handling practices.</p> <p>(NOTE: According to 40 CFR 260.10, a “drip pad” is an engineered structure consisting of a curbed, free-draining base, constructed of non-earthen materials and designed to convey preservative kick-back or drippage from treated wood,</p>

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<p>and 265.444) [<b>Added January 2017</b>].</p>	<p>precipitation, and surface water run-on to an associated collection system at wood preserving plants.)</p> <p>(NOTE: The requirements of this checklist item apply to owners and operators of facilities that use new or existing drip pads to convey treated wood drippage, precipitation, and/or surface water run-off to an associated collection system. Existing drip pads are those constructed before 6 December 1990 and those for which the owner or operator has a design and has entered into binding financial or other agreements for construction prior to 6 December 1990. All other drip pads are new drip pads.)</p> <p>(NOTE: This checklist item does not apply to the management of infrequent and incidental drippage in storage yards provided that the owner or operator maintains and complies with a written contingency plan that describes how the owner or operator will respond immediately to the discharge of such infrequent and incidental drippage and at a minimum, the contingency plan describes how the facility will do the following:</p> <ul style="list-style-type: none"> <li>– clean up the drippage</li> <li>– document the cleanup of the drippage</li> <li>– retain documents regarding cleanup for 3 yr</li> <li>– manage the contaminated media in a manner consistent with Federal regulations.)</li> </ul> <p>Verify that, during construction or installation, liners and cover systems (e.g., membranes, sheets, or coatings) are inspected for uniformity, damage and imperfections (e.g., holes, cracks, thin spots, or foreign materials).</p> <p>Verify that, immediately after construction or installation, liners are inspected and certified as meeting the requirements of 40 CFR 265.443 by a qualified Professional Engineer.</p> <p>Verify that the certification is maintained at the facility as part of the facility operating record.</p> <p>Verify that, after installation, liners and covers are inspected to ensure tight seams and joints and the absence of tears, punctures, or blisters.</p> <p>Verify that, while a drip pad is in operation, it is inspected weekly and after storms to detect evidence of any of the following:</p> <ul style="list-style-type: none"> <li>– deterioration, malfunctions or improper operation of run-on and run-off control systems</li> <li>– the presence of leakage in and proper functioning of leakage detection system</li> <li>– deterioration or cracking of the drip pad surface.</li> </ul>

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<p><b>HW.123.5.US.</b> The closure of drip pads must be done according to specific criteria (40 CFR 264.570, 264.575, 265.440, and 265.445) [Added January 2017].</p>	<p>(NOTE: According to 40 CFR 260.10, a “drip pad” is an engineered structure consisting of a curbed, free-draining base, constructed of non-earthen materials and designed to convey preservative kick-back or drippage from treated wood, precipitation, and surface water run-on to an associated collection system at wood preserving plants.)</p> <p>(NOTE: The requirements of this checklist item apply to owners and operators of facilities that use new or existing drip pads to convey treated wood drippage, precipitation, and/or surface water run-off to an associated collection system. Existing drip pads are those constructed before 6 December 1990 and those for which the owner or operator has a design and has entered into binding financial or other agreements for construction prior to 6 December 1990. All other drip pads are new drip pads.)</p> <p>(NOTE: This checklist item does not apply to the management of infrequent and incidental drippage in storage yards provided that the owner or operator maintains and complies with a written contingency plan that describes how the owner or operator will respond immediately to the discharge of such infrequent and incidental drippage and at a minimum, the contingency plan describes how the facility will do the following:</p> <ul style="list-style-type: none"> <li>– clean up the drippage</li> <li>– document the cleanup of the drippage</li> <li>– retain documents regarding cleanup for 3 yr</li> <li>– manage the contaminated media in a manner consistent with Federal regulations.)</li> </ul> <p>Verify that, at closure, the owner or operator removes or decontaminates all waste residues, contaminated containment system components (pad, liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leakage, and manage them as hazardous waste.</p> <p>Verify that, if, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment, the owner or operator finds that not all contaminated subsoils can be practically removed or decontaminated, the owner/operator closes the facilities and performs post-closure care in accordance with closure and post-closure care requirements that apply to landfills.</p> <p>(NOTE: For permitted units, the requirement to have a permit continues throughout the post-closure period.)</p> <p>Verify that the owner or operator of an existing drip pad that does not comply with the liner requirements of 40 CFR 264.573(b)(1) or 265.443(b)(1) (as applicable):</p> <ul style="list-style-type: none"> <li>– includes in the closure plan for the drip pad a plan for complying with the cleanup and decontamination requirements of this checklist item in case not all contaminated subsoils can be practicably removed at closure</li> </ul>

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	<p>– prepares a contingent post-closure plan in case not all contaminated subsoils can be practicably removed at closure.</p> <p>(NOTE: The cost estimates calculated for closure and post-closure care of a drip pad must include the cost of complying with the contingent closure plan and the contingent post-closure plan, but are not required to include the cost of expected closure.)</p>

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<p><b>ALL TSDFs</b></p> <p><b>HW.125.</b> <b>Containment Buildings</b></p> <p><b>HW.125.1.US.</b> TSDFs with containment buildings that are in compliance are not subject to the definition of land disposal if specific requirements are met (40 CFR 264.1100 and 265.1100) [Revised July 2006].</p> <p><b>HW.125.2.US.</b> Containment buildings must be designed according to specific standards (40 CFR 264.1101(a)(1))</p>	<p>(NOTE: According to the Background Information published on page 37211 of the 18 August 1992 edition of the Federal Register, a hazardous waste containment building involves "the management of a hazardous waste inside a unit designed and operated to contain the hazardous waste within the unit." This is not a building that holds drums or tanks filled with hazardous waste, but a building that holds the hazardous waste itself.)</p> <p>Verify that the containment building meets the following:</p> <ul style="list-style-type: none"> <li>– it is a completely enclosed, self-supporting structure that is designed and constructed of manmade materials of sufficient strength and thickness to support themselves, the waste contents, and any personnel and heavy equipment that operate within the unit</li> <li>– it is designed to prevent failure due to pressure gradients, settlement, compression or uplift, physical contact with the hazardous wastes, climatic conditions, and the stress of daily operations</li> <li>– it has a primary barrier that is designed to be sufficiently durable to withstand the movement of personnel, wastes, and handling of equipment within the unit</li> <li>– if the unit is used to manage liquids: <ul style="list-style-type: none"> <li>– there is a primary barrier designed and constructed of materials to prevent migration of hazardous constituents into the barrier</li> <li>– there is a liquid collection system designed and constructed of materials to minimize the accumulation of liquid on the primary barrier</li> <li>– there is a secondary containment system designed and constructed of materials to prevent migration of hazardous constituents into the barrier, with a leak detection and liquid collection system capable of detecting, collecting, and removing leaks of hazardous constituents at the earliest practicable time</li> </ul> </li> <li>– it has controls sufficient to prevent fugitive dust emissions</li> <li>– it is designed and operated to ensure containment and prevent the tracking of materials from the unit by personnel and equipment.</li> </ul> <p>(NOTE: The owner or operator is not subject to the definition of land disposal in RCRA section 3004(k) provided that the unit meets the requirements in this checklist item.)</p> <p>(NOTE: According to the Background Information published on page 37211 of the 18 August 1992 edition of the Federal Register, a hazardous waste containment building involves "the management of a hazardous waste inside a unit designed and operated to contain the hazardous waste within the unit." This is not a building that</p>

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through 264.1101(a)(2), 264.1101(b), 265.1101(a)(1) through 265.1101(a)(2), and 265.1101(b)).	<p>holds drums or tanks filled with hazardous waste, but a building that holds the hazardous waste itself.)</p> <p>Verify that containment buildings meet the following design standards:</p> <ul style="list-style-type: none"> <li>– it is completely enclosed with a floor, walls, and a roof to prevent exposure to the elements and to assure containment of wastes</li> <li>– the floor and containment walls, including any required secondary containment system, are designed and constructed of manmade materials of sufficient strength and thickness to support themselves, the waste contents, and any personnel and heavy equipment that operate within the unit</li> <li>– it is designed to prevent failure due to pressure gradients, settlement, compression or uplift, physical contact with the hazardous wastes, climatic conditions, and the stress of daily operations</li> <li>– it has sufficient structural strength to prevent collapse or other failure</li> <li>– all surfaces in contact with hazardous wastes are compatible with the wastes</li> <li>– it has a primary barrier that is designed to be sufficiently durable to withstand the movement of personnel, wastes, and handling of equipment within the unit and is appropriate for the chemical and physical characteristics of the waste.</li> </ul> <p>Verify that, if the containment building is going to manage hazardous wastes with free liquids or treated with free liquids, the following design requirements are also met:</p> <ul style="list-style-type: none"> <li>– there is a primary barrier designed and constructed of materials to prevent migration of hazardous constituents into the barrier (e.g., a geomembrane covered by a concrete wear surface)</li> <li>– there is a liquid collection and removal system designed and constructed of materials to minimize the accumulation of liquid on the primary barrier: <ul style="list-style-type: none"> <li>– the primary barrier is sloped to drain liquids to the associated collection system</li> <li>– liquids and wastes are collected and removed to minimized hydraulic head on the containment system at the earliest practicable time</li> </ul> </li> <li>– there is a secondary containment system, including a secondary barrier, designed and constructed of materials to prevent migration of hazardous constituents into the barrier with a leak detection and liquid collection system capable of detecting, collecting, and removing leaks of hazardous constituents at the earliest practicable time</li> <li>– the leak detection component of the secondary containment system meets the following: <ul style="list-style-type: none"> <li>– it is constructed with a bottom slope of 1 percent or more</li> <li>– it is constructed of granular drainage materials with a hydraulic conductivity of <math>1 \times 10^{-2}</math> cm/s or more and a thickness of 12 in. (30.5 cm) or more, or constructed of synthetic or geonet drainage materials with a transmissivity of <math>3 \times 10^{-5}</math> m<sup>2</sup>/s or more</li> </ul> </li> </ul>

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<p><b>HW.125.3.US.</b> Containment buildings are required to be operated according to specific standards (40 CFR 264.1101(a)(3), 264.1101(c)(1), 264.1101(c)(4), 265.1101(a)(3), 265.1101(c)(1), and 265.1101(c)(4)) [Revised July 2006].</p>	<ul style="list-style-type: none"> <li>– if treatment is to be conducted in the building, the treatment area is designed to prevent the release of liquids, wet materials, or liquid aerosols to other portions of the building</li> <li>– the secondary containment system is constructed of materials that are chemically resistant to the waste and liquids managed in the building and of sufficient strength and thickness to prevent collapse under pressure exerted by overlaying materials and by any equipment used.</li> </ul> <p>(NOTE: An exception to the structural strength requirement may be made for light-weight doors and windows based on the nature of the waste management operations if the following criteria are met:</p> <ul style="list-style-type: none"> <li>– the doors and windows provide an effective barrier against fugitive dust emissions</li> <li>– the unit is designed and operated in a manner that ensures the waste will not come in contact with the doors or windows.)</li> </ul> <p>(NOTE: A containment building can serve as an external liner or a secondary containment systems for tanks within the building if:</p> <ul style="list-style-type: none"> <li>– it meets the requirements of 264.193(d) (see Storage Tank Management)</li> <li>– it meets the requirements of 264.193(b), 264.193(c)(1), and 264.193(c)(2) (see Storage Tank Management.)</li> </ul> <p>(NOTE: According to the Background Information published on page 37211 of the 18 August 1992 edition of the Federal Register, a hazardous waste containment building involves "the management of a hazardous waste inside a unit designed and operated to contain the hazardous waste within the unit." This is not a building that holds drums or tanks filled with hazardous waste, but a building that holds the hazardous waste itself.)</p> <p>Verify that incompatible wastes or treatment reagents are not placed in the building or its secondary containment system if they could cause the unit or the secondary containment system to leak, corrode, or otherwise fail.</p> <p>Verify that the following operational procedures are done:</p> <ul style="list-style-type: none"> <li>– controls and practices are used to ensure the containment of the waste within the building</li> <li>– the primary barrier is maintained so that it is free of significant cracks, gaps, corrosion, or other deterioration that could cause hazardous waste to be released from the primary barrier</li> <li>– the level of the stored/treated hazardous waste is maintained so that the height of any containment wall is not exceeded</li> <li>– measures are implemented to prevent the tracking of hazardous waste out of the unit by personnel or equipment used in the handling of the waste</li> <li>– there is a designated area for the decontamination of equipment and collection of rinsate</li> </ul>

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<p><b>HW.125.4.US.</b> Containment buildings are required to be certified by a qualified professional engineer (40 CFR 264.1101(c)(2) and 265.1101(c)(2) [Revised July 2006]).</p> <p><b>HW.125.5.US.</b> Leaks in containment buildings must be repaired and reported (40 CFR 264.1101(c)(3) and 265.1101(c)(3)).</p>	<ul style="list-style-type: none"> <li>– any collected rinsate is managed as needed according to its constituents</li> <li>– measures are implemented to control fugitive dust emissions so that no openings exhibit visible emissions</li> <li>– particulate collection devices are maintained and operated according to sound air pollution control practices.</li> </ul> <p>Verify that the facility inspects and records in the facility's operating record, at least once every seven days, data gathered from monitoring and leak detection equipment as well as the containment building and the area immediately surrounding the containment building to detect signs of releases of hazardous waste.</p> <p>(NOTE: Performance Track member facilities are only required to inspect at least once each month, upon approval by the Director.)</p> <p>Verify that the facility obtains and keeps on-site a certification by a qualified Professional Engineer that the containment building design meets the requirements of 40 CFR 265.1101(a), (b), and (c) (see checklist items HW.125.2.US, HW.125.3.US, and HW.125.5.US).</p> <p>(NOTE: According to the Background Information published on page 37211 of the 18 August 1992 edition of the Federal Register, a hazardous waste containment building involves "the management of a hazardous waste inside a unit designed and operated to contain the hazardous waste within the unit." This is not a building that holds drums or tanks filled with hazardous waste, but a building that holds the hazardous waste itself.)</p> <p>Verify that, if a condition is detected which could lead to a leak or has already caused a leak, it is repaired promptly.</p> <p>Verify that, when a leak is discovered:</p> <ul style="list-style-type: none"> <li>– the discovery is recorded in the TSDF operating record</li> <li>– the portion of the containment building that is affected is removed from service</li> <li>– a cleanup and repair schedule is established</li> <li>– within 7 days the Regional Administrator is notified and within 14 working days written notice is provided to the Regional Administrator</li> <li>– the Regional Administrator is notified upon the completion of all repairs, and certification from a registered professional engineer is also submitted.</li> </ul> <p>(NOTE: According to the Background Information published on page 37211 of the 18 August 1992 edition of the Federal Register, a hazardous waste containment building involves "the management of a hazardous waste inside a unit designed and operated to contain the hazardous waste within the unit." This is not a building that holds drums or tanks filled with hazardous waste, but a building that holds the hazardous waste itself.)</p>

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<p><b>HW.125.6.US.</b> Containment buildings that contain both areas with and without secondary containment must meet specific requirements (40 CFR 264.1101(d) and 265.1101(d)).</p>	<p>(NOTE: According to the Background Information published on page 37211 of the 18 August 1992 edition of the Federal Register, a hazardous waste containment building involves "the management of a hazardous waste inside a unit designed and operated to contain the hazardous waste within the unit." This is not a building that holds drums or tanks filled with hazardous waste, but a building that holds the hazardous waste itself.)</p> <p>Verify that each area is designed and operated according to the requirements in 40 CFR 264.1101(a) through 264.1101(c) and 265.1101(a) through 265.1101(c) (see checklist items HW.125.2.US through HW.125.5.US).</p> <p>Verify that measures are taken to prevent the release of liquids or wet materials into areas without secondary containment.</p> <p>Verify that a written description is maintained in the TSDF operating log of operating procedures used to maintain the integrity of areas without secondary containment.</p>
<p><b>HW.125.7.US.</b> When a containment building is closed, specific requirements must be met (40 CFR 264.1102 and 265.1102).</p>	<p>(NOTE: According to the Background Information published on page 37211 of the 18 August 1992 edition of the Federal Register, a hazardous waste containment building involves "the management of a hazardous waste inside a unit designed and operated to contain the hazardous waste within the unit." This is not a building that holds drums or tanks filled with hazardous waste, but a building that holds the hazardous waste itself.)</p> <p>Determine if the TSDF has closed a containment building recently.</p> <p>Verify that, at closure, all waste residues, contaminated containment system components, contaminated subsoils, and structures and equipment contaminated with waste and leachate were removed or decontaminated.</p> <p>Verify that the containment building is closed in accordance with closure and post-closure requirements for TSDFs as outlined in the subsections pertaining to all TSDFs titled Documentation Requirements and Closure.</p> <p>Verify that, if it is found that not all contaminated subsoils can be practicably removed or decontaminated, the site is closed and landfill postclosure requirements are implemented.</p>



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<p><b>ALL TSDFs</b></p> <p><b>HW.130. Restricted Wastes</b></p> <p><b>HW.130.1.US.</b> TSDFs must not dispose of the wastes listed in 40 CFR 268, Appendix VII on land unless specific parameters are met (40 CFR 268.1, 268.4, 268.40 through 268.43, and Appendix VII) [Revised June 1997, Revised January 2017].</p> <p><b>HW.130.2.US.</b> Wastes that are restricted from land disposal or the residual from the treatment of a waste restricted</p>	<p>(NOTE: The text of 40 CFR 268, Appendix X [www.ecfr.gov] contains a summary of recordkeeping and notification requirements in relation to restricted wastes.)</p> <p>Verify that the wastes listed in the text of 40 CFR 268, Appendix VII on www.ecfr.gov for the most current list are not land disposed after the indicated dates unless:</p> <ul style="list-style-type: none"> <li>– the TSDF was granted an extension</li> <li>– the waste is hazardous only because it exhibits a hazardous characteristic, and is otherwise prohibited from land disposal, is not prohibited from land disposal if the waste: <ul style="list-style-type: none"> <li>– is disposed of into a nonhazardous or hazardous injection well</li> <li>– does not exhibit any prohibited characteristic of a hazardous waste at the point of injection</li> <li>– includes D001 High TOC subcategory wastes or D012-D017 pesticides wastes that are prohibited, but these wastes have been treated to meet applicable standards</li> </ul> </li> <li>– disposal is done in a surface impoundment and: <ul style="list-style-type: none"> <li>– treatment of the wastes occurs at the impoundment</li> <li>– sampling, testing, and removal procedures and design requirements outlined in 40 CFR 268.4 are followed</li> </ul> </li> <li>– the waste is treated.</li> </ul> <p>(NOTE: The following are exempted from all of the requirements concerning restricted wastes found in 40 CFR 268:</p> <ul style="list-style-type: none"> <li>– waste generated by a VSQG as defined by 40 CFR 260.10</li> <li>– waste pesticides that a farmer disposes of according to 262.70</li> <li>– wastes identified or listed as hazardous after 8 November 1984 for which USEPA has not promulgated land disposal prohibitions or treatment standards</li> <li>– De minimis losses of characteristic wastes to wastewaters.)</li> </ul> <p>(NOTE: As of 8 May 1993 debris that is contaminated with the wastes listed in the text of 40 CFR 268, Appendix VII [see www.ecfr.gov for the most current list] and debris that is contaminated with any characteristic waste for which there are treatment standards is prohibited from land disposal.)</p> <p>(NOTE: Appendix 4-7 contains a summary of recordkeeping and notification requirements in relation to restricted wastes.)</p>

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<p>from land disposal shall not be diluted as a substitute for adequate treatment (40 CFR 268.3(a) and 268.3(b)) [Citation Revised June 1998].</p> <p><b>HW.130.3.US.</b> A restricted waste may be land disposed only if the constituent concentrations in the waste or waste treatment residue meet applicable treatment standards, or if the waste is treated using a specified treatment technology or equivalent treatment method (40 CFR 268.2(f) and 268.40 through 268.43).</p> <p><b>HW.130.4.US.</b> Treatment facilities are required to follow specific procedures for restricted wastes (40 CFR 268.7(b)) [Revised June 1998].</p>	<p>Verify that restricted wastes or the residual from the treatment of restricted wastes are not diluted.</p> <p>(NOTE: Dilution is permitted if universal treatment standards are met and the wastes or residual are hazardous only because they exhibit a characteristic in a treatment system which treats wastes that are then discharged into a water of the United States by permit or which treats wastes for the purpose of pretreatment or unless the waste is a D003 reactive cyanide wastewater or nonwastewater.)</p> <p>Verify that wastes identified in Appendix 4-9 are land disposed only if they meet the requirements in Appendix 4-9.</p> <p>(NOTE: Appendix 4-9 identifies one of three following types of treatment standard requirements:</p> <ul style="list-style-type: none"> <li>– all hazardous constituents in the waste or in the treatment residue must be at or below the values found in the appendix for that waste (total waste standards)</li> <li>– the hazardous constituents in the extract of the waste or in the extract of the waste residue must be at or below the values found in the appendix (waste extract standards)</li> <li>– the waste must be treated using the technology specified.)</li> </ul> <p>(NOTE: An explanation of the treatment codes is found in Appendix 4-10.)</p> <p>(NOTE: Appendix 4-7 contains a summary of recordkeeping and notification requirements in relation to restricted wastes.)</p> <p>Verify that treatment facilities are testing their waste or contaminated soil according to the frequency outlined in their waste analysis plan.</p> <p>Verify that the treatment facility sends a notice with each waste or contaminated soil shipment going to a land disposal facility, except for debris excluded from the definitions of hazardous waste, that includes the following:</p> <ul style="list-style-type: none"> <li>– USEPA hazardous waste and manifest number</li> <li>– the waste is subject to LDRs and the constituents of concern for F001 - F005 and F039, and underlying hazardous constituents (for wastes that are not managed in a CWA or CWA-equivalent facility), unless the waste will be treated and monitored for all constituents (NOTE: If all wastes will be treated and monitored, there is no need to put them on the LDR notice.)</li> <li>– whether the waste is a nonwastewater or wastewater and subdivision made within a waste code based on waste specific criteria</li> <li>– certification statement as outlined in 40 CFR 268.7(b)(4).</li> </ul> <p>Verify that a copy of the notice is kept on file.</p>

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<p><b>HW.130.5.US.</b> Land disposal facilities for restricted wastes are required to maintain copies of notices and certifications and test the waste, except when disposing of waste that is recycled material used in a manner constituting disposal (40 CFR 268.7(c)) <b>[Revised June 1997]</b>.</p> <p><b>HW.130.6.US.</b> The storage of hazardous waste that is restricted from land disposal is not allowed unless specific conditions are met (40 CFR 268.50) <b>[Revised January 2017]</b>.</p>	<p>(NOTE: If waste or treatment residues will be further managed at a different treatment or storage facility, the TSDF sending the waste or treatment residue offsite must comply with notice and certification requirements.)</p> <p>(NOTE: When the wastes are recyclable materials used in a manner constituting disposal, the treatment facility is not required to notify the receiving facility.)</p> <p>(NOTE: Appendix 4-7 contains a summary of recordkeeping and notification requirements in relation to restricted wastes.)</p> <p>Verify that copies of the certifications and notification are kept on hand.</p> <p>Verify that the facility is testing waste as specified in the facilities waste analysis plan.</p> <p>(NOTE: Appendix 4-7 contains a summary of recordkeeping and notification requirements in relation to restricted wastes.)</p> <p>Verify that land-disposal restricted waste is not stored at the TSDF unless the TSDF is storing the wastes in tanks, containers, or containment buildings in order to accumulate the necessary quantities for proper recovery, treatment, or disposal.</p> <p>Verify that each container is clearly marked to identify its contents with:</p> <ul style="list-style-type: none"> <li>– the words “Hazardous Waste”</li> <li>– the applicable EPA hazardous waste number(s)</li> <li>– an indication of the hazards of the contents; examples include, but are not limited to: <ul style="list-style-type: none"> <li>– the applicable hazardous waste characteristic(s) (i.e., ignitable, corrosive, reactive, toxic)</li> <li>– hazard communication consistent with the Department of Transportation requirements at 49 CFR 172 subpart E (labeling) or subpart F (placarding)</li> <li>– a hazard statement or pictogram consistent with the OSHA Hazard Communication Standard at 29 CFR 1910.1200</li> <li>– a chemical hazard label consistent with the NFPA code 704</li> </ul> </li> <li>– the date each period of accumulation begins.</li> </ul> <p>Verify that each tank is clearly marked with a description of its contents, the quantity of each hazardous waste received, and the date each period of accumulation begins, or such information for each tank is recorded and maintained in the operating record at that facility.</p>

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	<p>Verify that transporters do not store manifested shipments of land-disposal restricted wastes for more than 10 days.</p> <p>(NOTE: A TSDF may store the land-disposal restricted wastes for up to 1 yr provided that the reason for storage is to accumulate such quantities of hazardous waste as are necessary to facilitate proper recovery, treatment, or disposal.)</p> <p>(NOTE: The prohibition on storage does not apply to hazardous wastes that have met treatment standards.)</p> <p>Verify that liquid hazardous wastes containing PCBs at concentrations greater than 50 ppm are stored at a site that meets the requirements of 40 CFR 761.65(b) (see Toxic Substances Management) and is removed from storage within 1 yr of the date it was first placed into storage.</p> <p>(NOTE: The text of 40 CFR 268, Appendix X [<a href="http://www.ecfr.gov">www.ecfr.gov</a>] contains a summary of recordkeeping and notification requirements in relation to restricted wastes.)</p>

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<p><b>ALL TSDFs</b></p> <p><b>HW.135.</b> <b>Emissions From Process Vents</b></p> <p><b>HW.135.1.US.</b> TSDFs with process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations that manage hazardous wastes with organic concentrations of at least 10 ppmw are required to meet specific standards (40 CFR 264.1030(b), 264.1030(e), 264.1032, 265.1030(b), 265.1030(d), and 265.1032) [Revised December 1997; Revised January 2017].</p> <p><b>HW.135.2.US.</b> When a TSDF uses a closed-vent system and control device to meet the standards for total organic emissions; the closed-vent system and control device must meet certain minimum requirements (40 CFR 264.1030(b), 264.1030(e), 264.1033(a) through 264.1033(h), 264.1033(j) 264.1033(k); 265.1030(b), 265.1030(d), and 265.1033(a)</p>	<p>(NOTE: This applies only if the operations are conducted in one of the following:</p> <ul style="list-style-type: none"> <li>– a unit that is subject to the permitting requirements of 40 CFR 270</li> <li>– a unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a hazardous waste recycling unit that is not a 90-day tank or container) and that is located at a hazardous waste management facility that is otherwise subject to the permitting requirements of 40 CFR 270</li> <li>– a unit that is exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a 90-day tank or container) and is not a recycling unit under the provisions of 40 CFR 261.6.)</li> </ul> <p>Verify that one of the following is met:</p> <ul style="list-style-type: none"> <li>– total organic emissions from the process vents do not exceed 1.4 kg/h (3 lb/h) and 2.8 Mg/yr (3.1 tons/yr)</li> <li>– total organic emissions are reduced by use of a control device from all process vents by 95 weight percent.</li> </ul> <p>(NOTE: These requirements do not apply to the process vents at a facility where the owner/operator certifies all of the process vents that would otherwise have to meet these requirements are equipped with and operating air emission controls in accordance with the process vent requirements of an applicable regulation under 40 CFR part 60, part 61, or part 63. The documentation of compliance with these other regulations must be kept with, or made readily available with, the facility operating record.)</p> <p>(NOTE: This applies to TSDFs with process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations that manage hazardous wastes with organic concentrations of at least 10 ppmw, if the operations are conducted in one of the following:</p> <ul style="list-style-type: none"> <li>– a unit that is subject to the permitting requirements of 40 CFR 270</li> <li>– a unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of 40 CFR 262.34(a) (i.e., a hazardous waste recycling unit that is not a 90-day tank or container) and that is located at a hazardous waste management facility that is otherwise subject to the permitting requirements of 40 CFR 270</li> <li>– a unit that is exempt from permitting under the provisions of 40 CFR 262.34(a) (i.e., a 90-day tank or container) and is not a recycling unit under the provisions of 40 CFR 261.6.)</li> </ul>

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<p>through 265.1033(j)) [Revised December 1997].</p>	<p>(NOTE: These requirements do not apply to the process vents at a facility where the owner/operator certifies all of the process vents that would otherwise have to meet these requirements are equipped with and operating air emission controls in accordance with the process vent requirements of an applicable regulation under 40 CFR part 60, part 61, or part 63. The documentation of compliance with these other regulations must be kept with, or made readily available with, the facility operating record.)</p> <p>Verify that control devices involving vapor recovery are designed and operated to recover the organic vapors vented to the air with an efficiency of 95 weight percent or greater unless the total organic emission limit can be attained at an efficiency of less than 95 weight percent.</p> <p>Verify that, if an enclosed combustion device is used (i.e., vapor incinerator, boiler, or process heater), it is designed and operated to reduce the organic emissions vented to it by 95 weight percent or greater, to achieve a total organic compound concentration of 20 ppmv expressed as the sum of the actual compounds, not carbon equivalents, on a dry basis corrected to 3 percent oxygen, or to provide a minimum residence time of 0.50 s at a minimum temperature of 760 °C [1400 °F].</p> <p>Verify that, if a boiler or process heater is used as the control device, the vent stream is introduced into the flame zone of the boiler or process heater.</p> <p>Verify that, if flares are used:</p> <ul style="list-style-type: none"> <li>– they are designed and operated with no visible emissions except for periods not in excess of 5 min during any 2 consecutive hours</li> <li>– they are operated with a flame present at all times</li> <li>– they are used only if the net heating value of the gas being combusted is 11.2 MJ/scm (300 Btu/scf) or greater, if the flare is steam assisted or air assisted</li> <li>– if nonassisted, the net heating value of the gas being combusted is 7.45 MJ/scm (200 Btu/scf) or greater</li> <li>– if nonassisted or steam assisted, they have an exit velocity less than 18.3 m/s (60 ft/s), except when the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1000 Btu/scf) and the exit velocity is equal to or greater than 18.3 m/s (60 ft/s) but less than 122 m/s (400 ft/s).</li> </ul> <p>Verify that each monitor and control device is inspected on a routine basis.</p> <p>Verify that each required control device is installed, calibrated, monitored and inspected as follows:</p> <ul style="list-style-type: none"> <li>– a flow indicator is installed in the vent stream at the nearest feasible point to the control device inlet, but before being combined with other streams, and provides a record of vent stream flow from each affected process vent to the control device at least once every hour</li> </ul>

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	<ul style="list-style-type: none"> <li>– a device to continuously monitor control device operations as specified:               <ul style="list-style-type: none"> <li>– a temperature monitoring device equipped with a continuous recorder for a thermal vapor incinerator</li> <li>– a temperature monitoring device equipped with a continuous recorder for a catalytic vapor incinerator</li> <li>– a heat sensing monitor with a continuous recorder for flares</li> <li>– a temperature monitoring device equipped with a continuous recorder to measure a parameter that indicates good combustion operating practices are being used for a boiler or process heater having a design heat input capacity less than 44 MW</li> </ul> </li> <li>– for a condenser, one of the following:               <ul style="list-style-type: none"> <li>– a monitoring device with a continuous recorder to measure the concentration level of the organic compound in the exhaust vent stream from the condenser</li> <li>– a temperature monitoring device equipped with a continuous recorder capable of monitoring temperature in the exhaust vent stream from the condenser exit with an accuracy of +/- 1 percent of the temperature being monitored in Celsius or in +/- 0.5 Celsius, whichever is greater</li> </ul> </li> <li>– for a carbon adsorption system such as a fixed bed carbon adsorber that regenerates the carbon bed directly in the control device, one of the following:               <ul style="list-style-type: none"> <li>– a monitoring device equipped with a continuous recorder to measure the concentration levels of the organic compounds in the exhaust vent stream from the carbon bed</li> <li>– a monitoring device equipped with a continuous recorder to measure a parameter that indicates the carbon bed is regenerated on a regular, predetermined time cycle.</li> </ul> </li> </ul> <p>Verify that readings from monitoring devices are checked at least once a day.</p> <p>Verify that, if a carbon adsorption system is being used that regenerates the carbon bed directly onsite, the existing carbon in the control device is replaced with fresh carbon at a regular, predetermined time intervals.</p> <p>(NOTE: The predetermined time interval is based on the design analysis required under 40 CFR 265.1035(b)(4)(iii)(F).)</p> <p>Verify that if a carbon adsorption system is being used that does not regenerate the carbon bed directly onsite in the control device, the existing carbon in the control device is replaced on a regular basis.</p> <p>(NOTE: When to replace the carbon is determined by one of the following procedures:</p> <ul style="list-style-type: none"> <li>– monitoring the concentration level of the organic compound in the exhaust vent stream from the carbon adsorption system daily or at an interval no</li> </ul>

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<p><b>HW.135.3.US.</b> TSDFs are required to maintain specific records pertaining to process vent emissions (40 CFR 264.1035 and 265.1035).</p>	<p>greater than 20 percent of the time required to consume the total carbon working capacity, whichever is longer</p> <ul style="list-style-type: none"> <li>– replace the carbon at a regular predetermined time interval that is less than the design carbon replacement interval.)</li> </ul> <p>Verify that closed vent systems meet one of the following:</p> <ul style="list-style-type: none"> <li>– are designed and operated with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background as determined by the procedures in 40 CFR 264.1035(b) and 265.1034(b) and by visual inspection</li> <li>– are designed to operate at a pressure below atmospheric pressure and are equipped with at least one pressure gauge or other pressure measurement device that can be read from a readily accessible location.</li> </ul> <p>Verify that the following information is kept in the operating record:</p> <ul style="list-style-type: none"> <li>– an implementation schedule</li> <li>– up-to-date documentation of compliance</li> <li>– the test plan if test data is used to determine the organic removal efficiency or the total organic compound concentration achieved by a control device</li> <li>– documentation of compliance with 40 CFR 265.1033, including: <ul style="list-style-type: none"> <li>– a list of all information references and sources used in preparing the documentation</li> <li>– records, including the dates of required compliance tests</li> <li>– design analysis, specifications, drawing, schematics, and piping and instrumentation diagrams if engineering calculations are used</li> </ul> </li> <li>– a statement signed and dated by the operator or owner certifying that the operating parameters used in the design analysis reasonably represent the conditions which exist when the hazardous waste management unit is or would be operating at the highest load or capacity level reasonably expected</li> <li>– a statement signed and dated by the owner or operator certifying that the control device is designed to operate at an efficiency of 95 percent or greater unless the total organic concentration limit is achieved at an efficiency of less than 95 weight percent or the total organic emissions limits for affected process vents can be attained by a control device involving vapor recovery at an efficiency less than 95 weight percent.</li> <li>– all performance test results if used to demonstrate compliance</li> <li>– design documentation</li> <li>– monitoring and inspection results</li> <li>– notations of exceedance</li> <li>– explanation for each period of exceedance</li> <li>– for carbon adsorption systems: <ul style="list-style-type: none"> <li>– when the carbon is replaced in carbon adsorption systems</li> </ul> </li> </ul>

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<p><b>HW.135.4.US.</b> Closed vent systems are required to be monitored, inspected, and leaks repaired (40 CFR 264.1030(b), 264.1030(e), 264.1033(l), 264.1033(o); 265.1030(b), 265.1030(d), 265.1033(k) and 265.1033(n) [Revised December 1997].</p>	<ul style="list-style-type: none"> <li>– date and time when a control device is monitored for carbon breakthrough</li> <li>– the date of each control device startup and shutdown.</li> </ul> <p>Verify that records of monitoring operations and inspection information are kept for 3 yr.</p> <p>(NOTE: This applies to TSDFs with process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations, that manage hazardous wastes with organic concentrations of at least 10 ppmw, if the operations are conducted in one of the following:</p> <ul style="list-style-type: none"> <li>– a unit that is subject to the permitting requirements of 40 CFR 270</li> <li>– a unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of 40 CFR 262.34(a) (i.e., a hazardous waste recycling unit that is not a 90-day tank or container) and that is located at a hazardous waste management facility that is otherwise subject to the permitting requirements of 40 CFR 270</li> <li>– a unit that is exempt from permitting under the provisions of 40 CFR 262.34(a) (i.e., a 90-day tank or container) and is not a recycling unit under the provisions of 40 CFR 261.6.)</li> </ul> <p>(NOTE: These requirements do not apply to the process vents at a facility where the owner/operator certifies all of the process vents that would otherwise have to meet these requirements are equipped with and operating air emission controls in accordance with the process vent requirements of an applicable regulation under 40 CFR part 60, part 61, or part 63. The documentation of compliance with these other regulations must be kept with, or made readily available with, the facility operating record.)</p> <p>Verify that closed vents systems designed and operated with no detectable emissions (i.e., one at a pressure below atmospheric pressure) as indicated by an instrument reading of less than 500 ppm above background are monitored as follows:</p> <ul style="list-style-type: none"> <li>– an initial leak detection monitoring of the closed vent system using the procedures outlined in 40 CFR 264.1034(b) or 265.1034(b) on or before the date the system become subject to this section of the CFR</li> <li>– visual inspection at least once a year for closed vent system joints, seams, or other connections that are permanently or semi-permanently sealed (e.g., a welded joint between two sections of hard piping or a bolted and gasketed ducting flange)</li> <li>– annual and at times required by the Regional Administrator for all other parts of the system using the procedures specified in 40 CFR 265.1034(b).</li> </ul>

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<p><b>HW.135.5.US.</b> Closed vent systems and control devices used to comply with the provisions of 40 CFR 264.1030 through 264.1035 and 265.1030 through 265.1035 are required to be operated at all times when emissions may be vented to them (40 CFR 264.1030(b), 264.1030(e), 264.1033(m), 265.1030(b), 265.1030(d), and 265.1033(l)) <b>[Revised December 1997].</b></p>	<p>Verify that closed vent systems designed to operate at no detectable emissions are monitored as follows:</p> <ul style="list-style-type: none"> <li>– annual visual inspection to check for defects that could result in air pollutant emissions</li> <li>– initial inspection on or before the date the system becomes subject to this section of the CFR.</li> </ul> <p>(NOTE: For closed vent systems designed to operate at no detectable emissions, portions of the system designated as unsafe to monitor are exempt from the visual monitoring if:</p> <ul style="list-style-type: none"> <li>– the components are unsafe to monitor because monitoring personnel would be exposed to an immediate danger</li> <li>– a written plan that requires monitoring as practicable during safe to monitor periods is in place and followed.)</li> </ul> <p>Verify that detectable emissions, as indicated by visual inspection or by an instrument reading of greater than 500 ppmv above background, are controlled as soon as practicable but not later than 15 days after the emissions is detected.</p> <p>Verify that a first attempt at repair is made no later than 5 calendar days after the emission is detected.</p> <p>(NOTE: Delay of repair of a closed vent system for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown, or if it is determined that the emissions resulting from the immediate repair would be greater than the fugitive emissions likely to result from delay of repair.)</p> <p>(NOTE: This applies to TSDFs with process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations, that manage hazardous wastes with organic concentrations of at least 10 ppmw, if the operations are conducted in one of the following:</p> <ul style="list-style-type: none"> <li>– a unit that is subject to the permitting requirements of 40 CFR 270</li> <li>– a unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of 40 CFR 262.34(a) (i.e., a hazardous waste recycling unit that is not a 90-day tank or container) and that is located at a hazardous waste management facility that is otherwise subject to the permitting requirements of 40 CFR 270</li> <li>– a unit that is exempt from permitting under the provisions of 40 CFR 262.34(a) (i.e., a 90-day tank or container) and is not a recycling unit under the provisions of 40 CFR 261.6.)</li> </ul> <p>Verify that closed vent systems and control devices are operated at all times when emissions may be vented to them.</p> <p>(NOTE: These requirements do not apply to the process vents at a facility where the owner/operator certifies all of the process vents that would otherwise have to</p>

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<p><b>HW.135.6.US.</b> When carbon adsorption systems are used, operators are required to manage all carbon that is a hazardous waste according to specific parameters (40 CFR 264.1030(b), 264.1030(e), 264.1033(n), 265.1030(b), 265.1030(d), and 265.1033(m)) <b>[Revised December 1997].</b></p>	<p>meet these requirements are equipped with and operating air emission controls in accordance with the process vent requirements of an applicable regulation under 40 CFR part 60, part 61, or part 63. The documentation of compliance with these other regulations must be kept with, or made readily available with, the facility operating record.)</p> <p>(NOTE: This applies to TSDFs with process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations, that manage hazardous wastes with organic concentrations of at least 10 ppmw, if the operations are conducted in one of the following:</p> <ul style="list-style-type: none"> <li>– a unit that is subject to the permitting requirements of 40 CFR 270</li> <li>– a unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of 40 CFR 262.34(a) (i.e., a hazardous waste recycling unit that is not a 90-day tank or container) and that is located at a hazardous waste management facility that is otherwise subject to the permitting requirements of 40 CFR 270</li> <li>– a unit that is exempt from permitting under the provisions of 40 CFR 262.34(a) (i.e., a 90-day tank or container) and is not a recycling unit under the provisions of 40 CFR 261.6.)</li> </ul> <p>(NOTE: These requirements do not apply to the process vents at a facility where the owner/operator certifies all of the process vents that would otherwise have to meet these requirements are equipped with and operating air emission controls in accordance with the process vent requirements of an applicable regulation under 40 CFR part 60, part 61, or part 63. The documentation of compliance with these other regulations must be kept with, or made readily available with, the facility operating record.)</p> <p>Verify that carbon removed from control devices that is a hazardous waste is managed in one of the following manners, regardless of the average VOC concentration of the carbon:</p> <ul style="list-style-type: none"> <li>– regenerated or reactivated in a thermal treatment unit that meets one of the following: <ul style="list-style-type: none"> <li>– the unit has a final permit under 40 CFR 270 which implements the requirements of 40 CFR 264, subpart X</li> <li>– the unit is equipped with and operating air emission controls in accordance with applicable requirements</li> </ul> </li> <li>– incinerated in a hazardous waste incinerator for which the operator either: <ul style="list-style-type: none"> <li>– has a final permit under 40 CFR 270 which implement the requirements of 40 CFR 264, subpart O</li> <li>– has designed and operates the incinerator in accordance with the interim status required in 40 CFR 265, subpart O</li> </ul> </li> <li>– burned in a boiler or industrial furnace for which the operator either: <ul style="list-style-type: none"> <li>– has been issued a final permit under 40 CFR 270 implementing 40 CFR 266</li> </ul> </li> </ul>

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	– has designed and operates the boiler or industrial furnace in accordance with the interim status requirements of 40 CFR 266, Subpart H.

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<p><b>ALL TSDFs</b></p> <p><b>HW.140.</b>  <b>Air Emission Standards for Equipment Leaks</b></p> <p><b>HW.140.1.US.</b> TSDFs with pumps in light liquid service that contain or contact hazardous wastes with organic concentrations of at least 10% by weight are required to meet specific standards (40 CFR 264.1052 and 265.1052) [Revised December 1996; Revised January 2017].</p>	<p>(NOTE: This section applies to equipment that contains or contacts hazardous waste with organic concentrations of at least 10 percent by weight that are managed in one of the following (40 CFR 264.1050(b) and 265.1050(b)) [Revised December 1997]:</p> <ul style="list-style-type: none"> <li>– a unit that is subject to the permitting requirements of 40 CFR 270</li> <li>– a unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a hazardous waste recycling unit that is not a 90-day tank or container) and that is located at a hazardous waste management facility that is otherwise subject to the permitting requirements of 40 CFR 270</li> <li>– a unit that is exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a 90-day tank or container) and is not a recycling unit under the provisions of 40 CFR 261.6.)</li> </ul> <p>(NOTE: This section does not apply to (40 CFR 264.1050(e), 264.1050(f), 265.1050(d), and 265.1050(e)) [Revised December 1997]:</p> <ul style="list-style-type: none"> <li>– equipment that is in vacuum service and is identified as such on the required list</li> <li>– equipment that contains or contacts hazardous waste with an organic concentration of at least 10 percent by weight for less than 300 h per calendar year and is identified as such.)</li> </ul> <p>Verify that pumps in light liquid service are monitored monthly according to designated reference methods and inspected visually weekly.</p> <p>(NOTE: A leak is detected if there is an instrument reading of 10,000 ppm or greater or if there is an indication of liquid dripping from the pump seal.)</p> <p>Verify that, when a leak is detected, the first attempt at repair is made within 5 calendar days and repair is completed within 15 calendar days.</p> <p>Verify that, if the TSDF has chosen to not monitor monthly or visually check weekly, pumps equipped with a dual mechanical seal system meet the following design and operation requirements:</p> <ul style="list-style-type: none"> <li>– the dual mechanical seal system is operated with barrier fluid at a pressure that is at all times greater than the pump stuffing box, or equipped with a barrier fluid degassing reservoir that is connected by a closed-vent system to a control device or equipped with a system that purges the barrier fluid into a hazardous waste stream with no detectable emission to the atmosphere</li> </ul>

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<p><b>HW.140.2.US.</b> TSDFs with compressors that contain or contact hazardous wastes with organic concentrations of at least 10% by weight are required to meet specific standards (40 CFR 264.1053 and 265.1053) <b>[Revised December 1996; Revised January 2017]</b>.</p>	<ul style="list-style-type: none"> <li>– the barrier fluid system has no hazardous waste with organic concentrations 10 percent or greater by weight</li> <li>– the barrier fluid system is equipped with a sensor that will detect failure if the seal is broken.</li> <li>– pumps are checked by visual inspection weekly</li> <li>– sensors are checked daily or equipped with an audible alarm that is checked monthly.</li> </ul> <p>Verify that, if the TSDF has chosen to not monitor monthly or visually check weekly, pumps designated for no detectable emissions as indicated by an instrument reading of 500 ppm above background or less meet the following:</p> <ul style="list-style-type: none"> <li>– they are operated with no detectable emissions</li> <li>– they are tested for compliance initially upon designation, annually, and at other times as requested by the Regional Administrator</li> <li>– no externally actuated shaft penetrates the pump housing.</li> </ul> <p>(NOTE: Any pump that is equipped with a closed-vent system capable of capturing and transporting any leakage from the seal or seals to a control device is exempt from these requirements.)</p> <p>Verify that the owner/operator has determined, based on design considerations and operating experience, a criterion that indicates failure of the deal system, the barrier fluid system, or both.</p> <p>Verify that each compressor is equipped with a seal system which includes a barrier fluid system and prevents leakage of total organic emissions to the atmosphere except if:</p> <ul style="list-style-type: none"> <li>– it is equipped with a closed-vent system capable of capturing and transporting any leakage from the seal to a control device</li> <li>– it is designated for no detectable emissions, and: <ul style="list-style-type: none"> <li>– it operates at an instrument reading of less than 500 ppm above back ground</li> <li>– it is tested for compliance initially upon designation, annually, and at times as requested by the Regional Administrator.</li> </ul> </li> </ul> <p>Verify that compressor seal systems meet one of the following:</p> <ul style="list-style-type: none"> <li>– it is operated with the barrier fluid at a pressure that is at all times greater than the compressor stuffing box pressure</li> <li>– it is equipped with a barrier fluid system that is connected to a closed-vent system to a control device</li> <li>– it is equipped with a system that purges the barrier fluid into a hazardous waste stream with no detectable emissions to the atmosphere.</li> </ul>

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<p><b>HW.140.3.US.</b> TSDFs with pressure relief devices in gas/vapor service that contain or contact hazardous wastes with organic concentrations of at least 10 percent by weight are required to meet specific standards (40 CFR 264.1054 and 265.1054) <b>[Revised</b></p>	<p>Verify that the barrier fluid is not a hazardous waste with organic concentrations 10 percent or greater by weight.</p> <p>Verify that each barrier fluid system is equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both.</p> <p>Verify that each sensor is checked daily or it is equipped with an audible alarm that is checked monthly.</p> <p>(NOTE: Sensors on compressors located within the boundary of an unmanned site must be checked daily.)</p> <p>Verify that, when a leak is detected, the first attempt at repair is made within 5 calendar days and the repair is made within 15 calendar days.</p> <p>(NOTE: This section applies to equipment that contains or contacts hazardous waste with organic concentrations of at least 10 percent by weight that are managed in one of the following (40 CFR 264.1050(b) and 265.1050(b)) [Revised December 1997]:</p> <ul style="list-style-type: none"> <li>– a unit that is subject to the permitting requirements of 40 CFR 270</li> <li>– a unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a hazardous waste recycling unit that is not a 90-day tank or container) and that is located at a hazardous waste management facility that is otherwise subject to the permitting requirements of 40 CFR 270</li> <li>– a unit that is exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a 90-day tank or container) and is not a recycling unit under the provisions of 40 CFR 261.6.)</li> </ul> <p>(NOTE: This section does not apply to (40 CFR 264.1050(e), 264.1050(f), 265.1050(d), and 265.1050(e)) [Revised December 1997]:</p> <ul style="list-style-type: none"> <li>– equipment that is in vacuum service and is identified as such on the required list</li> <li>– equipment that contains or contacts hazardous waste with an organic concentration of at least 10 percent by weight for less than 300 h per calendar year and is identified as such.)</li> </ul> <p>Verify that, except during pressure releases, each pressure relief device in gas/vapor service is operated with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background.</p> <p>Verify that, if there is a pressure release, the device is returned to a no detectable emission status within 5 calendar days and the device is monitored to ensure compliance.</p>

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<p><b>December 1996; Revised January 2017].</b></p> <p><b>HW.140.4.US.</b> TSDFs with sampling connecting systems that contain or contact hazardous wastes with organic concentrations of at least 10 percent by weight are required to meet specific standards (40 CFR 264.1055 and 265.1055) [Revised December 1996; Revised January 2017].</p>	<p>(NOTE: Any pressure relief device that is equipped with a closed-vent system capable of capturing and transporting leakage from the pressure relief device to a control device is exempt from these requirements.)</p> <p>(NOTE: This section applies to equipment that contains or contacts hazardous waste with organic concentrations of at least 10 percent by weight that are managed in one of the following (40 CFR 264.1050(b) and 265.1050(b)) [Revised December 1997]:</p> <ul style="list-style-type: none"> <li>– a unit that is subject to the permitting requirements of 40 CFR 270</li> <li>– a unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a hazardous waste recycling unit that is not a 90-day tank or container) and that is located at a hazardous waste management facility that is otherwise subject to the permitting requirements of 40 CFR 270</li> <li>– a unit that is exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a 90-day tank or container) and is not a recycling unit under the provisions of 40 CFR 261.6.)</li> </ul> <p>(NOTE: This section does not apply to (40 CFR 264.1050(e), 264.1050(f), 265.1050(d), and 265.1050(e)) [Revised December 1997]:</p> <ul style="list-style-type: none"> <li>– equipment that is in vacuum service and is identified as such on the required list</li> <li>– equipment that contains or contacts hazardous waste with an organic concentration of at least 10 percent by weight for less than 300 h per calendar year and is identified as such.)</li> </ul> <p>Verify that each sampling connection system is equipped with a closed-purge, closed loop system or closed-vent system.</p> <p>Verify that each system collects the sample purge for return to the processing or for routing to the appropriate treatment system.</p> <p>(NOTE: Gases displaced through filling of the sample container are not required to be collected or captured.)</p> <p>Verify that each closed-purge, closed-loop system or closed-vent system does one of the following:</p> <ul style="list-style-type: none"> <li>– returns the purged process fluid directly to the process line</li> <li>– collects and recycles the purged process fluid</li> <li>– is designed and operated to capture and transport all the purged process fluid to a waste management unit that is in compliance or a control device that is in compliance.</li> </ul> <p>(NOTE: In-situ sampling systems are exempt from these requirements.)</p>

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<p><b>HW.140.5.US.</b> TSDFs with open-ended valves or lines that contain or contact hazardous wastes with organic concentrations of at least 10 percent by weight are required to meet specific operation standards (40 CFR 264.1056 and 265.1056) [Revised December 1996; Revised January 2017].</p>	<p>(NOTE: This section applies to equipment that contains or contacts hazardous waste with organic concentrations of at least 10 percent by weight that are managed in one of the following (40 CFR 264.1050(b) and 265.1050(b)) [Revised December 1997]:</p> <ul style="list-style-type: none"> <li>– a unit that is subject to the permitting requirements of 40 CFR 270</li> <li>– a unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a hazardous waste recycling unit that is not a 90-day tank or container) and that is located at a hazardous waste management facility that is otherwise subject to the permitting requirements of 40 CFR 270</li> <li>– a unit that is exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a 90-day tank or container) and is not a recycling unit under the provisions of 40 CFR 261.6.)</li> </ul> <p>(NOTE: This section does not apply to (40 CFR 264.1050(e), 264.1050(f), 265.1050(d), and 265.1050(e)) [Revised December 1997]:</p> <ul style="list-style-type: none"> <li>– equipment that is in vacuum service and is identified as such on the required list</li> <li>– equipment that contains or contacts hazardous waste with an organic concentration of at least 10 percent by weight for less than 300 h per calendar year and is identified as such.)</li> </ul> <p>Verify that each open-ended valve or line is equipped with a cap, blind flange, plug, or a second valve.</p> <p>Verify that the cap, blind flange, plug, or second valve seals the open end at all times, except during operations requiring hazardous waste stream flow through the open-ended valve of line.</p> <p>Verify that each open-ended valve or line equipped with a second valve is operated so the valve on the hazardous waste stream end is closed before the second valve is closed.</p> <p>Verify that, when a double block and bleed system is being used; the bleed valve is shut or plugged except during operations that require venting the line between the block valves.</p> <p>(NOTE: This section applies to equipment that contains or contacts hazardous waste with organic concentrations of at least 10 percent by weight that are managed in one of the following (40 CFR 264.1050(b) and 265.1050(b)) [Revised December 1997]:</p> <ul style="list-style-type: none"> <li>– a unit that is subject to the permitting requirements of 40 CFR 270</li> <li>– a unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a hazardous waste recycling unit that is not a 90-day tank or container) and that is located at a hazardous waste management facility that is otherwise subject to the permitting requirements of 40 CFR 270</li> </ul>

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<p><b>HW.140.6.US.</b> TSDFs with valves in gas/vapor service or light liquid service that contain or contact hazardous wastes with organic concentrations of at least 10 percent by weight are required to meet specific monitoring and repair standards (40 CFR 264.1057 and 265.1057) [Revised December 1996; Citation Revised July 2006; Revised January 2017].</p>	<p>– a unit that is exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a 90-day tank or container) and is not a recycling unit under the provisions of 40 CFR 261.6.)</p> <p>(NOTE: This section does not apply to (40 CFR 264.1050(e), 264.1050(f), 265.1050(d), and 265.1050(e)) [Revised December 1997]:</p> <ul style="list-style-type: none"> <li>– equipment that is in vacuum service and is identified as such on the required list</li> <li>– equipment that contains or contacts hazardous waste with an organic concentration of at least 10 percent by weight for less than 300 h per calendar year and is identified as such.)</li> </ul> <p>Verify that valves in gas/vapor service or light liquid service are monitored monthly to detect leaks.</p> <p>(NOTE: A leak is detected if an instrument reading of 10,000 ppm or greater is measured. But, if a leak is not detected for 2 consecutive months, monitoring may be cut back to quarterly until a leak is detected.)</p> <p>(NOTE: Valves that are designated for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, do not have to be monitored monthly if:</p> <ul style="list-style-type: none"> <li>– the valve has no external actuating mechanism in contact with the hazardous waste stream</li> <li>– the valve is operated with emission less than 500 ppm above background</li> <li>– the valve is tested initially upon designation, annually, and at the request of the Regional Administrator.)</li> </ul> <p>(NOTE: Valves that are designated as unsafe to monitor are exempt from the requirement for monthly monitoring if:</p> <ul style="list-style-type: none"> <li>– the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger</li> <li>– a written monitoring plan is followed that requires monitoring as often as is reasonably practicable during safe to monitor times.)</li> </ul> <p>(NOTE: Valves that are designated as difficult to monitor are exempt from monthly monitoring requirements if:</p> <ul style="list-style-type: none"> <li>– the valve cannot be monitored without elevating the monitoring personnel more than 2 m above a support surface</li> <li>– the hazardous waste management unit within which the valve is located was in operation before 21 June 1990</li> <li>– a written monitoring plan is followed that requires the monitoring of the valve at least once per calendar year.)</li> </ul>

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	<p>(NOTE: The TSDF may elect to have all valves within a hazardous waste management unit comply with an alternative standard of no greater than 2 percent of the valves to leak, see checklist item HW.140.10 for those alternative standards.)</p> <p>(NOTE: Valves that are designated as difficult to monitor are exempt from monthly monitoring requirements if:</p> <ul style="list-style-type: none"> <li>– the valve cannot be monitored without elevating the monitoring personnel more than 2 m above a support surface</li> <li>– the hazardous waste management unit within which the valve is located was in operation before 21 June 1990</li> <li>– a written monitoring plan is followed that requires the monitoring of the valve at least once per calendar year.)</li> </ul> <p>(NOTE: The following are alternatives to the prescribed monitoring schedule which can be used until the percentage of valves leaking is greater than 2 percent:</p> <ul style="list-style-type: none"> <li>– after 2 consecutive quarterly leak detection period with the percentage of valves leaking equal to or less than 2 percent, an owner or operator may begin to skip one of the quarterly leak detection periods for the valves</li> <li>– after 5 consecutive quarterly leak detection periods with the percentage of valves leaking equal to or less than 2 percent, an owner or operator may begin to skip 3 of the quarterly leak detection periods.</li> </ul> <p>Verify that the first attempt at repairing a leak is done within 5 calendar days after detection and leak repair is completed within 15 days after detection.</p> <p>(NOTE: First attempts at repair include, but are not limited to:</p> <ul style="list-style-type: none"> <li>– tightening of bonnet bolts</li> <li>– replacement of bonnet bolts</li> <li>– tightening of packing gland nuts</li> <li>– injection of lubricant into lubricated packing.)</li> </ul> <p>(NOTE: This section applies to equipment that contains or contacts hazardous waste with organic concentrations of at least 10 percent by weight that are managed in one of the following (40 CFR 264.1050(b) and 265.1050(b)) [Revised December 1997]:</p> <ul style="list-style-type: none"> <li>– a unit that is subject to the permitting requirements of 40 CFR 270</li> <li>– a unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a hazardous waste recycling unit that is not a 90-day tank or container) and that is located at a hazardous waste management facility that is otherwise subject to the permitting requirements of 40 CFR 270</li> <li>– a unit that is exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a 90-day tank or container) and is not a recycling unit under the provisions of 40 CFR 261.6.)</li> </ul>

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<p><b>HW.140.7.US.</b> TSDFs with pumps and valves in heavy liquid service, pressure relief devices in light liquid service or heavy liquid service, and other connectors that contain or contact hazardous wastes with organic concentrations of at least 10% by weight are required to meet specific monitoring and repair standards (40 CFR 264.1058 and 265.1058) [Revised December 1996; Revised January 2017].</p>	<p>(NOTE: This section does not apply to (40 CFR 264.1050(e), 264.1050(f), 265.1050(d), and 265.1050(e)) [Revised December 1997]:</p> <ul style="list-style-type: none"> <li>– equipment that is in vacuum service and is identified as such on the required list</li> <li>– equipment that contains or contacts hazardous waste with an organic concentration of at least 10 percent by weight for less than 300 h per calendar year and is identified as such.)</li> </ul> <p>Verify that pumps and valves in heavy liquid service, pressure relief devices in light liquid service or heavy liquid service, and other connectors are required to be monitored within 5 days if evidence of a potential leak is found by visual, olfactory, audible, or other detection method.</p> <p>(NOTE: A leak is detected if an instrument reading of 10,000 ppm or greater is measured.)</p> <p>Verify that, when a leak is detected, the first attempt at repair occurs within 5 days and repair is done within 15 days after discovery.</p> <p>(NOTE: First attempts at repair include, but are not limited to:</p> <ul style="list-style-type: none"> <li>– tightening of bonnet bolts</li> <li>– replacement of bonnet bolts</li> <li>– tightening of packing gland nuts</li> <li>– injection of lubricant into lubricated packing.)</li> </ul> <p>(NOTE: Any connector that is inaccessible or is ceramic or ceramic lined is exempt from the monitoring requirements.)</p> <p>(NOTE: This section applies to equipment that contains or contacts hazardous waste with organic concentrations of at least 10 percent by weight that are managed in one of the following (40 CFR 264.1050(b) and 265.1050(b)) [Revised December 1997]:</p> <ul style="list-style-type: none"> <li>– a unit that is subject to the permitting requirements of 40 CFR 270</li> <li>– a unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a hazardous waste recycling unit that is not a 90-day tank or container) and that is located at a hazardous waste management facility that is otherwise subject to the permitting requirements of 40 CFR 270</li> <li>– a unit that is exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a 90-day tank or container) and is not a recycling unit under the provisions of 40 CFR 261.6.)</li> </ul> <p>(NOTE: This section does not apply to (40 CFR 264.1050(e), 264.1050(f), 265.1050(d), and 265.1050(e)) [Revised December 1997]:</p> <ul style="list-style-type: none"> <li>– equipment that is in vacuum service and is identified as such on the required list</li> </ul>

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<p><b>HW.140.8.US.</b> TSDFs are required to keep specific records pertaining to the valves, pumps, pressure relief devices, and connecting systems being monitored for leaks and submit certain reports (40 CFR 264.1058(e), 264.1064, 264.1065, 265.1058(e), and 265.1064) [Revised December 1997; Revised January 2017].</p>	<ul style="list-style-type: none"> <li>– equipment that contains or contacts hazardous waste with an organic concentration of at least 10 percent by weight for less than 300 h per calendar year and is identified as such.)</li> </ul> <p>Verify that the following information is maintained in the TSDF operating record:</p> <ul style="list-style-type: none"> <li>– equipment identification number and hazardous management unit identification</li> <li>– approximate locations</li> <li>– type of equipment</li> <li>– percent-by-weight total organics in the hazardous waste stream at the equipment</li> <li>– hazardous waste state at the equipment (gas, liquid, vapor)</li> <li>– method of compliance</li> <li>– implementation schedule if needed</li> <li>– a performance plan for control devices as needed</li> <li>– documentation of compliance</li> <li>– documentation of repair, including: <ul style="list-style-type: none"> <li>– the instrument and operator identification numbers and the equipment identification number</li> <li>– the date evidence of a potential leak was found</li> <li>– the date the leak was detected and the date of each attempt to repair the leak</li> <li>– repair methods applies in each attempt</li> <li>– “Above 10,000” if the maximum instrument reading after each repair attempt is greater than 10,000 ppm</li> <li>– “Repair Delayed” and the reason for delay if the leak is not repaired within 15 calendar days after discovery</li> <li>– documentation supporting the delay of valve repair</li> <li>– signature of the owner or operator whose decision it was that repair could not be made without a hazardous waste management unit shutdown</li> <li>– the expected date of successful repair of the leak when it is not repaired within 15 calendar day</li> <li>– the date of successful repair of the leak</li> </ul> </li> <li>– design documentation and monitoring, operating, and inspection information for each closed vent system control device required to comply with the provisions of 40 CFR 265.1060</li> <li>– monitoring and inspection information indicating proper operation and maintenance of the control device for a control device other than a thermal vapor incinerator, catalytic vapor incinerator, flare, boiler, process heater, condenser, or carbon adsorption system</li> <li>– the following information for all equipment subject to 40 CFR 265.1052 through 265.1060: <ul style="list-style-type: none"> <li>– a list of identification numbers for equipment (except welded fittings)</li> <li>– a list of identification numbers for equipment that the owner or operator elects to designated for no detectable emissions</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– a list of equipment identification numbers for pressure relief devices</li> <li>– the dates of required compliance tests, background levels, maximum instrument reading, measured during the compliance test</li> <li>– a list of identification numbers for equipment in vacuum service</li> <li>– identification either by list or location (area or group) of equipment that contains or contacts hazardous waste with an organic concentration of at least 10 percent by weight for less than 300 h per calendar year.</li> </ul> <p>Verify that the following information is kept for all valves subject to 40 CFR 265.1057(g) and (h):</p> <ul style="list-style-type: none"> <li>– a list of identification numbers for valves listed as unsafe to monitor, an explanation for each valve stating why it is unsafe to monitor, and the plan for monitoring each valve</li> <li>– a list of identification numbers for valves that are designated as difficult to monitor, an explanation for each valve stating why it is difficult to monitor, and the plan for monitoring each valve</li> <li>– the following for all valves complying with 40 CFR 265.1062: <ul style="list-style-type: none"> <li>– a schedule of monitoring</li> <li>– the percent of valves found leaking in each monitoring period.</li> </ul> </li> </ul> <p>Verify that the following information is kept for use in determining exemptions:</p> <ul style="list-style-type: none"> <li>– an analysis determining the design capacity of the unit</li> <li>– a statement listing the hazardous waste influent to and effluent from each unit subject to 40 CFR 265.1052 through 265.1060 and an analysis determining whether these hazardous wastes are heavy liquids</li> <li>– an up-to-date analysis and the supporting information and data used to determine if equipment is subject to the requirements.</li> </ul> <p>(NOTE: If repairs are made and the control device does not exceed or operate outside of the design specifications for more than 24 h, a report to the Regional Administrator is not required.</p> <p>Verify that permitted TSDFs submit a semiannual report indicating leaks and repairs to the Regional Administrator.</p> <p>(NOTE: Any connector that is inaccessible or is ceramic or ceramic lined is exempt from the recordkeeping requirements.)</p> <p>(NOTE: This section applies to equipment that contains or contacts hazardous waste with organic concentrations of at least 10 percent by weight that are managed in one of the following (40 CFR 264.1050(b) and 265.1050(b)) [Revised December 1997]:</p> <ul style="list-style-type: none"> <li>– a unit that is subject to the permitting requirements of 40 CFR 270</li> </ul>

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<p><b>HW.140.9.US.</b> Each piece of equipment subject to the requirements in 40 CFR 264.1050 through 264.1064 and 265.1050 through 265.1064 is required to be marked so that it can be distinguished from other equipment (40 CFR 264.1050(d) and 265.1050(c) [Added December 1996; Revised January 2017].</p>	<ul style="list-style-type: none"> <li>– a unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a hazardous waste recycling unit that is not a 90-day tank or container) and that is located at a hazardous waste management facility that is otherwise subject to the permitting requirements of 40 CFR 270</li> <li>– a unit that is exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a 90-day tank or container) and is not a recycling unit under the provisions of 40 CFR 261.6.)</li> </ul> <p>(NOTE: This section does not apply to (40 CFR 264.1050(e), 264.1050(f), 265.1050(d), and 265.1050(e)) [Revised December 1997]:</p> <ul style="list-style-type: none"> <li>– equipment that is in vacuum service and is identified as such on the required list</li> <li>– equipment that contains or contacts hazardous waste with an organic concentration of at least 10 percent by weight for less than 300 h per calendar year and is identified as such.)</li> </ul> <p>Verify that each piece of equipment subject to the requirements in 40 CFR 264.1050 through 264.1064 and 265.1050 through 265.1064 is marked so that it can be distinguished from other equipment.</p> <p>(NOTE: This section applies to equipment that contains or contacts hazardous waste with organic concentrations of at least 10 percent by weight that are managed in one of the following (40 CFR 264.1050(b) and 265.1050(b)) [Revised December 1997]:</p> <ul style="list-style-type: none"> <li>– a unit that is subject to the permitting requirements of 40 CFR 270</li> <li>– a unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a hazardous waste recycling unit that is not a 90-day tank or container) and that is located at a hazardous waste management facility that is otherwise subject to the permitting requirements of 40 CFR 270</li> <li>– a unit that is exempt from permitting under the provisions of 40 CFR 262.17 (i.e., a 90-day tank or container) and is not a recycling unit under the provisions of 40 CFR 261.6.)</li> </ul> <p>(NOTE: This section does not apply to (40 CFR 264.1050(e), 264.1050(f), 265.1050(d), and 265.1050(e)) [Revised December 1997]:</p> <ul style="list-style-type: none"> <li>– equipment that is in vacuum service and is identified as such on the required list</li> <li>– equipment that contains or contacts hazardous waste with an organic concentration of at least 10 percent by weight for less than 300 h per calendar year and is identified as such.)</li> </ul>
<p><b>HW.140.10.US.</b> When a TSD owner/operator has elected to comply with alternative standards</p>	<p>(NOTE: An owner or operator subject to the requirements of 40 CFR 264.1057 [see checklist item HW.140.6.US] may elect to have all valves within a hazardous waste management unit comply with an alternative standard that allows no greater than 2 percent of the valves to leak.)</p>

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<p>(percentage of valves allowed to leak) for valves in gas/vapor service or in light liquid service, specific actions are required (40 CFR 264.1061 and 265.1061) <b>[Added May 1997; Revised July 2006]</b>.</p> <p><b>HW.140.11.US.</b> When a TSD owner/operator has elected to comply with alternative standards (skip period leak detection and repair) for valves in gas/vapor service or in light liquid service, specific actions are required (40 CFR 264.1062 and 265.1062) <b>[Added July 2006]</b>.</p>	<p>Verify that, if an owner or operator decides to comply with the alternative standard of allowing 2 percent of valves to leak:</p> <ul style="list-style-type: none"> <li>– a performance test is conducted initially upon designation, annually, and at other times requested by the Regional Administrator.</li> <li>– if a valve leak is detected, it is repaired in accordance with 40 CFR 264.1057(d) and (e) (see checklist item HW.140.6.US).</li> </ul> <p>Verify that performance tests are conducted in the following manner:</p> <ul style="list-style-type: none"> <li>– all valves subject to the requirements in 40 CFR 264.1057 (see checklist item HW.140.6.US) within the hazardous waste management unit are monitored within 1 week by the methods specified in 40 CFR 264.1063(b) (see text)</li> <li>– if an instrument reading of 10,000 ppm or greater is measured, a leak is detected</li> <li>– the leak percentage shall be determined by dividing the number of valves subject to the requirements in 40 CFR 264.1057 for which leaks are detected by the total number of valves subject to the requirements in 40 CFR 264.1057 within the hazardous waste management unit.</li> </ul> <p>(NOTE: An owner or operator subject to the requirements of 40 CFR 264.1057 (see checklist item HW.140.6.US) may elect for all valves within a hazardous waste management unit to comply with one of the alternative work practices specified in this checklist item.)</p> <p>Verify that the owner or operator complies with the requirements for valves, as described in 40 CFR 264.1057 (see checklist item HW.140.6.US), except as follows:</p> <ul style="list-style-type: none"> <li>– after two consecutive quarterly leak detection periods with the percentage of valves leaking equal to or less than 2 percent, an owner or operator begins to skip one of the quarterly leak detection periods (i.e., monitor for leaks once every 6 mo) for the valves subject to the requirements in 40 CFR 264.1057 (see checklist item HW.140.6.US)</li> <li>– after five consecutive quarterly leak detection periods with the percentage of valves leaking equal to or less than 2 percent, an owner or operator begins to skip three of the quarterly leak detection periods (i.e., monitor for leaks once every year) for the valves subject to the requirements in 40 CFR 264.1057.</li> </ul> <p>(NOTE: If the percentage of valves leaking is greater than 2 percent, the owner or operator monitors monthly in compliance with the requirements in 40 CFR 264.1057, but may again elect to use this alternative after meeting the requirements of 40 CFR 264.1057(c)(1).)</p>



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<p><b>ALL TSDFs</b></p> <p><b>HW.145. Documentation Requirements</b></p> <p><b>HW.145.1.US.</b> TSDFs that treat, store, or dispose of hazardous wastes must develop and follow a written waste analysis plan (40 CFR 264.13(b), 264.13(c), 265.13(b), and 265.13(c)).</p> <p><b>HW.145.2.US.</b> TSDFs must conduct inspections and have a formal written inspection schedule and a log of inspection results (40 CFR 264.15 and 265.15) [Revised July 2006; Revised January 2017].</p>	<p>Determine if the TSDF treats, stores, or disposes of hazardous waste.</p> <p>Verify that the TSDF has a waste analysis plan.</p> <p>Verify that the TSDF is following the waste analysis plan by comparing the plan and records of actual procedures.</p> <p>Verify that the waste analysis plan contains the following:</p> <ul style="list-style-type: none"> <li>– testing parameters for which each hazardous waste will be analyzed</li> <li>– test methods</li> <li>– sampling methods used to obtain a representative sample</li> <li>– frequency in which the analysis will be reviewed or repeated to ensure that the analysis is up-to-date and accurate</li> <li>– waste analysis supplied by offsite generators</li> <li>– methods used to meet the additional analysis requirements for management of ignitable, reactive, or incompatible materials, bulk and containerized liquids, and incineration are stated (if applicable)</li> <li>– additional information as follows for offsite facilities: <ul style="list-style-type: none"> <li>– specific procedures to inspect (and analyze if necessary) each movement of hazardous waste received to ensure that it matches the identity of the waste designated in the manifest</li> <li>– the method of sampling used to obtain a representative sample (if the identification method includes sampling)</li> <li>– the procedures that an offsite landfill receiving containerized hazardous waste will use to determine if a hazardous waste generator or treater has added a biodegradable sorbent to the waste in the container.</li> </ul> </li> </ul> <p>Verify that the owner or operator inspects his facility for malfunctions and deterioration, operator errors, and discharges which may be causing, or may lead to one of the following:</p> <ul style="list-style-type: none"> <li>release of hazardous waste constituents to the environment</li> <li>a threat to human health.</li> </ul> <p>Verify that the owner or operator conducts these inspections often enough to identify problems in time to correct them before they harm human health or the environment.</p>

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<p><b>HW.145.3.US.</b> TSDFs must have a contingency plan (40 CFR 264.50 through 264.54 and 265.50 through 265.54) [Revised July 2006, Revised July 2010].</p>	<p>Verify that the TSDF has, and follows, a written inspection schedule for inspecting monitoring equipment, safety and emergency equipment, security devices, and operating and structural equipment that are important to preventing, detecting, or responding to environmental or human health hazards.</p> <p>Verify that the schedule is kept at the TSDF and lists the types of problems (e.g., malfunctions or deterioration) which are to be looked for during the inspection (e.g., inoperative sump pump, leaking fitting, eroding dike, etc.).</p> <p>(NOTE: The frequency of inspection may vary for the items on the schedule. However, the frequency should be based on the rate of deterioration of the equipment and the probability of an environmental or human health incident if the deterioration, malfunction, or operator error goes undetected between inspections. Areas subject to spills, such as loading and unloading areas, must be inspected daily when in use, upon approval by the Director. At a minimum, the inspection schedule must include the items and frequencies called for in 40 CFR 264.174, 264.193, 264.195, 264.226, 264.254, 264.278, 264.303, 264.347, 264.602, 264.1033, 264.1052, 264.1053, 264.1058, and 264.1083 through 264.1089, where applicable. For interim status TSDFs the inspection schedule must include the items and frequencies called for in 40 CFR 265.174, 265.193, 265.195, 265.226, 265.254, 265.278, 265.303, 265.347, 265.602, 265.1033, 265.1052, 265.1053, 265.1058, and 265.1083 through 265.1089, where applicable.)</p> <p>Verify that the owner or operator remedies any deterioration or malfunction of equipment or structures which the inspection reveals on a schedule which ensures that the problem does not lead to an environmental or human health hazard.</p> <p>Verify that, where a hazard is imminent or has already occurred, remedial action is taken immediately.</p> <p>Verify that inspections are recorded in an inspection log or summary and the records are kept for at least 3 yr from the date of inspection.</p> <p>Verify that, at a minimum, the records include:</p> <ul style="list-style-type: none"> <li>the date and time of the inspection</li> <li>the name of the inspector</li> <li>a notation of the observations made</li> <li>the date and nature of any repairs or other remedial actions.</li> </ul> <p>(NOTE: If the owner or operator of the TSDF has already prepared a Spill Prevention, Control, and Countermeasures (SPCC) Plan in accordance with 40 CFR 112 or some other emergency or contingency plan, the owner/operator need only amend that plan to incorporate hazardous waste management provisions that are sufficient to comply with the requirements in this checklist item. The owner or operator may develop one contingency plan which meets all regulatory requirements. EPA recommends that the plan be based on the National Response Team's Integrated Contingency Plan Guidance</p>

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<p><b>HW.145.4.US.</b> TSDF operators must record the time, date, and details of any incident that requires implementing the contingency plan (40 CFR 264.56(i), 264.77(a), 265.56(i), and 265.77(a)) <b>[Revised January 2005; Revised July 2006]</b>.</p>	<p>("One Plan"). When modifications are made to non-RCRA provisions in an integrated contingency plan, the changes do not trigger the need for a RCRA permit modification.)</p> <p>Verify that the contingency plan is designed to minimize hazards to human health or the environment from fires, explosions, or any unplanned sudden or nonsudden release of hazardous waste or hazardous waste constituents.</p> <p>Verify that the plan includes the following:</p> <ul style="list-style-type: none"> <li>– a description of actions to be taken during an emergency</li> <li>– a description of arrangements, as appropriate, agreed to by local police departments, fire departments, hospitals, contractors, and state and local emergency response teams</li> <li>– names, addresses, and phone numbers of all persons qualified to act as emergency coordinator</li> <li>– a list of all emergency equipment at the TSDF and where this equipment is required, located, and what it looks like in an evacuation plan for TSDF personnel where there is a possibility evacuation would be needed.</li> </ul> <p>Verify that copies of the contingency plan are maintained at the TSDF and have been submitted to organizations that may be called upon to provide emergency services.</p> <p>Verify that the contingency plan is routinely reviewed and updated, especially when the TSDF is issued a new permit, the plan fails in an emergency, the emergency coordinators change, the waste being handled changes, and/or the list of emergency equipment changes.</p> <p>Determine if incidents have been recorded and corrective actions taken through a review of TSDF operating records.</p> <p>(NOTE: Incidents include releases, fires, and explosions.)</p> <p>Verify that written reports have been submitted to the USEPA Regional Administrator within 15 days after the incident, including:</p> <ul style="list-style-type: none"> <li>– name, address, and telephone number of the owner or operator</li> <li>– name, address, and telephone number of the facility</li> <li>– date, time, and type of incident (e.g., fire, explosion)</li> <li>– name and quantity of material(s) involved</li> <li>– the extent of injuries, if any</li> <li>– an assessment of actual or potential hazards to human health or the environment, where this is applicable</li> <li>– estimated quantity and disposition of recovered material that resulted from the incident.</li> </ul>

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<p><b>HW.145.5.US.</b> TSDF operators must keep written operating records at the facility (40 CFR 264.70, 264.73 through 264.74 and 265.70, 265.73 through 265.74) <b>[Revised January 2003; Revised July 2006].</b></p>	<p>(NOTE: This checklist item applies to both onsite and offsite TSDFs except when responding to an explosives or munitions emergency in accordance with 40 CFR 266.204.)</p> <p>Verify that the TSDF has a written operating record.</p> <p>Verify that the following information is recorded, as it becomes available, and maintained in the operating record for 3 yr unless otherwise noted:</p> <ul style="list-style-type: none"> <li>– a description and the quantity of each hazardous waste received, and the method(s) and date(s) of its treatment, storage, or disposal at the facility and this information is maintained in the operating record until closure of the facility</li> <li>– the location of each hazardous waste within the facility and the quantity at each location including cross-references to manifest document numbers if the waste was accompanied by a manifest and this information is maintained in the operating record until closure of the facility</li> <li>– for disposal facilities, the location and quantity of each hazardous waste is recorded on a map or diagram that shows each cell or disposal area including cross-references to manifest document numbers if the waste was accompanied by a manifest and this information is maintained in the operating record until closure of the facility</li> <li>– records and results of waste analyses</li> <li>– reports of all the incidents that required the implementation of the contingency plan</li> <li>– records and results of inspections (only a 3-yr retention period)</li> <li>– monitoring, testing or analytical data, and corrective action which are maintained in the operating record for 3 yr, except for records and results pertaining to ground-water monitoring and cleanup which are maintained in the operating record until closure of the facility</li> <li>– for offsite facilities, notices to the generator</li> <li>– all closure cost estimates, and for disposal facilities, all post-closure cost estimates and maintaining the information in the operating record until closure of the facility</li> <li>– annual certification that the TSDF has a program in place to reduce the volume and toxicity of hazardous waste, and that the proposed method of treatment, storage, or disposal minimizes the present and future threat to human health and the environment</li> <li>– records of the quantities and date of placement for each shipment of hazardous waste placed in land disposal units under an extension to the effective date of any land disposal restriction granted pursuant to 40 CFR 268.5, a petition pursuant to 40 CFR 268.6, or a certification under 40 CFR 268.8, and the applicable notice required by a generator under 40 CFR 268.7(a) (NOTE: This information is maintained in the operating record until closure of the facility.)</li> <li>– a copy of the applicable notice, demonstration, and certification required for any restricted hazardous wastes</li> </ul>

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<p><b>HW.145.6.US.</b> TSDFs must prepare and submit a single copy of a biennial report to the USEPA Regional Administrator by March 1 of each even numbered year (40 CFR 264.75 and 265.75) [Revised January 2017].</p>	<ul style="list-style-type: none"> <li>– certifications and demonstrations provided to generators or received from generators</li> <li>– monitoring, testing or analytical data where required by 40 CFR 264.347 (see checklist item HW.205.3.US) is maintained in the operating record for 5 yr</li> <li>– monitoring, testing or analytical data and corrective action where required by 40 CFR 265.90, 40 CFR 265.93(d)(2), and 265.93(d)(5) (see checklist item HW.220.3.US), which are maintained in the operating record until closure of the facility</li> <li>– certifications as required by 40 CFR 264.196(f) or 265.196(f) which are maintained in the operating record until closure of the facility.</li> </ul> <p>(NOTE: This information must be recorded and maintained in the operating record until closure of the TSDF. These content requirements only apply to permittees who treat, store, or dispose of hazardous waste onsite where such wastes are generated)</p> <p>(NOTE: The retention period for all records is extended automatically during the course of any unresolved enforcement action or as required by the USEPA administrator.)</p> <p>Obtain a copy of the biennial report (USEPA Form 8700-13 A/B or applicable state form).</p> <p>Verify that biennial reports are prepared, submitted, and contain the following information:</p> <ul style="list-style-type: none"> <li>– USEPA identification number</li> <li>– TSDF name and address</li> <li>– calendar year covered by report</li> <li>– description and quantity of each waste received</li> <li>– method of treatment, storage, or disposal for each waste</li> <li>– certification signed by owner or operator of the TSDF</li> <li>– offsite facilities must also report USEPA identification number for each hazardous waste generator from which waste was received</li> <li>– description of efforts undertaken during the year to reduce the volume and toxicity of waste generated</li> <li>– description of changes in volume and toxicity of waste actually achieved during the year in comparison to previous years to the extent that information is available for the years prior to 1984.</li> </ul> <p>(NOTE: This may not be required if annual or biennial reports are submitted to the state depending on state requirements.)</p>

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<p><b>HW.145.7.US.</b> TSDFs must have a written closure plan for each TSDF (40 CFR 264.110(a), 264.110(c), 264.112(a) through 264.112(c), 265.110(a), 265.110(c), and 265.112(a) through 265.112(c)) [<b>Revised January 1999</b>].</p>	<p>(NOTE: These requirements apply to all hazardous waste management facilities. The Regional Administrator may substitute alternate requirements where it is determined that:</p> <ul style="list-style-type: none"> <li>– the regulated unit is situated among solid waste management units (or areas of concern), a release has occurred, and both the regulated unit and one or more solid waste management units (or areas of concern) are likely to have contributed to the release</li> <li>– it is not necessary to apply the closure requirements because alternative requirements will protect human health and the environment.)</li> </ul> <p>Verify that the TSDF has a written closure plan that is approved by the Regional Administrator.</p> <p>Verify that the closure plan addresses:</p> <ul style="list-style-type: none"> <li>– how each hazardous waste management unit will be closed</li> <li>– how final closure will be conducted</li> <li>– estimates of the maximum amount of wastes in storage and in treatment during the life of the TSDF</li> <li>– description of decontamination procedures to be used during closure</li> <li>– schedule for closure of each unit</li> <li>– description of other activities necessary during closure.</li> </ul> <p>Verify that a written notification of or request for a permit modification was submitted to authorize a change in the approved closure plan whenever:</p> <ul style="list-style-type: none"> <li>– changes in operating plans or facility design affect the closure plan</li> <li>– there is a change in the expected year of closure</li> <li>– in conducting partial or final closure activities, unexpected events required a modification of the approved closure plan</li> <li>– the owner or operator requests the Regional Administrator to apply alternative requirements to a regulated unit.</li> </ul> <p>Verify that the written notification was submitted at least 60 days prior to the proposed change in facility design or operation or no later than 60 days after an unexpected event has affected the closure plan.</p> <p>(NOTE: If an unexpected event occurs during the partial or final closure period, a permit modification must be requested no later than 30 days after the unexpected event.)</p>
<p><b>HW.145.8.US.</b> TSDFs with hazardous waste disposal units are required to have a written postclosure plan (40 CFR</p>	<p>(NOTE: This requirement applies to the following:</p> <ul style="list-style-type: none"> <li>– all hazardous waste disposal facilities</li> <li>– waste piles and surface impoundments from which the owner or operator intends to remove the wastes at closure</li> </ul>

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<p>264.110(b), 264.118, 264.110(b), and 265.118(a) through 265.118(d)) [Revised January 1999].</p> <p><b>HW.145.9.US.</b> TSDFs that receive waste from offsite sources must comply with manifest requirements (40 CFR 264.70, 264.71, 265.70, and 265.71) [Revised February 1995; Revised April 2005; Revised April 2010; Revised April 2014; Revised January 2017; Revised January 2018].</p>	<ul style="list-style-type: none"> <li>– tank systems that are required to meet the requirements for landfills</li> <li>– containment buildings that are required to meet the requirements for landfills.)</li> </ul> <p>Verify that the written postclosure plan includes the following information:</p> <ul style="list-style-type: none"> <li>– identifies the activities that will be carried on after closure of each disposal unit and the frequency of these activities such as monitoring and maintenance</li> <li>– name, address, and phone number of the person or office to contact during postclosure care</li> <li>– alternative requirements that apply to the unit or a reference to the enforceable document containing those requirements when applicable.</li> </ul> <p>Verify that the postclosure plan is amended if there is a change in the expected year of final closure, events occur during the life of the TSDF that impact closure care, a change in TSDF design, or a request has been made to the Regional Administrator to apply alternate standards.</p> <p>Verify that, if a TSDF receives hazardous waste accompanied by a manifest, the owner, operator or his/her agent signs and dates the manifest to certify that the hazardous waste covered by the manifest was received, that the hazardous waste was received except as noted in the discrepancy space of the manifest, or that the hazardous waste was rejected as noted in the manifest discrepancy space.</p> <p>Verify that, if a facility receives a hazardous waste shipment accompanied by a manifest, the owner, operator or his agent:</p> <ul style="list-style-type: none"> <li>– signs and dates each copy of the manifest</li> <li>– notes any discrepancies on each copy of the manifest</li> <li>– immediately gives the transporter at least one copy of the manifest</li> <li>– within 30 days of delivery, sends a copy of the manifest to the generator</li> <li>– retains at the facility a copy of each manifest for at least 3 yr from the date of delivery</li> <li>– beginning on 30 June 2018, sends the top copy (Page 1) of any paper manifest and any paper continuation sheet to the e-Manifest system for purposes of data entry and processing, or in lieu of submitting the paper copy to EPA, the owner or operator transmits to the EPA system an image file of Page 1 of the manifest and any continuation sheet, or both a data file and image file corresponding to Page 1 of the manifest and any continuation sheet, within 30 days of the date of delivery. Submissions of copies to the e-Manifest system shall be made at the mailing address or electronic mail/submission address specified at the e-Manifest program website's directory of services.</li> <li>– beginning on 30 June 2021, meet the requirement to submit the top copy (Page 1) of the paper manifest and any paper continuation sheet to the e-Manifest system for purposes of data entry and processing by the owner or operator transmitting to the EPA system an image file of Page 1 of the manifest and any continuation sheet, or by transmitting to the EPA system both a data file and the</li> </ul>

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	<p>image file corresponding to Page 1 of the manifest and any continuation sheet, within 30 days of the date of delivery.</p> <p>(NOTE: Beginning on 30 June 2021, EPA will not accept mailed paper manifests from facilities for processing in e-Manifest.)</p> <p>(NOTE: Any data or image files transmitted to EPA must be submitted in data file and image file formats that are acceptable to EPA and that are supported by EPA's electronic reporting requirements and by the electronic manifest system.)</p> <p>Verify that the owner or operator of a facility receiving hazardous waste subject to 40 CFR 262, subpart H from a foreign source:</p> <ul style="list-style-type: none"> <li>– additionally lists the relevant consent number from consent documentation supplied by EPA to the facility for each waste listed on the manifest, matched to the relevant list number for the waste from block 9b, using a Continuation Sheet(s) (EPA Form 8700-22A) if additional space is needed</li> <li>– sends a copy of the manifest within 30 days of delivery to EPA using the addresses listed in 40 CFR 262.82(e) until the facility can submit such a copy to the e-Manifest system.</li> </ul> <p>Verify that, if a facility receives, from a rail or water (bulk shipment) transporter, hazardous waste which is accompanied by a shipping paper containing all the information required on the manifest (excluding the EPA identification numbers, generator's certification, and signatures), the owner or operator, or his agent:</p> <ul style="list-style-type: none"> <li>– signs and dates each copy of the manifest or shipping paper (if the manifest has not been received) to certify that the hazardous waste covered by the manifest or shipping paper was received</li> <li>– notes any significant discrepancies in the manifest or shipping paper (if the manifest has not been received) on each copy of the manifest or shipping paper</li> <li>– immediately gives the rail or water (bulk shipment) transporter at least one copy of the manifest or shipping paper (if the manifest has not been received)</li> <li>– within 30 days after the delivery, sends a copy of the signed and dated manifest or a signed and dated copy of the shipping paper (if the manifest has not been received within 30 days after delivery) to the generator</li> <li>– retains at the facility a copy of the manifest and shipping paper (if signed in lieu of the manifest at the time of delivery) for at least 3 yr from the date of delivery.</li> </ul> <p>(NOTE: Whenever a shipment of hazardous waste is initiated from a facility, the owner or operator of that facility must comply with the requirements of 40 CFR 262.)</p> <p>(NOTE: The provisions of 40 CFR 262.15, 262.16, and 262.17 are applicable to the on-site accumulation of hazardous wastes by generators. Therefore, the provisions of 40 CFR 262.15, 262.16, and 262.17 only apply to owners or operators who are shipping hazardous waste which they generated at that facility or operating as a LQG consolidating hazardous waste from VSQGs.)</p>

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Verify that, within three (3) working days of the receipt of a shipment subject to 40 CFR 262, subpart H, the owner or operator of a facility provides a copy of the movement document bearing all required signatures to:

- the foreign exporter
- to the competent authorities of the countries of export and transit that control the shipment as an export and transit of hazardous waste respectively
- to EPA electronically using EPA's Waste Import Export Tracking System (WIETS), or its successor system on or after the electronic import-export reporting compliance date.

Verify that the original copy of the movement document is maintained at the facility for at least 3 yr from the date of signature.

(NOTE: The owner or operator of a facility may satisfy this recordkeeping requirement by retaining electronically submitted documents in the facility's account on EPA's WIETS, or its successor system, provided that copies are readily available for viewing and production if requested by any EPA or authorized state inspector. No owner or operator of a facility may be held liable for the inability to produce the documents for inspection under this section if the owner or operator of a facility can demonstrate that the inability to produce the document is due exclusively to technical difficulty with EPA's WIETS, or its successor system, for which the owner or operator of a facility bears no responsibility.)

(NOTE: A facility must determine whether the consignment state for a shipment regulates any additional wastes (beyond those regulated Federally) as hazardous wastes under its state hazardous waste program. Facilities must also determine whether the consignment state or generator state requires the facility to submit any copies of the manifest to these states.)

(NOTE: Electronic manifests that are obtained, completed, and transmitted in accordance with EPA requirements and used in lieu of the paper manifest form are the legal equivalent of paper manifest forms bearing handwritten signatures, and satisfy for all purposes any requirement in these regulations to obtain, complete, sign, provide, use, or retain a manifest.)

(NOTE: Any requirement for the owner or operator of a facility to sign a manifest or manifest certification by hand, or to obtain a handwritten signature, is satisfied by signing with or obtaining a valid and enforceable electronic signature within the meaning of 40 CFR 262.25.)

(NOTE: Any requirement in these regulations to give, provide, send, forward, or to return to another person a copy of the manifest is satisfied when a copy of an electronic manifest is transmitted to the other person.)

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<p><b>HW.145.10.US.</b> TSDFs receiving hazardous waste from a foreign source must notify the Regional Administrator (40 CFR 264.12(a) and 265.12(a)) [Revised April 2010; Revised January 2017].</p>	<p>(NOTE: Any requirement in these regulations for a manifest to accompany a hazardous waste shipment is satisfied when a copy of an electronic manifest is accessible during transportation and forwarded to the person or persons who are scheduled to receive delivery of the hazardous waste shipment.)</p> <p>(NOTE: Any requirement for an owner or operator to keep or retain a copy of each manifest is satisfied by the retention of the facility's electronic manifest copies in its account on the e-Manifest system, provided that such copies are readily available for viewing and production if requested by any EPA or authorized state inspector. No owner or operator may be held liable for the inability to produce an electronic manifest for inspection if the owner or operator can demonstrate that the inability to produce the electronic manifest is due exclusively to a technical difficulty with the EPA system for which the owner or operator bears no responsibility.)</p> <p>(NOTE: After facilities have certified to the receipt of hazardous wastes by signing Item 20 of the manifest, any post-receipt data corrections may be submitted at any time by any interested person (<i>e.g.</i>, waste handler) shown on the manifest.)</p> <p>Verify that, if a facility receives hazardous waste that is accompanied by a paper replacement manifest for a manifest that was originated electronically, the following procedures are followed when the hazardous waste is delivered by the by the final transporter:</p> <ul style="list-style-type: none"> <li>– upon delivery of the hazardous waste to the designated facility, the owner or operator signs and dates each copy of the paper replacement manifest by hand in Item 20 and note any discrepancies in Item 18 of the replacement manifest</li> <li>– the owner or operator of the facility gives back to the final transporter one copy of the paper replacement manifest</li> <li>– within 30 days of delivery of the hazardous waste to the designated facility, the owner or operator of the facility sends one signed and dated copy of the paper replacement manifest to the generator, and send an additional signed and dated copy of the paper replacement manifest to the EPA e-Manifest system</li> <li>– the owner or operator of the facility retains at the facility one copy of the paper replacement manifest for at least 3 yr from the date of delivery.</li> </ul> <p>Verify that the owner or operator of a facility that is arranging or has arranged to receive hazardous waste subject to the requirements for transboundary movement (40 CFR 262, subpart H) from a foreign source submits the following required notices:</p> <ul style="list-style-type: none"> <li>– for imports where the competent authority of the country of export does not require the foreign exporter to submit to it a notification proposing export and obtain consent from EPA and the competent authorities for the countries of transit, the owner or operator of the facility, if acting as the importer, provides notification of the proposed transboundary movement in English to EPA using the allowable methods listed in 40 CFR 262.84(b)(1) at least 60 days before the first shipment is expected to depart the country of export (NOTE: The</li> </ul>

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	<p>notification may cover up to one year of shipments of wastes having similar physical and chemical characteristics, the same United Nations classification, the same RCRA waste codes and OECD waste codes, and being sent from the same foreign exporter)</p> <ul style="list-style-type: none"> <li>– a copy of the movement document bearing all required signatures within 3 working days of receipt of the shipment to the foreign exporter to: <ul style="list-style-type: none"> <li>– the competent authorities of the countries of export and transit that control the shipment as an export and transit shipment of hazardous waste respectively</li> <li>– EPA electronically using EPA's Waste Import Export Tracking System (WIETS), or its successor system or after the electronic import-export reporting compliance date.</li> </ul> </li> </ul> <p>Verify that the original of the signed movement document is maintained at the facility for at least 3 yr.</p> <p>(NOTE: The owner or operator of a facility may satisfy this recordkeeping requirement by retaining electronically submitted documents in the facility's account on EPA's WIETS, or its successor system, provided that copies are readily available for viewing and production if requested by any EPA or authorized state inspector. No owner or operator of a facility may be held liable for the inability to produce the documents for inspection under this section if the owner or operator of a facility can demonstrate that the inability to produce the document is due exclusively to technical difficulty with EPA's WIETS, or its successor system for which the owner or operator of a facility bears no responsibility.)</p> <p>Verify that, if the facility has physical control of the waste and it must be sent to an alternate facility or returned to the country of export, the owner or operator of the facility informs EPA, using the allowable methods listed in 40 CFR 262.84(b)(1) of the need to return or arrange alternate management of the shipment.</p> <p>Verify that the owner/operator sends copies of the signed and dated confirmation of recovery or disposal, as soon as possible, but no later than thirty days after completing recovery or disposal on the waste in the shipment and no later than one calendar year following receipt of the waste, to the foreign exporter, to the competent authority of the country of export that controls the shipment as an export of hazardous waste, and for shipments recycled or disposed of on or after the electronic import-export reporting compliance date, to EPA electronically using EPA's WIETS, or its successor system.</p> <p>Verify that, if the facility performed any of recovery operations R12, R13, or RC16, or disposal operations D13 through D15, or DC17, it promptly sends copies of the confirmation of recovery or disposal that it receives from the final recovery or disposal facility within 1 yr of shipment delivery to the final recovery or disposal facility that performed one of recovery operations R1 through R11, or RC16, or one of disposal operations D1 through D12, or DC15 to DC16, to the competent authority of the country of export that controls the shipment as an export of hazardous waste, and on</p>

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<p><b>HW.145.11.US.</b> TSDFs that receive waste from offsite sources are required to attempt to resolve manifest discrepancies when they occur (40 CFR 264.72 and 265.72) [Revised April 2005, Revised July 2010].</p>	<p>or after the electronic import-export reporting compliance date, to EPA electronically using EPA's WIETS, or its successor system.</p> <p>(NOTE: Manifest discrepancies are defined as:</p> <ul style="list-style-type: none"> <li>– significant differences between the quantity or type of hazardous waste designated on the manifest or shipping paper, and the quantity and type of hazardous waste a facility actually receives</li> <li>– rejected wastes, which may be a full or partial shipment of hazardous waste that the TSDF cannot accept</li> <li>– container residues, which are residues that exceed the quantity limits for “empty” containers.</li> </ul> <p>Significant differences in quantity are:</p> <ul style="list-style-type: none"> <li>– for bulk waste, variations greater than 10 percent in weight</li> <li>– for batch waste, any variation in piece count, such as a discrepancy of one drum in a truckload.</li> </ul> <p>Significant differences in type are obvious differences which can be discovered by inspection or waste analysis, such as waste solvent substituted for waste acid, or toxic constituents not reported on the manifest or shipping paper.)</p> <p>Verify that, upon discovering a significant difference in quantity or type, the owner or operator attempts to reconcile the discrepancy with the waste generator or transporter (e.g., with telephone conversations).</p> <p>Verify that, if the discrepancy is not resolved within 15 days after receiving the waste, the owner or operator immediately submits to the Regional Administrator a letter describing the discrepancy and attempts to reconcile it, and a copy of the manifest or shipping paper at issue.</p> <p>Verify that, upon rejecting waste or identifying a container residue that exceeds the quantity limits for “empty” containers, the TSDF consults with the generator prior to forwarding the waste to another facility that can manage the waste.</p> <p>(NOTE: If it is impossible to locate an alternative facility that can receive the waste, the facility may return the rejected waste or residue to the generator.)</p> <p>Verify that the TSDF sends the waste to the alternative facility or to the generator within 60 days of the rejection or the container residue identification.</p> <p>Verify that, while the TSDF is making arrangements for forwarding rejected wastes or residues to another TSDF, it ensures that either the delivering transporter retains custody of the waste, or, the facility provides for secure, temporary custody of the waste, pending delivery of the waste to the first transporter designated on the prepared manifest.</p> <p>Verify that, for full or partial load rejections and residues that are to be sent off-site to an alternate facility, the TSDF prepares a new manifest in accordance with 40 CFR 262.20(a) and the following instructions:</p>

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	<ul style="list-style-type: none"> <li>– write the generator's U.S. EPA ID number in Item 1 of the new manifest</li> <li>– write the generator's name and mailing address in Item 5 of the new manifest and if the mailing address is different from the generator's site address, then write the generator's site address in the designated space for Item 5</li> <li>– write the name of the alternate designated facility and the facility's U.S. EPA ID number in the designated facility block (Item 8) of the new manifest</li> <li>– copy the manifest tracking number found in Item 4 of the old manifest to the Special Handling and Additional Information Block of the new manifest, and indicate that the shipment is a residue or rejected waste from the previous shipment</li> <li>– copy the manifest tracking number found in Item 4 of the new manifest to the manifest reference number line in the Discrepancy Block of the old manifest (Item 18a)</li> <li>– write the DOT description for the rejected load or the residue in Item 9 (U.S. DOT Description) of the new manifest and write the container types, quantity, and volume(s) of waste</li> <li>– sign the Generator's/Offerrer's Certification to certify, as the offeror of the shipment, that the waste has been properly packaged, marked and labeled and is in proper condition for transportation, and mail a signed copy of the manifest to the generator identified in Item 5 of the new manifest.</li> </ul> <p>(NOTE: For full load rejections that are made while the transporter remains present at the facility, the facility may forward the rejected shipment to the alternate facility by completing Item 18b of the original manifest and supplying the information on the next destination facility in the Alternate Facility space. The facility must retain a copy of this manifest for its records, and then give the remaining copies of the manifest to the transporter to accompany the shipment. If the original manifest is not used, then the facility must use a new manifest.)</p> <p>Verify that, for rejected wastes and residues that must be sent back to the generator, the TSDF prepares a new manifest in accordance with 40 CFR 262.20(a) and the following instructions:</p> <ul style="list-style-type: none"> <li>– write the facility's U.S. EPA ID number in Item 1 of the new Manifest</li> <li>– write the facility's name and mailing address in Item 5 of the new manifest</li> <li>– if the mailing address is different from the facility's site address, then write the facility's site address in the designated space for Item 5</li> <li>– write the name of the initial generator and the generator's U.S. EPA ID number in the designated facility block (Item 8) of the new manifest.</li> <li>– copy the manifest tracking number found in Item 4 of the old manifest to the Special Handling and Additional Information Block of the new manifest, and indicate that the shipment is a residue or rejected waste from the previous shipment.</li> </ul>

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<p><b>HW.145.12.US.</b> Reports must be submitted to the USEPA when a TSDF accepts an unmanifested waste shipment (40 CFR 264.76 and 265.76) [Revised April 2005].</p>	<ul style="list-style-type: none"> <li>– copy the manifest tracking number found in Item 4 of the new manifest to the manifest reference number line in the Discrepancy Block of the old manifest (Item 18a).</li> <li>– write the DOT description for the rejected load or the residue in Item 9 (U.S. DOT Description) of the new manifest and write the container types, quantity, and volume(s) of waste.</li> <li>– sign the Generator's/Offoror's Certification to certify, as offeror of the shipment, that the waste has been properly packaged, marked and labeled and is in proper condition for transportation.</li> </ul> <p>(NOTE: For full load rejections that are made while the transporter remains at the facility, the facility may return the shipment to the generator with the original manifest by completing Item 18a and 18b of the manifest and supplying the generator's information in the Alternate Facility space. The facility must retain a copy for its records and then give the remaining copies of the manifest to the transporter to accompany the shipment. If the original manifest is not used, then the facility must use a new manifest.)</p> <p>(NOTE: For full or partial load rejections and container residues contained in non-empty containers that are returned to the generator, the facility must comply with the exception reporting requirements in 40 CFR 262.42(a) [see checklist item HW.55.5.US])</p> <p>(NOTE: If a facility rejects a waste or identifies a container residue that exceeds the quantity limits for “empty” containers after it has signed, dated, and returned a copy of the manifest to the delivering transporter or to the generator, the facility must amend its copy of the manifest to indicate the rejected wastes or residues in the discrepancy space of the amended manifest. The facility must also copy the manifest tracking number from Item 4 of the new manifest to the Discrepancy space of the amended manifest, and must re-sign and date the manifest to certify to the information as amended. The facility must retain the amended manifest for at least 3 yr from the date of amendment, and must within 30 days, send a copy of the amended manifest to the transporter and generator that received copies prior to their being amended.)</p> <p>Verify that, if a facility accepts for treatment, storage, or disposal any hazardous waste from an off-site source without an accompanying manifest, or without an accompanying shipping paper, and if the waste is not excluded from the manifest requirement, the owner or operator prepared and submitted a letter to the Regional Administrator within 15 days after receiving the waste.</p> <p>Verify that the unmanifested waste report contains the following information:</p> <ul style="list-style-type: none"> <li>– the EPA identification number, name and address of the facility</li> <li>– the date the facility received the waste</li> <li>– the EPA identification number, name and address of the generator and the transporter, if available</li> </ul>

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<p><b>HW.145.13.US.</b> TSDFs that initiate a shipment of hazardous waste to a different, offsite TSDF must meet certain Generator standards (40 CFR 262.10(f)).</p> <p><b>HW.145.14.US.</b> Records must be maintained with job descriptions and descriptions of training for all TSDF staff that manages hazardous waste (40 CFR 264.16(d)(1), 264.16(d)(2), 265.16(d)(1) and 265.16(d)(2)) <b>[Added October 2003]</b>.</p>	<ul style="list-style-type: none"> <li>– a description and the quantity of each unmanifested hazardous waste the facility received</li> <li>– the method of treatment, storage, or disposal for each hazardous waste</li> <li>– the certification signed by the owner or operator of the facility or his authorized representative</li> <li>– a brief explanation of why the waste was unmanifested, if known.</li> </ul> <p>Verify that the TSDF complies with the Generator standards in 40 CFR 262.12(c), and 262.40 through 262.42 (see checklist items HW.55.3.US through HW.55.6.US), if initiating shipments of hazardous waste to a different, offsite TSDF.</p> <p>Verify that the owner or operator maintains the following documents and records at the facility:</p> <ul style="list-style-type: none"> <li>– the job title for each position at the facility related to hazardous waste management, and the name of the employee filling each job</li> <li>– a written job description for each listed job title.</li> </ul> <p>(NOTE: This description may be consistent in its degree of specificity with descriptions for other similar positions in the same company location or bargaining unit, but must include the requisite skill, education, or other qualifications, and duties of employees assigned to each position.)</p>



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<p><b>ALL TSDFs</b></p> <p><b>HW.150.</b> <b>Surface Impoundments</b></p> <p><b>HW.150.1.US.</b> TSDFs must follow specific restrictions concerning the types of wastes placed in any surface impoundment (40 CFR 264.229, 264.230, 265.229, and 265.230).</p> <p><b>HW.150.2.US.</b> When surface impoundments use floating membrane covers, the covers are required to meet specific</p>	<p>(NOTE: In relation to the requirements for air emissions standard, see the definition of Exempted Hazardous Waste Management Unit.)</p> <p>Verify that incompatible wastes or incompatible wastes and materials are not placed in the same surface impoundment unless precautions are taken to prevent:</p> <ul style="list-style-type: none"> <li>– generation of extreme heat or pressure, fire or explosions, or violent reactions</li> <li>– production of uncontrolled toxic mists, fumes, dusts, or gases in quantities that would threaten human health or the environment</li> <li>– production of uncontrolled flammable fumes or gases in quantities that would pose a risk of fire or explosion</li> <li>– damage to structural integrity of the device or TSDF</li> <li>– threats to human health or the environment through other means.</li> </ul> <p>Verify that ignitable or reactive wastes are not placed in surface impoundments unless the wastes and impoundments satisfy the restrictions in 40 CFR 268 (see checklist items HW.130.1.US through HW.130.6.US) and they are treated, rendered, or mixed so that they are no longer ignitable or reactive.</p> <p>Verify that one of the following conditions is also met for the surface impoundment:</p> <ul style="list-style-type: none"> <li>– precautions are taken so that the following are prevented: <ul style="list-style-type: none"> <li>– generation of extreme heat or pressure, fire or explosions, or violent reactions</li> <li>– production of uncontrolled toxic mists, fumes, dusts, or gases in quantities that would threaten human health or the environment</li> <li>– production of uncontrolled flammable fumes or gases in quantities that would pose a risk of fire or explosion</li> <li>– damage to structural integrity of the device or TSDF</li> <li>– threats to human health or the environment through other means</li> </ul> </li> <li>– the waste is managed so that it is protected from any materials or conditions which may cause it to ignite or react</li> <li>– the surface impoundment is used only for emergencies.</li> </ul> <p>(NOTE: These requirements do not apply to a surface impoundment in which an owner or operator has stopped adding hazardous waste (except to implement an approved closure plan) and the owner or operator has begun implementing or</p>

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<p>design standards (40 CFR 264.1085(a) through 264.1085(c)(2), 265.1086(a) through 265.1086(c)(ii))  <b>[Revised December 1997].</b></p>	<p>completed closure following an approved closure plan (40 CFR 264.1080(b)(4) and 265.1080(b)(4)).)</p> <p>(NOTE: These requirements do not apply to surface impoundments in which all the hazardous waste entering the surface impoundment meets one of the following (40 CFR 264.1082(c) and 265.1083(c).):</p> <ul style="list-style-type: none"> <li>– the average VO concentration of the hazardous waste at the point of waste origination is less than 500 ppmw</li> <li>– the organic content of the hazardous waste has been reduced by an organic destruction or removal process</li> <li>– the waste meets the numerical concentration limits for organic hazardous constituents as specified in 40 CFR 268.40 or has been treated by the treatment technology established by the USEPA for the waste in 268.42(a) or an equivalent method.)</li> </ul> <p>Verify that the surface impoundment has installed and operates one of the following:</p> <ul style="list-style-type: none"> <li>– a floating membrane cover</li> <li>– a cover that is vented through a closed-vent system to an approved control device.</li> </ul> <p>Verify that the floating membrane cover is designed and operated to meet the following:</p> <ul style="list-style-type: none"> <li>– it is designed to float on the liquid surface during normal operations and form a continuous barrier over the entire surface area of the liquid</li> <li>– it is fabricated from a synthetic membrane materials that is either high density polyethylene with a thickness no less than 2.5 mm or a material or a composite of different materials determined to have both organic permeability properties that are equivalent to the polyethylene and chemical and physical properties that maintain the material integrity for the intended service life of the material</li> <li>– it is installed so that there are no visible cracks, holes, gaps or other open spaces between cover section seams or between the interface of the cover edge and its foundation mountings</li> <li>– all openings, except for emergency cover drains, are equipped with a closure device designed to operate so that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the cover opening and the closure device</li> <li>– the emergency cover drains are equipped with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening or a flexible fabric sleeve seal</li> <li>– the closure device is made of suitable materials to minimize the exposure of the hazardous waste to the atmosphere and maintain the integrity of the closure devices through their intended service life.</li> </ul>

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<p><b>HW.150.3.US.</b> When surface impoundments use a cover that is vented through a closed-vent system to a control device, the cover is required to meet specific design standards (40 CFR 264.1085(d)(1), 264.1085(d)(2), 265.1086(d)(1), and 265.1086(d)(2)) <b>[Added December 1996].</b></p>	<p>Verify that, whenever hazardous waste is in the surface impoundment, the floating membrane cover floats on the liquid and each closure device is secured in the closed position except for the following:</p> <ul style="list-style-type: none"> <li>– to provide access to the surface impoundment for performing routine maintenance, inspection, or other activities for normal operations</li> <li>– to remove accumulated sludge or other residues from the bottom of the surface impoundments</li> <li>– when necessary to avoid an unsafe condition.</li> </ul> <p>(NOTE: In relation to the requirements for air emissions standard, see the definition of Exempted Hazardous Waste Management Unit.)</p> <p>(NOTE: These requirements do not apply to a surface impoundment in which an owner or operator has stopped adding hazardous waste (except to implement an approved closure plan) and the owner or operator has begun implementing or completed closure following an approved closure plan (40 CFR 264.1080(b)(4) and 265.1080(b)(4)).)</p> <p>(NOTE: These requirements do not apply to surface impoundments in which all the hazardous waste entering the surface impoundment meets one of the following (40 CFR 264.1082(c) and 265.1083(c):</p> <ul style="list-style-type: none"> <li>– the average VO concentration of the hazardous waste at the point of waste origination is less than 500 ppmw</li> <li>– the organic content of the hazardous waste has been reduced by an organic destruction or removal process</li> <li>– the waste meets the numerical concentration limits for organic hazardous constituents as specified in 40 CFR 268.40 or has been treated by the treatment technology established by the USEPA for the waste in 268.42(a) or an equivalent method.)</li> </ul> <p>Verify that the cover is vented directly through a closed vent system to a control device as follows:</p> <ul style="list-style-type: none"> <li>– the cover and the closure devices form a continuous barrier over the entire surface area of the liquid in the surface impoundment</li> <li>– each opening not vented to the control device is equipped with a closure device</li> <li>– when the pressure in the vapor headspace underneath the cover is less than atmospheric pressure when the control device is operation, closure devices are designed to operate so that when the closure device is secure in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the cover opening and the closure device</li> <li>– when the pressure in the vapor headspace is equal to or greater than atmospheric pressure when the control device is operating, the closure device is designed to operate with no detectable organic emissions</li> </ul>

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<p><b>HW.150.4.US.</b> Closed vent systems and control devices are required to be designed according to 40 CFR 264.1087 or 265.1088 (40 CFR 264.1085(d)(1)(iv), 264.1087, 265.1086(d)(1)(iv), 265.1088) [Added December 1996].</p>	<ul style="list-style-type: none"> <li>– the cover and its closure devices are made of suitable materials to minimize exposure of the hazardous waste to the atmosphere, to the extent practical, and maintains the integrity of the cover and closure devices throughout their intended life service.</li> </ul> <p>Verify that, when a hazardous waste is in the surface impoundment, the cover is installed with each closure device secured in the closed position, and the vapor underneath the cover vented to the control devices except as follows:</p> <ul style="list-style-type: none"> <li>– venting to the control device is not done and opening of the closure devices or removal is allowed in order to provide access to the surface impoundment for performing routine inspection, maintenance, or other activities needed for normal operations</li> <li>– venting to the control device is not done and opening of the closure devices or removal is allowed to remove accumulated sludge or other residues from the bottom of the surface impoundment</li> <li>– opening of safety devices to avoid an unsafe condition.</li> </ul> <p>(NOTE: In relation to the requirements for air emissions standard, see the definition of Exempted Hazardous Waste Management Unit.)</p> <p>(NOTE: These requirements do not apply to a surface impoundment in which an owner or operator has stopped adding hazardous waste (except to implement an approved closure plan) and the owner or operator has begun implementing or completed closure following an approved closure plan (40 CFR 264.1080(b)(4) and 265.1080(b)(4)).)</p> <p>(NOTE: These requirements do not apply to surface impoundments in which all the hazardous waste entering the surface impoundment meets one of the following (40 CFR 264.1082(c) and 265.1083(c)):</p> <ul style="list-style-type: none"> <li>– the average VO concentration of the hazardous waste at the point of waste origination is less than 500 ppmw</li> <li>– the organic content of the hazardous waste has been reduced by an organic destruction or removal process</li> <li>– the waste meets the numerical concentration limits for organic hazardous constituents as specified in 40 CFR 268.40 or has been treated by the treatment technology established by the USEPA for the waste in 268.42(a) or an equivalent method.)</li> </ul> <p>Verify that closed vent systems:</p> <ul style="list-style-type: none"> <li>– route the gases, vapors, and fumes emitted from the hazardous waste to a control device</li> <li>– are designed according to 264.1033(k) or 265.1033(j) as appropriate</li> <li>– are equipped with one of the following when the system includes bypass devices (except for low leg drains, high point bleeds, analyzer vents, open-</li> </ul>

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	<p>ended valves or lines, spring-loaded pressure relief valves, and other fittings used for safety purposes) that could be used to divert the gas or vapor stream to the atmosphere:</p> <ul style="list-style-type: none"> <li>– a flow indicator at the inlet to the bypass device that indicates whether gas or vapor flow is present in the bypass device</li> <li>– a seal or locking device placed on the mechanism by which the bypass device position is controlled when the bypass device is in the closed position so that the bypass device cannot be opened without breaking the seal or removing the lock.</li> </ul> <p>Verify that, if a control device is used, it is one of the following:</p> <ul style="list-style-type: none"> <li>– a control device designed and operated to reduce the total organic content of the inlet vapor stream vented to the control device by at least 95 percent weight</li> <li>– an enclosed combustion device (i.e., vapor incinerator, boiler, or process heater), designed and operated to reduce the organic emissions vented to it by 95 weight percent or greater, to achieve a total organic compound concentration of 20 ppmv, expressed as the sum of the actual compounds, not carbon equivalents, on a dry basis corrected to 3 percent oxygen, or to provide a minimum residence time of 0.50 s at a minimum temperature of 760°C [1400 °F]</li> <li>– a flare that: <ul style="list-style-type: none"> <li>– is designed and operated with no visible emissions except for periods not in excess of 5 min during any 2 consecutive hours</li> <li>– is operated with a flame present at all times</li> <li>– is used only if the net heating value of the gas being combusted is 11.2 MJ/scm (300 Btu/scf) or greater if the flare is steam assisted or air assisted</li> <li>– if nonassisted, the net heating value of the gas being combusted is 7.45 MJ/scm (200 Btu/scf) or greater</li> <li>– if nonassisted or steam assisted, have an exit velocity less than 18.3 m/s (60 ft/s) except when the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1000 Btu/scf) and the exit velocity is equal to or greater than 18.3 m/s (60 ft/s) but less than 122 m/s (400 ft/s).</li> </ul> </li> </ul> <p>(NOTE: These specifications do not apply during periods of planned routine maintenance. Nor do they apply during control device system malfunctions.)</p> <p>(NOTE: The performance of each flare will be demonstrated in accordance with 40 CFR 265.1033(e).)</p> <p>Verify that, when using a closed vent system and control device, periods of planned routine maintenance of the control device during which specifications will be exceeded do not exceed 240 h/yr.</p> <p>Verify that malfunctions are corrected as soon as is practical.</p>

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	<p>Verify that closed vent systems are operated so that gases, vapors, and/or fumes are not actively vented to the control device during periods of planned maintenance or control device system malfunctions.</p> <p>Verify that, when a carbon adsorption system is used, all activated carbon in the control device is replaced on a regular basis after start-up.</p> <p>Verify that carbon removed from control devices that is a hazardous waste is managed in one of the following manners, regardless of the average VOC concentration of the carbon:</p> <ul style="list-style-type: none"> <li>– regenerated or reactivated in a thermal treatment unit that meets one of the following: <ul style="list-style-type: none"> <li>– the unit has a final permit under 40 CFR 270 which implements the requirements of 40 CFR 264, subpart X</li> <li>– the unit is equipped with and operating air emission controls in accordance with applicable requirements</li> </ul> </li> <li>– incinerated in a hazardous waste incinerator for which the operator either: <ul style="list-style-type: none"> <li>– has a final permit under 40 CFR 270 which implement the requirements of 40 CFR 264, subpart O</li> <li>– has designed and operates the incinerator in accordance with the interim status required in 40 CFR 265, subpart O</li> </ul> </li> <li>– burned in a boiler or industrial furnace for which the operator either: <ul style="list-style-type: none"> <li>– has been issued a final permit under 40 CFR 270 implementing 40 CFR 266</li> <li>– has designed and operates the boiler or industrial furnace in accordance with the interim status requirements of 40 CFR 266, Subpart H.</li> </ul> </li> </ul> <p>Verify that operation and maintenance is done in accordance with 264.1033(j) or 265.10033 (i) if a control device is used other than a thermal vapor incinerator, flare, boiler, process heater, condenser, or carbon adsorption system.</p> <p>Verify that achievement of control device performance requirements is demonstrated by a performance test or design analysis is used for each control device except for the following:</p> <ul style="list-style-type: none"> <li>– a flare</li> <li>– a boiler or process heater with a design heat input capacity of 44 MW or greater</li> <li>– a boiler of process heater into which the vent stream is introduced with the primary fuel</li> <li>– a boiler or process heater burning hazardous waste for which a final permit has been issued under 40 CFR 270 and is designed and operated in accordance with the requirements of 40 CFR 266, subpart H</li> </ul>

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<p><b>HW.150.5.US.</b> Surface impoundments are required to have enclosed pipes or other closed systems for the transfer of hazardous waste in certain circumstances (40 CFR 264.1085(e) and 265.1086(e)) <b>[Added December 1996].</b></p>	<p>– a boiler or industrial furnace burning hazardous waste which the owner or operator has designed and operates in accordance with the interim status requirements of 40 CFR 266, subpart H.</p> <p>Verify that carbon adsorption systems demonstrate achievement of performance requirements based on the total quantity of organics vented to the atmosphere from all carbon adsorption equipment that is used for organic adsorption, organic desorptions or carbon regeneration, organic recovery, and carbon disposal.</p> <p>(NOTE: In relation to the requirements for air emissions standard, see the definition of Exempted Hazardous Waste Management Unit.)</p> <p>(NOTE: These requirements do not apply to a surface impoundment in which an owner or operator has stopped adding hazardous waste (except to implement an approved closure plan) and the owner or operator has begun implementing or completed closure following an approved closure plan (40 CFR 264.1080(b)(4) and 265.1080(b)(4)).)</p> <p>(NOTE: These requirements do not apply to surface impoundments in which all the hazardous waste entering the surface impoundment meets one of the following (40 CFR 264.1082(c) and 265.1083(c):</p> <ul style="list-style-type: none"> <li>– the average VO concentration of the hazardous waste at the point of waste origination is less than 500 ppmw</li> <li>– the organic content of the hazardous waste has been reduced by an organic destruction or removal process</li> <li>– the waste meets the numerical concentration limits for organic hazardous constituents as specified in 40 CFR 268.40 or has been treated by the treatment technology established by the USEPA for the waste in 268.42(a) or an equivalent method.)</li> </ul> <p>Verify that transfer of hazardous waste is done using continuous hard piping or another closed system that does not allow exposure of the waste to the atmosphere.</p> <p>(NOTE: In relation to the requirements for air emissions standard, see the definition of Exempted Hazardous Waste Management Unit.)</p>
<p><b>HW.150.6.US.</b> Checklist item deleted <b>[Deleted December 1996].</b></p>	<p>Checklist item deleted.</p>
<p><b>HW.150.7.US.</b> Facilities are required to meet inspection and monitoring requirements and requirements for the repair of defects identified in the inspection and monitoring</p>	<p>(NOTE: These requirements do not apply to a surface impoundment in which an owner or operator has stopped adding hazardous waste (except to implement an approved closure plan) and the owner or operator has begun implementing or completed closure following an approved closure plan (40 CFR 264.1080(b)(4) and 265.1080(b)(4)).)</p>

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<p>process for surface impoundments (40 CFR 264.1085(c)(3), 264.1085(d)(3), 264.1085(f), 264.1085(g), 264.1087(c)(7), 264.1088, 265.1086(c)(3), 265.1086(d)(3), 265.1086(f), 265.1086(g), 265.1088(c)(7), and 265.1089.) <b>[Added December 1996].</b></p>	<p>(NOTE: These requirements do not apply to surface impoundments in which all the hazardous waste entering the surface impoundment meets one of the following (40 CFR 264.1082(c) and 265.1083(c):</p> <ul style="list-style-type: none"> <li>– the average VO concentration of the hazardous waste at the point of waste origination is less than 500 ppmw</li> <li>– the organic content of the hazardous waste has been reduced by an organic destruction or removal process</li> <li>– the waste meets the numerical concentration limits for organic hazardous constituents as specified in 40 CFR 268.40 or has been treated by the treatment technology established by the USEPA for the waste in 268.42(a) or an equivalent method.)</li> </ul> <p>Verify that the facility has a written plan and schedule for performing inspections and monitoring.</p> <p>Verify that, when a floating membrane cover is used, inspection is done as follows:</p> <ul style="list-style-type: none"> <li>– initial visual inspection of the cover and its closure devices to check for defects that could result in air emissions on or before the date that the surface impoundment becomes subject to this section</li> <li>– annual visual inspection of the cover and its closure devices to check for defects that could result in air emissions.</li> </ul> <p>Verify that, when a cover vented to a control device is used, inspection is done as follows:</p> <ul style="list-style-type: none"> <li>– initial visual inspection of the cover and its closure devices to check for defects that could result in air emissions on or before the date that the surface impoundment becomes subject to this section</li> <li>– annual visual inspection of the cover and its closure devices to check for defects that could result in air emissions.</li> </ul> <p>(NOTE: After the initial inspection, subsequent inspection and monitoring may be done at intervals longer than 1 yr when inspecting or monitoring the cover would expose a worker to dangerous, hazardous, or other unsafe conditions as long as there is a written explanation stating the reasons the cover is unsafe to inspect and there is a written plan to inspect the cover.)</p> <p>Verify that, when a defect is identified, the first efforts at repair are made no later than 5 calendar days after detection and repair is completed as soon as possible, but no later than 45 calendar days after detection.</p> <p>(NOTE: Repair may be delayed beyond 45 calendar days if the owner or operator determines that repair requires emptying or temporary removal from service of the surface impoundment and no alternative capacity is available at the site to accept the hazardous waste normally managed in the surface impoundment.)</p>

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	<p>Verify that each required control device has a device to continuously monitor it as follows:</p> <ul style="list-style-type: none"> <li>– a temperature monitoring device equipped with a continuous recorder for a thermal vapor incinerator</li> <li>– a temperature monitoring device equipped with a continuous recorder for a catalytic vapor incinerator</li> <li>– a heat sensing monitor with a continuous recorder for flares</li> <li>– a temperature monitoring device equipped with a continuous recorder to measure a parameter that indicate good combustion operating practices are being used for a boiler or process heater having a design heat input capacity less than 44 MW</li> <li>– for a condenser, one of the following: <ul style="list-style-type: none"> <li>– a monitoring device with a continuous recorder to measure the concentration level of the organic compound in the exhaust vent stream from the condenser</li> <li>– a temperature monitoring device equipped with a continuous recorder capable of monitoring temperature in the exhaust vent stream from the condenser with an accuracy of +/- 1 percent of the temperature being monitored in Celsius or in +/- 0.5 degrees C, whichever is greater</li> </ul> </li> <li>– for a carbon adsorption system such as a fixed bed carbon adsorber that regenerates the carbon bed directly in the control device, one of the following: <ul style="list-style-type: none"> <li>– a monitoring device equipped with a continuous recorder to measure the concentration levels of the organic compounds in the exhaust vent stream from the carbon bed</li> <li>– a monitoring device equipped with a continuous recorder to measure a parameter that indicates the carbon bed is regenerated on a regular, predetermined time cycle.</li> </ul> </li> </ul> <p>Verify that the continuous monitoring devices are inspected at least once each operating day to check control device operation.</p> <p>Verify that closed vents systems designed and operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, are monitored as follows:</p> <ul style="list-style-type: none"> <li>– an initial leak detection monitoring of the closed vent system on or before the date the system become subject to this section of the CFR</li> <li>– visual inspection according to 40 CFR 264.1034(b)/265.1034(b) at least once a year for closed vent system joints, seams, or other connections that are permanently or semi-permanently sealed (e.g., a welded joint between two sections of hard piping or a bolted and gasketed ducting flange)</li> <li>– annually and at times required by the Regional Administrator for all other parts of the system using.</li> </ul>

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<p><b>HW.150.8.US.</b> Facilities are required to meet documentation requirements for surface impoundments (40 CFR 264.1089(a), 264.1089(c), 264.1089(e) through 264.1089(h), 265.1090(a), 265.1090(c), 265.1090(e) through 265.1090(h)) [Revised December 1997].</p>	<p>Verify that closed vent systems designed to operate at no detectable emissions are monitored as follows:</p> <ul style="list-style-type: none"> <li>– annual visual inspection to check for defects that could result in air pollutant emissions</li> <li>– initial inspection on or before the date the system becomes subject to this section of the CFR.</li> </ul> <p>(NOTE: For closed vent systems designed to operate at no detectable emissions, portions of the system designated as unsafe to monitor are exempt from the visual monitoring if:</p> <ul style="list-style-type: none"> <li>– the components are unsafe to monitor because monitoring personnel would be exposed to an immediate danger</li> <li>– a written plan that requires monitoring as practicable during safe to monitor periods is in place and followed.)</li> </ul> <p>Verify that detectable emissions, as indicated by visual inspection or by an instrument reading of greater than 500 ppmv above background, are controlled as soon as practicable but not later than 15 days after the emissions is detected.</p> <p>Verify that a first attempt at repair is made no later than 5 calendar days after the emission is detected.</p> <p>(NOTE: Delay of repair of a closed vent system for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown, or if it is determined that the emissions resulting from the immediate repair would be greater than the fugitive emissions likely to result from delay of repair.)</p> <p>(NOTE: In relation to the requirements for air emissions standard, see the definition of Exempted Hazardous Waste Management Unit.)</p> <p>Verify that the facility records and maintains the following:</p> <ul style="list-style-type: none"> <li>– the surface impoundment identification number (or other unique identification description as selected by the owner/operator</li> <li>– documentation describing the floating membrane cover or cover design, as applicable, that includes information prepared by the owner/operator or provided by the cover manufacturer or vendor describing the cover design, and certification by the owner/operator that the cover meets specifications</li> <li>– a records of each required inspection, including the following information: <ul style="list-style-type: none"> <li>– date inspection was completed</li> <li>– for each defect, the location, descriptions the defect, date of detection, and corrective action taken.</li> </ul> </li> </ul>

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	<p>Verify that the following documentation is kept for closed vent systems and control devices:</p> <ul style="list-style-type: none"> <li>– certification that the control device is designed to operate at the necessary performance level when the surface impoundment is or would be operating at capacity or the highest level reasonably expected to occur</li> <li>– design documentation, if design analysis is used</li> <li>– a performance test plan if performance tests are used</li> <li>– description and date of each modification</li> <li>– identification of operating parameters, description of monitoring devices, and diagram of monitoring sensor location or locations</li> <li>– for planned routine maintenance operations where the control device would not meet requirements, the following semiannually: <ul style="list-style-type: none"> <li>– a description of the planned routine maintenance that is anticipated for the next 6-mo period</li> <li>– a description of the planned routine maintenance that was performed during the previous 6-mo period.</li> <li>– the total number of hours that the control device did not meet the requirements of 40 CFR 264.1089(i)(1)/265.1090(i)(1)</li> </ul> </li> <li>– for unexpected malfunctions: <ul style="list-style-type: none"> <li>– the duration, and occurrence of each malfunction</li> <li>– the duration of each period during a malfunction when gases, vapors, or fumes are vented from the waste management unit through the closed-vent system to the control device while the control device is not properly functioning</li> <li>– actions taken during periods of malfunction to restore a malfunctioning control device to its normal or usual manner of operation</li> </ul> </li> <li>– records of the management of carbon removed from a carbon adsorption system.</li> </ul> <p>Verify that all records, except design information records, are kept for a minimum of 3 yr.</p> <p>Verify that design information records are kept in the operating record until the air pollution control equipment is replaced or otherwise no longer in service.</p> <p>Verify that records for exempted facilities are kept as long as the facility is not using air emissions controls.</p> <p>Verify that, for exempted facilities, the following information is kept:</p> <ul style="list-style-type: none"> <li>– the information used for waste determination in the operating log</li> <li>– the identification number of the incinerator, boiler, or industrial furnace in which the hazardous waste is treated.</li> </ul>

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	<p>Verify that, for unsafe to inspect and monitor covers, a record is kept of the identification numbers of the units and the reasons why the cover is unsafe to monitor and a plan and a schedule for inspecting and monitoring each cover.</p> <p>(NOTE: In relation to the requirements for air emissions standard, see the definition of Exempted Hazardous Waste Management Unit.)</p>

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<p><b>ALL TSDFs</b></p> <p><b>HW.155.</b> <b>Waste Piles</b></p> <p><b>HW.155.1.US.</b> All waste piles containing ignitable or incompatible wastes must follow certain requirements (40 CFR 264.256 and 264.257).</p>	<p>Verify that ignitable wastes are not placed into piles unless the following are met:</p> <ul style="list-style-type: none"> <li>– the waste is treated, rendered, or mixed before or immediately after placement in the pile so that: <ul style="list-style-type: none"> <li>– the waste or mixture no longer meets the definition of ignitable or reactive waste</li> <li>– there is no generation of extreme heat or pressure, fire or explosions, or violent reactions</li> <li>– there is no production of uncontrolled toxic mists, fumes, dusts, or gases in quantities that would threaten human health or the environment</li> <li>– there is no production of uncontrolled flammable fumes or gases in quantities that would pose a risk of fire or explosion</li> <li>– there is no damage to structural integrity of the device or TSDF</li> <li>– there is no threat to human health or the environment through other means</li> </ul> </li> <li>– the waste is managed in such a way that it is protected from any material or conditions that may cause it to ignite or react.</li> </ul> <p>Verify that incompatible wastes are not placed in the same pile and hazardous waste is not piled on the same base where incompatible wastes or materials were previously piled unless the base has been decontaminated and the following are avoided:</p> <ul style="list-style-type: none"> <li>– generation of extreme heat or pressure, fire or explosions, or violent reactions</li> <li>– production of uncontrolled toxic mists, fumes, dusts, or gases in quantities that would threaten human health or the environment</li> <li>– production of uncontrolled flammable fumes or gases in quantities that would pose a risk of fire or explosion</li> <li>– damage to structural integrity of the device or TSDF</li> <li>– threats to human health or the environment through other means.</li> </ul> <p>Verify that piles of hazardous waste that are incompatible with any waste or other material stored nearby in other containers, piles, open tanks, or surface impoundments are separated from the other materials or protected from them by means of a dike, berm, wall, or other device.</p>



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<p><b>ALL TSDFs</b></p> <p><b>HW.160.</b> <b>Land Treatment Units</b></p> <p><b>HW.160.1.US.</b> All land treatment facilities must follow specific guidelines for ignitable or reactive wastes and incompatible wastes (40 CFR 264.281, 264.282, 265.281, and 265.282).</p>	<p>Determine if the land treatment facility handles any ignitable or incompatible waste.</p> <p>Verify that ignitable or reactive waste are not land treated unless:</p> <ul style="list-style-type: none"> <li>– the waste is immediately incorporated into the soil so that the resulting mixture no longer meets the definition of ignitable or reactive waste</li> <li>– either the waste is managed in such a way that it is protected from any materials that may cause it to react or the following are prevented: <ul style="list-style-type: none"> <li>– generation of extreme heat or pressure, fire or explosions, or violent reactions</li> <li>– production of uncontrolled toxic mists, fumes, dusts, or gases in quantities that would threaten human health or the environment</li> <li>– production of uncontrolled flammable fumes or gases in quantities that would pose a risk of fire or explosion</li> <li>– damage to structural integrity of the device or facility</li> <li>– threats to human health or the environment through other means.</li> </ul> </li> </ul>



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<p><b>ALL TSDFs</b></p> <p><b>HW.165. Hazardous Waste Landfills</b></p> <p><b>HW.165.1.US.</b> All hazardous waste landfills are required to have a run-on control system, a runoff management system, and control the wind dispersal of particulate matter (40 CFR 264.301(g) through 264.301(k) and 265.301(f) through 265.301(i)) [<b>Revised February 1995</b>].</p> <p><b>HW.165.2.US.</b> All hazardous waste landfills must have specific information in their required operating records (40 CFR 264.309 and 265.309) [<b>Added April 1998</b>].</p> <p><b>HW.165.3.US.</b> To place ignitable or reactive materials in a hazardous waste landfill, specific requirements must be met (40 CFR 264.17(b), 264.312, 265.17(b), and 265.31) [<b>Added April 1999</b>].</p>	<p>Verify that:</p> <ul style="list-style-type: none"> <li>– the run-on control system has the capacity to prevent flow onto the active portion of the landfill during peak discharge of a 25-yr storm</li> <li>– the runoff management system has an adequate capacity to collect and control water from a 24-h, 25-yr storm and the contents tested to determine correct disposal methodology</li> <li>– collection and holding tanks or basins for run-on and runoff control systems are emptied expeditiously after storms</li> <li>– there is adequate control of wind dispersal, no blowing debris</li> <li>– there is adequate cover of waste material.</li> </ul> <p>(NOTE: For permitted TSDFs, the permit will specify all design and operating practices necessary to ensure compliance.)</p> <p>Verify that there is a map with the exact location and dimensions, including depth of each cell with respect to permanently surveyed benchmarks</p> <p>Verify that the contents of each cell and the approximate location of each hazardous waste type within the cell are recorded.</p> <p>Verify that:</p> <ul style="list-style-type: none"> <li>– both waste and landfill meet all applicable requirements of 40 CFR 268</li> <li>– waste, mixture, or dissolution of materials no longer meets the definition of ignitable or reactive waste</li> <li>– precautions are taken to prevent reactions which: <ul style="list-style-type: none"> <li>– generate extreme heat, pressure, fire, explosions, or violent reactions</li> <li>– produce uncontrolled toxic mists, fumes, dust, or gases at levels dangerous to human health or to the environment</li> <li>– produce uncontrolled flammable fumes or gases at levels high enough to pose a risk of fire or explosion</li> <li>– damage the structural integrity of the facility</li> <li>– through other like means threaten human health or the environment.</li> </ul> </li> </ul>

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<p><b>HW.165.4.US.</b> Incompatible wastes or incompatible wastes and materials must not be placed in the same landfill cell, unless certain precautions are taken (40 CFR 264.17(b), 264.313, 265.17(b), and 265.313) [Added April 1999].</p> <p><b>HW.165.5.US.</b> Bulk or non-containerized liquid waste or waste containing free liquids cannot be placed in landfills after 8 May 1985 (40 CFR 264.314(a) through 264.314(c), 264.314(e), 265.314(a) through 265.314(e), and 265.314(g)) [Added April 1999; Revised July 2005; Revised July 2006; Revised January 2007].</p>	<p>(NOTE: Ignitable wastes may be landfilled without meeting these standards if they are disposed of in such a way that they are protected from any material or conditions which may cause them to ignite. At a minimum, these wastes must be:</p> <ul style="list-style-type: none"> <li>– disposed of in non-leaking containers</li> <li>– carefully handled and placed to avoid heat, sparks, rupture, or any other condition that might cause ignition of the wastes</li> <li>– covered daily with soil or other non-combustible material</li> <li>– NOT disposed of in cells that contain other wastes that may generate heat sufficient to cause ignition of the waste.</li> </ul> <p>This exception does not apply to prohibited wastes, which are listed in a table in subpart D of 40 CFR 268.)</p> <p>Verify that precautions are taken to prevent reactions which:</p> <ul style="list-style-type: none"> <li>– generate extreme heat, pressure, fire, explosions, or violent reactions</li> <li>– produce uncontrolled toxic mists, fumes, dust, or gases at levels dangerous to human health or to the environment</li> <li>– produce uncontrolled flammable fumes or gases at levels high enough to pose a risk of fire or explosion</li> <li>– damage the structural integrity of the facility</li> <li>– through other like means threaten human health or the environment.</li> </ul> <p>Verify that the placement of bulk or non-containerized liquid hazardous waste or hazardous waste containing free liquids (whether or not sorbents have been added) in any landfill is not done.</p> <p>(NOTE: The presence or absence of free liquids in either a containerized or a bulk waste is demonstrated through the following test: Method 9095B (Paint Filter Liquids Test) as described in “Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,” EPA Publication SW-846, as incorporated by reference in 40 CFR 260.11.)</p> <p>(NOTE: Containers holding free liquids may only be placed in a landfill if they meet one of the following standards:</p> <ul style="list-style-type: none"> <li>– all free-standing liquid has been: <ul style="list-style-type: none"> <li>– removed by decanting, or other methods</li> <li>– mixed with sorbent or solidified so that free-standing liquid is no longer observed</li> <li>– otherwise eliminated</li> </ul> </li> <li>– the container is very small, such as an ampule</li> <li>– the container is designed to hold free liquids for use other than storage (for example, a battery or capacitor)</li> <li>– the container is a lab pack as defined in 264.316 or 265.316 (see checklist item HW.165.6.US).)</li> </ul>

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<p><b>HW.165.6.US.</b> Sorbents used to treat free liquids to be disposed of in landfills must be nonbiodegradable (40 CFR 264.314(d)) <b>[Added April 1999; Revised July 2006]</b>.</p>	<p>Verify that the placement of any liquid which is not a hazardous waste in a landfill is prohibited unless the owner or operator of such landfill demonstrates to the Regional Administrator, or the Regional Administrator determines that:</p> <ul style="list-style-type: none"> <li>– the only reasonably available alternative would be to place it in a landfill or unlined surface impoundment, which contains or is reasonably believed to contain hazardous waste</li> <li>– placement in the landfill will not present a risk of contamination of any underground source of drinking water, as defined in 40 CFR 270.2.)</li> </ul> <p>Verify that, the sorbent used is either an approved material, or is determined to be nonbiodegradable under one of the following tests:</p> <ul style="list-style-type: none"> <li>– ASTM Method G21-70 (1984a) Standard Practice for Determining Resistance of Synthetic Polymer Materials to Fungi</li> <li>– ASTM Method G22-76 (1984b) Standard Practice for Determining Resistance of Plastics to Bacteria</li> <li>– OECD Test 301B-CO2 Evolution (Modified Sturm Test).</li> </ul> <p>(NOTE: Approved sorbents include:</p> <ul style="list-style-type: none"> <li>– inorganic minerals, other inorganic materials, and elemental carbon</li> <li>– high molecular weight synthetic polymers, except for polymers derived from biological material or polymers specifically designed to be degradable</li> <li>– mixtures of nonbiodegradable materials.)</li> </ul>
<p><b>HW.165.7.US.</b> Containers must meet certain requirements in order to be placed in a hazardous waste landfill (40 CFR 264.315 and 265.315) <b>[Added April 1999]</b>.</p>	<p>Verify that, unless they are very small (such as ampules), containers are:</p> <ul style="list-style-type: none"> <li>– at least 90 percent full</li> <li>– crushed, shredded, or similarly reduced in volume to the maximum practical extent.</li> </ul>
<p><b>HW.165.8.US.</b> Lab packs are required to meet specific parameters if placed in a landfill (40 CFR 264.316 and 265.316) <b>[Added April 1999]</b>.</p>	<p>Verify that the following are met for lab packs being placed in a landfill:</p> <ul style="list-style-type: none"> <li>– the hazardous waste is packaged in nonleaking inside containers designed and constructed of material that: <ul style="list-style-type: none"> <li>– will not react dangerously with the waste, be decomposed by the waste, or be ignited by the waste</li> <li>– are tightly and securely sealed</li> <li>– are of the size and type specified in the DOT hazardous materials regulations, defined by 49 CFR parts 173, 178, and 179, if such specifications exist for the particular waste</li> </ul> </li> <li>– the outside container used for overpack is:</li> </ul>

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<p><b>HW.165.9.US.</b> When permanently closing any landfill or any cell within a landfill, a final cover must be placed over the landfill or cell (40 CFR 264.310(a) and 265.310(a)) [Added April 1999].</p> <p><b>HW.165.10.US.</b> After final closure of a hazardous waste landfill, certain procedures must be followed (40 CFR 264.310(b) and 265.310(b)) [Added April 1999].</p>	<ul style="list-style-type: none"> <li>– an open head DOT-specification metal shipping container of no more than 416 L (110 gal) capacity</li> <li>– packed full with a combination of inside containers and nonbiodegradable sorbent materials</li> <li>– not packed with incompatible wastes (i.e., wastes that may cause corrosion or decay of containment materials, and/or wastes that may produce heat, pressure, fire, explosion, violent reaction, toxic dusts, mists, fumes, or gases, or flammable fumes or gases).</li> </ul> <p>Verify that the sorbent material is not capable of reacting dangerously with the waste, being decomposed by the waste, or being ignited by the waste.</p> <p>Verify that reactive wastes are treated or rendered nonreactive prior to packaging.</p> <p>Verify that disposal is in compliance with 40 CFR 268.</p> <p>(NOTE: If lab packs are to be incinerated in accordance with 40 CFR 268.42(c)(1), fiber drums may be used in place of metal drums. Fiber drums must meet the DOT specifications in 49 CFR 173.12. The packing procedures for fiber drums are the same as for metal drums.)</p> <p>Verify that final cover is designed and constructed for the long term to:</p> <ul style="list-style-type: none"> <li>– minimize migration of liquids through the closed landfill</li> <li>– function with minimum maintenance</li> <li>– promote drainage and minimize erosion or abrasion of the cover</li> <li>– tolerate settling and subsidence so that the cover's integrity is maintained</li> <li>– have a permeability less than or equal to the permeability of the bottom liner system or natural subsoil present.</li> </ul> <p>Verify that, for a hazardous waste landfill, the owner/operator:</p> <ul style="list-style-type: none"> <li>– complies with all post-closure requirements</li> <li>– maintains the integrity and effectiveness of the final cover</li> <li>– makes repairs to the cap (cover) as necessary to correct the effects of settling, subsidence, erosion, or other disruptive events</li> <li>– maintains and monitors the leak detection system</li> <li>– maintains and monitors the groundwater monitoring system</li> <li>– prevents run-on and runoff from eroding or otherwise damaging the final cover</li> <li>– protects and maintains surveyed benchmarks.</li> </ul>

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<p><b>ALL TSDFs</b></p> <p><b>HW.167.</b>  <b>Hazardous Waste Munitions and Explosives Storage</b></p> <p><b>HW.167.1.US.</b> Hazardous waste munitions and explosives storage units must be designed and operated with containment systems, controls and monitoring (40 CFR 264.1201(a) and 265.1201(a) [Added February 1997; Revised July 2002; Revised April 2003].</p> <p><b>HW.167.2.US.</b> Hazardous waste munitions and explosives stored are require to be stored in either earth covered magazines, aboveground magazines, or outdoor/open storage areas meeting specific requirements (40 CFR 264.1201(b) and</p>	<p>Verify that the containment systems, controls, and monitoring minimize the potential for detonation or other means of release of hazardous waste, hazardous constituents, hazardous decomposition products, or contaminated runoff to the soil, groundwater, surface water, and atmosphere.</p> <p>Verify that the storage units provide a primary barrier that may be a container (including a shell) or a tank, designed to contain the hazardous waste.</p> <p>Verify that wastes stored outdoors are not standing in precipitation.</p> <p>Verify that liquid wastes are provided with a secondary containment system that assures that any released liquids are contained and promptly detected and removed from the waste area, or there are vapor detection systems that assure that any released liquids or vapors are promptly detected and an appropriate response is taken.</p> <p>Verify that there are monitoring and inspection procedures to assure the controls and containment systems are working as designed and that releases are not escaping from the unit.</p> <p>(NOTE: See the Other Environmental Issues section of the U.S. TEAM Guide, heading O6 for the storage and transportation of military waste munitions and explosives.)</p> <p>(NOTE: Depending on explosive hazards, hazardous waste munitions and explosives may also be managed in other types of storage units, including containment buildings (40 CFR 264 or 265, Subpart DD), tanks (40 CFR 264 or 265, subpart J), or containers (40 CFR 264 or 265, subpart I).)</p> <p>Verify that, when used, earth covered magazines meet the following requirements:</p> <ul style="list-style-type: none"> <li>– constructed of waterproofed, reinforced concrete or structural steel arches, and steel doors that are kept closed when not being accessed</li> <li>– designed and constructed: <ul style="list-style-type: none"> <li>– to be of sufficient strength and thickness to support the weight of any explosives or munitions stored and any equipment used in the unit</li> <li>– to provide working space for personnel and equipment in the unit</li> <li>– to withstand movement activities that occur in the unit</li> </ul> </li> </ul>

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<p>265.1201(b) [Added February 1997; Revised April 2003].</p> <p><b>HW.167.3.US.</b> Hazardous waste munitions and explosive storage areas are required to have an SOP that ensures safety, security, and environmental protection (40 CFR 264.1201(c) and 265.1201(c) [Added February 1997; Revised April 2003].</p> <p><b>HW.167.4.US.</b> Hazardous waste munitions and explosives must be managed according to specific parameters (40 CFR 264.1201(d) through 264.1201(f) and 265.1201(d)</p>	<p>– located and designed with walls and earthen covers that direct an explosion in the unit in a safe direction, so as to minimize the propagation of an explosion to adjacent units and to minimize other effects of any explosion.</p> <p>Verify that, when used, aboveground magazines are located and designed to minimize the propagation of an explosion to adjacent units and to minimize other effects of any explosion.</p> <p>Verify that outdoor or open storage areas are located and designed to minimize the propagation of an explosion to adjacent units and to minimize other effects of any explosion.</p> <p>(NOTE: See the Other Environmental Issues section of the U.S. TEAM Guide, heading O6 for the storage and transportation of military waste munitions and explosives.)</p> <p>Verify that the storage area has an SOP specifying procedures to ensure safety, security, and environmental protection.</p> <p>(NOTE: If these procedures serve the same purpose as the security and inspection requirements of 40 CFR 264.14 and 265.14 (see checklist item HW.105.4.US), the preparedness and prevention procedures of 40 CFR 264 and 265, subpart C (see checklist item HW.105.5.US), and the contingency plan and emergency procedure requirements of 40 CFR 264 and 265, subpart D (see checklist items HW.105.9.US, HW.105.10.US, HW.145.3.US, and HW.145.4.US), then these procedures will be used to fulfill those requirements.)</p> <p>(NOTE: See the Other Environmental Issues section of the U.S. TEAM Guide, heading O6 for the storage and transportation of military waste munitions and explosives.)</p> <p>(NOTE: Depending on explosive hazards, hazardous waste munitions and explosives may also be managed in other types of storage units, including containment buildings (40 CFR 264 or 265, Subpart DD), tanks (40 CFR 264 or 265, subpart J), or containers (40 CFR 264 or 265, subpart I).)</p> <p>Verify that hazardous waste munitions and explosives are packaged to ensure safety in handling and storage.</p> <p>Verify that hazardous waste munitions and explosives are inventoried at least annually.</p>

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<p>through 265.1201(f) [Added February 1997; Revised April 2003].</p> <p><b>HW.167.5.US.</b> Hazardous waste munitions and explosive storage areas are required to undergo specific closure procedures (40 CFR 264.1202 and 265.1202 [Added February 1997; Revised July 2002; Revised April 2003].</p>	<p>Verify that hazardous waste munitions and explosives and their storage units are inspected and monitored as necessary to ensure explosive safety and to ensure there is no migration of contaminants outside of the unit.</p> <p>(NOTE: See the Other Environmental Issues section of the U.S. TEAM Guide, heading O6 for the storage and transportation of military waste munitions and explosives.)</p> <p>(NOTE: Depending on explosive hazards, hazardous waste munitions and explosives may also be managed in other types of storage units, including containment buildings (40 CFR 264 or 265, Subpart DD), tanks (40 CFR 264 or 265, subpart J), or containers (40 CFR 264 or 265, subpart I).)</p> <p>Verify that, at the closure of a magazine or unit which stored hazardous waste, all waste residues, contaminated containment system components, contaminated sub soils, and structures and equipment contaminated with waste are removed or decontaminated.</p> <p>(NOTE: Additional requirements for closure and postclosure of nonhazardous waste munitions TSDFs also apply. The closure plan, closure activities, cost estimates for closure, and financial responsibility for the area must meet all of the requirements specified in 40 CFR 264 and 265, subparts G and H (see checklist items HW.145.7.US, HW.145.8.US, HW.170.1.US through HW.170.5.US, and HW.185.12.US.)</p> <p>Verify that if not all contaminated subsoils can be properly removed or decontaminated, postclosure care is performed in accordance with closure and post-closure requirements that apply to landfills (see checklist items HW.165.9.US and HW.165.10.US).</p> <p>(NOTE: See the Other Environmental Issues section of the U.S. TEAM Guide, heading O6 for the storage and transportation of military waste munitions and explosives.)</p> <p>(NOTE: Depending on explosive hazards, hazardous waste munitions and explosives may also be managed in other types of storage units, including containment buildings (40 CFR 264 or 265, Subpart DD), tanks (40 CFR 264 or 265, subpart J), or containers (40 CFR 264 or 265, subpart I).)</p>



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<p><b>ALL TSDFs</b></p> <p><b>HW.170. Closure</b></p> <p><b>HW.170.1.US.</b> TSDFs must comply with certain closure schedules (40 CFR 264.110(a), 264.110(c), 264.113(a) through 264.113(e), 264.114, 265.110(a), 265.110(c), 265.113(a) through 265.113(e), and 265.114) [Revised January 1999; Revised July 2006].</p>	<p>(NOTE: These requirements apply to all hazardous waste management facilities. The Regional Administrator may substitute alternate requirements where it is determined that:</p> <ul style="list-style-type: none"> <li>– the regulated unit is situated among solid waste management units (or areas of concern), a release has occurred, and both the regulated unit and one or more solid waste management units (or areas of concern) are likely to have contributed to the release</li> <li>– it is not necessary to apply the closure requirements because alternative requirements will protect human health and the environment.)</li> </ul> <p>Verify that, within 90 days after receiving the final volume of waste, all hazardous waste has been treated and removed or disposed of onsite in accordance with the closure plan.</p> <p>Verify that partial and final closure activities are completed in accordance with the approved closure plan within 180 days after receiving the final volume of waste.</p> <p>(NOTE: The Regional Administrator may grant variances on the time period.)</p> <p>(NOTE: During partial and final closure periods, all contaminated equipment, structures, and soils must be properly disposed of. By removing any hazardous wastes or constituents during closure, the TSDF becomes a hazardous waste generator and is subject to the requirements of 40 CFR 262.)</p> <p>Verify that an owner or operator of a hazardous waste surface impoundment that is not in compliance with the liner and leachate collection system requirements in 42 U.S.C. 3004(o)(1) and 3005(j)(1) or 42 U.S.C. 3004(o)(2) or (3) or 3005(j) (2), (3), (4) or (13):</p> <ul style="list-style-type: none"> <li>– submits the following with the part B application: <ul style="list-style-type: none"> <li>– a contingent corrective measures plan; and</li> <li>– a plan for removing hazardous wastes in compliance</li> </ul> </li> <li>– removes all hazardous wastes from the unit by removing all hazardous liquids and removing all hazardous sludges to the extent practicable without impairing the integrity of the liner(s), if any</li> <li>– removal of hazardous wastes is completed no later than 90 days after the final receipt of hazardous wastes.</li> </ul> <p>(NOTE: The Regional Administrator may approve an extension to the 90 day deadline if the owner or operator demonstrates that the removal of hazardous wastes</p>

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	<p>will, of necessity, take longer than the allotted period to complete and that an extension will not pose a threat to human health and the environment.)</p> <p>Verify that, if a release that is a statistically significant increase (or decrease in the case of pH) in hazardous constituents over background levels is detected, the owner or operator of the unit:</p> <ul style="list-style-type: none"> <li>– implement corrective measures in accordance with the approved contingent corrective measures plan no later than one year after detection of the release, or approval of the contingent corrective measures plan, whichever is later</li> <li>– receives wastes at the unit following detection of the release only if the approved corrective measures plan includes a demonstration that continued receipt of wastes will not impede corrective action</li> <li>– if required by the Regional Administrator implement corrective measures in less than one year or to cease receipt of wastes until corrective measures have been implemented if necessary to protect human health and the environment.</li> </ul> <p>Verify that, during the period of corrective action, the owner or operator provides annual reports to the Regional Administrator describing the progress of the corrective action program, compiles all ground-water monitoring data, and evaluates the effect of the continued receipt of non-hazardous wastes on the effectiveness of the corrective action.</p> <p>(NOTE: The Regional Administrator may require the owner or operator to commence closure of the unit if the owner or operator fails to implement corrective action measures in accordance with the approved contingent corrective measures plan within one year, or fails to make substantial progress in implementing corrective action and achieving the facility's background levels.)</p> <p>(NOTE: If the owner or operator fails to implement corrective measures or if the Regional Administrator determines that substantial progress has not been made, the Regional Administrator shall:</p> <ul style="list-style-type: none"> <li>– notify the owner or operator in writing that the owner or operator must begin closure in accordance with the deadline and provide a detailed statement of reasons for this determination</li> <li>– provide the owner or operator and the public, through a newspaper notice, the opportunity to submit written comments on the decision no later than 20 days after the date of the notice.</li> </ul> <p>If the Regional Administrator receives no written comments, the decision will become final five days after the close of the comment period. The Regional Administrator will notify the owner or operator that the decision is final, and that a revised closure plan, if necessary, must be submitted within 15 days of the final notice and that closure must begin in accordance with the deadlines. If the Regional Administrator receives written comments on the decision, he shall make a final decision within 30 days after the end of the comment period, and provide the owner or operator in writing and the public through a newspaper notice, a detailed statement of reasons for the final decision. If the Regional Administrator determines</p>

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<p><b>HW.170.2.US.</b> All TSDFs are required to follow certain notification procedures for partial and final closure (40 CFR 264.110(a), 264.110(c), 264.112(d), 265.110(a), 265.110(c) and 265.112(d)) [Revised January 1999].</p> <p><b>HW.170.3.US.</b> Within 60 days of completion of closure of each hazardous waste surface impoundment, waste pile; land treatment, and landfill unit facilities must submit a certification of closure to the Regional Administrator (40 CFR 264.77(b), 264.110(a), 264.110(c), 264.115, 265.77(b), 265.110(a), 265.110(c), and 265.115) [Revised January 1999; Citation Revised January 2005; Revised July 2006].</p>	<p>that substantial progress has not been made, closure must be initiated in accordance with the deadlines.)</p> <p>(NOTE: These requirements apply to all hazardous waste management facilities. The Regional Administrator may substitute alternate requirements where it is determined that:</p> <ul style="list-style-type: none"> <li>– the regulated unit is situated among solid waste management units (or areas of concern), a release has occurred, and both the regulated unit and one or more solid waste management units (or areas of concern) are likely to have contributed to the release</li> <li>– it is not necessary to apply the closure requirements because alternative requirements will protect human health and the environment.)</li> </ul> <p>Verify that TSDFs with surface impoundments, waste piles, land treatment, or landfill units notify the Regional Administrator:</p> <ul style="list-style-type: none"> <li>– 180 days prior to the expected date of beginning closure of the first unit for interim status TSDFs without an approved closure plan</li> <li>– 60 days with an approved closure plan</li> <li>– 45 days prior to the expected date of beginning closure for all permitted TSDFs.</li> </ul> <p>Verify that TSDFs with only tanks, containers, or incinerator units notify the Regional Administrator within 45 days prior to the date of beginning final closure.</p> <p>Verify that, within 60 days of completion of closure of each hazardous waste surface impoundment, waste pile, land treatment, and landfill unit, and within 60 days of the completion of final closure, the owner or operator submits to the Regional Administrator, by registered mail, a certification that the hazardous waste management unit or facility, as applicable, has been closed in accordance with the specifications in the approved closure plan..</p> <p>Verify that the certification is signed by the owner or operator and by a qualified Professional Engineer.</p> <p>Verify that documentation supporting the Professional Engineer's certification is furnished to the Regional Administrator upon request until the Administrator releases the owner or operator from the financial assurance requirements for closure under 40 CFR 264.143(i).</p> <p>(NOTE: These requirements apply to all hazardous waste management facilities. The Regional Administrator may substitute alternate requirements where it is determined that:</p> <ul style="list-style-type: none"> <li>– the regulated unit is situated among solid waste management units (or areas of concern), a release has occurred, and both the regulated unit and one or more</li> </ul>

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<p><b>HW.170.4.US.</b> By the time that certification of closure has been submitted, TSDFs are required to submit a survey plat indicating the location and dimensions of landfill cells in relationship to permanently surveyed landmarks to specific authorities (40 CFR 264.110(b), 264.116, 265.110(b) and 265.116) <b>[Revised January 1999].</b></p> <p><b>HW.170.5.US.</b> Postclosure care of hazardous waste management units must meet specific parameters (40 CFR 264.110(b), 264.117, 264.119, 264.120, 265.110(b), 265.117, 265.119, 265.120) <b>[Revised January 1999; Revised July 2006].</b></p>	<p>solid waste management units (or areas of concern) are likely to have contributed to the release  – it is not necessary to apply the closure requirements because alternative requirements will protect human health and the environment.)</p> <p>Verify that a survey plat was submitted to the local zoning authorities (or the authority with jurisdiction over local land use) and the Regional Administrator no later than the submission of the certification of closure.</p> <p>Verify that a professional land surveyor prepared and certified the plat.</p> <p>(NOTE: This requirement applies to the following:  – all hazardous waste disposal facilities  – waste piles and surface impoundments from which the owner or operator intends to remove the wastes at closure  – tank systems that are required to meet the requirements for landfills  – containment buildings that are required to meet the requirements for landfills.)</p> <p>(NOTE: This requirement applies to the following:  – all hazardous waste disposal facilities  – waste piles and surface impoundments from which the owner or operator intends to remove the wastes at closure  – tank systems that are required to meet the requirements for landfills  – containment buildings that are required to meet the requirements for landfills.)</p> <p>Verify that postclosure care lasts for 30 yr after closure and consists of the following:</p> <ul style="list-style-type: none"> <li>– monitoring and reporting as required in other sections in Hazardous Waste Management</li> <li>– maintenance of waste containment systems</li> <li>– use of the property is not allowed to disturb the integrity of the final cover, liner, or any other components</li> <li>– is done in accordance with the postclosure plan.</li> </ul> <p>(NOTE: Postclosure care generally must continue for 30 yr after the completion of closure. However, the Regional Administrator may shorten or extend the postclosure period.)</p> <p>(NOTE: For hazardous waste disposed of before 12 January 1981, the type, location, and quantity of the hazardous wastes are identified to the best of the owner/operators knowledge and in accordance with any records that have been kept.)</p>

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	<p>Verify that, within 60 days of certification of closure of the first hazardous waste disposal unit and within 60 days of certification of closure of the last hazardous waste disposal unit, the following occur:</p> <ul style="list-style-type: none"> <li>– a notation is recorded on the deed to the facility property, or on some other instrument that is normally examined during a title search, that the land has been used to manage hazardous waste and its use is restricted, and the survey plat and record of waste disposal have been filed with appropriate authorities</li> <li>– submit a signed certification to the Regional Administrator that the required notation has been recorded.</li> </ul> <p>Verify that, if any current or subsequent owner of the property wishes to remove the hazardous waste and hazardous waste residues, the liner, or contaminated soils, a modification to the postclosure permit is requested.</p> <p>Verify that no later than 60 days after completion of the established post-closure care period for each hazardous waste disposal unit, the owner or operator submits to the Regional Administrator, by registered mail, a certification that the post-closure care period for the hazardous waste disposal unit was performed in accordance with the specifications in the approved post-closure plan.</p> <p>Verify that the certification is signed by the owner or operator and a qualified Professional Engineer.</p> <p>Verify that documentation supporting the Professional Engineer's certification is furnished to the Regional Administrator upon request until the Administrator releases the owner or operator from the financial assurance requirements for post-closure care under 40 CFR 264.145(i).</p>



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<p><b>ADDITIONAL REQUIREMENTS FOR PERMITTED TSDFs</b></p> <p><b>HW.180. General</b></p> <p><b>HW.180.1.US.</b> Permitted TSDFs that receive hazardous waste from offsite sources must inform the generator in writing that the TSDF has the appropriate permit and will accept the waste (40 CFR 264.12(b)).</p> <p><b>HW.180.2.US.</b> Permitted TSDFs are required to institute corrective actions as outlined in the permit to protect human health and the environment for all releases from solid waste management units (40 CFR 264.90(a), 264.90(b), and 264.101) <b>[Revised January 1999]</b>.</p> <p><b>HW.180.3.US.</b> Container storage areas at TSDFs must have a containment system that meets specific standards (40 CFR 264.175(a) and 264.175(b)).</p>	<p>Verify that notification is sent and a copy is kept in the operating record.</p> <p>(NOTE: These requirements apply to all wastes (or constituents thereof) contained in solid waste management units, regardless of when the waste was placed in the solid waste management unit.)</p> <p>Verify that corrective actions required by the permit are being done.</p> <p>Verify that corrective actions are implemented beyond the property boundary where necessary to protect human health and the environment unless permission for such actions is not obtainable.</p> <p>(NOTE: The Regional Administrator may identify the unit as not having to comply with this requirement.)</p> <p>(NOTE: These requirements do not apply to surface impoundments, waste piles, or land treatment units receiving waste after 26 July 1982.)</p> <p>(NOTE: As a part of the corrective action program, the Regional Administrator may designate an area of the TSDF as a corrective action management unit (CAMU) or a temporary unit (TU).)</p> <p>Verify that all container storage areas meet the following criteria:</p> <ul style="list-style-type: none"> <li>– containers are stored on a base that is free from cracks or gaps and is impervious so leaks, spills, and precipitation are contained</li> <li>– the base is sloped (or otherwise designed) to drain and remove liquids resulting from leaks, spills, or precipitation unless the containers are elevated</li> </ul>

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<p><b>HW.180.4.US.</b> Containment at permitted TSDFs for containers holding wastes that do not contain free liquids must meet specific criteria, which is less than that for general containment areas (40 CFR 264.175(c)).</p>	<ul style="list-style-type: none"> <li>– spilled or leaked waste and accumulated precipitation is removed in a timely manner</li> <li>– the containment system has adequate capacity to contain 10 percent of the volume of the containers or the volume of the largest container, whichever is greater</li> <li>– run-on into the containment system is prevented unless the system has sufficient capacity to contain any run-on that might enter the system in addition to the already required capacity.</li> </ul> <p>(NOTE: If the collected material is a hazardous waste, it must be handled accordingly. If it is discharged through a point source, it is subject to the Clean Water Act (CWA) requirements.)</p> <p>Verify that one of the following storage area criteria is met:</p> <ul style="list-style-type: none"> <li>– the area is sloped or able to drain and remove liquid resulting from precipitation</li> <li>– containers are elevated or protected from contact with accumulated liquid.</li> </ul> <p>(NOTE: Storage areas must have complete containment systems when the containers holding F020, F021, F022, F023, F026, and F027 do not contain free liquids.)</p>
<p><b>HW.180.5.US.</b> When container storage areas are closed at permitted TSDFs, specific conditions must be met (40 CFR 264.178).</p>	<p>Verify that closure criteria was met:</p> <ul style="list-style-type: none"> <li>– all hazardous waste and residues were removed from the containment system</li> <li>– remaining containers, liners, bases, and soils (containing or contaminated with hazardous waste or hazardous waste residues) were decontaminated or removed</li> <li>– all hazardous wastes (including materials removed from the containment system) were managed appropriately.</li> </ul>
<p><b>HW.180.6.US.</b> TSDFs with permitted surface impoundments, waste piles, and land treatment units or landfills that received hazardous waste after 26 July 1982 (i.e., a regulated unit) are required to conduct monitoring and response programs under specific circumstances (40 CFR</p>	<p>(NOTE: These requirements apply when either a postclosure document or an enforceable document has been issued to the facility. The Regional Administrator may substitute alternate groundwater monitoring and corrective action requirements where it is determined that:</p> <ul style="list-style-type: none"> <li>– the regulated unit is situated among solid waste management units (or areas of concern), a release has occurred, and both the regulated unit and one or more solid waste management units (or areas of concern) are likely to have contributed to the release</li> <li>– it is not necessary to apply the regulations because alternative requirements will protect human health and the environment.)</li> </ul>

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264.90(a)(2), 264.90(b), 264.90(c)(1), 264.90(e), 264.90(f) and 264.91 through 264.95) <b>[Revised January 1999]</b> .	<p>Verify that, whenever permit-designated hazardous constituents are detected at permit-designated compliance points, a compliance-monitoring program is started as described in 40 CFR 264.99 (See checklist item HW.180.9.US).</p> <p>Verify that, whenever permit-designated groundwater protection limits are exceeded, a corrective action program is initiated as described in 40 CFR 264.100 (see checklist item HW.180.10.US).</p> <p>Verify that, whenever permit-designated hazardous constituents exceed concentration limits in Appendix 4-11 or permit-designated concentrations in groundwater between a designated compliance point and the downgradient property boundary, a corrective action program or a detection-monitoring program is started at the TSDF.</p> <p>(NOTE: In situations other than those described here, a detection monitoring program as described in 40 CFR 264.98 is required.)</p> <p>(NOTE: A regulated unit is not subject to regulation for releases into the uppermost aquifer if:</p> <ul style="list-style-type: none"> <li>– it is otherwise exempt from Part 264</li> <li>– the Regional Administrator has exempted the regulated unit</li> <li>– it is a waste pile operated in compliance with 40 CFR 254.250(c).)</li> </ul> <p>(NOTE: These requirements do not apply after closure of the regulated unit if all waste, waste residues, contaminated containment system components, and contaminated subsoils are removed or decontaminated at closure.)</p> <p>Verify that the TSDF is meeting the elements of the monitoring and response program specified by the Regional Administrator in the permit.</p>
<b>HW.180.7.US.</b> Checklist item deleted <b>[Deleted January 1999]</b> .	<p>(NOTE: This checklist item was deleted because its contents were incorporated in HW.180.6.US.)</p>
<b>HW.180.8.US.</b> TSDFs with permitted surface impoundments, waste piles, and land treatment units or landfills that received hazardous waste after 26 July 1982 that are required to operate detection monitoring programs must meet specific requirements (40 CFR 264.90(a)(2), 264.90(b), 264.90(c)(1), 264.90(e),	<p>(NOTE: See checklist item HW.180.6.US for guidance and who must have a detection-monitoring program.)</p> <p>(NOTE: These requirements apply when the either a postclosure document or an enforceable document have been issued to the facility. The Regional Administrator may substitute alternate groundwater monitoring and corrective action requirements where it is determined that:</p> <ul style="list-style-type: none"> <li>– the regulated unit is situated among solid waste management units (or areas of concern), a release has occurred, and both the regulated unit and one or more solid waste management units (or areas of concern) are likely to have contributed to the release</li> </ul>

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264.90(f) and 264.98) [Revised January 1999; Revised July 2006].	<p>– it is not necessary to apply the regulations because alternative requirements will protect human health and the environment.)</p> <p>Verify that indicator parameters (e.g., specific conductance, total organic carbon, or total organic halon), waste constituents, or reaction products that provide a reliable indication of the presence of hazardous constituents in groundwater and meet the parameters specified in the permit issued by the Regional Administrator.</p> <p>Verify that a record is kept of groundwater analytical data as measured and in a form necessary for the determination of statistical significance.</p> <p>Verify that the groundwater flow rate and direction in the uppermost aquifer are determined at least annually.</p> <p>Verify that it is identified whether or not there is statistically significant evidence of contamination for any chemical parameter or permit-designated hazardous constituent.</p> <p>(NOTE: The Regional Administrator will specify the frequencies for collecting samples and conducting statistical tests to determine whether there is statistically significant evidence of contamination for any parameter or hazardous constituent specified in the permit conditions.)</p> <p>Verify that the following steps are taken if there is significant evidence of contamination:</p> <ul style="list-style-type: none"> <li>– the Regional Administrator is notified in writing within 7 days</li> <li>– the groundwater in all monitoring wells is immediately sampled and analyzed for constituents in Appendix IX of 40 CFR 264 (see Appendix 4-12)</li> <li>– for any appendix IX compounds found in the analysis, the owner or operator may resample within 1 mo or at an alternative site-specific schedule approved by the Administrator and repeat the analysis for those compounds detected, and: <ul style="list-style-type: none"> <li>– if the results of the second analysis confirm the initial results, then these constituents will form the basis for compliance monitoring</li> <li>– if the owner or operator does not resample for the compounds, the hazardous constituents found during this initial appendix IX analysis will form the basis for compliance monitoring</li> </ul> </li> <li>– within 90 days an application for a permit modification is submitted to the Regional Administrator to establish a compliance monitoring program</li> <li>– within 180 days all data necessary to justify an alternate concentration limit and the engineering feasibility plan is submitted to the regional administrator unless an exception applies.</li> </ul> <p>(NOTE: A regulated unit is not subject to regulation for releases into the uppermost aquifer if:</p> <ul style="list-style-type: none"> <li>– it is otherwise exempt from 40 CFR 264</li> </ul>

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<p><b>HW.180.9.US.</b> TSDFs with permitted surface impoundments, waste piles, and land treatment units or landfills that received hazardous waste after 26 July 1982 that are required to operate compliance monitoring programs must meet specific requirements (40 CFR 264.90(a)(2), 264.90(b), 264.90(c)(1), 264.90(e), 264.90(f) and 264.99) [Revised January 1999; Revised July 2006].</p>	<ul style="list-style-type: none"> <li>– the Regional Administrator has exempted the regulated unit</li> <li>– it is a waste pile operated in compliance with 40 CFR 254.250(c.)</li> </ul> <p>(NOTE: These requirements do not apply after closure of the regulated unit if all waste, waste residues, contaminated containment system components, and contaminated subsoils are removed or decontaminated at closure.)</p> <p>(NOTE: These requirements apply when the either a postclosure document or an enforceable document have been issued to the facility. The Regional Administrator may substitute alternate groundwater monitoring and corrective action requirements where it is determined that:</p> <ul style="list-style-type: none"> <li>– the regulated unit is situated among solid waste management units (or areas of concern), a release has occurred, and both the regulated unit and one or more solid waste management units (or areas of concern) are likely to have contributed to the release</li> <li>– it is not necessary to apply the regulations because alternative requirements will protect human health and the environment.)</li> </ul> <p>Verify that a record is kept of groundwater analytical data as measured and in a form necessary for the determination of statistical significance.</p> <p>Verify that the groundwater flow rate and direction in the uppermost aquifer are determined at least annually.</p> <p>Verify that the owner or operator determines annually whether additional hazardous constituents from Appendix IX of 40 CFR 264 (see Appendix 4-12), which could possibly be present but are not on the detection monitoring list in the permit, are actually present in the uppermost aquifer and, if so, at what concentration.</p> <p>(NOTE: To accomplish the annual determination, the owner or operator must consult with the Regional Administrator to determine on a case-by-case basis: which sample collection event during the year will involve enhanced sampling; the number of monitoring wells at the compliance point to undergo enhanced sampling; the number of samples to be collected from each of these monitoring wells; and, the specific constituents from Appendix IX (see Appendix 4-12) for which these samples must be analyzed. If the enhanced sampling event indicates that Appendix IX constituents are present in the groundwater that are not already identified in the permit as monitoring constituents, the owner or operator may resample within one month or at an alternative site-specific schedule approved by the Regional Administrator, and repeat the analysis. If the second analysis confirms the presence of new constituents, the owner or operator must report the concentration of these additional constituents to the Regional Administrator within seven days after the completion of the second analysis and add them to the monitoring list. If the owner or operator chooses not to resample, then he or she must report the concentrations of these additional constituents to the Regional Administrator within seven days after completion of the initial analysis, and add them to the monitoring list.)</p>

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<p><b>HW.180.10.US.</b> TSDFs with permitted surface impoundments, waste piles, and land treatment units or landfills that received hazardous waste after 26 July 1982 that are required to operate corrective action programs must meet specific requirements (40 CFR 264.90(a)(2), 264.90(b), 264.90(c)(1), 264.90(e), 264.90(f) and 264.100) [Revised January 1999; Revised July 2006].</p>	<p>Verify that it is identified whether or not there is statistically significant evidence of contamination for any chemical parameter or permit-designated hazardous constituent.</p> <p>(NOTE: The Regional Administrator will specify the frequencies for collecting samples and conducting statistical tests to determine statistically significant evidence of increased contamination in accordance with 40 CFR 264.97(g).)</p> <p>Verify that the following actions are taken when concentration are exceeded:</p> <ul style="list-style-type: none"> <li>– the Regional Administrator is notified in writing within 7 days</li> <li>– an application for a permit modification to establish a corrective action program is submitted within 180 days.</li> </ul> <p>(NOTE: A regulated unit is not subject to regulation for releases into the uppermost aquifer if:</p> <ul style="list-style-type: none"> <li>– it is otherwise exempt from 40 CFR 264</li> <li>– the Regional Administrator has exempted the regulated unit</li> <li>– it is a waste pile operated in compliance with 40 CFR 254.250(c).)</li> </ul> <p>(NOTE: These requirements do not apply after closure of the regulated unit if all waste, waste residues, contaminated containment system components, and contaminated subsoils are removed or decontaminated at closure.)</p> <p>(NOTE: These requirements apply when the either a postclosure document or an enforceable document have been issued to the facility. The Regional Administrator may substitute alternate groundwater monitoring and corrective action requirements where it is determined that:</p> <ul style="list-style-type: none"> <li>– the regulated unit is situated among solid waste management units (or areas of concern), a release has occurred, and both the regulated unit and one or more solid waste management units (or areas of concern) are likely to have contributed to the release</li> <li>– it is not necessary to apply the regulations because alternative requirements will protect human health and the environment.)</li> </ul> <p>Determine if the TSDF operates a corrective action program.</p> <p>Verify that the corrective action program prevents hazardous constituents from exceeding their designated concentration limits at the compliance point by removing the hazardous waste constituents or treating them in place as specified by permit.</p> <p>Verify that corrective action was begun in a reasonable period of time after the groundwater protection standard is exceeded.</p> <p>Verify that a groundwater monitoring program is in place to demonstrate the effectiveness of the corrective action program.</p>

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<p><b>HW.180.11.US.</b> Checklist item deleted [Deleted January 1999].</p> <p><b>HW.180.12.US.</b> All permitted TSDFs are required to document compliance with ignitable, reactive, or incompatible waste management requirements (40 CFR 264.17(c)).</p> <p><b>HW.180.13.US.</b> Permitted TSDFs with process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations that manage hazardous wastes with organic concentrations of at least 10 ppmw are required to submit a semi-annual report concerning process vent emissions (40 CFR 264.1036).</p> <p><b>HW.180.14.US.</b> Permitted facilities are required to meet specific reporting requirements as related to air emissions controls (40 CFR 264.1090(a), 264.1090(c), and 264.1090(d)) [Revised]</p>	<p>Verify that the owner or operator annually reports in writing to the Regional Administrator on the effectiveness of the corrective action program.</p> <p>(NOTE: A regulated unit is not subject to regulation for releases into the uppermost aquifer if:</p> <ul style="list-style-type: none"> <li>– it is otherwise exempt from Part 264</li> <li>– the Regional Administrator has exempted the regulated unit</li> <li>– it is a waste pile operated in compliance with 40 CFR 254.250(c).)</li> </ul> <p>(NOTE: These requirements do not apply after closure of the regulated unit if all waste, waste residues, contaminated containment system components, and contaminated subsoils are removed or decontaminated at closure.)</p> <p>Checklist item deleted because it was a duplicate of HW.180.2.US.</p> <p>Verify that compliance documentation is maintained at the TSDF, and that it is based on published scientific or engineering literature, data from field tests, or the results of the treatment of similar wastes by similar treatment processes or similar operating conditions.</p> <p>Verify that a semiannual report is submitted to the Regional Administrator and that it includes the following:</p> <ul style="list-style-type: none"> <li>– the USEPA identification number, name, and address of the TSDF</li> <li>– dates when the control device exceeded or operated outside of design specification and the exceedances were not corrected within 24 h</li> <li>– dates when a flare operated with visible emissions</li> <li>– the duration and cause of exceedance and corrective measures taken.</li> </ul> <p>(NOTE: If there are no exceedances a report is not required.)</p> <p>Verify that a written report is submitted to the Regional Administrator within 15 days of becoming aware that hazardous waste is being managed in an exempted container in noncompliance with the applicable design and operating requirements.</p> <p>Verify that, in regard to required control devices, a semi-annual written report is submitted to the Regional Administrator.</p>

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<b>December 1997; Revised January 2007].</b>	<p>Verify that the report contains an explanation of why the control device could not be returned to compliance within 24 h and actions taken to correct noncompliance.</p> <p>(NOTE: The semiannual report is not required for a 6-mo period if all control devices are operated so there is not a period of 24 h or longer in which the control device was in continuous noncompliance and no flare was operated with visible emissions for 5 min or longer in a 2-h period.)</p> <p>(NOTE: If the facility received its permit under RCRA Section 3005 prior to 6 December 1996, these requirements will be incorporated in the permit when it is reviewed. Until that time, the TSDF is required to comply with 40 CFR 265 Subpart CC (40 CFR 264.1080(c) and 265.1080(c)).)</p>



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<p><b>ADDITIONAL REQUIREMENTS FOR PERMITTED TSDFs</b></p> <p><b>HW.185.</b>  <b>Surface Impoundments</b></p> <p><b>HW.185.1.US.</b> Permitted surface impoundments must be designed according to specific parameters (40 CFR 264.221(a) and 264.221(g) through 264.221(i)).</p> <p><b>HW.185.2.US.</b> New permitted surface impoundments that started construction after 29 January 1992, lateral expansions of permitted surface impoundments which started construction after 29 July 1992, and replacements of existing surface impoundments for which reuse started after 29 July 1992 are required to meet specific design and operating criteria (40 CFR 264.19, 264.221(c) through 264.221(f), 264.222, 264.223, and 264.226(d)).</p>	<p>Determine if the TSDF has a permitted surface impoundment.</p> <p>Verify that surface impoundments have a liner for all portions of the impoundment.</p> <p>Verify that the impoundment is designed, constructed, maintained, and operated to prevent overtopping as a result of overfilling, wind and wave action, rainfall, run-on, malfunctions of level controllers, alarms and other equipment, and human error.</p> <p>Verify that the impoundment has dikes that are designed, constructed, and maintained to prevent massive failure of the dikes.</p> <p>(NOTE: The Regional Administrator will specify in the permit all design and operating practices that are necessary.)</p> <p>Verify that the impoundment has two or more liners and a leachate collection and removal system between liners, or the double liner requirement has been waived by the USEPA Regional Administrator.</p> <p>Verify that the liner meets the specifications stated in 40 CFR 264.221(c).</p> <p>Verify that the TSDF has a construction quality assurance (CQA) program to ensure that constructed units meet or exceed all design criteria and specifications in the permit.</p> <p>Verify that the designated CQA officer is a registered professional engineer.</p> <p>Verify that the TSDF has a written CQA plan that addresses the following:</p> <ul style="list-style-type: none"> <li>– identification of applicable units and a description of how they will be constructed</li> <li>– identification of key personnel</li> <li>– a description of sampling and inspection activities.</li> </ul> <p>Verify that waste is not received in a unit until an approved CQA plan has been submitted to the Regional Administrator.</p>

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<p><b>HW.185.3.US.</b> Permitted TSDFs must inspect liners and cover systems during construction and installation of liners (40 CFR 264.226(a)).</p> <p><b>HW.185.4.US.</b> TSDFs must conduct inspections while surface impoundments are in operation (40 CFR 264.226(b)).</p> <p><b>HW.185.5.US.</b> Prior to the issuance of a permit and/ or after any period of greater than 6 mo of disuse, the TSDF must obtain certification from a qualified engineer that surface impoundment dikes have</p>	<p>Verify that these surface impoundments comply with the action leakage rate assigned by the Regional Administrator.</p> <p>Verify that the surface impoundment facility has an approved response action plan prior to the receipt of waste.</p> <p>Verify that the amount of liquid removed from each leak detection system sump is recorded at least once a week during the active life and closure period.</p> <p>Verify that, after a final cover is installed, the amount of liquids removed from each leak detection system sump is recorded at least monthly or:</p> <ul style="list-style-type: none"> <li>– if the liquid level in the sump stays below the pump operating level for 2 consecutive months, then the liquid amounts may be recorded quarterly</li> <li>– if the liquid level in the sump stays below the pump operating level for 2 consecutive quarters, then the liquid amounts may be recorded semiannually.</li> </ul> <p>(NOTE: TSDFs with replacement surface impoundments may be exempt from these requirements if the existing unit was constructed in compliance with the design standards of sections 3004(o)(1)(A)(i) and (o)(5) of RCRA and there is no reason to believe the liner is not functioning as designed.)</p> <p>(NOTE: This excludes existing portions of surface impoundments exempt from 264.221(a).)</p> <p>Verify that liners and covers are inspected for uniformity, damage, and imperfections.</p> <p>Verify that inspections are conducted at least weekly and after storms to detect evidence of the following:</p> <ul style="list-style-type: none"> <li>– deterioration, malfunctions, or improper operation of overtopping control systems</li> <li>– sudden drops in the level of the impoundment contents</li> <li>– severe erosion or other signs of deterioration in dikes or other containment devices.</li> </ul> <p>Determine if the TSDF is permitted or if any impoundment has been out of service for 6 mo or more.</p> <p>Verify that the certification of structural integrity includes:</p> <ul style="list-style-type: none"> <li>– verification that the impoundment can withstand the amounts and types of waste it will contain</li> </ul>

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<p>structural integrity (40 CFR 264.226(c)).</p> <p><b>HW.185.6.US.</b> TSDFs must follow specific restrictions concerning the types of wastes placed in permitted surface impoundments (40 CFR 264.231).</p> <p><b>HW.185.7.US.</b> Permitted surface impoundments are required to be removed from service under specific circumstances (40 CFR 264.227(a)).</p> <p><b>HW.185.8.US.</b> In order to remove a permitted surface impoundment from service, specific parameters have to be met (40 CFR 264.227(b), 264.227(c), and 264.227(e)).</p> <p><b>HW.185.9.US.</b> Surface impoundments may not be restored to service unless specific standards are met (40 CFR 264.227(d)).</p> <p><b>HW.185.10.US.</b> TSDFs that have surface impoundments must follow certain closure and postclosure requirements</p>	<p>– that the impoundment will not fail due to scouring or piping without dependence on any liner system.</p> <p>Verify that hazardous waste F020, F021, F022, F023, F026, and F027 are not placed in the impoundment unless it is done according to a management plan approved by the Regional Administrator.</p> <p>Verify that surface impoundments have been removed from service if any of the following circumstances exist:</p> <ul style="list-style-type: none"> <li>– the level of liquid suddenly drops and the drop is not known to be caused by changes in flow</li> <li>– the dike leaks.</li> </ul> <p>Verify that, when a surface impoundment is removed from service, the following requirements are met:</p> <ul style="list-style-type: none"> <li>– the flow or addition of waste is immediately shut off or stopped</li> <li>– surface leakage is immediately contained</li> <li>– leaks are stopped or empty the impoundment</li> <li>– the Regional Administrator is notified in writing within 7 days of problems</li> <li>– take any of the necessary steps to stop or prevent catastrophic failure.</li> </ul> <p>Verify that the contingency plan specifies a procedure for taking a surface impoundment out of service.</p> <p>Verify that, if a surface impoundment is removed from service and it is not being repaired, it is closed.</p> <p>Verify that prior to being returned to service the following is done:</p> <ul style="list-style-type: none"> <li>– the portion of the impoundment that was failing is repaired</li> <li>– the dike is recertified if the reason for removal from service was faulty dike integrity</li> <li>– liners are correctly installed and operating.</li> </ul> <p>Determine if the TSDF has closed, or plans to close, any surface impoundment activities.</p>

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<p>(40 CFR 264.228(a) and 264.228(b)).</p>	<p>Verify that, at closure, the TSDF does one of the following:</p> <ul style="list-style-type: none"> <li>– removes or decontaminates all waste residues, contaminated containment system components, contaminated subsoils, and structures and equipment contaminated with waste and leachate and manages them as hazardous waste</li> <li>– eliminates the free liquids by removing liquid wastes or solidifying the remaining wastes and water residue; stabilizes remaining wastes to a bearing capacity sufficient to support final cover and cover the surface impoundment with a final cover designed and constructed to: <ul style="list-style-type: none"> <li>– provide long-term minimization of the migration of liquids</li> <li>– function with minimum maintenance</li> <li>– promote drainage and minimized erosion or abrasion of the final cover</li> <li>– accommodate settling and subsidence so that the cover’s integrity is maintained</li> <li>– have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present.</li> </ul> </li> </ul> <p>Verify that, if waste residues or contaminated materials are left in place, the TSDF meets postclosure requirements outlined in 40 CFR 264.117 through 264.120 (see checklist items HW.145.8.US and HW.170.5.US) and:</p> <ul style="list-style-type: none"> <li>– maintains the integrity and effectiveness of the final cover</li> <li>– maintains and monitors the leak detection system</li> <li>– maintains and monitors the groundwater monitoring system</li> <li>– prevents run-on and runoff from eroding or otherwise damaging the final cover.</li> </ul>
<p><b>HW.185.11.US.</b> Facilities are required to meet specific reporting requirements as related to air emissions (40 CFR 264.1090(a), 264.1090(c), and 264.1090(d)) [Revised December 1997].</p>	<p>Verify that a written report is submitted to the Regional Administrator within 15 days of becoming aware that hazardous waste is being managed in an exempted surface impoundment in noncompliance with the applicable design and operating requirements.</p> <p>Verify that, in regard to required control devices, a semiannual written report is submitted to the Regional Administrator describing each occurrence of noncompliance during the previous 6 mo when either of the following occurred:</p> <ul style="list-style-type: none"> <li>– a control device is operated continuously for 24 h or longer in noncompliance with the applicable operating values</li> <li>– a flare is operated with visible emissions for 5 min or longer in a 2-h period.</li> </ul> <p>Verify that the report contains an explanation of why the control devices could not be returned to compliance within 24 h and actions taken to correct noncompliance.</p> <p>(NOTE: The semiannual report is not required for a 6-mo period if all control devices are operated so there is not a period of 24 h or longer in which the control</p>

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<p><b>HW.185.12.US.</b> Surface impoundments not in compliance with the liner and leachate collection system requirements are required to perform specific actions (40 CFR 264.110(a), 264.110(c), and 264.113(e)) <b>[Added January 1999]</b>.</p>	<p>device was in continuous noncompliance and no flare was operated with visible emissions for 54 min or longer in a 2-h period.</p> <p>(NOTE: If the facility received its permit under RCRA Section 3005 prior to 6 December 1996, these requirements will be incorporated in the permit when it is reviewed. Until that time, the TSDF is required to comply with all 40 CFR 265, Subpart CC (40 CFR 165.1080(c).)</p> <p>(NOTE: These requirements apply to all hazardous waste management facilities. The Regional Administrator may substitute alternate requirements where it is determined that:</p> <ul style="list-style-type: none"> <li>– the regulated unit is situated among solid waste management units (or areas of concern), a release has occurred, and both the regulated unit and one or more solid waste management units (or areas of concern) are likely to have contributed to the release</li> <li>– it is not necessary to apply the closure requirements because alternative requirements will protect human health and the environment.)</li> </ul> <p>Verify that a request has been submitted to modify the permit.</p> <p>Verify that all hazardous wastes have been removed from the unit by removing all hazardous liquids, and removing all hazardous sludges to the extent practicable without impairing the integrity of the liner, if any.</p> <p>Verify that removal of hazardous waste is done within 90 days after the final receipt of hazardous waste.</p> <p>(NOTE: The Regional Administrator may approve an extension.)</p> <p>Verify that, if a release that is a statistically significant increase (or decrease in the case of pH) over background values for detection monitoring parameters or constituents specified in the permit or that exceeds the impoundment's groundwater protection standard at the point of compliance is detected, the owner/operator:</p> <ul style="list-style-type: none"> <li>– implements corrective measures in accordance with approved contingent corrective measures plan no later than 1 yr after detection or approval of the plan, whichever is later</li> <li>– continues to receive waste only if the approved corrective measures plan includes a demonstration that continued receipt of wastes will not impede corrective action</li> <li>– responds to Regional Administrator imposed timelines.</li> </ul> <p>Verify that, during the period of corrective action, semi-annual reports are provided to the Regional Administrator describing the progress of the corrective action program, compiles all groundwater monitoring data, and evaluates the effect of the continued receipt of nonhazardous wastes on the effectiveness of the corrective action.</p>

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<p><b>ADDITIONAL REQUIREMENTS FOR PERMITTED TSDFs</b></p> <p><b>HW.190. Waste Piles</b></p> <p><b>HW.190.1.US.</b> Permitted TSDFs that store or treat hazardous waste in waste piles must meet specific design and operating standards (40 CFR 264.250, 264.251(a), 264.251(b), and 264.251(g) through 264.251(k)).</p> <p><b>HW.190.2.US.</b> Each new permitted waste pile unit, each lateral expansion of a waste pile unit, and each replacement of an existing waste pile unit is required to meet specific design and operating requirements (40 CFR 264.19, 264.251(c) through 264.251(f), 264.252, and 264.253) [Revised July 2006].</p>	<p>(NOTE: Waste piles closed with wastes left in place are regulated as landfills. Waste piles inside or under a protective structure are exempt from the standards in 264.250 through 264.259 if they contain no liquids, are protected from run-on, are designed and operated to control dispersal of waste by wind, and do not generate leachate through decomposition or other reactions.)</p> <p>Determine if the TSDF treats or stores hazardous waste in waste piles.</p> <p>Verify that the following standards are met for each waste pile:</p> <ul style="list-style-type: none"> <li>– the pile has a liner and is located on a foundation that provides support</li> <li>– the liner is installed to cover all surrounding earth likely to be in contact with the waste or leachate</li> <li>– a leachate collection and removal system is located immediately above the liner</li> <li>– leachate depth over the liner does not exceed 30 cm (1 ft)</li> <li>– protection from wind and run-on is provided</li> <li>– a runoff management system is in place and in operating condition</li> <li>– tanks and basins associated with the run-on and runoff control systems are emptied.</li> </ul> <p>(NOTE: The permit will designate all design and operating practices necessary to ensure that the requirements are satisfied.)</p> <p>Verify that the described waste piles have two or more liners and a leachate collection and removal system above and between the liners.</p> <p>Verify that the liners are designed and constructed of materials to prevent the migration of hazardous constituents into the liner during the active life and postclosure care period.</p> <p>(NOTE: See 40 CFR 264.251(c)(1) and 264.251(c)(2) for details on the design of the liners and the leachate collection system.)</p> <p>Verify that the TSDF has a CQA program to ensure that constructed units meet or exceed all design criteria and specifications in the permit.</p>

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<p><b>HW.190.3.US.</b> TSDFs must conduct inspections of permitted waste piles during construction and while they are in operation (40 CFR 264.254).</p>	<p>Verify that the designated CQA officer is a registered professional engineer.</p> <p>Verify that the TSDF has a written CQA plan that addresses the following:</p> <ul style="list-style-type: none"> <li>– identification of applicable units and a description of how they will be constructed</li> <li>– identification of key personnel</li> <li>– a description of sampling and inspection activities.</li> </ul> <p>Verify that waste is not received in a unit until an approved CQA plan has been submitted to the Regional Administrator.</p> <p>Verify that the pumpable liquids in the leak detection sumps are removed to minimize the head on the bottom liner.</p> <p>Verify that the TSDF is complying with the action leakage rate assigned by the Regional Administrator.</p> <p>Verify that the TSDF has an approved response action plan prior to the receipt of waste.</p> <p>(NOTE: The Regional Administrator may approve alternative designs or grant a waiver.)</p> <p>Verify that, if construction of a waste pile is occurring at the TSDF, the following inspections are taking place:</p> <ul style="list-style-type: none"> <li>– liners and cover systems are inspected for uniformity, damage, and imperfection</li> <li>– synthetic liners and covers are inspected for tight seams and joints immediately after construction</li> <li>– soil-based and admixed liners and covers are inspected for imperfections.</li> </ul> <p>Verify that the waste pile is inspected at least weekly and after storms to detect evidence of the following:</p> <ul style="list-style-type: none"> <li>– deterioration, malfunctions, or improper operation in run-on and runoff systems</li> <li>– proper functioning of wind dispersal control system</li> <li>– presence of leachate in, and proper functioning of, leachate control system.</li> </ul> <p>Verify that the amount of liquids removed from each leak detection system is recorded at least once a week during the active life and closure period.</p>

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<p><b>HW.190.4.US.</b> TSDFs that treat F020, F021, F022, F023, F026, and/or F027 in permitted waste piles are required to follow specific operating procedures (40 CFR 264.259).</p> <p><b>HW.190.5.US.</b> TSDFs that operate permitted waste piles must follow specific requirements for closure and postclosure care (40 CFR 264.258).</p>	<p>Determine if the TSDF treats F020-F023, F026, or F027.</p> <p>Verify that these wastes are kept in enclosed piles unless the owner/operator has a management plan approved by the Regional Administrator.</p> <p>Verify that, at the time of closure, all waste residues, contaminated containment system components, subsoils, and structures and equipment contaminated with hazardous waste have been removed or decontaminated.</p> <p>Verify that, if all contaminated subsoils cannot be removed or decontaminated practicably, the site is closed and managed according to closure and postclosure care requirements for a landfill.</p> <p>Verify that, if the TSDF has a waste pile that does not comply with the liner requirement, and is not exempted from this requirement, it complies with the following:</p> <ul style="list-style-type: none"> <li>– the written closure plan addresses the removal of all contaminated substances and a contingency plan if all contamination cannot be removed from the pile</li> <li>– a contingency postclosure plan is prepared for the waste pile and is submitted to the appropriate agency within 90 days after determining the waste pile must be closed.</li> </ul>





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<p><b>HW.195.3.US.</b> TSDFs with food chain crops grown in or on the treatment zone are required to meet specific operational standards (40 CFR 264.276).</p>	<p>Determine if food chain crops are grown in or on the treatment zone.</p> <p>Verify that prior to the growth of food chain crops in or on the treatment zone, it has been demonstrated that there is no substantial risk to human health caused by the growth of the crops by demonstrating that hazardous constituents other than cadmium meet one of the following:</p> <ul style="list-style-type: none"> <li>– will not be transferred to the food or feed portions of the crop by plant uptake or direct contact, and will not otherwise be ingested by food chain animals</li> <li>– will not occur in greater concentrations in or on food or feed portions of the crops grown on the treatment zone than in or on identical portions of the same crops grown on untreated soils under similar conditions in the same region.</li> </ul> <p>Verify that, if food chain crops are grown, only those specified in the permit by the Regional Administrator are being grown.</p> <p>Verify that, if cadmium-containing wastes are applied to food chain crops in or on treatment zones, the following are met:</p> <ul style="list-style-type: none"> <li>– the pH of the waste and soil mixture is 6.5 or greater at the time of application, except in cases where the waste contains cadmium at concentrations of 2 mg/kg or less</li> <li>– the annual application of cadmium from waste does not exceed 0.5 kg/ha on land used for production of tobacco, leafy vegetables, or root crops grown for human consumption. For other food chain crops the annual cadmium does not exceed 0.5 kg/ha</li> <li>– the cumulative application of cadmium from waste does not exceed 5 kg/ha if the waste and soil mixture has a pH less than 6.5</li> <li>– if the waste and soil mixture has a pH of 6.5 or greater or is maintained at a pH of 6.5 or greater during crop growth and one of the following is met: <ul style="list-style-type: none"> <li>– the cumulative application of cadmium from waste does not exceed 5 kg/ha if soil cation exchange capacity is less than 5 meq/100 g</li> <li>– the cumulative application of cadmium from waste does not exceed 10 kg/ha if soil cation exchange capacity is 5 to 15 meq/100 g</li> <li>– the cumulative application of cadmium from waste does not exceed 20 kg/ha if soil cation exchange capacity is greater than 15 meq/100 g</li> </ul> </li> <li>– animal feed is the only food chain crop produced.</li> </ul>
<p><b>HW.195.4.US.</b> Permitted land treatment units must have an unsaturated zone monitoring program (40 CFR 264.278).</p>	<p>Verify that the unsaturated zone monitoring program meets the following:</p> <ul style="list-style-type: none"> <li>– the soil and soil-pore liquid are monitored to determine if hazardous constituents migrate out of the treatment zone</li> <li>– a system is installed that includes soil monitoring using soil cores and soil-pore liquid monitoring using devices such as lysimeters</li> <li>– a background value has been established for each hazardous constituent to be monitored (see permit)</li> </ul>

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<p><b>HW.195.5.US.</b> Land treatment facilities must keep an operating record that includes dates and rates of application (40 CFR 265.279).</p> <p><b>HW.195.6.US.</b> All land treatment facilities are required to meet specific closure and postclosure plans (40 CFR 264.280) [Revised July 2006].</p>	<ul style="list-style-type: none"> <li>– the soil monitoring and soil-pore liquid monitoring is done immediately below the treatment zone</li> <li>– consistent sampling and monitoring procedures are used.</li> </ul> <p>Verify that the contaminants listed in the permit are being monitored.</p> <p>Verify that, when it is found that there is a statistically significant increase of hazardous constituents below the treatment zone the following steps are taken:</p> <ul style="list-style-type: none"> <li>– the Regional Administrator is notified within 7 days in writing</li> <li>– within 90 days a permit application is submitted to the Regional Administrator for a permit modification to modify the operating practices.</li> </ul> <p>Verify that the operating record contains the dates and rates of applications.</p> <p>Verify that, during the closure period, the following requirements are met:</p> <ul style="list-style-type: none"> <li>– all operations are continued as necessary to maximize degradation, transformation, or immobilization of hazardous constituents in the treatment zone</li> <li>– runoff is minimized</li> <li>– run-on and runoff management systems are maintained</li> <li>– wind dispersal of hazardous waste is controlled</li> <li>– compliance with food chain crop prohibitions is continued</li> <li>– unsaturated zone monitoring is continued, except that soil-pore liquid monitoring may be terminated 90 days after the last application of waste to the treatment zone</li> <li>– a vegetative cover is established on the portion of the land treatment facility being closed when the cover will not substantially impede degradation, transformation, or immobilization of hazardous constituents.</li> </ul> <p>(NOTE: When closure is completed the owner or operator may submit to the Regional Administrator certification by an independent, qualified soil scientist, in lieu of a qualified Professional Engineer, that the facility has been closed in accordance with the specifications in the approved closure plan.)</p> <p>Verify that, during the postclosure period:</p> <ul style="list-style-type: none"> <li>– operations are continued to enhance degradation, transformation, and sustain immobilization of hazardous constituents in the treatment zone</li> <li>– a vegetative cover is maintained</li> </ul>

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<p><b>HW.195.7.US.</b> Hazardous wastes F020 through F023, F026, and F027 must not be placed in a land treatment facility unless it is done according to an approved management plan for these wastes (40 CFR 264.283).</p>	<ul style="list-style-type: none"> <li>– run-on control systems are maintained</li> <li>– runoff management systems are maintained</li> <li>– wind dispersal of hazardous waste is controlled</li> <li>– food chain crop prohibitions are met</li> <li>– unsaturated zone monitoring is continued, except that soil-pore liquid monitoring may be terminated 90 days after the last application of waste to the treatment zone.</li> </ul> <p>(NOTE: The TSDF may not be required to establish a vegetative cover or meet post- closure requirements if the Regional Administrator finds that the level of hazardous waste constituents in the treatment soil zone does not exceed the background value of those constituents by an amount that is statistically significant.)</p> <p>Verify that these wastes are only placed in a land treatment unit according to the requirements of the approved waste management plan.</p>

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<p><b>ADDITIONAL REQUIREMENTS FOR PERMITTED TSDFs</b></p> <p><b>HW.200. Hazardous Waste Landfills</b></p> <p><b>HW.200.1.US.</b> Permitted hazardous waste landfills are required to have a liner and a leachate collection and removal system (40 CFR 264.301(a) through 264.301(b)) [Revised February 1995].</p> <p><b>HW.200.2.US.</b> New landfills on which construction started after 29 January 1992, lateral expansions that started construction after 29 July 1992, and each replacement of an existing land fill that will start reuse after 29 July 1992 are required to meet specific design and operating standards (40 CFR 264.19, 264.301(c) through 264.301(f), 264.302, and 264.304) [Revised January 2007].</p>	<p>Determine if the TSDF disposes of hazardous wastes in an onsite landfill.</p> <p>Verify that the landfill liner is:</p> <ul style="list-style-type: none"> <li>– designed, constructed, and installed to prevent any migration of waste out of the landfill</li> <li>– placed on a properly supported base or foundation</li> <li>– installed to cover all surrounding earth likely to be in contact with the waste.</li> </ul> <p>Verify that the leachate collection and removal system is immediately above the liner and will operate to remove leachate from the landfill.</p> <p>(NOTE: The permit will contain specific design and operating conditions.)</p> <p>Verify that collected leachate is tested to determine the correct disposal methodology.</p> <p>Determine if the TSDF has any landfills meeting the stated criteria.</p> <p>Verify that the landfill has two or more liners and a leachate collection and removal system above and between the liners, or a waiver of double liner requirement has been obtained from the USEPA Regional Administrator.</p> <p>Verify that the TSDF has a CQA program to ensure that constructed units meet or exceed all design criteria and specifications in the permit.</p> <p>Verify that the designated CQA officer is a registered professional engineer.</p> <p>Verify that the TSDF has a written CQA plan that addresses the following:</p> <ul style="list-style-type: none"> <li>– identification of applicable units and a description of how they will be constructed</li> <li>– identification of key personnel</li> <li>– a description of sampling and inspection activities.</li> </ul> <p>Verify that waste is not received in a unit until an approved CQA plan has been submitted to the Regional Administrator.</p>

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<b>HW.200.3.US.</b> Hazardous waste landfills are required to be inspected (40 CFR 264.303).	<p>Verify that the pumpable liquids in the leak detection system sumps are collected and removed to minimize the head on the bottom liner.</p> <p>Verify that landfill units subject to these requirements meet the action leakage rate set by the Regional Administrator.</p> <p>Verify that the TSDF has an approved response action plan before the receipt of waste.</p> <p>Verify that, if the flow rate into the leak detection system exceeds the action leakage rate for any sump:</p> <ul style="list-style-type: none"> <li>– the Regional Administrator is notified within 7 days</li> <li>– a written notification is submitted within 14 days</li> <li>– to the extent practicable, the location, size and cause of any leak is determined</li> <li>– a determination is made as to whether waste receipt should be stopped or restricted</li> <li>– the Regional Administrator is notified of actions taken and actions to be taken within 30 days after discovery</li> <li>– a monthly report is submitted to the Regional Administrator as long as the flow rate in the leak detection systems exceeds the action leakage rate.</li> </ul> <p>(NOTE: These restrictions do not apply if the existing unit was constructed in accordance with the design standards of section 3004(o)(1)(A)(i) and (o)(5) of RCRA and there is no reason to believe that the liner is not functioning as designed.)</p> <p>Verify that liners were inspected during construction for overall integrity.</p> <p>Verify that, immediately after construction was completed, the following inspections were performed:</p> <ul style="list-style-type: none"> <li>– synthetic liners and covers to ensure tight seams and joints and absence of tears</li> <li>– soil-based and admixed liners for imperfections that may increase impermeability (e.g., cracks and root-holes).</li> </ul> <p>Verify that, while a landfill is in operation, it is inspected weekly and after storms to detect evidence of the following:</p> <ul style="list-style-type: none"> <li>– deterioration, malfunctions, or improper operations of run-on and runoff control systems</li> <li>– proper functioning of wind dispersal control systems where present</li> <li>– the presence of leachate in and proper functioning of the leachate collection system.</li> </ul> <p>Verify that the amount of liquid removed from each leak detection sump is recorded at least once a week during the active life of the landfill and closure period.</p>

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<p><b>HW.200.4.US.</b> TSDFs with permitted hazardous waste landfills are required to meet specific standards for hazardous wastes F020, F021, F022, F023, F026, and F027 (40 CFR 264.317).</p>	<p>Verify that after a final cover is installed, the amount of liquids removed from each leak detection system sump is recorded at least monthly or:</p> <ul style="list-style-type: none"> <li>– if the liquid level in the sump stays below the pump operating level for 2 consecutive months, the liquid amounts are recorded quarterly</li> <li>– if the liquid level in the sump stays below the pump operating level for 2 consecutive quarters, the liquid amounts are recorded semi-annually.</li> </ul> <p>Determine whether or not these wastes are landfilled at the TSDF.</p> <p>Verify that, if they are landfilled, the TSDF has a management plan for their disposal that is approved by the Regional Administrator.</p>



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<p><b>ADDITIONAL REQUIREMENTS FOR PERMITTED TSDFs</b></p> <p><b>HW.205. Incinerators</b></p> <p><b>HW.205.1.US.</b> TSDFs with permitted hazardous waste incinerators must comply with certain operating requirements (40 CFR 264.341, 264.342, 264.343(a), 264.344, and 264.345) [Revised April 1999; Revised July 2006].</p>	<p>(NOTE: After consideration of the waste analysis included in the part B permit application, the Regional Administrator, when establishing permit conditions, must exempt the applicant from all requirements in Subpart O except for 264.341 and 264.351, if one of the following is true (40 CFR 264.340(c)):</p> <ul style="list-style-type: none"> <li>– the waste to be burned is listed as a hazardous waste solely because it is ignitable, corrosive, or both</li> <li>– the waste to be burned is listed as a hazardous waste solely because it is reactive for characteristics other than those listed in 40 CFR 261.23(a)(4) and 261.23(a)(5) and will not be burned when other hazardous wastes are present in the combustion chamber</li> <li>– the waste to be burned is a hazardous waste solely because it possesses the characteristics of ignitability, corrosivity, or both, as determined by the test for characteristic hazardous wastes</li> <li>– the waste is a hazardous waste solely because it possesses any of the reactive characteristics described by 40 CFR 261.23(a)(1), (2), (3), (6), (7), and (8) and will not be burned when other hazardous wastes are present in the combustion chamber.) [Added April 1999, Revised October 2001].</li> </ul> <p>Determine if the TSDF incinerates hazardous waste.</p> <p>Determine if specific wastes (principal organic hazardous constituents (POHCs)) are specified in the permit.</p> <p>Verify that only the wastes listed in the permit are burned, and only under the operating conditions set forth in the permit except in approved trial burns or otherwise approved exemptions</p> <p>Verify that sufficient waste analyses are conducted throughout normal operations to ensure that waste feed is within the limits specified in the permit.</p> <p>Verify that, for each waste specified in the permit, the incinerator achieves a destruction and removal efficiency (DRE) of 99.99 percent.</p> <p>Verify that the DRE for all wastes incinerated is determined by the following equation:</p> <p style="text-align: center;">(Win - Wout)</p>

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<p><b>HW.205.2.US.</b> Permitted hazardous waste incinerators are required to meet specific emission standards (40 CFR 264.343(b) and 264.343(c)).</p> <p><b>HW.205.3.US.</b> Operators of incinerators must conduct monitoring while incinerating hazardous waste (40 CFR 264.347) [Revised July 2006].</p>	<p>DRE = ----- x 100 percent</p> <p style="text-align: center;">Win</p> <p>Win = mass feed rate of one POHC in the waste stream feeding the incinerator</p> <p>Wout = mass emissions rate of the same POHC present in the exhaust emissions.)</p> <p>Verify that an incinerator burning hazardous wastes FO20, FO21, FO22, FO23, FO26, or FO27 achieves a destruction and removal efficiency (DRE) of 99.9999% for each principal organic hazardous constituent (POHC) designated in its permit.</p> <p>(NOTE: This performance of an incinerator burning hazardous wastes FO20, FO21, FO22, FO23, FO26, or FO27 must be demonstrated on POHCs that are more difficult to incinerate than tetra-, penta-, and hexachlorodibenzo-p-dioxins and dibenzofurans.)</p> <p>(NOTE: See the NOTE at the beginning of HW.205.1.US for factors influencing the applicability of this checklist item.)</p> <p>Determine if the incinerator produces stack emissions of hydrogen chloride (HCL).</p> <p>Verify that, if HCL emissions exceed 1.8 kg/h (4 lb/h), the emissions are controlled so the rate of emission is no greater than the larger of either 1.8 kg/h (4 lb/h) or 1 percent HCL in the stack gas prior to entering any pollution control equipment.</p> <p>Verify that particulate matter no greater than 180 mg/dscm is emitted.</p> <p>(NOTE: See the NOTE at the beginning of HW.205.1.US for factors influencing the applicability of this checklist item.)</p> <p>Verify that the operator monitors, at a minimum, the following at the indicated intervals:</p> <ul style="list-style-type: none"> <li>– waste feed rate, combustion temperature, combustion gas velocity, CO (prior to release): continuously</li> <li>– the incinerator and associated equipment for leaks, spills, etc.: daily</li> <li>– the emergency waste feed cutoff system and associated emergency cutoff alarms: weekly.</li> </ul> <p>Verify that the monitoring and inspection data is recorded and the records are placed in the operating record and maintained in the operating record for 5 yr.</p>

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<b>HW.205.4.US.</b> When permitted hazardous waste incinerators are closed, all hazardous waste and hazardous waste residues must be removed (40 CFR 264.351).	<p>(NOTE: See the NOTE at the beginning of HW.205.1.US for factors influencing the applicability of this checklist item.)</p> <p>Verify that all hazardous wastes and hazardous waste residues, including ash, scrubber waters, and scrubber sludges, are removed from the incinerator site.</p>

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<b>ADDITIONAL REQUIREMENTS FOR PERMITTED TSDFs</b>  <b>HW.210. Miscellaneous Units</b>  <b>HW.210.1.US.</b> TSDFs that treat, store, or dispose of hazardous wastes in permitted miscellaneous units must comply with specific environmental performance standard requirements (40 CFR 264.601).	<p>(NOTE: The open burning/open detonation (OB/OD) of waste explosives at permitted TSDFs is done under the classification of miscellaneous unit. This is also sometimes referred to as a Subpart X Permit.)</p> <p>Determine whether the TSDF treats, stores, or disposes of any hazardous waste in miscellaneous units.</p> <p>Verify that miscellaneous units are located, designed, constructed, operated, maintained, and closed in a manner that will ensure protection of human health and the environment, including:</p> <ul style="list-style-type: none"> <li>– prevention of any release that may have adverse effects on human health or the environment due to migration in the surface water, wetlands, or the soil surface, taking in to consideration:             <ul style="list-style-type: none"> <li>– volume and physical and chemical characteristics of the waste in the unit, including its potential for migration through soil, liners, or other containing structures</li> <li>– the hydrologic and geologic characteristics of the unit and surrounding area</li> <li>– existing quality of groundwater, including other sources of contamination and their cumulative impact on the groundwater</li> <li>– quantity and direction of groundwater flow</li> <li>– proximity to and withdrawal rates of current and potential groundwater users</li> <li>– regional pattern of land use</li> <li>– potential for deposition or migration of waste constituents into subsurface physical structures, and into the root zone of food-chain crops and other vegetation</li> <li>– potential health risks caused by human exposure to the waste</li> <li>– potential for damage from exposure to domestic animals, wildlife, crops, vegetation, and physical structures</li> </ul> </li> <li>– prevention of any release that may have adverse affects on human health or the environment due to migration of waste constituents in the groundwater or sub surface environment, taking into consideration:             <ul style="list-style-type: none"> <li>– volume, physical, and chemical characteristics of waste, including its potential for migration through soil, liners, or other containing structures</li> <li>– the hydrogeological and geological characteristics of the unit and surrounding area</li> </ul> </li> </ul>

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<p><b>HW.210.2.US.</b> TSDFs that treat, store, or dispose of hazardous wastes in permitted miscellaneous units must comply with monitoring, analysis, inspection, responses, reporting, and corrective action regulations (40 CFR 264.602) [<b>Revised January 2005</b>].</p> <p><b>HW.210.3.US.</b> A permitted miscellaneous unit that is a disposal unit must be maintained according to the permit requirements during the postclosure period (40 CFR 264.603).</p>	<ul style="list-style-type: none"> <li>– existing quality of groundwater, including other sources of contamination and their cumulative impact on the groundwater</li> <li>– the quantity and direction of groundwater flow</li> <li>– proximity to and withdrawal rates of current and potential groundwater users</li> <li>– regional pattern of land use</li> <li>– potential for deposition or migration of waste into subsurface physical structures, and the root zone of food-chain crops and other vegetation</li> <li>– potential health risks caused by human exposure to the waste</li> <li>– potential for damage from exposure to domestic animals, wildlife, crops, vegetation, and physical structures</li> <li>– regional pattern of precipitation.</li> </ul> <p>Verify that miscellaneous units are designed and operated according to their permit restrictions.</p> <p>(NOTE: The open burning/open detonation (OB/OD) of waste explosives at permitted TSDFs is done under the classification of miscellaneous unit. This is also sometimes referred to as a Subpart X Permit.)</p> <p>Determine if the TSDF complies with the following regulations:</p> <ul style="list-style-type: none"> <li>– follow the general inspection requirements of 40 CFR 264.15 (see checklist item HW.145.2.US)</li> <li>– test and maintain equipment in compliance with 40 CFR 264.33 (see checklist item HW.105.5.US)</li> <li>– prepares a biennial report as specified in 40 CFR 264.75 (see checklist item HW.145.6.US)</li> <li>– prepares unmanifested waste reports and additional reports, if applicable, as required in 40 CFR 264.76 through 264.77 (see checklist items HW.145.4.US and HW.170.3.US )</li> <li>– takes corrective action to prevent releases as defined in 40 CFR 264.101 (see checklist items HW.180.2.US and HW.180.11.US).</li> </ul> <p>Determine if the TSDF has a closed miscellaneous unit.</p> <p>Verify that the postclosure requirements specified in the permit are being carried out.</p> <p>(NOTE: The open burning/open detonation (OB/OD) of waste explosives at permitted TSDFs is done under the classification of miscellaneous unit. This is also sometimes referred to as a Subpart X Permit.)</p>



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<p><b>ADDITIONAL REQUIREMENTS FOR INTERIM STATUS TSDFs</b></p> <p><b>HW.220. General</b></p> <p><b>HW.220.1.US.</b> Interim status TSDFs are allowed to conduct OB/OD of waste explosives under specific conditions (40 CFR 265.382).</p> <p><b>HW.220.2.US.</b> Checklist item deleted <b>[Deleted January 1999]</b>.</p> <p><b>HW.220.3.US.</b> Interim status TSDFs operating surface impoundments, landfills, or land treatment facilities used to manage hazardous waste are required to implement a groundwater monitoring program that meets specific standards (40 CFR 265.90(a) through 265.90(e), and 265.91) <b>[Revised January 1999; Revised July 2006]</b>.</p>	<p>Determine if the TSDF is conducting OB/OD activities.</p> <p>Verify that the OB/OD occurs at the distance from an adjoining property line indicated in the following chart:</p> <table> <tr> <td>Pounds of waste explosive or propellants</td><td>Minimum distance from OB/OD activity to the property of others</td></tr> <tr> <td>0 to 100</td><td>204 m (670 ft)</td></tr> <tr> <td>101 to 1000</td><td>380 m (1250 ft)</td></tr> <tr> <td>1001 to 10,000</td><td>530 m (1730 ft)</td></tr> <tr> <td>10,000 to 30,000</td><td>690 m (2260 ft)</td></tr> </table> <p>This checklist item was incorporated into HW.220.3.US.</p> <p>Verify that the owner or operator of a surface impoundment, landfill, or land treatment facility which is used to manage hazardous waste has implemented a ground-water monitoring program capable of determining the facility's impact on the quality of ground water in the uppermost aquifer underlying the facility.</p> <p>Verify that the owner or operator installs, operates, and maintains a ground-water monitoring program that is carried out during the active life of the facility, and for disposal facilities, during the post-closure care period as well.</p> <p>Verify that the groundwater monitoring system is capable of yielding groundwater samples for analysis and consists of:</p> <ul style="list-style-type: none"> <li>– monitoring wells (at least one) installed hydraulically upgradient (i.e., in the direction of increasing static head) from the limit of the waste management area in number, locations, and depths sufficient to yield ground-water samples that are: <ul style="list-style-type: none"> <li>– representative of background groundwater quality in the uppermost aquifer near the facility</li> <li>– not affected by the facility</li> </ul> </li> <li>– monitoring wells (at least three) installed hydraulically downgradient (i.e., in the direction of decreasing static head) at the limit of the waste management</li> </ul>	Pounds of waste explosive or propellants	Minimum distance from OB/OD activity to the property of others	0 to 100	204 m (670 ft)	101 to 1000	380 m (1250 ft)	1001 to 10,000	530 m (1730 ft)	10,000 to 30,000	690 m (2260 ft)
Pounds of waste explosive or propellants	Minimum distance from OB/OD activity to the property of others										
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	<p>area in such number, locations, and depths that they immediately detect any statistically significant amounts of hazardous waste or hazardous waste constituents that migrate from the waste management area to the uppermost aquifer.</p> <p>(NOTE: The facility owner or operator may demonstrate in writing, and certified by a qualified groundwater scientist, that an alternate hydraulically downgradient monitoring well location will meet the following criteria</p> <ul style="list-style-type: none"> <li>– an existing physical obstacle prevents monitoring well installation at the hydraulically downgradient limit of the waste management area</li> <li>– the selected alternate downgradient location is as close to the limit of the waste management area as practical</li> <li>– the location ensures detection that, given the alternate location, is as early as possible of any statistically significant amounts of hazardous waste or hazardous waste constituents that migrate from the waste management area to the uppermost aquifer.</li> </ul> <p>Lateral expansion, new, or replacement units are not eligible for an alternate downgradient location.)</p> <p>(NOTE: Separate monitoring systems for each waste management component of a facility are not required provided that provisions for sampling upgradient and downgradient water quality will detect any discharge from the waste management area.)</p> <p>Verify that, in the case of a facility consisting of only one surface impoundment, landfill, or land treatment area, the waste management area is described by the waste boundary (perimeter).</p> <p>Verify that, in the case of a facility consisting of more than one surface impoundment, landfill, or land treatment area, the waste management area is described by an imaginary boundary line which circumscribes the several waste management components.</p> <p>Verify that all monitoring wells are cased in a manner that maintains the integrity of the monitoring well bore hole, and:</p> <ul style="list-style-type: none"> <li>– the casing is screened or perforated, and packed with gravel or sand where necessary, to enable sample collection at depths where appropriate aquifer flow zones exist</li> <li>– the annular space (i.e., the space between the bore hole and well casing) above the sampling depth is sealed with a suitable material (e.g., cement grout or bentonite slurry) to prevent contamination of samples and the ground water.</li> </ul> <p>(NOTE: All or part of these groundwater monitoring requirements may be waived if the owner or operator can demonstrate that there is a low potential for migration of hazardous waste or hazardous waste constituents from the facility via the uppermost aquifer to water supply wells (domestic, industrial, or agricultural) or to</p>

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	<p>surface water. This demonstration must be in writing, and must be kept at the facility. This demonstration must be certified by a qualified geologist or geotechnical engineer and must establish the following:</p> <ul style="list-style-type: none"> <li>– the potential for migration of hazardous waste or hazardous waste constituents from the facility to the uppermost aquifer, by an evaluation of: <ul style="list-style-type: none"> <li>– a water balance of precipitation, evapotranspiration, runoff, and infiltration</li> <li>– Unsaturated zone characteristics (i.e., geologic materials, physical properties, and depth to ground water)</li> </ul> </li> <li>– the potential for hazardous waste or hazardous waste constituents which enter the uppermost aquifer to migrate to a water supply well or surface water, by an evaluation of: <ul style="list-style-type: none"> <li>– saturated zone characteristics (i.e., geologic materials, physical properties, and rate of ground-water flow)</li> <li>– the proximity of the facility to water supply wells or surface water.)</li> </ul> </li> </ul> <p>(NOTE: If an owner or operator assumes (or knows) that ground-water monitoring of indicator parameters would show statistically significant increases (or decreases in the case of pH) when evaluated, he may, install, operate, and maintain an alternate groundwater monitoring system (other than the one described in 40 CFR 265.91 and 265.92).</p> <p>Verify that, if the owner or operator decides to use an alternate ground-water monitoring system he:</p> <ul style="list-style-type: none"> <li>– submits to the Regional Administrator a specific plan, certified by a qualified geologist or geotechnical engineer, which satisfies the requirements of 40 CFR 265.93(d)(3), for an alternate ground-water monitoring system</li> <li>– initiates the determinations specified in 40 CFR 265.93(d)(4)</li> <li>– prepares and submits a written report in accordance with 40 CFR 265.93(d)(5)</li> <li>– continues to make the determinations specified in 40 CFR 265.93(d)(4) on a quarterly basis until final closure of the facility</li> <li>– complies with the recordkeeping and reporting requirements in 40 CFR 265.94(b)</li> </ul> <p>(NOTE: The ground-water monitoring requirements may be waived with respect to any surface impoundment that:</p> <ul style="list-style-type: none"> <li>– is used to neutralize wastes which are hazardous solely because they exhibit the corrosivity characteristic or are listed as hazardous wastes in 40 CFR 261, Subpart D only for this reason</li> <li>– contains no other hazardous wastes, if the owner or operator can demonstrate that there is no potential for migration of hazardous wastes from the impoundment by establishing, based upon consideration of the characteristics of the wastes and the impoundment, that the corrosive wastes will be neutralized to the extent that they no longer meet the corrosivity characteristic before they can migrate out of the impoundment.</li> </ul>

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<p><b>HW.220.4.US.</b> Interim status TSDFs must gather and analyze samples from the groundwater monitoring system according to specific parameters (40 CFR 265.90(c), 265.90(e), 265.92, 265.93(b) through 265.93(d)) [Revised January 1999; Revised July 2006].</p>	<p>The demonstration must be in writing and must be certified by a qualified professional.)</p> <p>Verify that the groundwater sampling and analysis plan includes procedures and techniques for the following:</p> <ul style="list-style-type: none"> <li>– sample collection</li> <li>– sample preservation and shipment</li> <li>– analytical procedures</li> <li>– chain of custody control.</li> </ul> <p>Verify that the owner or operator determines the concentration or value of the following parameters in groundwater samples:</p> <ul style="list-style-type: none"> <li>– parameters characterizing the suitability of the ground water as a drinking water supply, as specified in appendix III.</li> <li>– parameters establishing groundwater quality: Chloride, Iron, Manganese, Phenols, Sodium, and Sulfate</li> <li>– parameters used as indicators of ground-water contamination: pH, Specific Conductance, Total Organic Carbon, and Total Organic Halogen.</li> </ul> <p>Verify that, for all monitoring wells, the owner or operator establishes initial background concentrations or values of all parameters specified above on a quarterly basis for one year.</p> <p>Verify that, for the indicator parameters of pH, Specific Conductance, Total Organic Carbon, and Total Organic Halogen, at least four replicate measurements are obtained for each sample and the initial background arithmetic mean and variance is determined by pooling the replicate measurements for the respective parameter concentrations or values in samples obtained from upgradient wells during the first year.</p> <p>Verify that, after the first year, the following frequencies are met:</p> <ul style="list-style-type: none"> <li>– parameters establishing groundwater quality: annually</li> <li>– parameters used as indicators of groundwater contamination: semiannually.</li> </ul> <p>Verify that the elevation of the groundwater surface at each monitoring well is determined each time a sample is obtained.</p> <p>Verify that, for parameters used as indicators of ground-water contamination, the owner or operator calculates the arithmetic mean and variance, based on at least four replicate measurements on each sample, for each well monitored in semiannually, and compares these results with its initial background arithmetic mean.</p>

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	<p>Verify that the comparison considers individually each of the wells in the monitoring system, and uses the Student's t-test at the 0.01 level of significance to determine statistically significant increases (and decreases, in the case of pH) over initial background.</p> <p>(NOTE: If the comparisons for the upgradient wells show a significant increase (or pH decrease), the owner or operator must submit this information annually. If the comparisons for downgradient wells show a significant increase (or pH decrease), the owner or operator must then immediately obtain additional ground-water samples from those downgradient wells where a significant difference was detected, split the samples in two, and obtain analyses of all additional samples to determine whether the significant difference was a result of laboratory)</p> <p>Verify that, if the comparison for downgradient wells confirm the significant increase (or pH decrease), the owner or operator provides written notice to the Regional Administrator, within 7 days of the date of the confirmation, that the facility may be affecting groundwater quality.</p> <p>Verify that, within 15 days after the notification pertaining to downgradient wells, the owner or operator develops a specific plan for a ground water quality assessment at the facility.</p> <p>Verify that the plan for the groundwater assessment at the facility is certified by a qualified geologist or geotechnical engineer and the plan is placed in the facility operating record and maintained until closure of the facility,</p> <p>Verify that the plan for groundwater assessment specifies:</p> <ul style="list-style-type: none"> <li>– the number, location, and depth of wells</li> <li>– sampling and analytical methods for those hazardous wastes or hazardous waste constituents in the facility</li> <li>– evaluation procedures, including any use of previously gathered groundwater quality information</li> <li>– a schedule of implementation</li> </ul> <p>Verify that the owner or operator implements the ground-water quality assessment plan, and, at a minimum, determines:</p> <ul style="list-style-type: none"> <li>– the rate and extent of migration of the hazardous waste or hazardous waste constituents in the ground water</li> <li>– the concentrations of the hazardous waste or hazardous waste constituents in the ground water.</li> </ul> <p>Verify that the groundwater quality assessment is done as soon as technically feasible and a report prepared containing an assessment of the groundwater quality.</p>

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	<p>Verify that the report assessing the groundwater quality is placed in the facility operating record and maintained until closure of the facility.</p> <p>(NOTE: If the owner or operator determines, based on the results of the first groundwater quality determination, that no hazardous waste or hazardous waste constituents from the facility have entered the groundwater, then the owner or operator may reinstate the indicator evaluation program.)</p> <p>Verify that, if the owner or operator reinstates the indicator evaluation program, the Regional Administrator is notified.</p> <p>Verify that, if the owner or operator determines, based on the first determination, that hazardous waste or hazardous waste constituents from the facility have entered the groundwater, then one of the following are met:</p> <ul style="list-style-type: none"> <li>– the facility continues to make the required determinations on a quarterly basis until final closure of the facility if the ground-water quality assessment plan was implemented prior to final closure of the facility</li> <li>– the facility ceases to make the required determinations if the groundwater quality assessment plan was implemented during the post-closure care period.</li> </ul> <p>(NOTE: All or part of these groundwater monitoring requirements may be waived if the owner or operator can demonstrate that there is a low potential for migration of hazardous waste or hazardous waste constituents from the facility via the uppermost aquifer to water supply wells (domestic, industrial, or agricultural) or to surface water. This demonstration must be in writing, and must be kept at the facility. This demonstration must be certified by a qualified geologist or geotechnical engineer and must establish the following:</p> <ul style="list-style-type: none"> <li>– the potential for migration of hazardous waste or hazardous waste constituents from the facility to the uppermost aquifer, by an evaluation of: <ul style="list-style-type: none"> <li>– a water balance of precipitation, evapotranspiration, runoff, and infiltration</li> <li>– unsaturated zone characteristics (i.e., geologic materials, physical properties, and depth to ground water)</li> </ul> </li> <li>– the potential for hazardous waste or hazardous waste constituents which enter the uppermost aquifer to migrate to a water supply well or surface water, by an evaluation of: <ul style="list-style-type: none"> <li>– saturated zone characteristics (i.e., geologic materials, physical properties, and rate of ground-water flow)</li> <li>– the proximity of the facility to water supply wells or surface water.)</li> </ul> </li> </ul> <p>(NOTE: The ground-water monitoring requirements may be waived with respect to any surface impoundment that:</p> <ul style="list-style-type: none"> <li>– is used to neutralize wastes which are hazardous solely because they exhibit the corrosivity characteristic or are listed as hazardous wastes in 40 CFR 261, Subpart D only for this reason</li> </ul>

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<p><b>HW.220.5.US.</b> Interim status TSDFs must have an outline of a more extensive groundwater quality assessment program and implement that program according to specific parameters when contamination is detected (40 CFR 265.77(b), 265.90(a) through 265.90(c), 265.90(e), 265.93(a)) <b>[Revised January 1999; Citation Revised January 2005].</b></p>	<p>– contains no other hazardous wastes, if the owner or operator can demonstrate that there is no potential for migration of hazardous wastes from the impoundment by establishing, based upon consideration of the characteristics of the wastes and the impoundment, that the corrosive wastes will be neutralized to the extent that they no longer meet the corrosivity characteristic before they can migrate out of the impoundment.  The demonstration must be in writing and must be certified by a qualified professional.)</p> <p>(NOTE: These requirements apply during the active life of the facility, and for disposal facilities, during the postclosure care period as well.)</p> <p>(NOTE: All or part of the groundwater monitoring requirements may be waived:  – if the owner/operator has demonstrated in writing that there is a low potential for migration of hazardous waste constituents from the facility via the uppermost aquifer to water supply wells or surface water  – for any surface impoundment that is used to neutralize wastes that are hazardous solely because they exhibit the corrosivity characteristic or are listed as hazardous wastes only for that reason and contains no other hazardous wastes and it can be demonstrated in writing that there is no potential for migration.)</p> <p>(NOTE: All demonstrations in writing must be kept at the facility and be certified by a qualified geologist or geotechnical engineer.)</p> <p>Determine if a groundwater quality assessment program outline has been developed.</p> <p>Verify that the program outline describes a more comprehensive program capable of determining:</p> <ul style="list-style-type: none"> <li>– whether hazardous waste or hazardous waste constituents have entered the groundwater</li> <li>– the rate and extent of migration of hazardous waste or hazardous waste constituents in the groundwater</li> <li>– the concentrations of hazardous waste or hazardous waste constituents in the groundwater.</li> </ul> <p>Verify that, for indicator parameters (pH, specific conductance, total organic carbon, total organic halogen):</p> <ul style="list-style-type: none"> <li>– the arithmetic mean and variance, based on at least four replicate measurements on each sample, for each well monitored for indicator parameters semiannually</li> <li>– results of calculations are compared with the initial background arithmetic mean.</li> </ul>

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<p><b>HW.220.6.US.</b> Checklist item deleted. <b>[Deleted January 1999].</b></p> <p><b>HW.220.7.US.</b> Checklist item deleted. <b>[Deleted January 1999].</b></p>	<p>Verify that, if the comparisons for the indicator parameters from upgradient wells show a significant increase (or pH decrease), this is included in the annual report to the Regional Administrator.</p> <p>Verify that, if the comparisons for the indicator parameters from downgradient wells show a significant increase (or pH decrease), additional groundwater samples are immediately taken from those downgradient wells where a significant difference was detected, split the samples in two, and determine if there was laboratory error.</p> <p>Verify that, if the cross check confirms a significant increase (or pH decrease) in a downgradient well:</p> <ul style="list-style-type: none"> <li>– a written notice is provided to the Regional Administrator within 7 days of confirmation that the facility may be affecting groundwater quality</li> <li>– submit a plan based on the groundwater quality assessment program outline to the Regional Administrator within 15 days after the notification.</li> </ul> <p>Verify that the plan is certified by a qualified geologist or geotechnical engineer and specifies:</p> <ul style="list-style-type: none"> <li>– number, location, and depth of wells</li> <li>– sampling and analytical methods for the wastes and constituents in the facility</li> <li>– evaluation procedures, including any use of previously gathered groundwater quality data</li> <li>– a schedule of implementation.</li> </ul> <p>Verify that the plan is implemented with the first determinations being made as soon as technically feasible.</p> <p>Verify that within 15 days after the first determinations, a written report is submitted to the Regional Administrator containing an assessment of the groundwater quality.</p> <p>(NOTE: When it is determined there is no contamination, the original indicator evaluation program may be resumed.)</p> <p>This checklist item was incorporated into HW.220.5.US.</p> <p>This checklist item was incorporated into HW.220.5.US.</p>

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<p><b>HW.220.8.US.</b> The interim status TSDF is required to meet specific reporting and recordkeeping requirements except when the groundwater is being monitored to satisfy a groundwater assessment program resulting from downgradient well contamination (40 CFR 265.90(a) through 265.90(c), 265.90(e), and 265.94(a)) [Revised January 1999].</p>	<p>(NOTE: These requirements apply during the active life of the facility, and for disposal facilities, during the postclosure care period as well.)</p> <p>(NOTE: All or part of the groundwater monitoring requirements may be waived:</p> <ul style="list-style-type: none"> <li>– if the owner/operator has demonstrated in writing that there is a low potential for migration of hazardous waste constituents from the facility via the uppermost aquifer to water supply wells or surface water</li> <li>– for any surface impoundment that is used to neutralize wastes that are hazardous solely because they exhibit the corrosivity characteristic or are listed as hazardous wastes only for that reason and contain no other hazardous wastes and it can be demonstrated in writing there is no potential for migration.)</li> </ul> <p>(NOTE: All demonstrations in writing must be kept at the facility and be certified by a qualified geologist or geotechnical engineer.)</p> <p>Verify that records of initial background concentrations, ongoing analyses, and groundwater elevations are kept throughout the life of the site, and for disposal facilities through postclosure.</p> <p>Verify that, during the first year of groundwater monitoring, the results of parameter monitoring are submitted to the Regional Administrator within 15 days after completing each quarterly analysis.</p> <p>Verify that, after the first year, concentrations and values for monitored parameters are reported annually to the Regional Administrator by 1 March of each calendar year.</p>
<p><b>HW.220.9.US.</b> When the groundwater is being monitored to satisfy a groundwater assessment program resulting from downgradient well contamination, specific records have to be maintained and reports submitted (40 CFR 265.90(a) through 265.90(c), 265.90(e), and 265.94(b)) [Revised January 1999].</p>	<p>(NOTE: These requirements apply during the active life of the facility, and for disposal facilities, during the postclosure care period as well.)</p> <p>(NOTE: All or part of the groundwater monitoring requirements may be waived:</p> <ul style="list-style-type: none"> <li>– if the owner/operator has demonstrated in writing that there is a low potential for migration of hazardous waste constituents from the facility via the uppermost aquifer to water supply wells or surface water</li> <li>– for any surface impoundment that is used to neutralize wastes that are hazardous solely because they exhibit the corrosivity characteristic or are listed as hazardous wastes only for that reason and contain no other hazardous wastes and it can be demonstrated in writing that there is no potential for migration.)</li> </ul> <p>(NOTE: All demonstrations in writing must be kept at the facility and be certified by a qualified geologist or geotechnical engineer.)</p>

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	<p>Verify that records of analyses and evaluations specified in the plan are maintained throughout the active life of the site, and for disposal facilities throughout postclosure.</p> <p>Verify that the results of the program are submitted annually to the Regional Administrator by 1 March of each calendar year.</p>

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<p><b>ADDITIONAL REQUIREMENTS FOR INTERIM STATUS TSDFs</b></p> <p><b>HW.225.</b>  <b>Surface Impoundments</b></p> <p><b>HW.225.1.US.</b> Interim status new surface impoundments, lateral expansions of surface impoundments, and replacements of existing surface impoundments are required to meet specific design and operating criteria (40 CFR 265.19, 265.221(a) through 265.221(e), 265.221(h), and 265.222) [Revised July 2006; Revised January 2007].</p>	<p>Verify that the listed surface impoundments have two or more liners and a leachate collection and removal system between the liners unless the Regional Administrator has granted a waiver.</p> <p>Verify that, the owner or operator of new surface impoundments, lateral expansions of surface impoundments, and replacements of existing surface impoundments notify the Regional Administrator at least 60 days prior to receiving waste.</p> <p>Verify that the owner or operator of each facility submitting notice files a part B application within 6 mo of the receipt of such notice.</p> <p>(NOTE: The owner or operator of any replacement surface impoundment does not have to ensure the impoundment has two or more liners and a removal system above and between the liners if:</p> <ul style="list-style-type: none"> <li>– the existing unit was constructed in compliance with the design standards of Sec. 3004(o)(1)(A)(i) and (o)(5) of RCRA</li> <li>– there is no reason to believe that the liner is not functioning as designed.)</li> </ul> <p>(NOTE: The double liner requirement may be waived by the Regional Administrator for any monofill, if:</p> <ul style="list-style-type: none"> <li>– the monofill contains only hazardous wastes from foundry furnace emission controls or metal casting molding sand, and such wastes do not contain constituents which would render the wastes hazardous for reasons other than the Toxicity Characteristic, with EPA Hazardous Waste Numbers D004 through D017</li> <li>– the monofill has at least one liner for which there is no evidence that such liner is leaking</li> <li>– the monofill is located more than one-quarter mile from an underground source of drinking water</li> <li>– the monofill is in compliance with generally applicable groundwater monitoring requirements for facilities with permits under RCRA section 3005(c)</li> <li>– the owner or operator demonstrates that the monofill is located, designed and operated so as to assure that there will be no migration of any hazardous constituent into ground water or surface water at any future time.)</li> </ul> <p>(NOTE: The term “liner” means a liner designed, constructed, installed, and operated to prevent hazardous waste from passing into the liner at any time during the active life of the facility, or a liner designed, constructed, installed, and operated</p>

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	<p>to prevent hazardous waste from migrating beyond the liner to adjacent subsurface soil, ground water, or surface water at any time during the active life of the facility.)</p> <p>Verify that, at the closure of a surface impoundment which has been exempted from the liner requirements on the basis of a liner designed, constructed, installed, and operated to prevent hazardous waste from passing beyond the liner, the owner or operator removes or decontaminates all waste residues, all contaminated liner material, and contaminated soil to the extent practicable.</p> <p>(NOTE: If all contaminated soil it is not removed or decontaminated, the owner of operator of such impoundment must comply with appropriate post-closure requirements, including but not limited to ground-water monitoring and corrective action.)</p> <p>(NOTE: When the appropriate liner and leachate collection system has been installed in good faith compliance and with guidance documents governing liners and leachate collection systems, no liner or leachate collection system which is different from that which was so installed will be required for such unit by the Regional Administrator when issuing the first permit to such facility, except that the Regional Administrator will not be precluded from requiring installation of a new liner when the Regional Administrator has reason to believe that any liner installed is leaking.)</p> <p>(NOTE: Surface impoundments that are newly subject to hazardous waste requirements because of new additions or characteristics for the identification of hazardous waste are required to meet the standards outlined above concerning having two or more liners and a leachate collection system not later than 48 mo after promulgation of the additional listing of a characteristic waste.)</p> <p>Verify that the owner or operator of surface impoundment units submits a proposed action leakage rate to the Regional Administrator when submitting the notice prior to acceptance of waste.</p> <p>(NOTE: If the Regional Administrator does not take action on before the original 60 or extended 90 day review periods, the action leakage rate will be approved as proposed by the owner or operator.)</p> <p>(NOTE: The action leakage rate is the maximum design flow rate that the leak detection system (LDS) can remove without the fluid head on the bottom liner exceeding 1 foot. The action leakage rate must include an adequate safety margin to allow for uncertainties in the design (e.g., slope, hydraulic conductivity, thickness of drainage material), construction, operation, and location of the LDS, waste and leachate characteristics, likelihood and amounts of other sources of liquids in the LDS, and proposed response actions (e.g., the action leakage rate must consider decreases in the flow capacity of the system over time resulting from siltation and clogging, rib layover and creep of synthetic components of the system, overburden pressures, etc.).</p>

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<p><b>HW.225.2.US.</b> Interim status surface impoundments are required to meet specific operating and containment standards (40 CFR 265.221(f), 265.221(g), 265.223, and 265.226).</p>	<p>Verify that, in order to determine if the action leakage rate has been exceeded, the owner or operator converts the weekly or monthly flow rate from the monitoring data obtained under 40 CFR 265.226(b), to an average daily flow rate (gallons per acre per day) for each sump;</p> <p>(NOTE: Unless the Regional Administrator approves a different calculation, the average daily flow rate for each sump must be calculated weekly during the active life and closure period, and if the unit closes in accordance with 40 CFR 265.228(a)(2), monthly during the post-closure care period when monthly monitoring is required under 40 CFR 265.226(b).)</p> <p>Verify that there is enough freeboard to prevent any overtopping of the dike by over filling, wave actions, or a storm.</p> <p>Verify that there is a freeboard of 60 cm (2 ft) unless written certification states that a lesser freeboard is acceptable.</p> <p>Verify that all earthen dikes have a protective cover such as grass, shale, or rock to minimize wind and water erosion and preserve integrity.</p> <p>Verify that the freeboard is inspected at least once each day.</p> <p>Verify that the surface impoundment is inspected at least once a week for signs of deterioration, leaks, or failure.</p> <p>Verify that the amount of liquids removed from each leak detection system sump is recorded at least:</p> <ul style="list-style-type: none"> <li>– once a week during the active life and closure period</li> <li>– monthly after the final cover is installed or: <ul style="list-style-type: none"> <li>– if the liquid level in the sump stays below the pump operating level of 2 consecutive months, quarterly</li> <li>– if the liquid level in the sump stays below the pump operating level for 2 consecutive quarters, semi-annually.</li> </ul> </li> </ul>
<p><b>HW.225.3.US.</b> In specific circumstances additional waste analyses must be done (40 CFR 265.225).</p>	<p>Verify that additional waste analyses are done whenever one of the following situations exists:</p> <ul style="list-style-type: none"> <li>– the surface impoundment is used to treat a substantially different hazardous waste from what was previously treated</li> <li>– a substantially different process is used to treat the waste.</li> </ul>
<p><b>HW.225.4.US.</b> Specific procedures must be followed during the closure and postclosure periods for an</p>	<p>Verify that at closure all waste residues, contaminated containment system components, contaminated subsoils, and structures and equipment contaminated with waste and leachate are removed or decontaminated.</p>

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<p>interim status surface impoundment (40 CFR 265.228).</p> <p><b>HW.225.5.US.</b> Checklist item deleted [Deleted December 1996].</p> <p><b>HW.225.6.US.</b> Interim status new surface impoundments, lateral expansions of surface impoundments, and replacements of existing surface impoundments must have a response action plan including the actions to be taken during response (40 CFR 265.224) [Added July 2006].</p>	<p>Verify that postclosure care includes care equivalent to that for interim status landfills and 40 CFR 265.310, including:</p> <ul style="list-style-type: none"> <li>– elimination of free liquids</li> <li>– stabilization of wastes to a bearing capacity sufficient to support the final cover</li> <li>– covering of surface impoundment.</li> </ul> <p>Verify that if wastes, waste residues, or contaminated materials remain after closure:</p> <ul style="list-style-type: none"> <li>– the integrity of the final cover is maintained</li> <li>– a groundwater monitoring system is maintained that meets the requirements of 40 CFR 265.90 through 265.94 (see checklist item HW.220.2.US through HW.220.9.US)</li> <li>– run-on and runoff are prevented from damaging or eroding the final cover</li> <li>– maintenance and monitoring of leak detection system.</li> </ul> <p>Checklist item deleted.</p> <p>Verify that the owner or operator of interim status new surface impoundments, lateral expansions of surface impoundments, or replacements of existing surface impoundments submit a response action plan to the Regional Administrator when submitting the proposed action leakage rate under 40 CFR 265.222 (see checklist item HW.225.1.US).</p> <p>Verify that the response action plan sets forth the actions to be taken if the action leakage rate has been exceeded.</p> <p>Verify that, at a minimum, the response action plan describes the following actions if the flow rate into the leak detection system exceeds the action leakage rate for any sump, the owner or operator:</p> <ul style="list-style-type: none"> <li>– notifies the Regional Administrator in writing of the exceedance within 7 days of the determination</li> <li>– submits a preliminary written assessment to the Regional Administrator within 14 days of the determination, as to the amount of liquids, likely sources of liquids, possible location, size, and cause of any leaks, and short-term actions taken and planned</li> <li>– determines to the extent practicable the location, size, and cause of any leak</li> <li>– determines whether waste receipt should cease or be curtailed, whether any waste should be removed from the unit for inspection, repairs, or controls, and whether or not the unit should be closed</li> </ul>

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	<ul style="list-style-type: none"> <li>– determines any other short-term and longer-term actions to be taken to mitigate or stop any leaks</li> <li>– submits to the Regional Administrator the results of the analyses specified above, the results of actions taken, and actions planned within 30 days after the notification that the action leakage rate has been exceeded</li> <li>– submits to the Regional Administrator a report summarizing the results of any remedial actions taken and actions planned monthly thereafter, as long as the flow rate in the leak detection system exceeds the action leakage rate.</li> </ul> <p>Verify that, in order to make the leak and/or remediation determinations, the owner or operator:</p> <ul style="list-style-type: none"> <li>– assesses the source of liquids and amounts of liquids by source</li> <li>– conducts a fingerprint, hazardous constituent, or other analyses of the liquids in the leak detection system to identify the source of liquids and possible location of any leaks, and the hazard and mobility of the liquid</li> <li>– assesses the seriousness of any leaks in terms of potential for escaping into the environment</li> <li>– documents why such assessments are not needed.</li> </ul>



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<b>ADDITIONAL REQUIREMENTS FOR INTERIM STATUS TSDFs</b>  <b>HW.230. Waste Piles</b>  <b>HW.230.1.US.</b> Interim status waste piles are required to meet specific standards for wind protection, waste analysis, storage, and containment (40 CFR 265.250, 265.251, 265.253, 265.256, and 265.257) [Revised July 2006].	<p>(NOTE: This checklist item applies to owners and operators of facilities that treat or store hazardous waste in piles, except as 40 CFR 265.1 provides otherwise. Alternatively, a pile of hazardous waste may be managed as a landfill under 40 CFR 265, Subpart N.)</p> <p>Verify that the owner or operator of a pile containing hazardous waste which could be subject to dispersal by wind must cover or otherwise manage the pile so that wind dispersal is controlled.</p> <p>Verify that, if leachate or run-off from a pile is a hazardous waste, then one of the following is done:</p> <ul style="list-style-type: none"> <li>– Option 1             <ul style="list-style-type: none"> <li>– the pile is placed on an impermeable base that is compatible with the waste under the conditions of treatment or storage</li> <li>– the owner or operator designs, constructs, operates, and maintains a run-on control system capable of preventing flow onto the active portion of the pile during peak discharge from at least a 25-year storm</li> <li>– the owner or operator designs, constructs, operates, and maintains a run-off management system to collect and control at least the water volume resulting from a 24-h, 25-yr storm</li> <li>– collection and holding facilities (e.g., tanks or basins) associated with run-on and run-off control systems are emptied or otherwise managed expeditiously to maintain design capacity of the system</li> </ul> </li> <li>– Option 2             <ul style="list-style-type: none"> <li>– the pile is protected from precipitation and run-on by some other means</li> <li>– no liquids or wastes containing free liquids are placed in the pile.</li> </ul> </li> </ul> <p>(NOTE: If collected leachate or run-off is discharged through a point source to waters of the United States, it is subject to the requirements of section 402 of the Clean Water Act, as amended.)</p> <p>Verify that ignitable or reactive waste is not placed in a pile unless the waste and pile satisfy all applicable requirements of 40 CFR 268, and one of the following:</p> <ul style="list-style-type: none"> <li>– addition of the waste to an existing pile:             <ul style="list-style-type: none"> <li>– results in the waste or mixture no longer meeting the definition of ignitable or reactive waste under 40 CFR 261.21 or 40 CFR 261.23</li> </ul> </li> </ul>

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<p><b>HW.230.2.US.</b> New interim status piles that started construction after 29 January 1992, lateral expansions of a waste pile unit which started after 29 July 1992, and each such replacement of an existing waste pile unit for which reuse started after 29 July 1992 must meet specific design and operating standards (40 CFR 265.19, 265.254, 265.255, and 265.260) [Revised July 2006].</p>	<p style="text-align: center;">– complies with 40 CFR 265.17(b) (see checklist item HW.105.7.US)  – the waste is managed in such a way that it is protected from any material or conditions which may cause it to ignite or react.</p> <p>Verify that incompatible wastes, or incompatible wastes and materials are not placed in the same pile, unless storage as outlined in 40 CFR 265.17(b) (see checklist item HW.105.7.US) is complied with.</p> <p>Verify that a pile of hazardous waste that is incompatible with any waste or other material stored nearby in other containers, piles, open tanks, or surface impoundments is separated from the other materials, or protected from them by means of a dike, berm, wall, or other device.</p> <p>Verify that hazardous waste is not piled on the same area where incompatible wastes or materials were previously piled, unless that area has been decontaminated sufficiently to ensure compliance with 40 CFR 265.17(b) (see checklist item HW.105.7.US).</p> <p>Verify that the waste pile has two or more liners and a leachate collection and removal system above and between the liners.</p> <p>Verify that the leachate collection and removal system is operated in accordance with 40 CFR 264.251(c) (see checklist item HW.190.2.US), and comply with the procedures of 40 CFR 265.221(b) (see checklist item HW.225.1.US).</p> <p>Verify that the owner or operator records the amount of liquids removed from each leak detection system sump at least once each week during the active life and closure period.</p> <p>Verify that new interim status piles that started construction after 29 January 1992, lateral expansions of a waste pile unit which started after 29 July 1992, and each such replacement of an existing waste pile unit for which reuse started after 29 July 1992 have a construction quality assurance (CQA) program.</p> <p>Verify that the CQA program ensures that the constructed unit meet or exceed all design criteria and specifications in the permit.</p> <p>Verify that the CQA program is developed and implemented under the direction of a CQA officer who is a registered professional engineer.</p> <p>Verify that the CQA program addresses the following physical components, where applicable:</p> <ul style="list-style-type: none"> <li>– foundations</li> <li>– dikes</li> <li>– low-permeability soil liners</li> <li>– geomembranes (flexible membrane liners)</li> </ul>

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	<ul style="list-style-type: none"> <li>– leachate collection and removal systems and leak detection systems</li> <li>– final cover systems.</li> </ul> <p>Verify that a written CQA plan is developed before construction on a unit begins.</p> <p>Verify that the CQA plan identifies steps that will be used to monitor and document the quality of materials and the condition and manner of their installation.</p> <p>Verify that the CQA plan includes:</p> <ul style="list-style-type: none"> <li>– identification of applicable units, and a description of how they will be constructed</li> <li>– identification of key personnel in the development and implementation of the CQA plan, and CQA officer qualifications</li> <li>– a description of the following information for inspection and sampling activities for all unit components, including observations and tests that will be used before, during, and after construction to ensure that the construction materials and the installed unit components meet the design specifications: <ul style="list-style-type: none"> <li>– sampling size and locations</li> <li>– frequency of testing</li> <li>– data evaluation procedures</li> <li>– acceptance and rejection criteria for construction materials</li> <li>– plans for implementing corrective measures</li> <li>– data or other information to be recorded and retained in the operating record under 40 CFR 265.73 (see checklist item HW.145.5.US).</li> </ul> </li> </ul> <p>Verify that the CQA program includes observations, inspections, tests, and measurements sufficient to ensure:</p> <ul style="list-style-type: none"> <li>– structural stability and integrity of all components of the unit</li> <li>– proper construction of all components of the liners, leachate collection and removal system, leak detection system, and final cover system, according to permit specifications and good engineering practices, and proper installation of all components (e.g., pipes) according to design specifications</li> <li>– conformity of all materials used with design and other material specifications under 40 CFR 264.251 (see checklist items HW.190.1.US and HW.190.2.US).</li> </ul> <p>Verify that the CQA program includes test fills for compacted soil liners, using the same compaction methods as in the full-scale unit, to ensure that the liners are constructed to meet the hydraulic conductivity requirements of 40 CFR 264.251(c)(1) (see checklist items HW.190.1.US and HW.190.2.US) in the field.</p> <p>Verify that compliance with the hydraulic conductivity requirements is verified by using in-situ testing on the constructed test fill.</p>

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	<p>(NOTE: The test fill requirement is waived where data are sufficient to show that a constructed soil liner meets the hydraulic conductivity requirements of 40 CFR 264.254(c)(1) (see checklist items HW.190.1.US and HW.190.2.US) in the field.</p> <p>Verify that the owner or operator of units required to have a CQA program submit to the Regional Administrator by certified mail or hand delivery, at least 30 days prior to receiving waste, a certification signed by the CQA officer that the CQA plan has been successfully carried out and that the unit meets the requirements of 40 CFR 265.254.</p> <p>(NOTE: The owner or operator may receive waste in the unit after 30 days from the Regional Administrator's receipt of the CQA certification unless the Regional Administrator determines in writing that the construction is not acceptable, or extends the review period for a maximum of 30 more days, or seeks additional information from the owner or operator during this period.)</p> <p>Verify that documentation supporting the CQA officer's certification is furnished to the Regional Administrator upon request.</p> <p>Verify that the owner or operator of new interim status piles that started construction after 29 January 1992, lateral expansions of a waste pile unit which started after 29 July 1992, and each such replacement of an existing waste pile unit for which reuse started after 29 July 1992:</p> <ul style="list-style-type: none"> <li>– notifies the Regional Administrator at least sixty days prior to receiving waste</li> <li>– files a part B application within 6 mo of the receipt of such notice</li> <li>– submit a proposed action leakage rate.</li> </ul> <p>(NOTE: Within 60 days of receipt of the notification, the Regional Administrator will establish an action leakage rate, either as proposed by the owner or operator or modified; or extend the review period for up to 30 days. If no action is taken by the Regional Administrator before the original 60 or extended 90 day review periods, the action leakage rate will be approved as proposed by the owner or operator.)</p> <p>(NOTE: The action leakage rate is the maximum design flow rate that the leak detection system (LDS) can remove without the fluid head on the bottom liner exceeding 1 foot. The action leakage rate must include an adequate safety margin to allow for uncertainties in the design [e.g., slope, hydraulic conductivity, thickness of drainage material], construction, operation, and location of the LDS, waste and leachate characteristics, likelihood and amounts of other sources of liquids in the LDS, and proposed response actions [e.g., the action leakage rate must consider decreases in the flow capacity of the system over time resulting from siltation and clogging, rib layover and creep of synthetic components of the system, overburden pressures, etc.]</p> <p>Verify that, in order to determine if the action leakage rate has been exceeded, the owner or operator converts the weekly flow rate from the monitoring data obtained</p>

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<p><b>HW.230.3.US.</b> Except in specific instances, TSDFs are required to analyze a representative sample from each incoming waste before adding the waste to an existing pile (40 CFR 265.252).</p> <p><b>HW.230.4.US.</b> Interim status waste piles must meet specific closure and post closure requirements (40 CFR 265.258).</p> <p><b>HW.230.5.US.</b> New interim status piles that started construction after 29 January 1992, lateral expansions of a waste pile unit which started after 29 July 1992, and each such replacement of an existing waste pile unit for which reuse started after 29 July 1992 must have a response plan (40 CFR 265.259) [Added July 2006].</p>	<p>under 40 CFR 265.260, to an average daily flow rate (gallons per acre per day) for each sump.</p> <p>(NOTE: Unless the Regional Administrator approves a different calculation, the average daily flow rate for each sump must be calculated weekly during the active life and closure period.)</p> <p>Verify that an analysis is performed unless one of the following occurs:</p> <ul style="list-style-type: none"> <li>– the only wastes that the TSDF receives for piling are compatible</li> <li>– the waste received is compatible with the pile in which it is to be placed.</li> </ul> <p>Verify that, at closure, all waste residues, contaminated containment system components, contaminated subsoils, and structures and equipment contaminated with waste and leachate are removed or decontaminated.</p> <p>Verify that, if all residues cannot be removed, the waste pile is closed and postclosure care is carried out as for a landfill.</p> <p>Verify that the owner or operator of new interim status piles that started construction after 29 January 1992, lateral expansions of a waste pile unit which started after 29 July 1992, and each such replacement of an existing waste pile unit for which reuse started after 29 July 1992 submits a response action plan to the Regional Administrator when submitting the proposed action leakage rate under 40 CFR 265.255 (see checklist item HW.230.2.US).</p> <p>Verify that the response action plan sets forth the actions to be taken if the action leakage rate has been exceeded.</p> <p>Verify that the response action plan is kept onsite until closure of the facility.</p> <p>Verify that, at a minimum, the response action plan describes the following actions to be done by the owner or operator if the flow rate into the leak determination system exceeds the action leakage rate for any sump:</p> <ul style="list-style-type: none"> <li>– notify the Regional Administrator in writing of the exceedance within 7 days of the determination</li> <li>– submit a preliminary written assessment to the Regional Administrator within 14 days of the determination, as to the amount of liquids, likely sources of liquids, possible location, size, and cause of any leaks, and short-term actions taken and planned</li> <li>– determine to the extent practicable the location, size, and cause of any leak</li> </ul>

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	<ul style="list-style-type: none"> <li>– determine whether waste receipts should cease or be curtailed, whether any waste should be removed from the unit for inspection, repairs, or controls, and whether or not the unit should be closed</li> <li>– determine any other short-term and longer-term actions to be taken to mitigate or stop any leaks</li> <li>– within 30 days after the notification that the action leakage rate has been exceeded, submit to the Regional Administrator the results of the analyses specified above, the results of actions taken, and actions planned.</li> <li>– monthly thereafter, as long as the flow rate in the leak detection system exceeds the action leakage rate, submit to the Regional Administrator a report summarizing the results of any remedial actions taken and actions planned.</li> </ul> <p>Verify that, in order to make the leak and/or remediation determinations, the owner or operator does one of the following:</p> <ul style="list-style-type: none"> <li>– assesses the source of liquids and amounts of liquids by source and: <ul style="list-style-type: none"> <li>– conducts a fingerprint, hazardous constituent, or other analyses of the liquids in the leak detection system to identify the source of liquids and possible location of any leaks, and the hazard and mobility of the liquid</li> <li>– assesses the seriousness of any leaks in terms of potential for escaping into the environment</li> </ul> </li> <li>– documents why such assessments are not needed.</li> </ul>



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<p><b>HW.235.3.US.</b> TSDFs with interim status land treatment facilities are required to have an unsaturated zone monitoring plan (40 CFR 265.278).</p> <p><b>HW.235.4.US.</b> TSDFs with interim status land treatment facilities are required to meet specific requirements concerning closure and postclosure (40 CFR 265.280) [Revised July 2006].</p>	<p>Verify that if the TSDF accepts waste is contaminated with cadmium, the handling practices outlined in 40 CFR 265.276(c) are followed.</p> <p>Verify that the TSDF has an unsaturated zone monitoring plan which includes:</p> <ul style="list-style-type: none"> <li>– soil monitoring using soil cores</li> <li>– soil-pore water monitoring using devices such as lysimeters</li> <li>– depth and number of samples to be taken.</li> </ul> <p>Verify that the TSDF is following the plan.</p> <p>Verify that the owner or operator addresses the following objectives and how they will be achieved in the closure plan under 40 CFR 265.112 (see checklist item HW.145.7.US and HW.170.2.US) and the post-closure plan under 40 CFR 265.118 (see checklist item HW.145.8.US):</p> <ul style="list-style-type: none"> <li>– control of the migration of hazardous waste and hazardous waste constituents from the treated area into the ground water</li> <li>– control of the release of contaminated run-off from the facility into surface water</li> <li>– control of the release of airborne particulate contaminants caused by wind erosion</li> <li>– compliance with 40 CFR 265.276 (see checklist item HW.235.2.US) concerning the growth of food-chain crops.</li> </ul> <p>Verify that the owner or operator considers at least the following factors in addressing the closure and post-closure care objectives:</p> <ul style="list-style-type: none"> <li>– type and amount of hazardous waste and hazardous waste constituents applied to the land treatment facility</li> <li>– the mobility and the expected rate of migration of the hazardous waste and hazardous waste constituents</li> <li>– site location, topography, and surrounding land use, with respect to the potential effects of pollutant migration (e.g., proximity to ground water, surface water and drinking water sources)</li> <li>– climate, including amount, frequency, and pH of precipitation</li> <li>– geological and soil profiles and surface and subsurface hydrology of the site, and soil characteristics, including cation exchange capacity, total organic carbon, and pH</li> <li>– unsaturated zone monitoring information obtained under 40 CFR 265.278 (see checklist item HW.235.3.US)</li> <li>– type, concentration, and depth of migration of hazardous waste constituents in the soil as compared to their background concentrations.</li> </ul>

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	<p>Verify that the owner or operator considers at least the following methods in addressing the closure and post-closure care objectives:</p> <ul style="list-style-type: none"> <li>– removal of contaminated soils</li> <li>– placement of a final cover, considering: <ul style="list-style-type: none"> <li>– functions of the cover (e.g., infiltration control, erosion and run-off control, and wind erosion control)</li> <li>– characteristics of the cover, including material, final surface contours, thickness, porosity and permeability, slope, length of run of slope, and type of vegetation on the cover</li> </ul> </li> <li>– monitoring of ground water.</li> </ul> <p>Verify that, in addition to the requirements of 40 CFR 265, Subpart G, during the closure period the owner or operator of a land treatment facility:</p> <ul style="list-style-type: none"> <li>– continues unsaturated zone monitoring in a manner and frequency specified in the closure plan, except that soil pore liquid monitoring may be terminated 90 days after the last application of waste to the treatment zone</li> <li>– maintains the run-on control system required under 40 CFR 265.272(b)</li> <li>– maintains the run-off management system required under 40 CFR 265.272(c) (see checklist item HW.235.1.US)</li> <li>– controls wind dispersal of particulate matter which may be subject to wind dispersal.</li> </ul> <p>(NOTE: For the purpose of complying with 40 CFR 265.115 (see checklist item HW.170.3.US), when closure is completed the owner or operator may submit to the Regional Administrator certification both by the owner or operator and by an independent qualified soil scientist, in lieu of a qualified professional engineer, that the facility has been closed in accordance with the specifications in the approved closure plan.)</p> <p>Verify that, in addition to the requirements of 40 CFR 265.117, during the post-closure care period the owner or operator of a land treatment unit:</p> <ul style="list-style-type: none"> <li>– continues soil-core monitoring by collecting and analyzing samples in a manner and frequency specified in the post-closure plan</li> <li>– restricts access to the unit as appropriate for its post-closure use</li> <li>– assures that growth of food chain crops complies with 40 CFR 265.276 (see checklist item HW.235.2.US)</li> <li>– controls wind dispersal of hazardous waste.</li> </ul>

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<p><b>ADDITIONAL REQUIREMENTS FOR INTERIM STATUS TSDFs</b></p> <p><b>HW.240. Hazardous Waste Landfills</b></p> <p><b>HW.240.1.US.</b> New interim status landfill units, each lateral expansion of a landfill unit, and each replacement of an existing landfill is required to meet specific design and operating standards (40 CFR 265.19, 265.301(a) through 265.301(e) and 265.304) <b>[Revised July 2006]</b>.</p>	<p>Verify that new interim status landfill units, each lateral expansion of a landfill unit, and each replacement of an existing landfill has two or more liners and a leachate collection system above and between the liners.</p> <p>Verify that the owner or operator of each new interim status landfill units, each lateral expansion of a landfill unit, and each replacement of an existing landfill notifies the Regional Administrator at least 60 days prior to receiving waste and files a part B application within 6 mo of the receipt of such notice.</p> <p>(NOTE: The owner or operator of any replacement landfill unit is exempt from the liner and leachate collection system requirement if:</p> <ul style="list-style-type: none"> <li>– the existing unit was constructed in compliance with the design standards of section 3004(o)(1)(A)(i) and (o)(5) of RCRA</li> <li>– there is no reason to believe that the liner is not functioning as designed.)</li> </ul> <p>(NOTE: The double liner requirement may be waived by the Regional Administrator for any monofill, if:</p> <ul style="list-style-type: none"> <li>– the monofill contains only hazardous wastes from foundry furnace emission controls or metal casting molding sand, and such waste does not contain constituents which would render the wastes hazardous for reasons other than the Toxicity Characteristic, with EPA Hazardous Waste Number D004 through D017</li> <li>– the monofill: <ul style="list-style-type: none"> <li>– has at least one liner for which there is no evidence that such liner is leaking;</li> <li>– is located more than one-quarter mile from an underground source of drinking water</li> <li>– is in compliance with generally applicable groundwater monitoring requirements for facilities with permits under RCRA section 3005(c)</li> </ul> </li> <li>– the owner or operator demonstrates that the monofill is located, designed and operated so as to assure that there will be no migration of any hazardous constituent into ground water or surface water at any future time.</li> </ul> <p>(NOTE: In the case of any unit in which the liner and leachate collection system has been installed according to the requirements in this checklist item, and in good faith compliance and with guidance documents governing liners and leachate collection systems, no liner or leachate collection system which is different from that which was installed will be required for such unit by the Regional Administrator when issuing the first permit to such facility, except that the Regional</p>

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	<p>Administrator will not be precluded from requiring installation of a new liner when the Regional Administrator has reason to believe that any liner installed is leaking.)</p> <p>Verify that the amount of liquids removed from each leak detection system sump is recorded at least once each week during the active life and closure period.</p> <p>Verify that, after the final cover is installed, the amount of liquids removed from each leak detection system sump is recorded at least monthly.</p> <p>Verify that if the liquid level in the sump stays below the pump operating level for two consecutive months, the amount of liquids in the sumps is recorded at least quarterly.</p> <p>Verify that, if the liquid level in the sump stays below the pump operating level for two consecutive quarters, the amount of liquids in the sumps is recorded at least semi-annually.</p> <p>Verify that, if at any time during the post-closure care period the pump operating level is exceeded at units on quarterly or semi-annual recording schedules, the owner or operator returns to monthly recording of amounts of liquids removed from each sump until the liquid level again stays below the pump operating level for two consecutive months.</p> <p>(NOTE: "Pump operating level" is a liquid level proposed by the owner or operator and approved by the Regional Administrator based on pump activation level, sump dimensions, and level that avoids backup into the drainage layer and minimizes head in the sump.)</p> <p>Verify that each new interim status landfill units, each lateral expansion of a landfill unit, and each replacement of an existing landfill has a construction quality assurance (CQA) program.</p> <p>Verify that the CQA program ensures that the constructed unit meet or exceed all design criteria and specifications in the permit.</p> <p>Verify that the CQA program is developed and implemented under the direction of a CQA officer who is a registered professional engineer.</p> <p>Verify that the CQA program addresses the following physical components, where applicable:</p> <ul style="list-style-type: none"> <li>– foundations</li> <li>– dikes</li> <li>– low-permeability soil liners</li> <li>– geomembranes (flexible membrane liners)</li> <li>– leachate collection and removal systems and leak detection systems</li> <li>– final cover systems.</li> </ul>

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	<p>Verify that a written CQA plan is developed before construction on a unit begins.</p> <p>Verify that the CQA plan identifies steps that will be used to monitor and document the quality of materials and the condition and manner of their installation.</p> <p>Verify that the CQA plan includes:</p> <ul style="list-style-type: none"> <li>– identification of applicable units, and a description of how they will be constructed</li> <li>– identification of key personnel in the development and implementation of the CQA plan, and CQA officer qualifications</li> <li>– a description of the following information for inspection and sampling activities for all unit components, including observations and tests that will be used before, during, and after construction to ensure that the construction materials and the installed unit components meet the design specifications: <ul style="list-style-type: none"> <li>– sampling size and locations</li> <li>– frequency of testing</li> <li>– data evaluation procedures</li> <li>– acceptance and rejection criteria for construction materials</li> <li>– plans for implementing corrective measures</li> <li>– data or other information to be recorded and retained in the operating record under 40 CFR 265.73 (see checklist item HW.145.5.US).</li> </ul> </li> </ul> <p>Verify that the CQA program includes observations, inspections, tests, and measurements sufficient to ensure:</p> <ul style="list-style-type: none"> <li>– structural stability and integrity of all components of the unit</li> <li>– proper construction of all components of the liners, leachate collection and removal system, leak detection system, and final cover system, according to permit specifications and good engineering practices, and proper installation of all components (e.g., pipes) according to design specifications</li> <li>– conformity of all materials used with design and other material specifications under 40 CFR 264.301 (see checklist item HW.200.1.US and HW.200.2.US).</li> </ul> <p>Verify that the CQA program includes test fills for compacted soil liners, using the same compaction methods as in the full-scale unit, to ensure that the liners are constructed to meet the hydraulic conductivity requirements of 40 CFR 264.301(c)(1) (see checklist item HW.200.1.US and HW.200.2.US) in the field.</p> <p>Verify that compliance with the hydraulic conductivity requirements is verified by using in-situ testing on the constructed test fill.</p> <p>(NOTE: The test fill requirement is waived where data are sufficient to show that a constructed soil liner meets the hydraulic conductivity requirements of 40 CFR 264.301(c)(1) [see checklist item HW.200.1.US and HW.200.2.US] in the field.)</p>

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<p><b>HW.240.2.US.</b> New interim status landfill units, each lateral expansion of a landfill unit, and each replacement of an existing landfill must submit a proposed action leakage rate and develop response action (40 CFR 265.302 and 265.303) [Added July 2006].</p>	<p>Verify that the owner or operator of units required to have a CQA program submit to the Regional Administrator by certified mail or hand delivery, at least 30 days prior to receiving waste, a certification signed by the CQA officer that the CQA plan has been successfully carried out and that the unit meets the requirements of 40 CFR 265.301.</p> <p>(NOTE: The owner or operator may receive waste in the unit after 30 days from the Regional Administrator's receipt of the CQA certification unless the Regional Administrator determines in writing that the construction is not acceptable, or extends the review period for a maximum of 30 more days, or seeks additional information from the owner or operator during this period.)</p> <p>Verify that documentation supporting the CQA officer's certification is furnished to the Regional Administrator upon request.</p> <p>Verify that the owner or operator of new interim status landfill units, each lateral expansion of a landfill unit, and each replacement of an existing landfill submits a proposed action leakage rate to the Regional Administrator when submitting the notice of waste receipt.</p> <p>(NOTE: Within 60 days of receipt of the notification, the Regional Administrator will establish an action leakage rate, either as proposed by the owner or operator or modified using the criteria in this section; or extend the review period for up to 30 days. If no action is taken by the Regional Administrator before the original 60 or extended 90 day review periods, the action leakage rate will be approved as proposed by the owner or operator.)</p> <p>(NOTE: The action leakage rate is the maximum design flow rate that the leak detection system (LDS) can remove without the fluid head on the bottom liner exceeding 1 foot. The action leakage rate must include an adequate safety margin to allow for uncertainties in the design [e.g., slope, hydraulic conductivity, thickness of drainage material], construction, operation, and location of the LDS, waste and leachate characteristics, likelihood and amounts of other sources of liquids in the LDS, and proposed response actions [e.g., the action leakage rate must consider decreases in the flow capacity of the system over time resulting from siltation and clogging, rib layover and creep of synthetic components of the system, overburden pressures, etc.]</p> <p>Verify that, in order to determine if the action leakage rate has been exceeded, the owner or operator converts the weekly or monthly flow rate from the monitoring data obtained under 40 CFR 265.304 (see checklist item HW.240.2.US) to an average daily flow rate (gallons per acre per day) for each sump.</p> <p>(NOTE: Unless the Regional Administrator approves a different calculation, the average daily flow rate for each sump must be calculated weekly during the active</p>

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	<p>life and closure period, and monthly during the post-closure care period when monthly monitoring is required.)</p> <p>Verify that the owner or operator of new interim status landfill units, each lateral expansion of a landfill unit, and each replacement of an existing landfill unit submits a response action plan to the Regional Administrator when submitting the proposed action leakage rate.</p> <p>Verify that the response action plan is kept onsite until closure of the facility.</p> <p>Verify that the response action plan sets forth the actions to be taken if the action leakage rate has been exceeded.</p> <p>Verify that, at a minimum, the response action plan describes the following actions to be taken if the flow rate into the leak detection system exceeds the action leakage rate for any sump:</p> <ul style="list-style-type: none"> <li>– notify the Regional Administrator in writing of the exceedance within 7 days of the determination</li> <li>– submit a preliminary written assessment to the Regional Administrator within 14 days of the determination, as to the amount of liquids, likely sources of liquids, possible location, size, and cause of any leaks, and short-term actions taken and planned</li> <li>– determine to the extent practicable the location, size, and cause of any leak</li> <li>– determine whether waste receipt should cease or be curtailed, whether any waste should be removed from the unit for inspection, repairs, or controls, and whether or not the unit should be closed</li> <li>– determine any other short-term and longer-term actions to be taken to mitigate or stop any leaks</li> <li>– within 30 days after the notification that the action leakage rate has been exceeded, submit to the Regional Administrator the results of the above analyses section, the results of actions taken, and actions planned</li> <li>– submit to the Regional Administrator a report summarizing the results of any remedial actions taken and actions planned on a monthly basis as long as the flow rate in the leak detection system exceeds the action leakage rate.</li> </ul> <p>Verify that, to make the leak and/or remediation determinations, the owner or operator:</p> <ul style="list-style-type: none"> <li>– Option 1: <ul style="list-style-type: none"> <li>– assesses the source of liquids and amounts of liquids by source</li> <li>– conducts a fingerprint, hazardous constituent, or other analyses of the liquids in the leak detection system to identify the source of liquids and possible location of any leaks, and the hazard and mobility of the liquid</li> <li>– assesses the seriousness of any leaks in terms of potential for escaping into the environment</li> </ul> </li> </ul>

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	– Options 2: documents why such assessments are not needed.

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<p><b>ADDITIONAL REQUIREMENTS FOR INTERIM STATUS TSDFs</b></p> <p><b>HW.245. Incinerators</b></p> <p><b>HW.245.1.US.</b> TSDFs with interim status that use incinerators for hazardous waste must sufficiently analyze all wastes burned (40 CFR 265.340 and 265.341) <b>[Revised July 2003]</b>.</p>	<p>Determine if the TSDF incinerates hazardous wastes.</p> <p>Verify that, in addition to the waste analyses required by 40 CFR 265.13 (see checklist items HW.105.8.US and HW.145.1.US), the owner or operator sufficiently analyzes any waste which he has not previously burned in his incinerator to enable him to establish steady state (normal) operating conditions (including waste and auxiliary fuel feed and air flow) and to determine the type of pollutants which might be emitted.</p> <p>Verify that, at a minimum, the analysis determines:</p> <ul style="list-style-type: none"> <li>– heating value of the waste;</li> <li>– halogen content and sulfur content in the waste; and</li> <li>– concentrations in the waste of lead and mercury, unless the owner or operator has written, documented data that show that the element is not present.</li> </ul> <p>(NOTE: These standards no longer apply when an owner or operator demonstrates compliance with the maximum achievable control technology (MACT) requirements of 40 CFR 63, subpart EEE, by conducting a comprehensive performance test and submitting to the Administrator a Notification of Compliance under 40 CFR 63.1207(j) and 63.1210(b) documenting compliance with the requirements of part 63, subpart EEE.)</p> <p>(NOTE: The MACT standards do not replace the closure requirements of 40 CFR 264.351 (see checklist item HW.205.4.US) or the applicable requirements of subparts A through H, BB and CC.)</p> <p>(NOTE: 40 CFR 265.345 (see checklist item HW.205.1.US) generally prohibiting burning of hazardous waste during startup and shutdown remains in effect if the facility elects to comply with 40 CFR 270.235(b)(1)(i) to minimize emissions of toxic compounds from startup and shutdown.)</p> <p>(NOTE: Owners and operators of incinerators burning hazardous waste are exempt from all of the requirements of this subpart, except 40 CFR 265.351 (Closure), provided that the owner or operator has documented, in writing, that the waste would not reasonably be expected to contain any of the hazardous constituents listed in 40 CFR 261, appendix VIII, and such documentation is retained at the facility, if the waste to be burned is:</p>

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<p><b>HW.245.2.US.</b> TSDFs with interim status may burn F020 through F023, F026, or F027 if they have proper certification (40 CFR 265.352).</p> <p><b>HW.245.3.US.</b> TSDFs with interim status that incinerate hazardous waste must not feed hazardous waste unless the incinerator is at a steady state (40 CFR 265.345).</p> <p><b>HW.245.4.US.</b> An interim status TSDF that incinerates hazardous waste must conduct monitoring and inspections (40 CFR 265.347).</p>	<ul style="list-style-type: none"> <li>– listed as a hazardous waste in 40 CFR 261, subpart D solely because it is ignitable (Hazard Code I), corrosive (Hazard Code C), or both</li> <li>– listed as a hazardous waste in 40 CFR 261, subpart D solely because it is reactive (Hazard Code R) for characteristics other than those listed in 40 CFR 261.23(a) (4) and (5), and will not be burned when other hazardous wastes are present in the combustion zone</li> <li>– a hazardous waste solely because it possesses the characteristic of ignitability, corrosivity, or both, as determined by the tests for characteristics of hazardous wastes</li> <li>– hazardous waste solely because it possesses the reactivity characteristics will not be burned when other hazardous wastes are present in the combustion zone.)</li> </ul> <p>Determine if the TSDF burns USEPA hazardous waste numbers F020 through F023, F026, or F027.</p> <p>Verify that the TSDF has received certification from the Assistant Administrator for Solid Waste and Emergency Response if such wastes are burned at the site.</p> <p>Verify that the waste is not fed until steady state conditions are reached by observing the incinerator during startup and shutdown.</p> <p>Verify that the following monitoring and inspection procedures are followed:</p> <ul style="list-style-type: none"> <li>– existing instruments related to combustion and emission are monitored every 15 min, with appropriate adjustments made to maintain steady state combustion, including the instruments that control: <ul style="list-style-type: none"> <li>– waste feed</li> <li>– auxiliary fuel feed</li> <li>– air flow</li> <li>– incinerator temperature</li> <li>– scrubber flow</li> <li>– scrubber pH</li> <li>– relevant level controls</li> </ul> </li> <li>– the complete incinerator and associated equipment are monitored at least daily for leaks, spills, and fugitive emissions, including: <ul style="list-style-type: none"> <li>– pumps</li> <li>– valves</li> <li>– conveyors</li> <li>– pipes</li> <li>– emergency shutdown controls</li> <li>– system alarms.</li> </ul> </li> </ul>

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<b>HW.245.5.US.</b> At closure of an interim status incinerator, all hazardous waste and hazardous waste residues must be removed (40 CFR 265.351).	Verify that, when an interim status hazardous waste incinerator is closed, the wastes and residues are removed.





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<b>HW.250.3.US.</b> Operators of interim status thermal treatment facilities must conduct monitoring and inspections while thermally treating hazardous waste (40 CFR 265.377).	<p>Determine if the operator conducts, at a minimum, the following monitoring while thermally treating hazardous wastes:</p> <ul style="list-style-type: none"> <li>– every 15 min, the following instrumentation for temperature and emission controls are monitored and appropriate corrections are made immediately:             <ul style="list-style-type: none"> <li>– waste feed rate</li> <li>– auxiliary fuel rate</li> <li>– treatment process temperature</li> <li>– relevant process flow and level controls</li> </ul> </li> <li>– every hour, stack emissions are visually checked for normal appearance (color and opacity) with immediate correction if needed</li> <li>– every day, the complete thermal treatment process and associated equipment are checked including:             <ul style="list-style-type: none"> <li>– pumps, valves, conveyors, pipes, etc. inspected for leaks, spills, and fugitive emissions</li> <li>– emergency shutdown controls and systems alarms are checked for proper operation.</li> </ul> </li> </ul>

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<b>ADDITIONAL REQUIREMENTS FOR INTERIM STATUS TSDFs</b>  <b>HW.255. Chemical / Physical / Biological Treatment</b>  <b>HW.255.1.US.</b> TSDFs with interim status chemical, physical, and biological treatment facilities must meet certain requirements (40 CFR 265.400 through 265.402 and 265.404).  <b>HW.255.2.US.</b> TSDFs with chemical, physical, and biological treatment facilities must conduct regular inspections (40 CFR 265.403).  <b>HW.255.3.US.</b> TSDFs with interim status may not place	<p>Determine if the TSDF operates a chemical, physical, or biological treatment facility to treat hazardous wastes.</p> <p>(NOTE: These requirements apply to TSDFs that treat hazardous wastes by chemical, physical, or biological methods in other than tanks, surface impoundments, and land treatment units.)</p> <p>Verify that the following criteria are met:</p> <ul style="list-style-type: none"> <li>– wastes or treatment reagents are not placed in treatment process or equipment if they could cause ruptures, leaks, corrosion, or other failures</li> <li>– continuously fed systems are equipped with waste feed cutoff or bypass system</li> <li>– waste analyses and treatment tests (e.g., bench scale or pilot plant tests) are performed, or written, documented information is obtained whenever a substantially different waste is treated or a substantially different treatment process is used.</li> </ul> <p>Verify that at closure all wastes and residues are removed.</p> <p>Determine if the chemical, physical, and biological treatment facility is inspected in accordance with the following:</p> <ul style="list-style-type: none"> <li>– at least daily, discharge control and safety equipment (e.g., waste feed cutoff system, bypass system, drainage systems, and pressure relief systems) to ensure good working order</li> <li>– at least daily, data from monitoring equipment is checked to ensure process is operated in accordance with its design</li> <li>– at least weekly, construction materials of the treatment process or equipment are inspected to detect corrosion, leaks, etc.</li> <li>– at least weekly, construction materials of and the area surrounding dikes or other discharge confinement structures are inspected to detect erosion or signs of leakage (dead vegetation, wet spots, etc.).</li> </ul> <p>Determine whether the TSDF treats any of these wastes.</p>

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ignitable, reactive, or incompatible waste in a treatment process or equipment unless certain requirements are met (40 CFR 265.405 through 265.406).	<p>Verify that any ignitable or reactive waste is treated or mixed in such a way before or immediately after placement in the treatment process so that the resultant material no longer meets the definition for ignitable or reactive wastes or is treated in such a way that it is not exposed to conditions that may cause it to react or ignite.</p> <p>Verify that incompatible wastes are not placed in the same treatment process, equipment, or in unwashed equipment that previously held an incompatible waste.</p>

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<p><b>HW.262.</b></p> <p><b>CORRECTIVE ACTION MANAGEMENT UNITS</b></p> <p><b>HW.262.1.US.</b> CAMUs are required to be managed and operated according to specific requirements (40 CFR 264.550(b) and 264.552(a) through 264.552(e), and 264.555(a)) [Added January 2004].</p>	<p>(NOTE: These requirements do not apply to CAMU waste, activities, and design so long as the waste, activities, and design remain within the general scope of the CAMU as approved.)</p> <p>(NOTE: To implement remedies under 40 CFR 264.101 [see checklist item HW.180.2.US] or RCRA Section 3008(h), or to implement remedies at a permitted facility that is not subject to 40 CFR 264.101, the Regional Administrator may designate an area at the facility as a CAMU.)</p> <p>(NOTE: CAMU means an area within a facility that is used only for managing CAMU-eligible wastes [see definitions] for implementing corrective action or cleanup at the facility. The Regional Administrator with regulatory oversight at the location where the cleanup is taking place may approve placement of CAMU-eligible wastes in hazardous waste landfills not located at the site from which the waste originated, without the wastes meeting the requirements of RCRA 40 CFR 268.)</p> <p>Verify that a CAMU is located within the contiguous property under the control of the owner or operator where the wastes to be managed in the CAMU originated.</p> <p>(NOTE: One or more CAMUs may be designated at a facility.)</p> <p>Verify that no bulk or noncontainerized liquid hazardous waste or free liquids contained in hazardous waste (whether or not sorbents have been added) are placed in any CAMU except where placement of such wastes facilitates the remedy selected for the waste.</p> <p>(NOTE: The requirements in 40 CFR 264.314(d) [see checklist item HW.165.5.US] for placement of containers holding free liquids in landfills apply to placement in a CAMU except where placement facilitates the remedy selected for the waste.)</p> <p>Verify that there is no placement of any liquid which is not a hazardous waste in a CAMU unless such placement facilitates the remedy selected for the waste or a demonstration is made pursuant to 40 CFR 264.314(f) (see checklist item HW.165.5.US).</p> <p>Verify that the absence or presence of free liquids in either a containerized or a bulk waste must be determined in accordance with 40 CFR 264.314(c) (see checklist item HW.165.5.US).</p>

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	<p>Verify that sorbents used to treat free liquids in CAMUs meet the requirements of 40 CFR 264.314(e) (see checklist item HW.165.6.US).</p> <p>(NOTE: Placement of CAMU-eligible wastes into or within a CAMU does not constitute land disposal of hazardous wastes.)</p> <p>(NOTE: Consolidation or placement of CAMU-eligible wastes into or within a CAMU does not constitute creation of a unit subject to minimum technology requirements.)</p> <p>(NOTE: The Regional Administrator may designate a regulated unit as a CAMU, or may incorporate a regulated unit into a CAMU.)</p> <p>Verify that the CAMU facilitates the implementation of reliable, effective, protective, and cost-effective remedies.</p> <p>Verify that waste management activities associated with the CAMU do not create unacceptable risks to humans or to the environment resulting from exposure to hazardous wastes or hazardous constituents.</p> <p>Verify that the CAMU includes uncontaminated areas of the facility, only if including such areas for the purpose of managing CAMU-eligible waste is more protective than management of such wastes at contaminated areas of the facility.</p> <p>Verify that areas within the CAMU, where wastes remain in place after closure of the CAMU, are managed and contained so as to minimize future releases, to the extent practicable.</p> <p>Verify that the CAMU expedites the timing of remedial activity implementation, when appropriate and practicable.</p> <p>Verify that the CAMU enables the use, when appropriate, of treatment technologies (including innovative technologies) to enhance the long-term effectiveness of remedial actions by reducing the toxicity, mobility, or volume of wastes that will remain in place after closure of the CAMU.</p> <p>Verify that the CAMU, to the extent practicable, minimizes the land area of the facility upon which wastes will remain in place after closure of the CAMU.</p> <p>Verify that the owner or operator is complying with the permit or order issued by the Regional Administrator.</p> <p>(NOTE: The permit or order may specify the following:</p> <ul style="list-style-type: none"> <li>– the area configuration of the CAMU</li> <li>– requirements for remediation waste management to include the specification of applicable design, operation, and closure requirements</li> </ul>

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	<ul style="list-style-type: none"> <li>– minimum design requirements</li> <li>– minimum treatment requirements</li> <li>– requirements for ground water monitoring that are sufficient to: <ul style="list-style-type: none"> <li>– continue to detect and to characterize the nature, extent, concentration, direction, and movement of existing releases of hazardous constituents in ground water from sources located within the CAMU</li> <li>– detect and subsequently characterize releases of hazardous constituents to ground water that may occur from areas of the CAMU in which wastes will remain in place after closure of the CAMU</li> <li>– notification to the Regional Administrator and corrective action as necessary to protect human health and the environment for releases to ground water from the CAMU</li> </ul> </li> <li>– closure and post-closure requirements, including: <ul style="list-style-type: none"> <li>– minimizing the need for further maintenance</li> <li>– controlling, minimizing, or eliminating, to the extent necessary to protect human health and the environment for areas where wastes remain in place, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to the ground, to surface waters, or to the atmosphere</li> <li>– requirements for excavation, removal, treatment, or containment of wastes</li> <li>– requirements for removal and decontamination of equipment, devices, and structures used in CAMU-eligible waste management activities within the CAMU</li> <li>– post-closure requirements as necessary to protect human health and the environment, to include, for areas where wastes will remain in place, monitoring and maintenance activities, and the frequency with which such activities shall be performed to ensure the integrity of any cap, final cover, or other containment system.</li> </ul> </li> </ul> <p>Verify that, at final closure of the CAMU, for areas in which wastes will remain after closure of the CAMU, with constituent concentrations at or above remedial levels or goals applicable to the site, the owner or operator covers the CAMU with a final cover designed and constructed to meet the following performance criteria:</p> <ul style="list-style-type: none"> <li>– provide long-term minimization of migration of liquids through the closed unit</li> <li>– function with minimum maintenance</li> <li>– promote drainage and minimize erosion or abrasion of the cover</li> <li>– accommodate settling and subsidence so that the cover's integrity is maintained</li> <li>– have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present.</li> </ul> <p>(NOTE: CAMUs into which wastes are placed where all wastes have constituent levels at or below remedial levels or goals applicable to the site do not have to</p>

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<p><b>HW.262.2.US.</b> CAMUs used for storage and/or treatment only must meet specific operational requirements (40 CFR 264.550(b) and 264.552(f)) [Added January 2004].</p>	<p>comply with the requirements for liners, caps, or ground water monitoring requirements.)</p> <p>Verify that incorporation of a CAMU into an existing permit is approved by the Regional Administrator.</p> <p>(NOTE: The designation of a CAMU does not change USEPA's existing authority to address clean-up levels, media-specific points of compliance to be applied to remediation at a facility, or other remedy selection decisions.)</p> <p>(NOTE: These requirements do not apply to CAMU waste, activities, and design so long as the waste, activities, and design remain within the general scope of the CAMU as approved.)</p> <p>(NOTE: CAMUs used for storage and/or treatment only are CAMUs in which wastes will not remain after closure.)</p> <p>Verify that CAMUs designated for storage and/or treatment only meet the requirements outlined in 40 CFR 264.552 (see checklist item HW.262.1.US), except as follows:</p> <ul style="list-style-type: none"> <li>– CAMUs that are used for storage and/or treatment only and that operate in accordance with the time limits established in the staging pile regulations are subject to the requirements for staging piles (see checklist item HW.262.5.US) in lieu of the performance standards and requirements for CAMUs</li> <li>– CAMUs that are used for storage and/or treatment only and that do not operate in accordance with the time limits established in the staging pile regulations (see checklist item HW.262.5.US): <ul style="list-style-type: none"> <li>– must operate in accordance with a time limit, established by the Regional Administrator, that is no longer than necessary to achieve a timely remedy selected for the waste, and</li> <li>– are subject to the requirements for staging piles (see checklist item HW.262.5.US) in lieu of the performance standards and requirements for CAMUs.</li> </ul> </li> </ul>
<p><b>HW.262.3.US.</b> Grandfathered CAMUs are required to be managed and operated according to specific requirements (40 CFR 264.550(b) and 264.551) [Added January 2004].</p>	<p>(NOTE: These requirements apply to CAMUs that were approved before 22 April 2002, or for which substantially complete applications [or equivalents] were submitted to the Agency on or before 20 November 2000.)</p> <p>(NOTE: To implement remedies under 40 CFR 264.101 [see checklist item HW.180.2.US] or RCRA Section 3008(h), or to implement remedies at a permitted facility that is not subject to 40 CFR 264.101, the Regional Administrator may designate an area at the facility as a CAMU.)</p>

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	<p>(NOTE: Corrective action management unit means an area within a facility that is used only for managing remediation wastes for implementing corrective action or cleanup at the facility.)</p> <p>Verify that a CAMU is located within the contiguous property under the control of the owner or operator where the wastes to be managed in the CAMU originated.</p> <p>(NOTE: One or more CAMUs may be designated at a facility.)</p> <p>(NOTE: Placement of remediation wastes into or within a CAMU does not constitute land disposal of hazardous wastes. Consolidation or placement of remediation wastes into or within a CAMU does not constitute creation of a unit subject to minimum technology requirements.)</p> <p>(NOTE: The Regional Administrator may designate a regulated unit as a CAMU, or may incorporate a regulated unit into a CAMU. A regulated unit includes permitted surface impoundments, waste piles, and land treatment units or landfills that received hazardous waste after 26 July 1982.)</p> <p>Verify that the owner or operator is complying with the permit or order issued by the Regional Administrator.</p> <p>(NOTE: The permit or order may specify the following:</p> <ul style="list-style-type: none"> <li>– the area configuration of the CAMU</li> <li>– requirements for remediation waste management to include the specification of applicable design, operation, and closure requirements</li> <li>– requirements for ground water monitoring that are sufficient to: <ul style="list-style-type: none"> <li>– continue to detect and to characterize the nature, extent, concentration, direction, and movement of existing releases of hazardous constituents in ground water from sources located within the CAMU</li> <li>– detect and subsequently characterize releases of hazardous constituents to ground water that may occur from areas of the CAMU in which wastes will remain in place after closure of the CAMU</li> </ul> </li> <li>– closure and post-closure requirements, including: <ul style="list-style-type: none"> <li>– minimizing the need for further maintenance</li> <li>– controlling, minimizing, or eliminating, to the extent necessary to protect human health and the environment</li> <li>– for areas where wastes remain in place, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to the ground, to surface waters, or to the atmosphere, requirements for excavation, removal, treatment, or containment of wastes</li> <li>– for areas in which wastes will remain after closure of the CAMU, requirements for capping of such areas</li> </ul> </li> </ul>

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<p><b>HW.262.4.US.</b> Temporary units must be managed according to certain parameters (40 CFR 264.553) [Added January 2004].</p>	<ul style="list-style-type: none"> <li>– requirements for removal and decontamination of equipment, devices, and structures used in remediation waste management activities within the CAMU</li> <li>– post-closure requirements as necessary to protect human health and the environment, to include, for areas where wastes will remain in place, monitoring and maintenance activities, and the frequency with which such activities shall be performed to ensure the integrity of any cap, final cover, or other containment system.</li> </ul> <p>Verify that incorporation of a CAMU into an existing permit is approved by the Regional Administrator.</p> <p>(NOTE: The designation of a CAMU does not change USEPA's existing authority to address clean-up levels, media-specific points of compliance to be applied to remediation at a facility, or other remedy selection decisions.)</p> <p>(NOTE: For temporary tanks and container storage areas used to treat or store hazardous remediation wastes during remedial activities required under 40 CFR 264.101 [see checklist item HW.180.2.US] or RCRA 3008(h), or at a permitted facility that is not subject to 40 CFR 264.101, the Regional Administrator may designate a unit at the facility, as a temporary unit.)</p> <p>Verify that a temporary unit is located within the contiguous property under the control of the owner/operator where the wastes to be managed in the temporary unit originated.</p> <p>(NOTE: For temporary units, the Regional Administrator may replace the design, operating, or closure standard applicable to these units under 40 CFR 264 or 40 CFR 265 with alternative requirements which protect human health and the environment.)</p> <p>Verify that any temporary unit to which alternative requirements are applied meets the following:</p> <ul style="list-style-type: none"> <li>– it is located within the facility boundary</li> <li>– it is used only for treatment or storage of remediation wastes.</li> </ul> <p>Verify that the owner or operator complies with the length of time a temporary unit will be allowed to operate, and the design, operating, and closure requirements designated by the Regional Administrator in a permit or order.</p>
<p><b>HW.262.5.US.</b> Staging piles must be managed according to certain parameters (40 CFR</p>	<p>(NOTE: A staging pile is an accumulation of solid, nonflowing remediation waste that is not a containment building and is used only during remedial operations for temporary storage at a facility.)</p>

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264.554) [Added January 2004; Revised July 2006].	<p>Verify that a staging pile is located within the contiguous property under the control of the owner/operator where the wastes to be managed in the staging pile originated.</p> <p>(NOTE: Staging piles must be designated by the Director in a permit or, at an interim status facility, in a closure plan or order.)</p> <p>(NOTE: For the purposes of this checklist item, storage includes mixing, sizing, blending, or other similar physical operations as long as they are intended to prepare the wastes for subsequent management or treatment.)</p> <p>Verify that., when the facility is seeking a staging pile designation, they provide:</p> <ul style="list-style-type: none"> <li>– sufficient and accurate information to enable the Director to impose appropriate standards and design criteria</li> <li>– certification by a qualified Professional Engineer for technical data, such as design drawings and specifications, and engineering studies, unless the Director determines, based on information that you provide, that this certification is not necessary to ensure that a staging pile will protect human health and the environment.</li> </ul> <p>Verify that a staging pile is used to store hazardous remediation waste (or remediation waste otherwise subject to land disposal restrictions) only if the standards and design criteria the Director has designated for that staging pile are met.</p> <p>Verify that the staging pile complies with the following standards and design criteria:</p> <ul style="list-style-type: none"> <li>– the staging pile facilitates a reliable, effective, and protective remedy</li> <li>– the staging pile is designed so as to prevent or minimize releases of hazardous wastes and hazardous constituents into the environment, and minimize or adequately control cross-media transfer, as necessary to protect human health and the environment (for example, through the use of liners, covers, run-off/run-on controls, as appropriate)</li> <li>– the staging pile does not operate for more than 2 yr, except when the Director grants an operating term extension.</li> </ul> <p>(NOTE: The 2-yr limit, or other operating term specified by the Director in the permit, closure plan, or order, is measured from the first time remediation waste is placed into a staging pile.)</p> <p>Verify that a record is maintained of the date when remediation waste was first placed into the staging pile for the life of the permit, closure plan, or order, or for 3 yr, whichever is longer.</p> <p>Verify that ignitable or reactive remediation waste is not placed in a staging pile unless one of the following is met:</p>

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	<ul style="list-style-type: none"> <li>– the remediation waste has been treated, rendered, or mixed before placing it in the staging pile so that:               <ul style="list-style-type: none"> <li>– the remediation waste no longer meets the definition of ignitable or reactive</li> <li>– the owner or operator is in compliance with 40 CFR 264.17(b) (see checklist item HW.105.7.US)</li> </ul> </li> <li>– the remediation waste is managed to protect it from exposure to any material or condition that may cause it to ignite or react.</li> </ul> <p>Verify that incompatible remediation wastes are not placed in the same staging pile unless in compliance with 40 CFR 264.17(b) (see checklist item HW.105.7.US).</p> <p>Verify that, if remediation waste in a staging pile is incompatible with any waste or material stored nearby in containers, other piles, open tanks, or land disposal units (for example, surface impoundments), the incompatible materials are separated, or protected from one another by using a dike, berm, wall, or other device.</p> <p>Verify that remediation waste is not piled on the same base where incompatible wastes or materials were previously piled, unless the base has been decontaminated sufficiently to comply with 40 CFR 264.17(b) (see checklist item HW.105.7.US).</p> <p>(NOTE: Placing hazardous remediation wastes into a staging pile does not constitute land disposal of hazardous wastes or create a unit that is subject to the minimum technological requirements of RCRA 3004(o).)</p> <p>Verify that the staging pile is used no longer than the length of time designated by the Director in the permit, closure plan, or order (the “operating term”).</p> <p>(NOTE: The Director may grant one operating term extension of up to 180 days beyond the operating term limit contained in the permit, closure plan, or order.)</p> <p>Verify that, within 180 days after the operating term of the staging pile expires, a staging pile located in a previously contaminated area of the site is closed by removing or decontaminating all:</p> <ul style="list-style-type: none"> <li>– remediation waste</li> <li>– contaminated containment system components</li> <li>– structures and equipment contaminated with waste and leachate.</li> </ul> <p>Verify that contaminated subsoils are decontaminated in a manner and according to a schedule that the Director determines will protect human health and the environment.</p> <p>Verify that, within 180 days after the operating term of the staging pile expires, a staging pile located in an uncontaminated area of the site is closed according to 40</p>

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	CFR 264.258(a) (see checklist item HW.190.5.US) and 264.111; or according to 40 CFR 265.258(a) (see checklist item HW.230.4.US) and 265.111.

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<p><b>HW.265.</b></p> <p><b>EXPORT / IMPORT OF HAZARDOUS WASTE</b></p> <p><b>HW.265.1.US.</b> Exporters of hazardous waste outside the United States must comply with specific notification requirements (40 CFR 262.80, 262.82, and 262.83(b)) [Revised October 2001; Revised October 2006; Revised January 2018].</p>	<p>(NOTE: This checklist item applies to transboundary movements of hazardous wastes. Any person (including exporter, importer, disposal facility operator, or recovery facility operator) who mixes two or more wastes (including hazardous and non-hazardous wastes) or otherwise subjects two or more wastes (including hazardous and non-hazardous wastes) to physical or chemical transformation operations, and thereby creates a new hazardous waste, becomes a generator and assumes all subsequent generator duties under RCRA and any exporter duties, if applicable, under 40 CFR 262.80 through 262.84.)</p> <p>(NOTE: This checklist item does not apply to the export or import of a hazardous waste sample if the sample is destined for laboratory analysis to assess its physical or chemical characteristics, or to determine its suitability for recovery or disposal operations, does not exceed twenty-five kilograms (25 kg) in quantity, is appropriately packaged and labeled, and complies with the conditions of 40 CFR 261.4(d) or (e).)</p> <p>Verify that at least 60 days prior to the first shipment of hazardous waste is expected to leave the United States, the exporter has notified the USEPA of the proposed transboundary movement in English using EPA's Waste Import Export Tracking System (WIETS), or its successor system.</p> <p>(NOTE: The notification may cover up to one year of shipments of one or more hazardous wastes being sent to the same recovery or disposal facility.)</p> <p>Verify that notifications proposing export to a pre-consented facility in an OECD member country are submitted at least 10 days before the first shipment is expected to leave the United States.</p> <p>(NOTE: If the recovery facility is located in an OECD member country and has been pre-consented by the competent authority of the OECD member country to recover the waste sent by exporters located in other OECD member countries, the notification may cover up to three years of shipments. Notifications proposing export to a pre-consented facility in an OECD member country must additionally state that the facility is pre-consented.)</p> <p>(NOTE: If the foreign receiving facility will engage in any of the interim recovery operations R12 or R13 or interim disposal operations D13 through D15, or in the case of transboundary movements with Canada, any of the interim recovery operations R12, R13, or RC16, or interim disposal operations D13 to D14, or DC17, the submitted notification must also include the final foreign recovery or disposal facility name, address, telephone, fax numbers, email address, technologies</p>

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	<p>employed, and which of the applicable recovery or disposal operations R1 through R11 and D1 through D12, or in the case of transboundary movements with Canada, which of the applicable recovery or disposal operations R1 through R11, RC14 to RC15, D1 through D12, and DC15 to DC16 will be employed at the final foreign recovery or disposal facility.)</p> <p>Verify that, when the exporter wishes to change any of the information specified on the original notification (including increasing the estimate of the total quantity of hazardous waste specified in the original notification or adding transporters), the exporter submits a renotification of the changes to EPA using EPA's Waste Import Export Tracking System (WIETS), or its successor system.</p> <p>(NOTE: Any shipment using requested changes cannot take place until the countries of import and transit consent to the changes and the exporter receives an EPA AOC letter documenting the countries' consents to the changes.)</p> <p>(NOTE: For cases where the proposed country of import and recovery or disposal operations are not covered under an international agreement to which both the United States and the country of import are parties, EPA will coordinate with the Department of State to provide the complete notification to country of import and any countries of transit. In all other cases, EPA will provide the notification directly to the country of import and any countries of transit. A notification is complete when EPA receives a notification which EPA determines is compliant.)</p> <p>Verify that there is no export of hazardous wastes for recycling or disposal operations that were originally imported into the United States for recycling or disposal operations in a third country unless an exporter in the United States complies with the export requirements in 40 CFR 262.83 and:</p> <ul style="list-style-type: none"> <li>– provides the original consent number issued for the initial import of the wastes in the notification</li> <li>– receives an AOC from EPA documenting the consent of the competent authorities in new country of import, the original country of export, and any transit countries prior to re-export.</li> </ul> <p>(NOTE: The level of control for exports and imports of waste is indicated by assignment of the waste to either a list of wastes subject to the Green control procedures or a list of wastes subject to the Amber control procedures and whether the waste is or is not hazardous waste. The OECD Green and Amber lists are incorporated by reference in 40 CFR 260.11. Green wastes that are not hazardous wastes are subject to existing controls normally applied to commercial transactions, and are not subject to the requirements of this checklist item. A green waste that is mixed with one or more other Green wastes such that the resulting mixture is not hazardous waste is not subject to the requirements of this checklist item. Amber wastes that are hazardous wastes are subject to the requirements of this checklist item, even if they are imported to or exported from a country that does not consider the waste to be hazardous or control the transboundary shipment as a hazardous</p>

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<p><b>HW.265.2.US.</b> When shipping hazardous waste outside the United States, an exporter is required to receive an USEPA acknowledgment of consent (AOC) documenting consent from the countries of import and transit (40 CFR 262.83(a)(3)) [Revised October 2001; Revised January 2018].</p> <p><b>HW.265.3.US.</b> Checklist item deleted [Revised October 2001; Deleted January 2018].</p> <p><b>HW.265.4.US.</b> Exporters of hazardous waste outside the United States are required to use manifests with special additions and movement documents (40 CFR 262.83(c) and 262.83(d)) [Revised October 2001; Revised April 2005; Revised January 2018].</p>	<p>waste import or export. Amber wastes that are not hazardous wastes, but are considered hazardous by the other country are subject to the Amber control procedures in the country that considers the waste hazardous, and are not subject to the requirements of this checklist item. All responsibilities of the importer or exporter shift to the foreign importer or foreign exporter in the other country that considers the waste hazardous unless the parties make other arrangements through contracts. A Green waste that is mixed with one or more Amber wastes, in any amount, de minimis or otherwise, or a mixture of two or more Amber wastes, such that the resulting waste mixture is hazardous waste is subject to this checklist item.)</p> <p>(NOTE: Wastes not yet assigned to an OECD waste list are eligible for transboundary movements, as follows:</p> <ul style="list-style-type: none"> <li>–if such wastes are hazardous wastes, such wastes are subject to the requirements of this checklist item</li> <li>–if such wastes are not hazardous wastes, such wastes are not subject to the requirements of this checklist item.)</li> </ul> <p>(NOTE: See HW.265.1.US for information on the applicability of 40 CFR 262.80 through 262.84.)</p> <p>Verify that, prior to shipment, the exporter has received an USEPA acknowledgment of consent (AOC) documenting consent from the countries of import and transit.</p> <p>(NOTE: This checklist item about confirmation of delivery has been incorporated into HW.265.5.US.)</p> <p>(NOTE: See HW.265.1.US for information on the applicability of 40 CFR 262.80 through 262.84.)</p> <p>Verify that the manifest copies comply with the general manifest requirements of 40 CFR 262.20 through 262.23 (see checklist item HW.55.5.US).</p> <p>Verify that the following exceptions and additions are noted by reviewing the manifest copies:</p> <ul style="list-style-type: none"> <li>–instead of the name, site address and EPA ID number of the designated permitted facility, the exporter enters the name and site address of the foreign receiving facility</li> </ul>

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	<ul style="list-style-type: none"> <li>– in the International Shipments block, the primary exporter checks the export box and enter the U.S. port of exit (city and State) from the United States</li> <li>– the consent number from the AOC for each hazardous waste listed on the manifest, matched to the relevant list number for the hazardous waste from block 9b. If additional space is needed, the exporter should use a Continuation Sheet(s) (EPA Form 8700-22A).</li> </ul> <p>(NOTE: The exporter may obtain the manifest from any source that is registered with the U.S. EPA as a supplier of manifests (e.g., states, waste handlers, and/or commercial forms printers).)</p> <p>Verify that a copy of the manifest is provided for delivery to the U.S. Customs official at the U.S. point of departure.</p> <p>(NOTE: The primary exporter's state may require the use of its manifest.)</p> <p>Verify that the exporters ensures that a compliant movement document accompanies each transboundary movement of hazardous wastes from the initiation of the shipment until it reaches the foreign receiving facility, including cases in which the hazardous waste is stored and/or sorted by the foreign importer prior to shipment to the foreign receiving facility, except:</p> <ul style="list-style-type: none"> <li>– for shipments of hazardous waste within the United States solely by water (bulk shipments only), the exporter forwards the movement document to the last water (bulk shipment) transporter to handle the hazardous waste in the United States if exported by water</li> <li>– for rail shipments of hazardous waste within the United States which start from the company originating the export shipment, the exporter forwards the movement document to the next non-rail transporter, if any, or the last rail transporter to handle the hazardous waste in the United States if exported by rail.</li> </ul> <p>(NOTE: See the text of 40 CFR 262.83(d)(2)(i) through (xiii) for details on the information to be included on the movement document.)</p> <p>Verify that each U.S. person that has physical custody of the hazardous waste from the time the movement commences until it arrives at the foreign receiving facility signs the movement document (<i>e.g.</i>, transporter, foreign importer, and owner or operator of the foreign receiving facility).</p> <p>Verify that the exporter requires that the foreign receiving facility send a copy of the signed movement document to confirm receipt within 3 working days of shipment delivery to the exporter, to the competent authorities of the countries of import and transit, and for shipments occurring on or after the electronic import-export reporting compliance date.</p> <p>Verify that the exporter additionally requires that the foreign receiving facility send a copy of the signed movement to EPA at the same time.</p>

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<p><b>HW.265.5.US.</b> Exporters of hazardous waste outside the United States are required to file an exception report under certain conditions (40 CFR 262.83(h)) <b>[Revised October 2001; Revised April 2010; Revised January 2018].</b></p>	<p>(NOTE: See HW.265.1.US for information on the applicability of 40 CFR 262.80 through 262.84.)</p> <p>Verify that, instead of the requirements of 40 CFR 262.42 (see checklist items HW.20.4.US and HW.55.5.US), a primary exporter files an exception report of any of the following occurs:</p> <ul style="list-style-type: none"> <li>– the exporter has not received a copy of the RCRA hazardous waste manifest (if applicable) signed by the transporter identifying the point of departure of the hazardous waste from the United States, within forty-five (45) days from the date it was accepted by the initial transporter, in which case the exporter must file the exception report within the next thirty (30) days</li> <li>– the exporter has not received a written confirmation of receipt from the foreign receiving facility in accordance with paragraph (d) of this section within ninety (90) days from the date the waste was accepted by the initial transporter in which case the exporter must file the exception report within the next thirty (30) days</li> <li>– the foreign receiving facility notifies the exporter, or the country of import notifies EPA, of the need to return the shipment to the U.S. or arrange alternate management, in which case the exporter must file the exception report within thirty (30) days of notification, or one (1) day prior to the date the return shipment commences, whichever is sooner.</li> </ul> <p>Verify that exception reports are submitted using EPA's Waste Import Export Tracking System (WIETS), or its successor system.</p>
<p><b>HW.265.6.US.</b> Exporters of hazardous waste are required to follow specific procedures when a shipment cannot be delivered to the designated or alternate consignee (40 CFR 262.83(e)) <b>[Revised October 2001; Revised January 2018].</b></p>	<p>(NOTE: See HW.265.1.US for information on the applicability of 40 CFR 262.80 through 262.84.)</p> <p>Verify that, when a transboundary movement of hazardous wastes cannot be completed in accordance with the terms of the contract or the consent(s) and alternative arrangements cannot be made to recover or dispose of the waste in an environmentally sound manner in the country of import, the exporter ensures that the hazardous waste is returned to the United States or re-exported to a third country.</p> <p>Verify that, if the waste must be returned, the exporter provides for the return of the hazardous waste shipment within ninety days from the time the country of import informs EPA of the need to return the waste or such other period of time as the concerned countries agree.</p> <p>Verify that an exception report is submitted.</p>
<p><b>HW.265.7.US.</b> An annual report must be filed with the</p>	<p>(NOTE: See HW.265.1.US for information on the applicability of 40 CFR 262.80 through 262.84.)</p>

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<p>Regional Administrator by 1 March of each year by the exporter of hazardous waste (40 CFR 262.83(g)) [<b>Revised October 2001; Revised October 2006; Revised January 2018</b>].</p>	<p>Verify that an annual report has been submitted by 1 March of every calendar year by checking the records.</p> <p>(NOTE: After 31 December 2016 submissions will be made using EPA's Waste Import Export Tracking System (WIETS), or its successor system.</p> <p>Verify that the annual reports contain the following information for all hazardous waste exported during the previous calendar year by checking a random sample:</p> <ul style="list-style-type: none"> <li>– USEPA identification number, name, and mailing and site address for each exporter</li> <li>– calendar year covered by the report</li> <li>– the name and site address of each consignee</li> <li>– by consignee, for each hazardous waste exported: <ul style="list-style-type: none"> <li>– a description of the hazardous waste</li> <li>– the applicable USEPA hazardous waste number</li> <li>– the applicable waste code from the appropriate OECD waste list incorporated by reference in 40 CFR 260.11</li> <li>– the DOT hazard class</li> <li>– the name and USEPA ID number for each transporter used over the calendar year covered by the report</li> <li>– the consent number(s) under which the hazardous waste was shipped, and for each consent number, the total amount of the hazardous waste and the number of shipments exported during the calendar year covered by the report</li> </ul> </li> <li>– a certification signed by the primary exporter that states:  "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment."</li> </ul> <p>Verify that, in even numbered years, the following is also reported for each hazardous waste exported, except for hazardous waste produced by exporters of greater than 100kg but less than 1,000kg in a calendar month, and except for hazardous waste for which information was already provided pursuant to 40 CFR 262.41:</p> <ul style="list-style-type: none"> <li>– a description of the efforts undertaken during the year to reduce the volume and toxicity of the waste generated</li> <li>– a description of the changes in volume and toxicity of the waste actually achieved during the year in comparison to previous years to the extent such information is available for years prior to 1984.</li> </ul>

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<p><b>HW.265.8.US.</b> Exporters of hazardous wastes must documentation that relates to their export activities (40 CFR 262.83(i)) <b>[Revised October 2001; Revised January 2018].</b></p>	<p>(NOTE: See HW.265.1.US for information on the applicability of 40 CFR 262.80 through 262.84.)</p> <p>Verify that the exporter keeps the following records and provides them to EPA or authorized state personnel upon request:</p> <ul style="list-style-type: none"> <li>– a copy of each notification of intent to export and each EPA AOC for a period of at least 3 yr from the date the hazardous waste was accepted by the initial transporter</li> <li>– copy of each annual report for a period of at least 3 years from the due date of the report</li> <li>– a copy of any exception reports and a copy of each confirmation of receipt (<i>i.e.</i>, movement document) sent by the foreign receiving facility to the exporter for at least 3 yr from the date the hazardous waste was accepted by the initial transporter</li> <li>– copy of each confirmation of recovery or disposal sent by the foreign receiving facility to the exporter for at least 3 yr from the date that the foreign receiving facility completed interim or final processing of the hazardous waste shipment</li> <li>– a copy of each contract or equivalent arrangement established per 40 CFR 262.85 for at least 3 yr from the expiration date of the contract or equivalent arrangement.</li> </ul> <p>(NOTE: Exporters may satisfy these recordkeeping requirements by retaining electronically submitted documents in the exporter's account on EPA's Waste Import Export Tracking System (WIETS), or its successor system, provided that copies are readily available for viewing and production if requested by any EPA or authorized state inspector. No exporter may be held liable for the inability to produce such documents for inspection under this section if the exporter can demonstrate that the inability to produce the document is due exclusively to technical difficulty with EPA's Waste Import Export Tracking System (WIETS), or its successor system for which the exporter bears no responsibility.)</p> <p>(NOTE: The periods of retention referred to in this section are extended automatically during the course of any unresolved enforcement action regarding the regulated activity or as requested by the Administrator.)</p>
<p><b>HW.265.9.US.</b> Importers of hazardous waste must meet specific notification requirements (40 CFR</p>	<p>(NOTE: See HW.265.1.US for information on the applicability of 40 CFR 262.80 through 262.84.)</p>

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262.84(b)) [Added January 2018].	<p>Verify that the importer of hazardous waste provides notification in English to EPA of the proposed transboundary movement of hazardous waste at least sixty (60) days before the first shipment is expected to depart the country of export.</p> <p>(NOTE: If the competent authority of the country of export does not regulate the waste as hazardous waste and therefore does not require the foreign exporter to submit to it a notification proposing export and obtain consent from EPA and the competent authorities for the countries of transit, but EPA does regulate the waste as hazardous waste, notification is required.)</p> <p>Verify that notifications submitted on or after the electronic import-export reporting compliance date are submitted electronically using EPA's Waste Import Export Tracking System (WIETS), or its successor system.</p> <p>(NOTE: The notification may cover up to one year of shipments of one or more hazardous wastes being sent from the same foreign exporter. The details of notification contents are defined in 40 CFR 262.84(b)(1)(i) through 262.84(b)(1)(xiii).)</p> <p>Verify that, if the receiving facility will engage in any of the interim recovery operations R12 or R13 or interim disposal operations D13 through D15, the notification also includes the final recovery or disposal facility name, address, telephone, fax numbers, email address, technologies employed, and which of the applicable recovery or disposal operations R1 through R11 and D1 through D12, will be employed at the final recovery or disposal facility.</p> <p>(NOTE: The recovery and disposal operations in this paragraph are defined in 40 CFR 262.81.)</p> <p>Verify that the importer submits a renotification to the EPA when the foreign exporter wishes to change any of the conditions specified on the original notification (including increasing the estimate of the total quantity of hazardous waste specified in the original notification or adding transporters.</p> <p>(NOTE: Any shipment using the requested changes cannot take place until EPA and the countries of transit consent to the changes and the importer receives an EPA AOC letter documenting the consents to the changes.)</p> <p>(NOTE: Where EPA and the countries of transit consent to the proposed transboundary movement(s) of the hazardous waste(s), EPA will forward an EPA AOC letter to the importer documenting the countries' consents and EPA's consent. Where any of the countries of transit or EPA objects to the proposed transboundary movement(s) of the hazardous waste or withdraws a prior consent, EPA will notify the importer.)</p> <p>(NOTE: Export of hazardous wastes that were originally imported into the United States for recycling or disposal operations is prohibited unless an exporter in the</p>

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<b>HW.265.10.US.</b> Importers of hazardous waste from outside the United States are required to use manifests with special additions and movement documents (40 CFR 262.84(c) and 262.84(d)) <b>[Added January 2018]</b> .	<p>United States complies with the export requirements in 40 CFR 262.83(b)(7) [see checklist item HW.265.1.US].)</p> <p>(NOTE: See HW.265.1.US for information on the applicability of 40 CFR 262.80 through 262.84.)</p> <p>Verify that the manifest copies comply with the general manifest requirements of 40 CFR 262.20 through 262.23 (see checklist item HW.55.5.US).</p> <p>Verify that the following exceptions and additions are noted by reviewing the manifest copies:</p> <ul style="list-style-type: none"> <li>– instead of the name, site address and EPA ID number of the foreign generators and the importer’s name, address, and EPA ID number</li> <li>– instead of the generator’s signature on the certification statement, the importer or their agent signs and dates the certification and obtains the signature of the initial transporter</li> <li>– in the International Shipments block, the importer checks the import box and enters the U.S. port of exit (city and State) into the United States.</li> </ul> <p>(NOTE: The importer may obtain the manifest from any source that is registered with the U.S. EPA as a supplier of manifests (e.g., states, waste handlers, and/or commercial forms printers).)</p> <p>Verify that the importer provides the transporter with an additional copy of the manifest to be submitted by the receiving facility to U.S. EPA.</p> <p>Verify that, where a shipment cannot be delivered for any reason to the receiving facility, the importer instructs the transporter in writing via fax, email or mail to:</p> <ul style="list-style-type: none"> <li>– return the hazardous waste to the foreign exporter or designate another facility within the United States</li> <li>– revise the manifest in accordance with the importer's instructions.</li> </ul> <p>Verify that the importer ensures a compliant movement document accompanies each transboundary movement of hazardous wastes from the initiation of the shipment in the country of export until it reaches the receiving facility, including cases in which the hazardous waste is stored and/or sorted by the importer prior to shipment to the receiving facility.</p> <p>(NOTE: The requirement for movement documents does not apply in the following situations:</p> <ul style="list-style-type: none"> <li>– for shipments of hazardous waste within the United States by water (bulk shipments only), the importer forwards the movement document to the last water (bulk shipment) transporter to handle the hazardous waste in the United States if imported by water</li> </ul>

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<p><b>HW.265.11.US.</b> Importers of hazardous waste are required to follow specific procedures when a shipment cannot be delivered to the designated or alternate consignee (40 CFR 262.84(e)) [Added January 2018].</p>	<p>– for rail shipments of hazardous waste within the United States which start from the company originating the export shipment, the importer forwards the movement document to the next non-rail transporter, if any, or the last rail transporter to handle the hazardous waste in the United States if imported by rail.)</p> <p>(NOTE: See the text of 40 CFR 264.84(d)(2)(i) through 264.84(d)(2)(xii).)</p> <p>Verify that each person that has physical custody of the waste from the time the movement starts until it arrives at the receiving facility signs the movement document.)</p> <p>Verify that the receiving facility sends a copy of the signed movement document to confirm receipt within three working days of shipment delivery to the foreign exporter, to the competent authorities of the countries of export and transit, and for shipments received on or after the electronic import-export reporting compliance date, to EPA electronically using EPA's Waste Import Export Tracking System (WIETS), or its successor system.</p> <p>(NOTE: See HW.265.1.US for information on the applicability of 40 CFR 262.80 through 262.84.)</p> <p>Verify that, when a transboundary movement of hazardous wastes cannot be completed in accordance with the terms of the contract or the consent(s), the following steps are taken:</p> <ul style="list-style-type: none"> <li>– the transporter or receiving facility having actual possession of physical control over the hazardous wastes immediately informs the foreign exporter and importer, and the competent authority where the shipment is located of the need to arrange alternate management or return</li> <li>– the person specified in the contract assumes responsibility for the adequate management of the hazardous waste in compliance with the applicable laws and regulations including, if necessary, arranging the return of the hazardous waste and any required notification for re-export.</li> </ul> <p>Verify that, if alternative arrangements cannot be made to recover the hazardous waste in an environmentally sound manner in the United States, the hazardous waste is returned to the country of export or exported to a third country.</p> <p>(NOTE: If the return shipment will cross any transit country, the return shipment may only occur after EPA provides notification to and obtains consent from the competent authority of the country of transit, and provides a copy of that consent to the importer.)</p>
<p><b>HW.265.12.US.</b> When importing hazardous waste,</p>	<p>(NOTE: See HW.265.1.US for information on the applicability of 40 CFR 262.80 through 262.84.)</p>

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<p>the receiving facility must confirm recovery or disposal of the hazardous waste (40 CFR 262.84(g)) <b>[Added January 2018]</b>.</p> <p><b>HW.265.13.US.</b> Importers of hazardous waste are required to maintain specific records (40 CFR 262.84(h)) <b>[Added January 2018]</b>.</p>	<p>Verify that the receiving facility sends copies of the signed and dated confirmation of recovery or disposal, as soon as possible, but no later than thirty days after completing recovery or disposal on the waste in the shipment and no later than one calendar year following receipt of the waste, to the foreign exporter, to the competent authority of the country of export, and for shipments recycled or disposed of on or after the electronic import-export reporting compliance date, to EPA electronically using EPA's Waste Import Export Tracking System (WIETS), or its successor system.</p> <p>Verify that, if the receiving facility performed any of recovery operations R12, R13, or RC16, or disposal operations D13 through D15, or DC17, the receiving facility promptly sent copies of the confirmation of recovery or disposal that it receives from the final recovery or disposal facility within 1 yr of shipment delivery to the final recovery or disposal facility that performed one of recovery operations R1 through R11, or RC14 to RC15, or one of disposal operations D1 through D12, or DC15 to DC16, to the competent authority of the country of export, and for confirmations received on or after the electronic import-export reporting compliance date, to EPA electronically using EPA's Waste Import Export Tracking System (WIETS), or its successor system.</p> <p>(NOTE: See HW.265.1.US for information on the applicability of 40 CFR 262.80 through 262.84.)</p> <p>Verify that the importer keeps the following records and provides them to EPA or authorized state personnel upon request:</p> <ul style="list-style-type: none"> <li>– a copy of each notification that the importer sends to EPA and each EPA AOC it receives in response for a period of at least 3 yr from the date the hazardous waste was accepted by the initial foreign transporter</li> <li>– a copy of each contract or equivalent arrangement for at least 3 yr from the expiration date of the contract or equivalent arrangement.</li> </ul> <p>Verify that the receiving facility keeps the following records:</p> <ul style="list-style-type: none"> <li>– a copy of each confirmation of receipt (<i>i.e.</i>, movement document) that the receiving facility sends to the foreign exporter for at least 3 yr from the date it received the hazardous waste</li> <li>– a copy of each confirmation of recovery or disposal that the receiving facility sends to the foreign exporter for at least 3 yr from the date that it completed processing the waste shipment</li> <li>– for the receiving facility that performed any of recovery operations R12, R13, or RC16, or disposal operations D13 through D15, or DC17, a copy of each confirmation of recovery or disposal that the final recovery or disposal facility sent to it for at least 3 yr from the date that the final recovery or disposal facility completed processing the waste shipment</li> </ul>

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	<p>– a copy of each contract or equivalent arrangement for at least 3 yr from the expiration date of the contract or equivalent arrangement.</p> <p>(NOTE: Importers and receiving facilities may satisfy these recordkeeping requirements by retaining electronically submitted documents in the importer's or receiving facility's account on EPA's Waste Import Export Tracking System (WIETS), or its successor system, provided that copies are readily available for viewing and production if requested by any EPA or authorized state inspector. No importer or receiving facility may be held liable for the inability to produce such documents for inspection under this section if the importer or receiving facility can demonstrate that the inability to produce the document is due exclusively to technical difficulty with EPA's Waste Import Export Tracking System (WIETS), or its successor system for which the importer or receiving facility bears no responsibility.)</p> <p>(NOTE: The periods of retention referred to in this section are extended automatically during the course of any unresolved enforcement action regarding the regulated activity or as requested by the Administrator.)</p>



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<p><b>HW.270.</b></p> <p><b>HAZARDOUS WASTE ON PUBLIC VESSELS</b></p> <p><b>HW.270.1.US.</b> Public vessels are required to comply with the regulations for the storing, manifesting, inspecting, and recordkeeping of hazardous waste under specific circumstances (FFCA, Section 106).</p>	<p>Verify that the standards outlined in checklist items HW.1.1.US through HW.265.8.US are adhered to if either of the following occurs:</p> <ul style="list-style-type: none"> <li>– the waste is stored on the public vessel for more than 90 days after the public vessel is placed in reserve or is otherwise no longer in service</li> <li>– the waste is transferred to another public vessel within the territorial waters of the United States and is stored on the vessel or another public vessel for more than 90 days after the date of transfer.</li> </ul> <p>(NOTE: The 90-day period begins the earlier of the following:</p> <ul style="list-style-type: none"> <li>– the date when the public vessel on which the waste was generated was placed in reserve or was otherwise no longer in service</li> <li>– the date when the waste was transferred from the public vessel on which the waste was generated, to another public vessel within the territorial waters of the United States.)</li> </ul>



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<p><b>SMALL QUANTITY UNIVERSAL WASTE HANDLERS</b></p> <p><b>HW.280. General</b></p> <p><b>HW.280.1.US.</b> Small quantity handlers of universal waste, less than 5000 kg at any time, are generally prohibited from disposing, diluting, or treating universal wastes (40 CFR 273.11) [Revised March 2000].</p> <p><b>HW.280.2.US.</b> Small quantity handlers of universal waste are required to meet specific accumulation time limits (40 CFR 273.15) [Reviewed March 2000].</p>	<p>(NOTE: 5000 kg is approx. 11,111 lb.)</p> <p>Determine if the facility is a small quantity handler of universal waste.</p> <p>Verify that the facility does not dispose of universal wastes onsite.</p> <p>Verify that, except when responding to a release or performing waste management activities outlined in 40 CFR 273.13 (see checklist item HW.290.1.US through HW.290.5.US), the facility does not dilute or treat universal waste.</p> <p>(NOTE: The following waste may, at the option of the generator, be managed under the requirements of 40 CFR 273 (40 CFR 273.5(a)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul> <p>(NOTE: When the following wastes are commingled with universal wastes, the commingled wastes must be managed under 40 CFR 273 as universal waste (40 CFR 273.5(b)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 40 CFR 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul> <p>Verify that universal waste is not accumulated for more than 1 yr from the date that the universal waste is generated, or received from another handler.</p> <p>(NOTE: The 1 yr limit may be exceeded if the sole purpose is to accumulate such quantities as necessary to facilitate proper recovery, treatment, or disposal. However, the handler must be able to prove that this is the case.)</p> <p>Verify that the handler can demonstrate the length of time that the universal waste has been accumulated by one of the following methods:</p>

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<p><b>HW.280.3.US.</b> Small quantity handlers of universal waste are required to handle releases according to specific procedures (40 CFR 273.17) [Reviewed March 2000].</p>	<ul style="list-style-type: none"> <li>– placing the universal waste in a container and marking or labeling the container with the earliest date that any universal waste in the container became a waste or was received</li> <li>– marking or labeling each individual item of universal waste with the date it became waste or was received</li> <li>– maintaining an inventory system onsite that identifies the date each universal waste became a waste or was received</li> <li>– maintaining an inventory system onsite that identifies the earliest date that any universal waste in a group of universal waste items or a group of containers of universal waste became a waste or was received</li> <li>– placing the universal waste in a specific accumulation area and identifying the earliest date that any universal waste in the area became a waste or was received</li> <li>– any other method that clearly demonstrates the length of time that the universal waste has been accumulated from the date that it becomes a waste or was received.</li> </ul> <p>(NOTE: The following waste may, at the option of the generator, be managed under the requirements of 40 CFR 273 (40 CFR 273.5(a)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul> <p>(NOTE: When the following wastes are commingled with universal wastes, the commingled wastes must be managed under 40 CFR 273 as universal waste (40 CFR 273.5(b)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 40 CFR 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul> <p>Verify that all releases of universal waste and other universal waste residues are immediately contained.</p> <p>Verify that the facility determines if the material resulting from the release is a hazardous waste.</p> <p>(NOTE: The following waste may, at the option of the generator, be managed under the requirements of 40 CFR 273 (40 CFR 273.5(a)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 273.6</li> </ul>

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<p><b>HW.280.4.US.</b> Small quantity handlers of universal waste managing imported universal waste are required to meet specific parameters. (40 CFR 273.70(b) and 273.70(d)) [Added March 2000; Revised October 2006; Revised April 2010; Revised July 2015; Revised January 2017].</p>	<p>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</p> <p>(NOTE: When the following wastes are commingled with universal wastes, the commingled wastes must be managed under 40 CFR 273 as universal waste (40 CFR 273.5(b)):</p> <p>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 40 CFR 273.6</p> <p>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</p> <p>Determine if the small quantity handler of universal waste is receiving universal waste from a foreign country.</p> <p>Verify that the universal waste is handled according to all requirements applicable to small quantity handlers of universal waste (40 CFR 273, Subpart B) immediately after the waste enters the United States, as well as 40 CFR 262, Subpart H.</p>



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<p><b>SMALL QUANTITY UNIVERSAL WASTE HANDLERS</b></p> <p><b>HW.290. Specific Wastes</b></p> <p><b>HW.290.1.US.</b> Small quantity handlers of universal waste are required to manage universal waste batteries according to specific parameters (40 CFR 273.12, 273.13(a)(1), and 273.13(a)(2)) <b>[Reviewed March 2000]</b>.</p>	<p>(NOTE: A small quantity handler of universal waste is not required to notify the USEPA of universal waste handling activities.)</p> <p>(NOTE: Refer to the definition of Battery and Waste Battery.)</p> <p>Verify that universal waste batteries are managed in a way that prevents releases of any universal waste or component of a universal waste to the environment.</p> <p>Verify that batteries that show evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable condition are contained in a container.</p> <p>Verify that containers for batteries with leak potential are closed, structurally sound, compatible with the contents of the battery, and lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions.</p> <p>Verify that, when conducting any of the following activities, the casing of each individual battery cell is not breached and remains intact and closed:</p> <ul style="list-style-type: none"> <li>– sorting batteries by type</li> <li>– mixing battery types in one container</li> <li>– discharging batteries so as to remove the electric charge</li> <li>– regenerating used batteries</li> <li>– disassembling batteries or battery packs into individual batteries or cells</li> <li>– removing batteries from consumer products</li> <li>– removing electrolyte from batteries.</li> </ul> <p>(NOTE: Cells may be opened to remove electrolyte but must be immediately closed after removal.)</p> <p>(NOTE: The following waste may, at the option of the generator, be managed under the requirements of 40 CFR 273 (40 CFR 273.5(a)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul>

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<p><b>HW.290.2.US.</b> Small quantity handlers of universal waste are required to manage the electrolyte from universal waste batteries and other solid wastes generated from battery management activities according to specific parameters (40 CFR 273.13(a)(3)) [Revised March 2000].</p>	<p>(NOTE: When the following wastes are commingled with universal wastes, the commingled wastes must be managed under 40 CFR 273 as universal waste (40 CFR 273.5(b)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 40 CFR 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul> <p>Verify that, if the small quantity universal waste handler removes electrolyte from batteries or generates other solid waste (e.g., battery pack materials, discarded consumer products) as a result of battery management activities, the handler determines if any of the wastes exhibit the characteristics of a hazardous waste.</p> <p>Verify that, if it does exhibit the characteristics of a hazardous waste, it is treated and handled as a hazardous waste.</p> <p>Verify that, if the electrolyte or other solid waste is not a hazardous waste, it is managed in accordance with any other applicable state and federal laws and regulations.</p> <p>(NOTE: The following waste may, at the option of the generator, be managed under the requirements of 40 CFR 273 (40 CFR 273.5(a)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul> <p>(NOTE: When the following wastes are commingled with universal wastes, the commingled wastes must be managed under 40 CFR 273 as universal waste (40 CFR 273.5(b)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 40 CFR 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul>
<p><b>HW.290.3.US.</b> Small quantity handlers of universal waste are required to manage universal waste pesticides according to specific parameters (40 CFR</p>	<p>(NOTE: A small quantity handler of universal waste is not required to notify the USEPA of universal waste handling activities.)</p> <p>(NOTE: Refer to the definition of Pesticides and Waste Pesticides.)</p>



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	<p>or that shows evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions</p> <ul style="list-style-type: none"> <li>– the container is closed, structurally sound, compatible with the contents of the device, lacks evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions, and is reasonably designed to prevent the escape of mercury into the environment by volatilization or any other means.</li> </ul> <p>(NOTE: A small quantity handler of universal waste may remove mercury-containing ampules from universal waste mercury-containing equipment provided the handler:</p> <ul style="list-style-type: none"> <li>– removes and manages the ampules in a manner designed to prevent breakage of the ampules</li> <li>– removes the ampules only over or in a containment device (e.g., tray or pan sufficient to collect and contain any mercury released from an ampule in case of breakage)</li> <li>– ensures that a mercury clean-up system is readily available to immediately transfer any mercury resulting from spills or leaks from broken ampules from that containment device to a container that meets the requirements of 40 CFR 262.34</li> <li>– immediately transfers any mercury resulting from spills or leaks from broken ampules from the containment device to a container that meets the requirements of 40 CFR 262.34</li> <li>– ensures that the area in which ampules are removed is well ventilated and monitored to ensure compliance with applicable OSHA exposure levels for mercury</li> <li>– ensures that employees removing ampules are thoroughly familiar with proper waste mercury handling and emergency procedures, including transfer of mercury from containment devices to appropriate containers</li> <li>– stores removed ampules in closed, non-leaking containers that are in good condition</li> <li>– packs removed ampules in the container with packing materials adequate to prevent breakage during storage, handling, and transportation.)</li> </ul> <p>(NOTE: The following waste may, at the option of the generator, be managed under the requirements of 40 CFR 273 (40 CFR 273.5(a)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul> <p>(NOTE: When the following wastes are commingled with universal wastes, the commingled wastes must be managed under 40 CFR 273 as universal waste (40 CFR 273.5(b)):</p>

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<p><b>HW.290.5.US.</b> Small quantity handlers of universal waste are required to manage the wastes from universal waste mercury-containing equipment according to specific parameters (40 CFR 273.12, 273.13(c)(3), and 273.13(c)(4)) [Reviewed March 2000; Revised October 2005].</p>	<ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 40 CFR 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul> <p>Verify that, when a small quantity handler of universal waste mercury-containing equipment that does not contain an ampule removes the open original housing holding the mercury from universal waste mercury-containing equipment, the handler:</p> <ul style="list-style-type: none"> <li>– immediately seals the original housing holding the mercury with an air-tight seal to prevent the release of any mercury to the environment</li> <li>– follows all requirements for removing ampules and managing removed ampules under paragraph 40 CFR 273.13(c)(2) (see checklist item number HW.290.4.US).</li> </ul> <p>Verify that a small quantity handler of universal waste who removes mercury-containing ampules from mercury-containing equipment or seals mercury from mercury-containing equipment in its original housing determines whether the following exhibit a characteristic of hazardous waste identified in 40 CFR 261, subpart C:</p> <ul style="list-style-type: none"> <li>– mercury or clean-up residues resulting from spills or leaks</li> <li>– other solid waste generated as a result of the removal of mercury-containing ampules or housings (e.g., the remaining mercury-containing device).</li> </ul> <p>Verify that, if the mercury, residues, and/or other solid waste exhibits a characteristic of hazardous waste, it is managed in compliance with all applicable requirements of 40 CFR 260 through 272.</p> <p>(NOTE: The handler is considered the generator of the mercury, residues, and/or other waste and must manage it in compliance with 40 CFR 262.)</p> <p>(NOTE: If the mercury, residues, and/or other solid waste is not hazardous, the handler may manage the waste in any way that is in compliance with applicable federal, state or local solid waste regulations.</p> <p>(NOTE: The following waste may, at the option of the generator, be managed under the requirements of 40 CFR 273 (40 CFR 273.5(a)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul>

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<p><b>HW.290.6.US.</b> Small quantity handlers of universal waste are required to manage universal waste lamps according to specific parameters (40 CFR 273.13(d)) [Added October 1999; Reviewed March 2000].</p>	<p>(NOTE: When the following wastes are commingled with universal wastes, the commingled wastes must be managed under 40 CFR 273 as universal waste (40 CFR 273.5(b)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 40 CFR 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul> <p>Verify that a small quantity handler of universal waste contains any lamp in containers or packages that are structurally sound, adequate to prevent breakage, and compatible with the contents of the lamps.</p> <p>Verify that containers and packages remain closed and lack evidence of leakage, spillage or damage that could cause leakage under reasonably foreseeable conditions.</p> <p>Verify that a small quantity handler of universal waste immediately cleans up and places in a container any lamp that is broken and any lamp that shows evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous constituents to the environment.</p> <p>Verify that containers are closed, structurally sound, compatible with the contents of the lamps, and lack evidence of leakage, spillage, or damage that could cause leakage or releases of mercury or other hazardous constituents to the environment under reasonably foreseeable conditions.</p> <p>(NOTE: The following waste may, at the option of the generator, be managed under the requirements of 40 CFR 273 (40 CFR 273.5(a)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul> <p>(NOTE: When the following wastes are commingled with universal wastes, the commingled wastes must be managed under 40 CFR 273 as universal waste (40 CFR 273.5(b)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 40 CFR 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul>

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<p><b>SMALL QUANTITY UNIVERSAL WASTE HANDLERS</b></p> <p><b>HW.300.</b> <b>Personnel Training</b></p> <p><b>HW.300.1.US.</b> A small quantity handler of universal waste must inform all employees who handle or have responsibility for managing universal waste of certain information (40 CFR 273.16) [Reviewed March 2000; Revised April 2012].</p>	<p>Verify that a small quantity handler of universal waste informs all employees who handle or have responsibility for managing universal waste about the proper handling and emergency procedures appropriate to the type(s) of universal waste handled at the facility.</p> <p>(NOTE: The following waste may, at the option of the generator, be managed under the requirements of 40 CFR 273 (40 CFR 273.5(a)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul> <p>(NOTE: When the following wastes are commingled with universal wastes, the commingled wastes must be managed under 40 CFR 273 as universal waste (40 CFR 273.5(b)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 40 CFR 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul>



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<p><b>SMALL QUANTITY UNIVERSAL WASTE HANDLERS</b></p> <p><b>HW.310. Containers</b></p> <p><b>HW.310.1.US.</b> Universal wastes at small quantity universal waste handlers are required to be labeled according to specific parameters (40 CFR 273.14) [Revised October 1999; Reviewed March 2000; Revised October 2005].</p>	<p>Verify that universal waste batteries (each battery), or a container in which the batteries are contained, are labeled or marked clearly with any one of the following phrases:</p> <ul style="list-style-type: none"> <li>– UNIVERSAL WASTE - BATTERY(IES)</li> <li>– WASTE BATTERY(IES)</li> <li>– USED BATTERY(IES).</li> </ul> <p>Verify that containers or multiple container package units, tanks, transport vehicles, or vessels in which recalled universal waste pesticides are contained are marked clearly with:</p> <ul style="list-style-type: none"> <li>– the label that was on or accompanied the product as sold or distributed</li> <li>– the words UNIVERSAL WASTE PESTICIDE(S) or WASTE PESTICIDE(s).</li> </ul> <p>Verify that the container, tanks, or transport vehicles or vessels in which unused pesticide products are contained are labeled or marked clearly with:</p> <ul style="list-style-type: none"> <li>– the label that was on the product when purchased, if still legible</li> <li>– if this is not feasible, the appropriate DOT label</li> <li>– if it is not feasible to use the original or DOT label, an alternate label prescribed or designated by the waste pesticide collection program administered or recognized by a state</li> <li>– the words UNIVERSAL WASTE - PESTICIDE(S) or WASTE PESTICIDE(S).</li> </ul> <p>Verify that universal waste mercury-containing equipment (i.e., each device), or a container in which the equipment is contained, is labeled or marked clearly with any of the following phrases:</p> <ul style="list-style-type: none"> <li>– Universal Waste--Mercury Containing Equipment</li> <li>– Waste Mercury-Containing Equipment</li> <li>– Used Mercury-Containing Equipment.</li> </ul> <p>(NOTE: A universal waste mercury-containing thermostat or container containing only universal waste mercury-containing thermostats may be labeled or marked clearly with any of the following phrases:</p>

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	<ul style="list-style-type: none"> <li>– Universal Waste--Mercury Thermostat(s)</li> <li>– Waste Mercury Thermostat(s)</li> <li>– Used Mercury Thermostat(s). )</li> </ul> <p>Verify that each lamp or a container or package in which lamps are contained is labeled or marked clearly with one of the following phrases:</p> <ul style="list-style-type: none"> <li>– UNIVERSAL WASTE - LAMP(S)</li> <li>– WASTE LAMP(S)</li> <li>– USED LAMP(S).</li> </ul> <p>(NOTE: The following waste may, at the option of the generator, be managed under the requirements of 40 CFR 273 (40 CFR 273.5(a)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul> <p>(NOTE: When the following wastes are commingled with universal wastes, the commingled wastes must be managed under 40 CFR 273 as universal waste (40 CFR 273.5(b)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 40 CFR 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul>

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<b>SMALL QUANTITY UNIVERSAL WASTE HANDLERS</b>  <b>HW.330. Transportation</b>  <b>HW.330.1.US.</b> Offsite shipments of universal waste from small quantity handlers are required to be done according to specific parameters (40 CFR 273.18 and 273.19) [Revised March 2000].	<p>Verify that small quantity handlers of universal waste do not send or take universal waste to anyplace other than another universal waste handler, a destination facility, or a foreign destination.</p> <p>(NOTE: If the handler self-transportes universal waste, they have to comply with the requirements for transportation in 40 CFR 273.50 through 273.56 (see checklist items HW.450.1.US through HW.450.6.US).)</p> <p>Verify that, if the universal waste being offered for offsite transportation meets the definition of hazardous materials under 49 CFR 171 through 180, the shipment is packaged, labeled, marked, and placarded, and that the proper shipping papers have been prepared under DOT regulations.</p> <p>Verify that, prior to sending the waste to another universal waste handler, the originating handler has ensured that the receiving handler agrees to receive the waste.</p> <p>Verify that, if the receiving handler rejects a waste shipment, the originating handler does one of the following:</p> <ul style="list-style-type: none"> <li>– receives the waste back when notified the shipment was rejected</li> <li>– agrees with the receiving handler on a destination facility to which the shipment will be sent.</li> </ul> <p>Verify that, if the receiving handler rejects a shipment or a portion of the shipment, the receiving handler notifies the originating handler to discuss reshipment of the load, and either:</p> <ul style="list-style-type: none"> <li>– sends the shipment back to the originating handler</li> <li>– if agreed by both originating and receiving handlers, sends the shipment to a destination facility.</li> </ul> <p>Verify that, if a small quantity handler of universal waste receives a shipment containing hazardous waste that is not universal waste, the handler immediately notifies the regional USEPA office of the illegal shipment and provides the name, address, and phone number of the originating shipper.</p>

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<p><b>HW.330.2.US.</b> Small quantity handlers of universal waste that send universal waste to a foreign destination are required to meet specific requirements (40 CFR 273.20) [Revised March 2000; Revised January 2017].</p>	<p>(NOTE: If the handler receives a shipment of nonhazardous nonuniversal waste the handler may manage the waste in any way that is in compliance with federal, state, or local regulations.)</p> <p>(NOTE: A small quantity handler of universal waste is not required to keep records of shipments of universal waste.)</p> <p>(NOTE: The following waste may, at the option of the generator, be managed under the requirements of 40 CFR 273 (40 CFR 273.5(a)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul> <p>(NOTE: When the following wastes are commingled with universal wastes, the commingled wastes must be managed under 40 CFR 273 as universal waste (40 CFR 273.5(b)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 40 CFR 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul> <p>Verify that, for universal waste being sent to a foreign destination other than an OECD country, the requirements in 40 CFR 262.53 (notification of intent to export), 40 CFR 262.56(a)(1) through 262.56(a)(4), 262.56(a)(6) and 262.56(b) (annual reports), and 40 CFR 262.57 (recordkeeping) are met.</p> <p>Verify that, for universal waste being sent to a foreign destination, the requirements of 40 CFR 262, Subpart H are met.</p> <p>Verify that the receiving country has consented to accept the waste through an Acknowledgment of Consent.</p> <p>Verify that a copy of the USEPA Acknowledgment of Consent for the shipment has been provided to the transporter.</p> <p>(NOTE: The following waste may, at the option of the generator, be managed under the requirements of 40 CFR 273 (40 CFR 273.5(a)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul>

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	<p>(NOTE: When the following wastes are commingled with universal wastes, the commingled wastes must be managed under 40 CFR 273 as universal waste (40 CFR 273.5(b)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 40 CFR 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul>



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<p><b>LARGE QUANTITY UNIVERSAL WASTE HANDLERS</b></p> <p><b>HW.370. General</b></p> <p><b>HW.370.1.US.</b> Large quantity handlers of universal waste, more than 5000 kg at any time, are generally prohibited from disposing, diluting, or treating universal wastes (40 CFR 273.31) [Revised March 2000].</p> <p><b>HW.370.2.US.</b> Large quantity handlers of universal waste are required to meet specific accumulation time limits (40 CFR 273.35) [Revised March 2000].</p>	<p>Determine if the facility is a large quantity handler of universal waste.</p> <p>Verify that the facility does not dispose of universal wastes onsite.</p> <p>Verify that, except when responding to a release or performing waste management activities outlined in 40 CFR 273.13 (see checklist items HW.290.1.US through HW.290.5.US), the facility does not dilute or treat universal waste.</p> <p>(NOTE: The following waste may, at the option of the generator, be managed under the requirements of 40 CFR 273 (40 CFR 273.5(a)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul> <p>(NOTE: When the following wastes are commingled with universal wastes, the commingled wastes must be managed under 40 CFR 273 as universal waste (40 CFR 273.5(b)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 40 CFR 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul> <p>Verify that universal waste is not accumulated for more than 1 yr from the date that the universal waste is generated, or received from another handler.</p> <p>(NOTE: The 1 yr limit may be exceeded if the sole purpose is to accumulate such quantities as are necessary to facilitate proper recovery, treatment, or disposal. However, the handler must be able to prove that this is so.)</p> <p>Verify that the handler can demonstrate the length of time that the universal waste has been accumulated by one of the following methods:</p>

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<p><b>HW.370.3.US.</b> Large quantity handlers of universal waste are required to handle releases according to specific procedures (40 CFR 273.37) [Reviewed March 2000].</p>	<ul style="list-style-type: none"> <li>– placing the universal waste in a container and marking or labeling the container with the earliest date that any universal waste in the container became a waste or was received</li> <li>– marking or labeling each individual item of universal waste with the date it became waste or was received</li> <li>– maintaining an inventory system onsite that identifies the date each universal waste became a waste or was received</li> <li>– maintaining an inventory system onsite that identifies the earliest date that any universal waste in a group of universal waste items or a group of containers of universal waste became a waste or was received</li> <li>– placing the universal waste in a specific accumulation area and identifying the earliest date that any universal waste in the area became a waste or was received</li> <li>– any other method that clearly demonstrates the length of time that the universal waste has been accumulated from the date that it becomes a waste or was received.</li> </ul> <p>(NOTE: The following waste may, at the option of the generator, be managed under the requirements of 40 CFR 273 (40 CFR 273.5(a)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul> <p>(NOTE: When the following wastes are commingled with universal wastes, the commingled wastes must be managed under 40 CFR 273 as universal waste (40 CFR 273.5(b)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 40 CFR 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul> <p>Verify that all releases of universal waste and other universal waste residues are immediately contained.</p> <p>Verify that the facility determines if the material resulting from the release is a hazardous waste and handles it accordingly.</p> <p>(NOTE: The following waste may, at the option of the generator, be managed under the requirements of 40 CFR 273 (40 CFR 273.5(a)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 273.6</li> </ul>

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<p><b>HW.370.4.US.</b> Large quantity handlers of universal waste managing imported universal waste are required to meet specific parameters. (40 CFR 273.70(b)) [Added March 2000; Revised October 2006; Revised April 2010; Revised July 2015; Revised January 2017].</p>	<p>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</p> <p>(NOTE: When the following wastes are commingled with universal wastes, the commingled wastes must be managed under 40 CFR 273 as universal waste (40 CFR 273.5(b)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 40 CFR 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul> <p>Determine if the large quantity handler of universal waste is receiving universal waste from a foreign country.</p> <p>Verify that the imported universal waste is handled according all requirements applicable to large quantity handlers of universal waste immediately after the waste enters the United States, as well as 40 CFR 262, Subpart H.</p>



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<p><b>LARGE QUANTITY UNIVERSAL WASTE HANDLERS</b></p> <p><b>HW.380. Specific Wastes</b></p> <p><b>HW.380.1.US.</b> Large quantity handlers of universal waste are required to manage universal waste batteries and other solid waste generated from battery management activities according to specific parameters (40 CFR 273.33(a)(1) and 273.33(a)(2)) <b>[Revised March 2000].</b></p>	<p>(NOTE: Refer to the definition of <i>Battery</i> and <i>Waste Battery</i>.)</p> <p>Verify that universal waste batteries are managed in a way that prevents releases of any universal waste or component of a universal waste to the environment.</p> <p>Verify that batteries that show evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable condition are contained in a container.</p> <p>Verify that containers are closed, structurally sound, compatible with the contents of the battery, and lack evidence of leakage, spillage, or damage that could cause leakage.</p> <p>Verify that, when conducting any of the following activities, the casing of each individual battery cell is not breached and remains intact and closed:</p> <ul style="list-style-type: none"> <li>– sorting batteries by type</li> <li>– mixing battery types in one container</li> <li>– discharging batteries so as to remove the electric charge</li> <li>– regenerating used batteries</li> <li>– disassembling batteries or battery packs into individual batteries or cells</li> <li>– removing batteries from consumer products</li> <li>– removing electrolyte from batteries.</li> </ul> <p>(NOTE: Cells may be opened to remove electrolyte but must be immediately closed after removal.)</p> <p>(NOTE: The following waste may, at the option of the generator, be managed under the requirements of 40 CFR 273 (40 CFR 273.5(a)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul> <p>(NOTE: When the following wastes are commingled with universal wastes, the commingled wastes must be managed under 40 CFR 273 as universal waste (40 CFR 273.5(b)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 40 CFR 273.6</li> </ul>

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<p><b>HW.380.2.US.</b> Large quantity handlers of universal waste are required to manage the electrolyte from universal waste batteries according to specific parameters (40 CFR 273.33(a)(3)) <b>[Reviewed March 2000]</b>.</p>	<p>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</p> <p>Verify that, if the large quantity universal waste handler removes electrolyte from batteries or generates other solid waste (e.g., battery pack materials, discarded consumer products) as a result of battery management activities, the handler determines if any of the wastes exhibit the characteristics of a hazardous waste.</p> <p>Verify that, if it does exhibit the characteristics of a hazardous waste, it is treated and handled as a hazardous waste.</p> <p>Verify that, if the electrolyte or other solid waste is not a hazardous waste, it is managed in accordance with any other applicable state and federal laws and regulations.</p> <p>(NOTE: The following waste may, at the option of the generator, be managed under the requirements of 40 CFR 273 (40 CFR 273.5(a)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul> <p>(NOTE: When the following wastes are commingled with universal wastes, the commingled wastes must be managed under 40 CFR 273 as universal waste (40 CFR 273.5(b)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 40 CFR 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul> <p><b>HW.380.3.US.</b> Large quantity handlers of universal waste are required to manage universal waste pesticides according to specific parameters (40 CFR 273.33(b)) <b>[Reviewed March 2000]</b>.</p> <p>(NOTE: Refer to the definition of Pesticide and Waste Pesticides.)</p> <p>Verify that universal waste pesticides are managed in a way that prevents releases of any universal waste or component of a universal waste to the environment.</p> <p>Verify that the pesticides are contained in one or more of the following:</p> <ul style="list-style-type: none"> <li>– a container that remains closed, structurally sound, compatible with the pesticide, and lacks evidence of leakage, spillage, or damage that could cause leak age under reasonably foreseeable conditions (NOTE: This is considered an appropriate container)</li> <li>– an inappropriate container that is overpacked in an appropriate container</li> </ul>

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<p><b>HW.380.4.US.</b> Large quantity handlers of universal waste are required to manage universal waste mercury-containing equipment in a way that prevents release of any universal waste or component of a universal waste to the environment (40 CFR 273.33(c)(1) and 273.33(c)(2)) [Revised March 2000; Revised October 2005].</p>	<ul style="list-style-type: none"> <li>– a tank that meets the requirements of 40 CFR 265, Subpart J except for 40 CFR 265.197(c) (tank closure plans), 40 CFR 265.200 (waste analysis and trial tests), and 40 CFR 265.201 (requirements for SQGs)</li> <li>– a transport vehicle or vessel that is closed, structurally sound, compatible with the pesticide, and that lacks evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions.</li> </ul> <p>(NOTE: The following waste may, at the option of the generator, be managed under the requirements of 40 CFR 273 (40 CFR 273.5(a)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul> <p>(NOTE: When the following wastes are commingled with universal wastes, the commingled wastes must be managed under 40 CFR 273 as universal waste (40 CFR 273.5(b)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 40 CFR 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul> <p>(NOTE: Refer to the definition of Mercury-Containing Equipment and Waste Mercury-Containing Equipment.)</p> <p>Verify that a large quantity handler of universal waste places in a container any universal waste mercury-containing equipment with non-contained elemental mercury or that shows evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions.</p> <p>Verify that the container is closed, structurally sound, compatible with the contents of the device, lacks evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions, and is reasonably designed to prevent the escape of mercury into the environment by volatilization or any other means.</p> <p>(NOTE: A large quantity handler of universal waste may remove mercury-containing ampules from universal waste mercury-containing equipment provided the handler:</p> <ul style="list-style-type: none"> <li>– removes and manages the ampules in a manner designed to prevent breakage of the ampules</li> <li>– removes the ampules only over or in a containment device (e.g., tray or pan sufficient to collect and contain any mercury released from an ampule in case of breakage)</li> </ul>

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<p><b>HW.380.5.US.</b> Large quantity handlers of universal waste are required to manage the wastes from universal waste mercury-containing equipment according to specific parameters (40 CFR 273.33(c)(3) and 273.33(c)(4)) [Reviewed March 2000; Revised October 2005].</p>	<ul style="list-style-type: none"> <li>– ensures that a mercury clean-up system is readily available to immediately transfer any mercury resulting from spills or leaks of broken ampules from that containment device to a container that meets the requirements of 40 CFR 262.34</li> <li>– immediately transfers any mercury resulting from spills or leaks from broken ampules from the containment device to a container that meets the requirements of 40 CFR 262.34</li> <li>– ensures that the area in which ampules are removed is well ventilated and monitored to ensure compliance with applicable OSHA exposure levels for mercury</li> <li>– ensures that employees removing ampules are thoroughly familiar with proper waste mercury handling and emergency procedures, including transfer of mercury from containment devices to appropriate containers</li> <li>– stores removed ampules in closed, non-leaking containers that are in good condition</li> <li>– packs removed ampules in the container with packing materials adequate to prevent breakage during storage, handling, and transportation.</li> </ul> <p>(NOTE: The following waste may, at the option of the generator, be managed under the requirements of 40 CFR 273 (40 CFR 273.5(a)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul> <p>(NOTE: When the following wastes are commingled with universal wastes, the commingled wastes must be managed under 40 CFR 273 as universal waste (40 CFR 273.5(b)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 40 CFR 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul> <p>Verify that, if a large quantity handler of universal waste mercury-containing equipment that does not contain an ampule removes the open original housing holding the mercury from universal waste mercury-containing equipment the following is done:</p> <ul style="list-style-type: none"> <li>– immediately seal the original housing holding the mercury with an air-tight seal to prevent the release of any mercury to the environment</li> <li>– follow all requirements for removing ampules and managing removed ampules under 40 CFR 273(c)(2) (see checklist item HW.380.4.US.).</li> </ul>

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<p><b>HW.380.6.US.</b> Large quantity handlers of universal waste are required to manage universal waste lamps according to specific parameters (40 CFR 273.33(d)) [Added October 1999; Reviewed March 2000].</p>	<p>Verify that a large quantity handler of universal waste who removes mercury-containing ampules from mercury-containing equipment or seals mercury from mercury-containing equipment in its original housing determines whether the following exhibit a characteristic of hazardous waste identified in 40 CFR 261, subpart C:</p> <ul style="list-style-type: none"> <li>– mercury or clean-up residues resulting from spills or leaks</li> <li>– other solid waste generated as a result of the removal of mercury-containing ampules or housings (e.g., the remaining mercury-containing device).</li> </ul> <p>(NOTE: If the mercury, residues, and/or other solid waste exhibits a characteristic of hazardous waste, it must be managed in compliance with all applicable requirements of 40 CFR 260 through 272. The handler is considered the generator of the mercury, residues, and/or other waste and must manage it in compliance with 40 CFR 262.)</p> <p>(NOTE: If the mercury, residues, and/or other solid waste is not hazardous, the handler may manage the waste in any way that is in compliance with applicable federal, state or local solid waste regulations.)</p> <p>(NOTE: The following waste may, at the option of the generator, be managed under the requirements of 40 CFR 273 (40 CFR 273.5(a)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul> <p>(NOTE: When the following wastes are commingled with universal wastes, the commingled wastes must be managed under 40 CFR 273 as universal waste (40 CFR 273.5(b)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 40 CFR 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul> <p>Verify that a large quantity handler of universal waste contains any lamp in containers or packages that are structurally sound, adequate to prevent breakage, and compatible with the contents of the lamps.</p> <p>Verify that containers and packages remain closed and lack evidence of leakage, spillage or damage that could cause leakage under reasonably foreseeable conditions.</p> <p>Verify that a large quantity handler of universal waste immediately cleans up and places in a container any lamp that is broken and places in a container any lamp that</p>

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	<p>shows evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous constituents to the environment.</p> <p>Verify that containers are closed, structurally sound, compatible with the contents of the lamps, and lack evidence of leakage, spillage, or damage that could cause leakage or releases of mercury or other hazardous constituents to the environment under reasonably foreseeable conditions.</p> <p>(NOTE: The following waste may, at the option of the generator, be managed under the requirements of 40 CFR 273 (40 CFR 273.5(a)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul> <p>(NOTE: When the following wastes are commingled with universal wastes, the commingled wastes must be managed under 40 CFR 273 as universal waste (40 CFR 273.5(b)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 40 CFR 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul>

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<p><b>LARGE QUANTITY UNIVERSAL WASTE HANDLERS</b></p> <p><b>HW.390.</b> <b>Personnel Training</b></p> <p><b>HW.390.1.US.</b> A large quantity handler of universal waste must ensure all employees are knowledgeable about universal waste relative to their responsibilities (40 CFR 273.36) [<b>Revised March 2000; Revised April 2012</b>].</p>	<p>Verify that a large quantity handler of universal waste ensures that all employees are thoroughly familiar with proper waste handling and emergency procedures, relative to their responsibilities during normal facility operations and emergencies.</p> <p>(NOTE: The following waste may, at the option of the generator, be managed under the requirements of 40 CFR 273 (40 CFR 273.5(a)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul> <p>(NOTE: When the following wastes are commingled with universal wastes, the commingled wastes must be managed under 40 CFR 273 as universal waste (40 CFR 273.5(b)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 40 CFR 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul>



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<p><b>LARGE QUANTITY UNIVERSAL WASTE HANDLERS</b></p> <p><b>HW.400. Containers</b></p> <p><b>HW.400.1.US.</b> Universal wastes at large quantity universal waste handlers are required to be labeled according to specific parameters (40 CFR 273.34) [Revised October 1999; Reviewed March 2000; Revised October 2005].</p>	<p>Verify that universal waste batteries (each battery), or a container in which the batteries are contained, are labeled or marked clearly with any one of the following phrases:</p> <ul style="list-style-type: none"> <li>– UNIVERSAL WASTE - BATTERY(IES)</li> <li>– WASTE BATTERY(IES)</li> <li>– USED BATTERY(IES).</li> </ul> <p>Verify that containers or multiple container package units, tanks, transport vehicles, or vessels in which recalled universal waste pesticides are contained are marked clearly with:</p> <ul style="list-style-type: none"> <li>– the label that was on or accompanied the product as sold or distributed</li> <li>– the words UNIVERSAL WASTE PESTICIDE(S) or WASTE PESTICIDE(s).</li> </ul> <p>Verify that the container, tanks, or transport vehicles or vessels in which unused pesticide products are contained are labeled or marked clearly with:</p> <ul style="list-style-type: none"> <li>– the label that was on the product when purchased, if still legible, or, if this is not feasible, the appropriate DOT label</li> <li>– an alternate label prescribed or designated by the waste pesticide collection program administered or recognized by a state</li> <li>– the words UNIVERSAL WASTE - PESTICIDE(S) or WASTE PESTICIDE(S).</li> </ul> <p>Verify that mercury-containing equipment (i.e., each device), or a container in which the equipment is contained, is labeled or marked clearly with any of the following phrases:</p> <ul style="list-style-type: none"> <li>– Universal Waste--Mercury Containing Equipment</li> <li>– Waste Mercury-Containing Equipment</li> <li>– Used Mercury-Containing Equipment.</li> </ul> <p>Verify that a universal waste mercury-containing thermostat or container containing only universal waste mercury-containing thermostats is labeled or marked clearly with any of the following phrases:</p> <ul style="list-style-type: none"> <li>– Universal Waste--Mercury Thermostat(s)</li> </ul>

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	<ul style="list-style-type: none"> <li>– Waste Mercury Thermostat(s)</li> <li>– Used Mercury Thermostat(s).</li> </ul> <p>Verify that each lamp or a container or package in which lamps are contained is labeled or marked clearly with one of the following phrases:</p> <ul style="list-style-type: none"> <li>– UNIVERSAL WASTE - LAMP(S)</li> <li>– WASTE LAMP(S)</li> <li>– USED LAMP(S).</li> </ul> <p>(NOTE: The following waste may, at the option of the generator, be managed under the requirements of 40 CFR 273 (40 CFR 273.5(a)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul> <p>(NOTE: When the following wastes are commingled with universal wastes, the commingled wastes must be managed under 40 CFR 273 as universal waste (40 CFR 273.5(b)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 40 CFR 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul>

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<p><b>LARGE QUANTITY UNIVERSAL WASTE HANDLERS</b></p> <p><b>HW.410. Notifications</b></p> <p><b>HW.410.1.US.</b> Large quantity handlers of universal waste are required to perform specific notification activities (40 CFR 273.32) <b>[Revised March 2000; Revised October 2005].</b></p>	<p>Verify that the handler has sent written notification of universal waste management to the Regional Administrator and received an USEPA identification number before meeting or exceeding the 5000 kg (11,111 lb) storage limit.</p> <p>(NOTE: In the following circumstances, the handler is not required to notify the USEPA:</p> <ul style="list-style-type: none"> <li>– if the handler has already notified the USEPA of hazardous waste management activity and has received a U.S. USEPA identification number</li> <li>– if recalled pesticides are being managed and notification has already been sent in under 40 CFR 165.)</li> </ul> <p>Verify that the notification includes:</p> <ul style="list-style-type: none"> <li>– the universal waste handlers name and mailing address</li> <li>– the name and business phone of the POC at the facility</li> <li>– the address or physical location of the universal waste management activities</li> <li>– a list of all types of universal waste managed by the handler (e.g., batteries, pesticides, mercury-containing equipment, and lamps)</li> <li>– a statement indicating that the handler is accumulating more than 5000 kg [approx. 11,111 lb] of universal waste at one time and the types of universal waste that are accumulated above this quantity.</li> </ul> <p>(NOTE: The following waste may, at the option of the generator, be managed under the requirements of 40 CFR 273 (40 CFR 273.5(a)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul> <p>(NOTE: When the following wastes are commingled with universal wastes, the commingled wastes must be managed under 40 CFR 273 as universal waste (40 CFR 273.5(b)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 40 CFR 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul>

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<p><b>LARGE QUANTITY UNIVERSAL WASTE HANDLERS</b></p> <p><b>HW.420. Transportation</b></p> <p><b>HW.420.1.US.</b> Offsite shipment of universal waste from large quantity handlers is required to be done according to specific parameters (40 CFR 273.38) [<b>Revised March 2000</b>].</p>	<p>Verify that large quantity handlers of universal waste do not send or take universal waste to anyplace other than another universal waste handler, a destination facility, or a foreign destination.</p> <p>(NOTE: If the handler self-transport universal waste, they have to comply with the requirements for transportation in 40 CFR 273.50 through 273.56 (see checklist items HW.450.1.US through HW.450.6.US).)</p> <p>Verify that, if the universal waste being offered for off-site transportation, the material meets the definition of hazardous materials under 49 CFR 171 through 180, the shipment is packaged, labeled, marked, and placarded, and the proper shipping papers have been prepared under DOT regulations.</p> <p>Verify that, prior to sending the waste offsite, the originating handler has ensured that the receiving handler agrees to receive the waste.</p> <p>Verify that, if the receiving handler rejects a waste shipment, the originating handler does one of the following:</p> <ul style="list-style-type: none"> <li>– receives the waste back when notified the shipment was rejected</li> <li>– agrees with the receiving handler on a destination facility to which the shipment will be sent.</li> </ul> <p>Verify that, if the receiving handler rejects a shipment or a portion of a shipment, the receiving handler notifies the originating handler to discuss reshipment of the load, and either:</p> <ul style="list-style-type: none"> <li>– sends the shipment back to the originating handler, or</li> <li>– if agreed by both originating and receiving handlers, sends the shipment to a destination facility.</li> </ul> <p>Verify that, if a large quantity handler of universal waste receives a shipment containing hazardous waste that is not universal waste, the handler immediately notifies the regional USEPA office of the illegal shipment and provides the name, phone numbers, and address of the originating shipper.</p> <p>(NOTE: If the handler receives a shipment of nonhazardous, nonuniversal waste, the handler may manage the waste in any way that is in compliance with federal, state, or local regulations.)</p>

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<p><b>HW.420.2.US.</b> Large quantity handlers are required to track offsite shipments (40 CFR 273.39) [Revised March 2000; Revised January 2017].</p>	<p>(NOTE: The following waste may, at the option of the generator, be managed under the requirements of 40 CFR 273 (40 CFR 273.5(a)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul> <p>(NOTE: When the following wastes are commingled with universal wastes, the commingled wastes must be managed under 40 CFR 273 as universal waste (40 CFR 273.5(b)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 40 CFR 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul>
	<p>Verify that the large quantity handler of universal waste keeps a record of each shipment of universal waste received at the facility.</p> <p>(NOTE: The record may take the form of a log, invoice, manifest, bill of lading, movement document or other shipping document.)</p> <p>Verify that a record of each shipment of universal waste received at the facility is kept in one of the following:</p> <ul style="list-style-type: none"> <li>– a log</li> <li>– invoices</li> <li>– manifests</li> <li>– bill of lading</li> <li>– other shipping document.</li> </ul> <p>Verify that the record for each shipment received includes the following:</p> <ul style="list-style-type: none"> <li>– name and address of the originating handler or foreign shipper from who the waste was sent</li> <li>– the quantity of each type of universal waste received</li> <li>– the date of receipt of the shipment.</li> </ul> <p>Verify that the large quantity handler of universal waste keeps a record of each shipment of universal waste sent from the handler to other facilities.</p> <p>(NOTE: The record may take the form of a log, invoice, manifest, bill of lading, movement document or other shipping document.</p>

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<p><b>HW.420.3.US.</b> Large quantity handlers of universal waste that send universal waste to a foreign destination are required to meet specific requirements (40 CFR 273.40)</p>	<p>Verify that a record of each shipment of universal waste shipped offsite is kept in one of the following:</p> <ul style="list-style-type: none"> <li>– a log</li> <li>– invoices</li> <li>– manifests</li> <li>– bill of lading</li> <li>– other shipping document.</li> </ul> <p>Verify that the record for each offsite shipment includes the following:</p> <ul style="list-style-type: none"> <li>– name and address of the handler, destination facility, or foreign destination to whom the universal waste was sent</li> <li>– the quantity of each type of universal waste shipped</li> <li>– the date the shipment left the facility.</li> </ul> <p>Verify that records are retained for at least 3 yr:</p> <ul style="list-style-type: none"> <li>– for shipments received at the facility, from the date of receipt of the shipment</li> <li>– for shipments sent off-site by the handler, from the date the shipment left the facility.</li> </ul> <p>(NOTE: The following waste may, at the option of the generator, be managed under the requirements of 40 CFR 273 (40 CFR 273.5(a)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul> <p>(NOTE: When the following wastes are commingled with universal wastes, the commingled wastes must be managed under 40 CFR 273 as universal waste (40 CFR 273.5(b)):</p> <ul style="list-style-type: none"> <li>– household wastes that are exempt under 40 CFR 261.4(b)(1) and are also the same type as the universal wastes defined at 40 CFR 273.6</li> <li>– conditionally exempt small quantity generator wastes that are exempt under 40 CFR 261.5 and are also the same types as the universal waste defined in 40 CFR 273.6.)</li> </ul> <p>Verify that a large quantity handler of universal waste who sends universal waste to a foreign destination meets the requirements of 40 CFR 262, subpart H.</p>

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<b>REGULATORY</b> <b>REQUIREMENTS</b>	<b>REVIEWER CHECKS</b> <b>December 2018</b>
[Revised March 2000; Revised January 2017].	

<p style="text-align: center;"><b>COMPLIANCE CATEGORY</b>  <b>HAZARDOUS WASTE MANAGEMENT</b>  <b>U.S. TEAM Guide</b></p>	
<b>REGULATORY REQUIREMENTS</b>	<b>REVIEWER CHECKS</b> December 2018
<p><b>HW.450.</b></p> <p><b>UNIVERSAL WASTE TRANSPORTERS</b></p> <p><b>HW.450.1.US.</b> Universal waste transporters are prohibited from disposing or treating universal wastes (40 CFR 273.51) <b>[Reviewed March 2000].</b></p> <p><b>HW.450.2.US.</b> Universal waste transporters are required to manage the waste they transport according to specific parameters (40 CFR 273.52) <b>[Reviewed March 2000].</b></p> <p><b>HW.450.3.US.</b> Universal waste transporters may only store the universal waste at a transfer facility for 10 days (40 CFR 273.53) <b>[Reviewed March 2000].</b></p> <p><b>HW.450.4.US.</b> Universal waste transporters are required to handle releases according to specific procedures (40 CFR 273.54) <b>[Reviewed March 2000].</b></p> <p><b>HW.450.5.US.</b> Offsite shipments of universal waste transporters are required to be done according to specific parameters (40 CFR 273.18 and 273.19) <b>[Reviewed March 2000].</b></p> <p><b>HW.450.6.US.</b> Transporters of universal waste that send universal wastes to a foreign destination are required to meet specific requirements (40</p>	<p>Determine if the facility is a transporter of universal waste.</p> <p>Verify that the facility does not dispose of universal wastes onsite.</p> <p>Verify that, except when responding to a release or performing waste management activities outlined in 40 CFR 273.13 (see checklist item HW.290.1.US through HW.290.5.US), the facility does not dilute or treat universal waste.</p> <p>Verify that the waste is managed according to applicable DOT regulations depending on whether it meets the criteria for definition as a hazardous material or as a hazardous waste.</p> <p>Verify that universal waste is not stored at a transfer facility for more than 10 days.  (NOTE: If the waste is stored for more than 10 days, the transporter becomes a handler.)</p> <p>Verify that all releases of universal waste and other universal waste residues are immediately contained.</p> <p>Verify that the transporter determines if the material resulting from the release is a hazardous waste.</p> <p>Verify that transporters of universal waste do not send or take universal waste to any place other than a universal waste handler, a destination facility, or a foreign destination.</p> <p>Verify that, if the universal waste being offered for offsite transportation meets the definition of hazardous materials under 49 CFR 171 through 180, it is placarded, packaged and shipped according to DOT requirements.</p> <p>Verify that a universal waste transporter transporting a shipment of universal waste to a foreign destination meets to the requirements of 40 CFR 262, subpart H.</p>

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<p>CFR 273.56) [Revised March 2000; Revised October 2006; Revised April 2010; Revised July 2015; Revised January 2017].</p> <p><b>HW.450.7.US.</b> Universal waste transporters managing imported universal waste are required to meet specific parameters. (40 CFR 273.70(a)) [Added March 2000; Revised October 2006; Revised April 2010; Revised July 2015; Revised January 2017].</p>	<p>Determine if the universal waste transporter is managing universal waste from a foreign country.</p> <p>Verify that the universal waste is handled according all requirements applicable to universal waste transporters immediately after the waste enters the United States, as well as 40 CFR 262, Subpart H.</p>

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<p><b>HW.470.</b></p> <p><b>UNIVERSAL WASTE DESTINATION FACILITIES</b></p> <p><b>HW.470.1.US.</b> Destination facilities are required to meet specific requirements (40 CFR 273.60) [Revised October 1999; Reviewed March 2000].</p> <p><b>HW.470.2.US.</b> Destination facilities are required to meet specific standards in relation to offsite shipments of universal waste (40 CFR 273.61) [Revised March 2000].</p>	<p>Verify that the owner or operator of a destination facility meets all applicable requirements of 40 CFR 264, 265, 266, 268, 270, and the notification requirement under section 3010 of RCRA.</p> <p>Verify that the owner/operator of a destination facility that recycles a particular universal waste without storing that universal waste before it is recycled complies with 40 CFR 261.6(c)(2).</p> <p>Verify that the destination facility does not send or take universal waste to a place other than a universal waste handler, another destination facility, or foreign destination.</p> <p>Verify that, if the destination facility rejects a shipment or portion of a shipment containing universal waste, they contact the shipper to notify him of the rejection and discuss reshipment of the load.</p> <p>Verify that, if a shipment is rejected, the destination facility does one of the following:</p> <ul style="list-style-type: none"> <li>– sends the shipment back to the original shipper</li> <li>– sends the shipment to another destination facility if agreed upon by the shipper and the holding destination facility.</li> </ul> <p>Verify that, if a destination facility receives a shipment containing hazardous waste that is not universal waste, the facility immediately notifies the regional USEPA office of the illegal shipment and provides the name, phone numbers, and address of the originating shipper.</p> <p>(NOTE: If the facility receives a shipment of nonhazardous nonuniversal waste, the facility may manage the waste in any way that is in compliance with Federal, state, or local regulations.)</p>

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<b>REGULATORY REQUIREMENTS</b>	<b>REVIEWER CHECKS</b> <b>December 2018</b>
<p><b>HW.470.3.US.</b> Destination facilities are required to track universal waste shipments (40 CFR 273.62) [Revised March 2000; Revised January 2017].</p>	<p>Verify that the owner or operator of a destination facility keeps a record of each shipment of universal waste received at the facility.</p> <p>(NOTE: The record may take the form of a log, invoice, manifest, bill of lading, movement document or other shipping document.)</p> <p>Verify that a record of each shipment of universal waste received at the facility is kept in one of the following:</p> <ul style="list-style-type: none"> <li>– a log</li> <li>– invoices</li> <li>– manifests</li> <li>– bill of lading</li> <li>– other shipping document.</li> </ul> <p>Verify that the record for each shipment received includes the following:</p> <ul style="list-style-type: none"> <li>– name and address of the originating universal waste handler, destination facility or foreign shipper from whom the waste was sent</li> <li>– the quantity of each type of universal waste received</li> <li>– the date of receipt of the shipment.</li> </ul> <p>Verify that records are retained for 3 yr from the date of receipt of a shipment of universal waste.</p>
<p><b>HW.470.4.US.</b> Universal waste destination facilities managing imported universal waste are required to meet specific parameters. (40 CFR 273.70(c)) [Added March 2000; Revised October 2006; Revised July 2015; Revised January 2017].</p>	<p>Determine if the universal waste destination facility is managing universal waste from a foreign country.</p> <p>Verify that the universal waste is handled according all requirements applicable to universal waste destination facility immediately after the waste enters the United States as well as 40 CFR 262, Subpart H.</p>





## **Appendix 4-0**

### **Materials Which Are Not Solid Waste (40 CFR 261.4(a))**

**[Added January 2003; Revised July 2006; Revised January 2009, Revised July 2010; Revised January 2017]**

See [www.ecfr.gov](http://www.ecfr.gov) for the most recent, integrated, version of 40 CFR 261.4(a).



## **Appendix 4-1**

### **Hazardous Waste from Nonspecific Sources and from Specific Sources**

**(40 CFR 261.31 and 261.32)**

**[Revised January 2017]**

See [www.ecfr.gov](http://www.ecfr.gov) for the most recent, integrated, version of 40 CFR 261.31 and 261.32.



## **Appendix 4-2**

### **Commercial Chemical Products or Manufacturing Chemical Intermediates Identified as Toxic Wastes**

**(40 CFR 261.33(f))**

**[Revised June 1998; Revised January 2007, Revised July 2010, Revised January 2017]**

The commercial chemical products, manufacturing chemical intermediates, or off-specification commercial chemical products identified in 40 CFR 261.33(f) are identified as “toxic wastes.”

See [www.ecfr.gov](http://www.ecfr.gov) for the most recent, integrated, version of this information.



### Appendix 4-3

#### Toxicity Characteristics Constituents and Regulatory Levels (40 CFR 261.24)

USEPA HW No.	Constituent	CAS No	Regulatory level (mg/L)
D004	Arsenic	7440-38-2	5.0
D005	Barium	7440-39-3	100.0
D018	Benzene	71-43-2	0.5
D006	Cadmium	7440-43-9	1.0
D019	Carbon tetrachloride	56-23-5	0.5
D020	Chlordane	57-74-9	0.03
D021	Chlorobenzene	108-90-7	100.0
D022	Chloroform	67-66-3	6.0
D007	Chromium	7440-47-3	5.0
D023	o-Cresol	95-48-7	200.0 <sup>1</sup>
D024	m-Cresol	108-39-4	200.0 <sup>1</sup>
D025	p-Cresol	106-44-5	200.0 <sup>1</sup>
D026	Cresol		200.0 <sup>1</sup>
D016	2,4-D	94-75-7	10.0
D027	1,4-Dichlorobenzene	106-46-7	7.5
D028	1,2-Dichloroethane	107-06-2	0.5
D029	1,1-Dichloroethylene	75-35-4	0.7
D030	2,4-Dinitrotoluene	121-14-2	0.13 <sup>2</sup>
D012	Endrin	72-20-8	0.02
D031	Heptachlor (and its hydroxide)	76-44-8	0.008
D032	Hexachlorobenzene	118-74-1	0.13 <sup>2</sup>
D033	Hexachloro-1,3-butadiene	87-68	0.50
D034	Hexachloroethane	67-72-1	3.0
D008	Lead	7439-92-1	5.0
D013	Lindane	58-89-9	0.4
D009	Mercury	7439-97-6	0.2
D014	Methoxychlor	72-43-5	10.0
D035	Methyl ethyl ketone	78-93-3	200.0
D036	Nitrobenzene	98-95-3	2.0
D037	Pentachlorophenol	87-86-5	100.0
D038	Pyridine	110-86-1	5.0 <sup>2</sup>
D010	Selenium	7782-49-2	1.0
D011	Silver	7440-22-4	5.0
D039	Tetrachloroethylene	127-18-4	0.7
D015	Toxaphene	8001-35-2	0.5
D040	Trichloroethylene	79-01-6	0.5
D041	2,4,5-Trichlorophenol	95-95-4	400.0
D042	2,4,6-Trichlorophenol	88-06-2	2.0
D017	2,4,5-TP (Silvex)	93-72-1	1.0
D043	Vinyl chloride	75-01-4	0.2

<sup>1</sup> If o-, m-, and p-cresol concentrations cannot be differentiated, the total cresol (D026) concentration is used.

<sup>2</sup> Quantitation limit is greater than the calculated regulatory level. Therefore, the quantitation limit becomes the regulatory level.



#### **Appendix 4-4**

**This Appendix has been deleted.**



## **Appendix 4-5**

### **Commercial Chemical Products or Manufacturing Chemical Intermediates Identified as Acute Hazardous Waste (40 CFR 261.33(a) through 261.33(e)) [Revised January 2007; Revised January 2017]**

The commercial chemical products, manufacturing chemical intermediates, or off-specification commercial chemical products identified in 40 CFR 261.33(a) through 261.33(e) are identified as “acute hazardous wastes.”

See [www.ecfr.gov](http://www.ecfr.gov) for the most recent, integrated, version of this information.



**Appendix 4-6**  
**Hazardous Waste Storage Incompatibility Chart**  
**Substances in bold have detailed example lists on the next page.**

If the material contains:	It may not be stored with any of the following:
<b>Acid</b> (pH below 2.0)	<b>Caustics</b> (pH above 12.5) <b>Reactive Metals</b> Alcohol Water Aldehydes Halogenated, Nitrated, or Unsaturated Hydrocarbons <b>Reactive Organic Compounds and Solvents</b> Spent Cyanide and Sulfide Solutions <b>Oxidizers</b>
<b>Caustic</b> (pH above 12.5)	<b>Acid</b> (pH below 2.0) <b>Reactive Metals</b> Alcohol Water Aldehydes Halogenated, Nitrated, or Unsaturated Hydrocarbons <b>Reactive Organic Compounds and Solvents</b>
<b>Reactive Metals</b>	<b>Caustics</b> <b>Acids</b> Alcohol Aldehydes Halogenated, Nitrated, or Unsaturated Hydrocarbons <b>Reactive Organic Compounds and Solvents</b> <b>Oxidizers</b>
<b>Reactive Organic Compounds and Solvents</b>	<b>Caustics</b> <b>Acids</b> <b>Reactive Metals</b>
<b>Spent Cyanide and Sulfide Solutions</b>	<b>Acids</b>
<b>Oxidizers</b>	Acetic or Other Organic Acids Concentrated Mineral Acids <b>Reactive Metals</b> <b>Reactive Organic Compounds and Solvents</b> <b>Ignitable [Flammable/Combustible] Wastes*</b>

\* "Ignitable" in this context refers to substances with a flashpoint below 140× oF, and includes:  
Combustible substances, with a flashpoint below 140× oF  
Flammable substances, with a flashpoint below 100× oF.

**Some Deadly Combinations**

Acids + Oil or Grease = Fire      Flammable Liquids + Hydrogen Peroxide = Fire/Explosion  
Acids + Caustics = Heat/Spattering    Aluminum Powder + Ammonium Nitrate = Explosion  
Caustics + Epoxies = Extreme Heats      Sodium Cyanide + Sulfuric Acid = Lethal Hydrogen Cyanide  
Chlorine Gas + Acetylene = Explosion      Ammonia + Bleach = Noxious Fumes

In general: **Reactives** must be segregated from **Ignitables**

**Acids** must be segregated from **Caustics**

**Corrosives** should be segregated from **Flammables**

**Oxidizers** should be segregated from **EVERYTHING**

**Many Corrosives** are "Water Reactive"

Most **Organic Reactives** must be segregated from **Inorganic Reactives** (metals)

<b>Ignitables</b> <b>(Flammables/Combustibles)</b>	<b>Corrosives</b> <b>Acids</b>	<b>Caustics</b>
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<ul style="list-style-type: none"> <li>• Carburetor Cleaners</li> <li>• Engine Cleaners</li> <li>• Epoxy, Resins, Adhesives, and Rubber Cements</li> <li>• Finishes</li> <li>• Fuels</li> <li>• Lacquers</li> <li>• Paints</li> <li>• Paint Thinners</li> <li>• Paint Wastes</li> <li>• Pesticides that contain Solvents (such as Methyl Alcohol, Ethyl Alcohol, Isopropyl Alcohol, Toluene, Xylene).</li> <li>• Petroleum Solvents (Drycleaning Fluid)</li> <li>• Solvents:</li> <li>• Acetone</li> <li>• Benzene</li> <li>• Carbon Tetrachloride (Carbon Tet)</li> <li>• Ethanol (Ethyl Alcohol)</li> <li>• Ethyl Benzene</li> <li>• Isopropanol (Isopropyl Alcohol)</li> <li>• Kerosene (Fuel Oil #1)</li> <li>• Methanol (Wood Alcohol)</li> <li>• Methyl Ethyl Ketone (MEK)</li> <li>• Petroleum Distillates</li> <li>• Tetrahydrofuran (THF)</li> <li>• Toluene (Methacide, Methylbenzene, Methylbenzol, Phenylmethane, Toluol, Antisal 1A)</li> <li>• White Spirits (White Spirits, Mineral Spirits, Naptha)</li> </ul>	<ul style="list-style-type: none"> <li>• Battery Acids</li> <li>• Degreasers and Engine Cleaners</li> <li>• Etching Fluids</li> <li>• Hydrobromic Acid</li> <li>• Hydrochloric Acid (Muriatic Acid)</li> <li>• Nitric Acid (&lt;40%) (Aquafortis)</li> <li>• Phosphoric Acid</li> <li>• Rust Removers</li> <li>• Sulfuric Acid (Oil of Vitriol)</li> <li>• _____</li> <li>• _____</li> <li>• _____</li> <li>• _____</li> <li>• <b>Reactive Metals</b></li> <li>• _____</li> <li>• _____</li> <li>• Lithium (Batteries)</li> <li>• Aluminum</li> <li>• Beryllium</li> <li>• Calcium</li> <li>• Magnesium</li> <li>• Sodium</li> <li>• Zinc Powder</li> </ul>	<ul style="list-style-type: none"> <li>• Acetylene Sludge</li> <li>• Alkaline Battery Acids</li> <li>• Alkaline Cleaners</li> <li>• Alkaline Degreasers</li> <li>• Alkaline Etching Fluids</li> <li>• Lime and Water</li> <li>• Lime Wastewater</li> <li>• Potassium Hydroxide (Caustic Potash)</li> <li>• Rust Removers</li> <li>• Sodium Hydroxide (Caustic Soda, Soda Lye)</li> </ul> <hr/> <p>Reactive Organic Compounds and Solutions</p> <hr/> <ul style="list-style-type: none"> <li>• Alcohols</li> <li>• Aldehydes</li> <li>• Chromic Acids (from chrome plating, copper stripping and aluminum anodizing)</li> <li>• Cyanides (from electroplating operations)</li> <li>• Hypochlorides (from water treatment plants, swimming pools, sanitizing operations)</li> <li>• Organic Peroxides (including Hydrogen Peroxide)</li> <li>• Perchlorates</li> <li>• Permanganates</li> </ul> <p>Sulfides</p>
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<ul style="list-style-type: none"> <li>• Xylene (Xylol)</li> <li>• Stains</li> <li>• Stripping Agents</li> <li>• Varsol</li> <li>• Waste Fuels</li> <li>• Waste Ink</li> <li>• Wax Removers</li> <li>• Wood Cleaners</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	
	<b>Oxidizers</b>	
	<ul style="list-style-type: none"> <li>• Chlorine Gas</li> <li>• Nitric Acid (&gt;40%), aka Red Fuming Nitric</li> <li>• Nitrates (Sodium Nitrate, Ammonium Nitrate)</li> <li>• Perchlorates</li> <li>• Perchloric Acid</li> <li>• Peroxides</li> <li>• Calcium Hypochlorite (&gt;60%)</li> </ul>	

## **Appendix 4-7**

### **Recordkeeping, Notification, and/or Certification Requirements for 40 CFR 268 (40 CFR 268, Appendix X) [Revised January 2017]**

See [www.ecfr.gov](http://www.ecfr.gov) for the most recent, integrated, version of this information.



## **Appendix 4-8**

### **Land Disposal Restricted Wastes and Their Effective Dates (40 CFR 268, Appendix VII) [Revised January 2017]**

See [www.ecfr.gov](http://www.ecfr.gov) for the most recent, integrated, version of this information.

## **Appendix 4-8a**

[Deleted January 2004]



## **Appendix 4-9**

### **Treatment Standards for Hazardous Wastes**

(40 CFR 268.40)

**[Revised January 2000; Revised January 2001; Revised January 2002; Revised July 2002;  
Revised January 2003; Revised July 2005; Revised January 2007, Revised July 2010; Revised January 2017]**

See [www.ecfr.gov](http://www.ecfr.gov) for the most recent, integrated, version of this information.



## **Appendix 4-10**

### **Technology Codes and Description of Technology-Based Standards (40 CFR 268.42)**

**[Revised January 2007, Revised January 2017]**

See [www.ecfr.gov](http://www.ecfr.gov) for the most recent, integrated, version of this information.



#### Appendix 4-11

##### Maximum Concentrations of Constituents for Groundwater Protection (40 CFR 264.94, Table 1)

Constituent	Maximum Concentration (mg3)
Arsenic	0.05
Barium	1.0
Cadmium	0.01
Chromium	0.05
Lead	0.05
Mercury	0.002
Selenium	0.01
Silver	0.05
Endrin	0.0002
Lindane	0.004
Methoxychlor	0.01
2,4,5-TP Silvex	0.01
Toxaphene	0.005
2,4-D	0.1



## **Appendix 4-12**

### **Groundwater Monitoring List (40 CFR 264, Appendix IX) [Revised 2005, Revised January 2017]**

See [www.ecfr.gov](http://www.ecfr.gov) for the most recent, integrated, version of this information.



#### Appendix 4-13

##### Interim Primary Drinking Water Standards (40 CFR 265, Appendix III)

Parameter	Maximum level (mg/L)
Arsenic	0.05
Barium	1.0
Cadmium	0.01
Chromium	0.05
Fluoride	1.4 - 2.4
Lead	0.05
Mercury	0.002
Nitrate (as N)	10
Selenium	0.01
Silver	0.05
Endrin	0.0002
Lindane	0.004
Methoxychlor	0.01
Toxaphene	0.005
2,4-D	0.1
2,4,5-TP Silver	0.01
Radium	5 pCi/l
Gross alpha	15 pCi/l
Gross beta	4 mrem/yr
Turbidity	1/TU
Coliform bacteria	1/100 mL

(NOTE: Turbidity is only applicable to surface water supplies.)



## SECTION 5

### NATURAL RESOURCES MANAGEMENT U.S. TEAM Guide, December 2018

#### A. Applicability

This section integrates the requirements of regulations pertaining to the protection of natural resources and endangered and threatened species into a single document which normally will apply to any facility with land management programs.

Assessors are required to review state and local regulations and, if applicable, the appropriate Agency Supplement, to perform a comprehensive assessment.

#### B. Federal Regulations

- EPA and Corps of Engineers Legal Memorandum, *Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos v. United States & Carabell v. United States*. This memorandum, dated 5 June 2007, provides guidance to EPA regions and Corps districts implementing the Supreme Court's decision in the consolidated cases *Rapanos v. United States* and *Carabell v. United States* [**Added July 2007**].
- *The Endangered Species Act* (ESA) of 1973. The purpose of this act (16 USC 1531-1547, et al., last amended in October 1988), is to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species, and to take such steps as may be appropriate to achieve the purposes of the treaties and conventions for protection of endangered species (16 USC 1531(b)). Under ESA, the policy of Congress is that all Federal departments and agencies must seek to conserve endangered species and threatened species and must use their authorities in furtherance of the purposes of this act. Further, Federal agencies must cooperate with state and local agencies to resolve water resource issues in concert with conservation of endangered species (16 USC 1531(c)).
- *Sikes Act*. This act (16 USC 670a-670f, last amended in November 1997) authorizes the Secretary of Defense to carry out a program to provide for the conservation and rehabilitation of natural resources on military installations. The Act makes the Secretary of each military department responsible for [**Revised March 1998**]:
  1. determining whether an Integrated Natural Resources Management Plan (INRMP) is appropriate for each installation
  2. preparing the INRMP in cooperation with the Secretary of the Interior, acting through the Director of the US FWS, and the head of each appropriate state fish and wildlife agency
  3. preparing and implementing the INRMP to reflect the mutual agreement of the parties concerning conservation, protection, and management of fish and wildlife resources
  4. ensuring, to the extent feasible, that sufficient number of professionally trained natural resources management personnel and natural resources law enforcement personnel are available and assigned responsibility to carry out all of Title 16 - Conservation, including the preparation and implementation of INRMPs (16 USC 670e-2).
- *Wild and Scenic Rivers Act* of 1986. This act (16 USC 1271-1287, last amended in May 1991) outlines the policy of the United States that certain selected rivers of the nation which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values, must be preserved in free-flowing condition, and that they and their immediate environments must be protected for the benefit and enjoyment of present and future generations. The Congress declares that the established national policy of dam and other construction at appropriate sections of the rivers of the United States needs to be complemented by a policy that would preserve other selected rivers or sections thereof in their free-

flowing condition to protect the water quality of such rivers and fulfill other vital national conservation purposes (16 USC 1271). The purpose of this act is to implement the declared policy of Congress by instituting a national wild and scenic rivers system, by designing the initial components of that system, and by prescribing the methods by which and standards to which additional components may be added to the system from time to time (16 USC 1272).

- *Withdrawal of Public Lands for Military Purposes.* This act (Public Law (PL) 99-606), dated 6 November 1986, authorized the withdrawal of certain public lands for use by the military. This use includes training activities such as air-to-air combat and bombing and ground maneuvers.
- *Farmland Protection Policy Act of 1981.* The purpose of this act (7 USC 4201-4209, last amended in December 1991), is to minimize the extent to which Federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses, and to assure that Federal programs are administered in a manner that, to the extent practicable, will be compatible with state, unit of local government, and private programs and policies to protect farmland (7 USC 4201(b)).
- *The Fish and Wildlife Coordination Act of 1946.* This act (16 USC 666c, last amended in July 1965), is the Federal legislation that coordinates programs and activities regarding the conservation and rehabilitation of fish and wildlife in the United States. Unless provided for otherwise, whenever the waters of any stream or other body of water are proposed or authorized to be impounded, diverted, the channel deepened, or the stream or other body of water otherwise controlled or modified for any purpose whatever, including navigation and drainage, by any department or agency of the United States, or by any public or private agency under Federal permit or license, such department or agency first must consult with the U.S. Fish and Wildlife Service, Department of the Interior (DOI), and the head of the agency exercising administration over the wildlife resources of the particular state where the impoundment, diversion, or other control facility is to be constructed, with a view to the conservation of wildlife resources by preventing loss of and damage to such resources as well as providing for the development and improvement thereof in connection with such water-resource development (16 USC 662(a)).
- *Fish and Wildlife Conservation Act of 1980.* This act (PL 96-366) encourages Federal departments and agencies to utilize their statutory and administrative authority to the maximum extent possible to conserve and protect non-game fish and wildlife and their habitats.
- *Bald Eagle Protection Act.* This act (PL 86-70) establishes penalties for taking, possessing, selling, purchasing, bartering, offering to sell, transporting, exporting, or importing any bald eagle or golden eagles. The prohibitions also apply to any part, nest, or egg.
- *Anadromous Fish Conservation Act.* This act (PL 89-304) was passed to promote the conservation, development, and enhancement within several states the anadromous fishing resources of the Nation.
- *Marine Protection, Research, and Sanctuaries Act of 1972.* This act (16 USC 1401 - 1444) declares that the United States will strictly limit all dumping into the ocean of any material which would adversely affect human health, welfare, or amenities, or the marine environment, ecological systems, or economic potentialities.
- *Marine Mammal Protection Act of 1972.* This act, (16 USC 1362 - 1407) states policy to prevent the extinction or depletion of marine mammals as a result of man's activities. It further encourages the development of international arrangements for research on and conservation of all marine mammals.
- *The Wilderness Act.* This act (16 USC 1133), mandates that each agency administering any area designated as wilderness is responsible for preserving the wilderness character of the area. When the agency uses the area for another purpose, it will do so in a manner that preserves the wilderness character.
- *The National Recreational Trails Act.* This act (16 USC 1261, Section 1301 of *The Surface Transportation Efficiency Act*), outlines the national recreational trails funding program. The money available under this act is allocated to the states for the purpose of providing and maintaining recreational trails.

- *Outleasing for Grazing and Agriculture on Military Lands.* This section (10 USC 2667(d) addresses the taking of fees by Federal agencies for the leasing of Federal lands for grazing and agricultural purposes.
- *Outdoor Recreation on Federal Lands.* This section (16 USC 460l) addresses the development of recreational resources. This includes the development of a nationwide outdoor recreation plan, classification of outdoor resources, and technical assistance from the SOI.
- *Coastal Barrier Resources Act.* This act (PL 97-348) restricts Federal expenditure and financial assistance for the encouragement of development of coastal barriers. The long term goal is to prevent the damage to fish and wildlife and other natural resources associated with the coastal barriers along the Atlantic and Gulf coasts.
- *The Migratory Bird Treaty Act of 1918.* This act (16 USC 703-711, last amended in December 1989), is a Federal law that enforces international conventions for the protection of migratory birds and game animals to which the United States is a party. Unless permitted by regulations, it is unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, kill, attempt to transport or cause to be transported, carry or cause to be carried, or receive for shipment, transportation, carriage, or export, any migratory bird, any part, nest, or egg of any such bird, or any product, whether or not manufactured, which consists, or is composed in whole or in part, of any such bird or any part, nest, or egg thereof, included in the terms of the conventions for the protection and conservation of migratory birds and game mammals between the United States and the USSR, the United States and Mexico, and the United States and Japan (16 USC 703). It is also unlawful to ship, transport, or carry, by any means whatever, from one state, territory, or district to or through another state, territory, or district, or to or through a foreign country, any bird, or any part, nest, or egg thereof, captured, killed, taken, shipped, transported, or carried at any time contrary to the laws of the state, territory, or district in which it was captured, killed, or taken, or from which it was shipped, transported, or carried (16 USC 705). [NOTE: This law includes essentially all species of birds, not just those typically considered migratory. Only exceptions include Rock Dove (pigeon) and European Starling].
- *Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU).* Signed on August 10, 2005 SAFETEA-LU authorizes the Federal surface transportation programs for highways, highway safety, and transit for the 5-yr period 2005-2009. SAFETEA-LU includes the following [Added October 2005]:
  1. Projects are prohibited on publicly owned parks, recreation areas, wildlife and waterfowl refuges, or historic sites unless there is no feasible and prudent alternative and all possible mitigation is used.
  2. A total of \$370 million is provided through 2009 to continue the program to develop and maintain trails for recreational purposes that include pedestrian, equestrian, bicycling and non-motorized snow activities as well as off-road motorized vehicle activities.
  3. The conduct of an *Wildlife Vehicle Collision Reduction Study* of methods to reduce collisions between motor vehicles and wildlife, and report to Congress within 2 years on causes, impacts, and solutions. A manual of best practices is due 1 year after report to Congress. The Secretary is required to develop a training course for transportation professionals.
- Executive Order (EO) 11514, *Protection and Enhancement of Environmental Quality.* This EO, issued on 5 March 1970 and amended by EO 11990 issued on 24 May 1977, is a Presidential order that implements NEPA. Under this EO, the Federal Government must provide leadership in protecting and enhancing the quality of the nation's environment to sustain and enrich human life. Federal agencies must initiate measures needed to direct their policies, plans and programs so as to meet national environmental goals.
- EO 11988, *Floodplain Management.* This EO, dated 24 May 1977 and amended by EO 12148, 20 July 1979, implements NEPA, the National Flood Insurance Act of 1968, and the Flood Disaster Protection Act of 1973. Each agency must provide leadership and take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains. Each agency must evaluate the potential effects of any actions it may take in a floodplain; to ensure that its planning programs and budget requests reflect consideration of flood hazards and floodplain management; and to prescribe procedures to implement the policies and requirements of this order. Each agency must take floodplain management into account when formulating or evaluating any water and land use plans, and

must require land and water resources use appropriate to the degree of hazard involved. Agencies must include adequate provision for the evaluation and consideration of flood hazards in the regulations and operating procedures for the license, permits, loan or grants-in-aid programs that they administer (Section 2(c)).

Those responsible for Federal real property and facilities must take the following additional actions:

1. The regulations and procedures established under Section 2(d) of this order require, at a minimum, the construction of Federal structures and facilities to be consistent with standards, criteria, and the intent of those issued under the National Flood Insurance Program. They may deviate only to the extent that the standards of the Flood Insurance Program are demonstrably inappropriate for a given type of structure or facility.
  2. If, after compliance with the requirements of this order, new construction of structures or facilities is to be located in a floodplain, accepted flood-proofing and other flood protection measures must be applied to new construction or rehabilitation. To achieve flood protection, Services must, wherever practicable, elevate structures above the base flood level rather than filling in land (Section 3(a)(b)).
- EO 11989, *Use of Off-Road Vehicles (ORVs) on The Public Lands*. This EO specifies that ORVs may not be used without special use and location designation.
  - EO 11990, *The Protection of Wetlands*. This EO, dated 24 May 1977 and amended by EO 12608, dated 9 September 1987, implements NEPA. Under this EO each Federal agency must provide leadership and take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands. Each agency, to the extent permitted by law, must avoid undertaking or providing assistance for new construction located in wetlands unless the head of the agency finds:
    1. that there is no practical alternative to such construction
    2. that the proposed action includes all practical measures to minimize harm to wetlands that may result from such use. In making this finding the head of the agency may take into account economic, environmental and other pertinent factors (Section 2(a)).

Each agency must also provide opportunity for early public review of any plans or proposals for new construction in wetlands (Section 2(b)).

- *The Convention on Wetlands of International Importance Especially as Waterfowl Habitat*. This Convention was created on 2 February 1971, in Ramsar, amended by *Paris Protocol of 3 December 1982*, and entered into force for the United States on 18 December 1986. Each country must promote the conservation of wetlands and waterfowl by establishing nature reserves on wetlands and provide adequately for their wardening (Article 4, para 1). The contracting countries must promote the training of personnel competent in the fields of wetland research, management, and wardening (Article 4, para 4). Those countries that are Contracting Parties to the convention agreed [**Revised October 2002**]:
  1. wetlands constitute a resource of great economic, cultural, scientific and recreational value, the loss of which would be irreparable
  2. the progressive encroachment on and loss of wetlands now and in the future should be stemmed
  3. waterfowl in their seasonal migration should be regarded as an international resource
  4. conservation of wetlands and their flora and fauna can be ensured by combining far-sighted national policies with coordinated international action.
- *The North American Wetland Conservation Act*. This act (PL 101-233), dated 13 December 1989, was promulgated to conserve North American wetland ecosystems and waterfowl and the other migratory birds and fish and wildlife that depend upon such habitat. The act encourages partnership among public agencies and other interested to:
  1. protect, enhance, restore, and manage an appropriate distribution and diversity of wetland ecosystems and other habitats for migratory birds and other fish and wildlife in North America
  2. maintain current or improved distribution of migratory bird populations, and

3. sustain an abundance of waterfowl and other migratory birds consistent with the goals of the North American Waterfowl Management Plan and the international obligations contained in the migratory bird treaties and conventions and other agreements with Canada, Mexico, and other countries.
- EO 12088, *Federal Compliance with Pollution Standards*. This EO, dated 13 October 1978, requires Federally owned and operated facilities to comply with applicable Federal, state, and local pollution control standards. It makes the head of each executive agency responsible for ensuring that the agencies, facilities, programs, and activities the Agency funds meet applicable Federal, state, and local environmental requirements for correcting situations that are not in compliance with such requirements. In addition, the EO requires that each agency ensure that sufficient funds for environmental compliance are included in the agency budget. Sections 1-4, "Pollution Control Plan" were revoked by EO 13148 [**Revised October 2002**].
  - EO 12962, *Recreational Fisheries*. This EO, dated 7 June 1995, mandates that Federal agencies, to the extent permitted by law and where practicable, improve the quality, function, and sustainable productivity and distribution of U.S. aquatic resources for increased recreational fishing opportunities. It also established the National Recreational Fisheries Coordination Council.
  - EO 13112, *Invasive Species*. This EO, dated 3 February 1999, addresses the prevention of the introduction of invasive species and provides for their control and minimization of the economic, ecological, and human health impacts the invasive species causes. The EO establishes the Invasive Species Council, which is responsible for the preparation and issuance of the National Invasive Species Management Plan, which details and recommends performance-oriented goals and objectives and specific measures of success for Federal Agencies [**Added April 1999**].
  - EO 13158, *Marine Protected Areas*. This EO, dated 26 May 2000, mandates strengthening the management, protection, and conservation of existing marine protected areas (MPA) and establishment of new or expanded MPAs; the development of a scientifically based, comprehensive national system of MPAs representing diverse U.S. marine ecosystems and the Nation's natural and cultural resources; and the avoiding causing harm to MPAs through federally conducted, approved, or funded activities [**Added July 2000**].
  - EO 13186, *Responsibilities of Federal Agencies To Protect Migratory Birds*. This EO, dated 10 January 2001, directs executive departments and agencies to take certain actions to further implement the Migratory Bird Treaty Act. The EO requires that Each Federal agency taking actions that have, or are likely to have, a measurable negative effect on migratory bird populations is directed to develop and implement, within 2 yr, a Memorandum of Understanding (MOU) with the Fish and Wildlife Service (Service) that shall promote the conservation of migratory bird populations. Under this EO, the SOI will establish the interagency Council for the Conservation of Migratory Birds (Council) to oversee the implementation of the EO [**Added April 2001**].
  - EO 13195, *Trails for America in the 21st Century*. This EO, dated 18 January 2001, mandates that Federal agencies will, to the extent permitted by law and where practicable--and in cooperation with Tribes, States, local governments, and interested citizen groups--protect, connect, promote, and assist trails of all types throughout the United States [**Added April 2001**].
  - EO 13352, *Facilitation of Cooperative Conservation*. This EO, dated 26 August 2004, requires that the Secretaries of the Interior, Agriculture, Commerce, and Defense and the Administrator of the Environmental Protection Agency shall, to the extent permitted by law and subject to the availability of appropriations and in coordination with each other as appropriate:
    1. carry out the programs, projects, and activities of the agency that they respectively head that implement laws relating to the environment and natural resources in a manner that:
      - a. facilitates cooperative conservation;
      - b. takes appropriate account of and respects the interests of persons with ownership or other legally recognized interests in land and other natural resources;
      - c. properly accommodates local participation in Federal decisionmaking; and

- d. provides that the programs, projects, and activities are consistent with protecting public health and safety;
2. report annually to the Chairman of the Council on Environmental Quality (CEQ) on actions taken to implement this order; and
3. provide funding to the Office of Environmental Quality Management Fund (42 U.S.C. 4375) for the Conference for which section 4 of the order provides.

The term “cooperative conservation” means actions that relate to use, enhancement, and enjoyment of natural resources, protection of the environment, or both, and that involve collaborative activity among Federal, State, local, and tribal governments, private for-profit and nonprofit institutions, other nongovernmental entities and individuals [**Added October 2004**].

- EO 13443, *Facilitation of Hunting Heritage and Wildlife Conservation* – The purpose of this EO, dated 16 August 2007, is to direct Federal agencies that have programs and activities that have a measurable effect on public land management, outdoor recreation, and wildlife management, including the Department of the Interior and the Department of Agriculture, to facilitate the expansion and enhancement of hunting opportunities and the management of game species and their habitat [**Added October 2007**].
- *The Coastal Zone Management Act of 1972*. This act (16 USC 1451-1464, last amended in November 1990), is the Federal legislation that governs the preservation and management of coastal waters in the nation. In relation to coastal zones, the national policy is (16 USC 145):
  1. to preserve, protect, develop, and where possible, to restore or enhance, the resources of the Nation’s coastal zone for this and succeeding generations
  2. to encourage and assist the states to exercise effectively their responsibilities in the coastal zone through the development and implementation of management programs to achieve wise use of the land and water resources of the coastal zone, giving full consideration to ecological, cultural, historic, and esthetic values as well as the needs for compatible economic development
  3. to encourage the preparation of special area management plans which provide for increased specificity in protecting significant natural resources, reasonable coastal-dependent economic growth, improved protection of life and property in hazardous areas, including those areas likely to be affected by land subsidence, sea level rise, or fluctuating water levels of the Great Lakes, and improved predictability in governmental decision making
  4. to encourage the participation and cooperation of the public, state and local governments, and interstate and other regional agencies, as well as of the Federal agencies having programs affecting the coastal zone, in carrying out the purposes of this act
  5. to encourage coordination and cooperation with and among the appropriate Federal, state, and local agencies, and international organizations where appropriate, in collection, analysis, synthesis, and dissemination of coastal management information, research results, and technical assistance, to support state and Federal regulation of land use practices affecting the coastal land ocean resources of the United States
  6. to respond to changing circumstances affecting the coastal environment and coastal resource management by encouraging states to consider such issues as ocean uses potentially affecting the coastal zone.
- *Hunting, Fishing, and Trapping on Military Lands*. This law (10 USC 2671, PL 86-337) requires that all hunting, fishing, and trapping be in accordance with the fish and game laws of the state in which it is located, and that appropriate state licenses can be obtained for these activities. State license do not substitute for Federal facility permits that may also be required.
- *Timber Sales on Military Lands*. This law (10 USC 2665, PL 86 -717) requires that projects be developed and maintained to encourage, promote, and assure adequate and dependable future resources, including supplies of forest products. The forest lands will be administered to increase the value of project lands for recreation and wildlife, and to promote ecological conditions by following accepted conservation practices.

- *Clean Water Act (CWA)*. Section 404 of this act (33 USC 1344) requires that all discharges of dredged and fill material in the waters of the United States, including wetlands, meet the requirements of USEPA's 404(b)(1) guidelines (40 CFR 230) and obtain water quality certification from the state (33 USC 1341) unless exempted by Congress through implementation of Section 404(r).
- *The Plant Protection Act (PPA)*. This law (part of Pub.L. 106-224; 7 U.S.C. 7701 *et seq*) addresses plant pests and noxious weeds and was introduced in 2000. It consolidates related responsibilities that were previously spread over various legislative statutes, including the *Plant Quarantine Act*, the *Federal Plant Pest Act* and the *Federal Noxious Weed Act of 1974* [**Added July 2013**].
- *The Marine Mammal Protection Act of 1972 (MMPA)*. This law, last amended in 2007, prohibits the taking of marine mammals, and enacts a moratorium on the import, export, and sale of any marine mammal, along with any marine mammal part or product within the United States [**Added July 2013**].
- EO 13089, *Coral Reef Protection*. This EO, dated 11 June 1998, tasks all Federal agencies whose actions may affect U.S. coral reef ecosystems to: (a) identify their actions that may affect U.S. coral reef ecosystems; (b) utilize their programs and authorities to protect and enhance the conditions of such ecosystems; and (c) to the extent permitted by law, ensure that any actions they authorize, fund, or carry out will not degrade the conditions of such ecosystems [**Added July 2013**].
- EO 13751, *Safeguarding the Nation From the Impacts of Invasive Species*. This EO, dated 5 December 2016, amends EO 13112 and directs Federal Agency actions to continue coordinated Federal prevention and control efforts related to invasive species [**Added January 2017**].

### C. State/Local Regulations

For information on regulations in specific states, see the State Supplements to TEAM Guide.

States develop lists for their local threatened or endangered species in addition to the Federal lists.

States develop regulations and management practices (MPs) for the protection of surface waters, coastal zones, wetlands, and the prevention of nonpoint source pollution.

The *Coastal Zone Management Act* authorizes coastal states to establish a Coastal Zone Management Program (CZMP) to coordinate state, local, and federal programs of the management of coastal areas. Once a state's program is federally approved, the CZMA allows participating states to set goals and procedures that control the use and development of designated Coastal Zones [**Added October 2004**].

States also establish regulations governing hunting and fishing activities.

### D. Key Compliance Requirements

- Land Management - Floodplains and wetlands should be identified and protected. Federal facilities are not allowed to discharge dredge or fill material into the waters of the United States without a permit (MPs and 33 CFR 323.3) [**Revised October 2002**].
- Endangered/Threatened Species - Federal facilities with Federally designated endangered and threatened species are required to carry out programs for their conservation. Surveys will be done to determine the presence of state and Federally listed species, including Federal candidate species if conditions warrant such a survey. All proposed actions and activities must be reviewed to ensure that they are not likely to jeopardize the continued existence of a listed species or to destroy or adversely modify its critical habitat (40 CFR 1500; 50 CFR 402.01(a), 402.10, and 402.12).

- **Migratory Species** - Individuals may not take, possess, import, export, transport, sell, purchase, barter, or offer for sale any migratory bird, or the parts, nests, or eggs without a permit. Exemption from the permit requirement is available (50 CFR 21.11 through 21.50).
- **INRMP** - Based on guidance provided by the Secretary of each military department, some military installations are required to develop INRMPs. The purposes of this program are to provide for: the conservation and rehabilitation of natural resources on military installations; the sustainable multipurpose use of the resources, which includes hunting, fishing, trapping, and nonconsumptive uses; public access to military installations subject to safety requirements and military security (*Sikes Act*, 42 USC 670 et. seq) **[Added March 1998]**.
- **Cooling Water Intake Structures** – These regulations apply to existing power producing facilities that employ a cooling water intake structure and are designed to withdraw 50 million gallons per day (MGD) or more of water from rivers, streams, lakes, reservoirs, estuaries, oceans, or other waters of the United States for cooling purposes. This regulation establishes national requirements, and procedures for implementing those requirements, applicable to the location, design, construction, and capacity of cooling water intake structures at these facilities. Specifically, performance standards are established that are projected to reduce impingement mortality by 80 to 95 percent and, if applicable, entrainment by 60 to 90 percent **[Added October 2004]**.

## E. Key Compliance Definitions

- **Action** - all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies in the United States or upon the high seas. Examples include, but are not limited to (50 CFR 402.02):
  1. actions intended to conserve listed species or their habitat
  2. the promulgation of regulations
  3. the granting of licenses, contracts, leases, easements, rights-of-way, permits, or grants-in-aid
  4. actions directly or indirectly causing modifications to the land, water, or air.
- **Action Area** - all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR 402.02).
- **Adequately Covered** - with respect to species listed pursuant to section 4 of the ESA, that a proposed conservation plan has satisfied the permit issuance criteria under section 10(a)(2)(B) of the ESA for the species covered by the plan, and, with respect to unlisted species, that a proposed conservation plan has satisfied the permit issuance criteria under section 10(a)(2)(B) of the ESA that would otherwise apply if the unlisted species covered by the plan were actually listed. For the Services to cover a species under a conservation plan, it must be listed on the section 10(a)(1)(B) permit (50 CFR 17.3) **[Added April 2005]**.
- **Adjacent** - means bordering, contiguous, or neighboring [see definition of *Neighboring*] a water identified in paragraphs (1) through (5) of the definition for “Waters of the United States,” including waters separated by constructed dikes or barriers, natural river berms, beach dunes, and the like. For purposes of adjacency, an open water such as a pond or lake includes any wetlands within or abutting its ordinary high water mark. Adjacency is not limited to waters located laterally to a water identified in paragraphs (1) through (5) of the definition for “Waters of the United States.” Adjacent waters also include all waters that connect segments of a water identified in paragraphs (1) through (5) or are located at the head of a water identified in paragraphs (1) through (5) of the definition for “Waters of the United States,” and are bordering, contiguous, or neighboring such water. Waters being used for established normal farming, ranching, and silviculture activities (33 U.S.C. 1344(f)) are not adjacent. This definition is effective 6 February 2020 (33 CFR 328.3(c)(1)) **[Added July 2007; Revised July 2015; Revised April 2018]**.
- **Armed Forces** - the Army, Navy, Air Force, Marine Corps, Coast Guard, and the National Guard of any State (50 CFR 21.3) **[Added April 2007]**.

- *Biological Assessment* - the information prepared by or under the direction of the Federal agency concerning listed and proposed species and designated and proposed critical habitat that may be present in the action area and the evaluation potential effects of the action on such species and habitat (50 CFR 402.02) **[Added April 2013]**.
- *Biological Opinion* - the document that states the opinion of the Service as to whether or not the Federal action is likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat (50 CFR 402.02) **[Added April 2013]**.
- *Bred in Captivity or Captive-Bred* - raptors, including eggs, hatched in captivity from parents that mated or otherwise transferred gametes in captivity (50 CFR 21.3) **[Added July 2004]**.
- *Bred in Captivity or Captive-Bred* - wildlife, including eggs, born or otherwise produced in captivity from parents that mated or otherwise transferred gametes in captivity, if reproduction is sexual, or from parents that were in captivity when development of the progeny began, if development is asexual (50 CFR 17.3) **[Added April 2005]**.
- *Candidate* - any species being considered by the Secretary for listing as an endangered or threatened species, but not yet the subject of a proposed rule (50 CFR 424.02) **[Added April 2016]**.
- *Candidate Species* - any species being considered by the SOI for listing as a threatened or endangered species (50 CFR 404.02).
- *Captivity* - that living wildlife is held in a controlled environment that is intensively manipulated by man for the purpose of producing wildlife of the selected species, and that has boundaries designed to prevent animal, eggs or gametes of the selected species from entering or leaving the controlled environment. General characteristics of captivity may include but are not limited to artificial housing, waste removal, health care, protection from predators, and artificially supplied food (50 CFR 17.3) **[Added April 2005]**.
- *Captivity* - that a live raptor is held in a controlled environment that is intensively manipulated by man for the purpose of producing raptors of selected species, and that has boundaries designed to prevent raptors, eggs or gametes of the selected species from entering or leaving the controlled environment. General characteristics of captivity may include, but are not limited to, artificial housing, waste removal, health care, protection from predators, and artificially supplied food (50 CFR 21.3) **[Added July 2004]**.
- *Changed Circumstances* - changes in circumstances affecting a species or geographic area covered by a conservation plan or agreement that can reasonably be anticipated by plan or agreement developers and the Service and that can be planned for (e.g., the listing of new species, or a fire or other natural catastrophic event in areas prone to such events) (50 CFR 17.3) **[Added April 2005]**.
- *Conference* - a process which involves informal discussions between a Federal agency and the Service under section 7(a)(4) of the Act regarding the impact of an action on proposed species or proposed critical habitat and recommendations to minimize or avoid the adverse effects (50 CFR 402.02) **[Added April 2013]**.
- *Conserve, Conserving, and Conservation* - to use and the use of all methods and procedures that are necessary to bring any endangered or threatened species to the point at which the measures provided pursuant to the Act are no longer necessary, i.e., the species is recovered in accordance with 50 CFR 402.02. Such methods and procedures include, but are not limited to, all activities associated with scientific resources management such as research, census, law enforcement, habitat acquisition and maintenance, propagation, live trapping, and transplantation, and, in the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved, may include regulated taking (50 CFR 424.02) **[Added April 2016]**.
- *Conservation Measures* - as used in 50 CFR 21.15, means project design or mitigation activities that are reasonable from a scientific, technological, and economic standpoint, and are necessary to avoid, minimize, or mitigate the take of migratory birds or other adverse impacts. Conservation measures should be implemented in a reasonable period of time (50 CFR 21.3) **[Added April 2007]**.

- *Conservation Plan* - the plan required by section 10(a)(2)(A) of the ESA that an applicant must submit when applying for an incidental take permit. Conservation plans also are known as “habitat conservation plans” or “HCPs” (50 CFR 17.3) **[Added April 2005]**.
- *Conserved Habitat Areas* - areas explicitly designated for habitat restoration, acquisition, protection, or other conservation purposes under a conservation plan (50 CFR 17.3) **[Added April 2005]**.
- *Convention* - the *Convention on International Trade in Endangered Species of Wild Fauna and Flora*, TIAS 8249 (50 CFR 17.3) **[Added April 2005]**.
- *Critical Habitat* - specific areas within the geographic area commonly occupied by a species which contain features essential to the conservation of the species and which may require special management considerations or protection. Specific areas outside the currently occupied range of a threatened or endangered species may be determined by the SOI as areas essential for the conservation of the species. Critical habitats are Federally designated (50 CFR 424.02).
- *Destruction or Adverse Modification* - a direct or indirect alteration that appreciably diminishes the value of critical habitat for the conservation of a listed species. Such alterations may include, but are not limited to, those that alter the physical or biological features essential to the conservation of a species or that preclude or significantly delay development of such features (50 CFR 402.02) **[Revised April 2016]**.
- *Discharge of Dredged Material* - any addition of dredged material into, including redeposit of dredged material other than incidental fallback within, the waters of the United States. The term includes, but is not limited to, the following (33 CFR 323.2(d)(1) and 323.2(d)(2)) **[Added July 1999]**:
  1. the addition of dredged material to a specified discharge site located in waters of the United States;
  2. the runoff or overflow from a contained land or water disposal area; and
  3. any addition, including redeposit other than incidental fallback, of dredged material, including excavated material, into waters of the United States which is incidental to any activity, including mechanized landclearing, ditching, channelization, or other excavation.

The term discharge of dredged material does not include the following:

1. discharges of pollutants into waters of the United States resulting from the onshore subsequent processing of dredged material that is extracted for any commercial use (other than fill). These discharges are subject to section 402 of the Clean Water Act even though the extraction and deposit of such material may require a permit from the Corps or applicable State section 404 program.
  2. activities that involve only the cutting or removing of vegetation above the ground (e.g., mowing, rotary cutting, and chainsawing) where the activity neither substantially disturbs the root system nor involves mechanized pushing, dragging, or other similar activities that redeposit excavated soil material.
  3. incidental fallback.
- *Discharge of Fill Material* - the addition of fill material into waters of the United States. The term generally includes, without limitation, the following activities: Placement of fill that is necessary for the construction of any structure or infrastructure in a water of the United States; the building of any structure, infrastructure or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, or other uses; causeways or road fills; dams and dikes; artificial islands; property protection and/or reclamation devices such as riprap, groins, seawalls, breakwaters, and revetments; beach nourishment; levees; fill for structures such as sewage treatment facilities, intake and outfall pipes associated with power plants and sub aqueous utility lines; placement of fill material for construction or maintenance of any liner, berm, or other infrastructure associated with solid waste landfills; placement of overburden, slurry, or tailings or similar mining-related materials; and artificial reefs. The term does not include plowing, cultivating, seeding and harvesting for the production of food, fiber, and forest products (See 33 CFR

323.4 for the definition of these terms). See 33 CFR 323.3(c) concerning the regulation of the placement of pilings in waters of the United States (33 CFR 323.2(f)) **[Added July 1999; Revised July 2002]**.

- *Dredged Material* - material that is excavated or dredged from waters of the United States (33 CFR 323.2(c)) **[Added July 1999]**.
- *Endangered* - a species of wildlife listed in 50 CFR 17.11 or a species of plant listed in 50 CFR 17.12 and designated as endangered (50 CFR 17.3) **[Added April 2005]**.
- *Endangered Species* - any species which is in danger of extinction throughout all or a significant portion of its range (other than a species of the Class Insect determined to constitute a pest). Federally listed endangered species are officially designated by the DOI (50 CFR 81.1).

NOTE: As used in this definition, the phrase “significant portion of its range” has been clarified in a policy issued by the U.S. FWS and the National Marine Fisheries Services. According to the policy, “a portion of the range of a species is ‘significant’ if the species is not currently endangered or threatened throughout all of its range, but the portion’s contribution to the viability of the species is so important that, without the members in that portion, the species would be in danger of extinction, or likely to become so in the foreseeable future, throughout all of its range.” (<http://www.regulations.gov/#!documentDetail;D=FWS-R9-ES-2011-0031-0526>) **(Revised July 2014)**.

- *Enhance the Propagation or Survival* - when used in reference to wildlife in captivity, includes but is not limited to the following activities when it can be shown that such activities would not be detrimental to the survival of wild or captive populations of the affected species (50 CFR 17.3) **[Added April 2005]**:
  1. Provision of health care, management of populations by culling, contraception, euthanasia, grouping or handling of wildlife to control survivorship and reproduction, and similar normal practices of animal husbandry needed to maintain captive populations that are self-sustaining and that possess as much genetic vitality as possible;
  2. Accumulation and holding of living wildlife that is not immediately needed or suitable for propagative or scientific purposes, and the transfer of such wildlife between persons in order to relieve crowding or other problems hindering the propagation or survival of the captive population at the location from which the wildlife would be removed; and
  3. Exhibition of living wildlife in a manner designed to educate the public about the ecological role and conservation needs of the affected species.
- *Essential Experimental Population* - an experimental population whose loss would be likely to appreciably reduce the likelihood of the survival of the species in the wild. All other experimental populations are to be classified as nonessential (50 CFR 222.501(a)) **[Added July 2016]**.
- *Experimental Population* - any introduced and/or designated population (including any off-spring arising solely therefrom) that has been so designated in accordance with the procedures of 50 CFR Subpart E but only when, and at such times as, the population is wholly separate geographically from nonexperimental populations of the same species. Where part of an experimental population overlaps with nonexperimental populations of the same species on a particular occasion, but is wholly separate at other times, specimens of the experimental population will not be recognized as such while in the area of overlap. That is, experimental status will only be recognized outside the areas of overlap. Thus, such a population shall be treated as experimental only when the times of geographic separation are reasonably predictable; e.g., fixed migration patterns, natural or man-made barriers. A population is not treated as experimental if total separation will occur solely as a result of random and unpredictable events (50 CFR 222.501(a)) **[Added July 2016]**.
- *Falconry* - the sport of taking quarry by means of a trained raptor (50 CFR 21.3) **[Added July 2004]**.
- *Fill Material* - material placed in waters of the United States where the material has the effect of:
  1. replacing any portion of a **water** of the United States with dry land; or

2. changing the bottom elevation of any portion of a **water** of the United States.

Examples of such fill material include, but are not limited to: rock, sand, soil, clay, plastics, construction debris, wood chips, overburden from mining or other excavation activities, and materials used to create any structure or infrastructure in the waters of the United States. The term fill material does not include trash or garbage (33 CFR 323.2(e)) [**Added July 1999; Revised July 2002**].

- *Geographical Area Occupied by the Species* - an area that may generally be delineated around species' occurrences, as determined by the Secretary (i.e., range). Such areas may include those areas used throughout all or part of the species' life cycle, even if not used on a regular basis (e.g., migratory corridors, seasonal habitats, and habitats used periodically, but not solely by vagrant individuals) (50 CFR 424.02) [**Added April 2016**].
- *Harass in the definition of “take” in the Act* - an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. This definition, when applied to captive wildlife, does not include generally accepted (50 CFR 17.3) [**Added April 2005**]:
  1. Animal husbandry practices that meet or exceed the minimum standards for facilities and care under the *Animal Welfare Act*,
  2. Breeding procedures, or
  3. Provisions of veterinary care for confining, tranquilizing, or anesthetizing, when such practices, procedures, or provisions are not likely to result in injury to the wildlife.
- *Hard Part* - any bone, tooth, baleen, treated pelt, or other part of a marine mammal that is relatively solid or durable (50 CFR 216.3) [**Added July 2013**].
- *Harm in the definition of “take” in the Act* - an act which actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering (50 CFR 17.3) [**Added April 2005**].
- *High Tide Line* - the line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm. This definition is effective 6 February 2020 (33 CFR 328.3(c)(7)) [**Added July 2007; Revised July 2015; Revised April 2018**].
- *Incidental Taking* - any taking otherwise prohibited, if such taking is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity (50 CFR 17.3) [**Added April 2005**].
- *Industry or trade in the definition of “commercial activity” in the Act* - the actual or intended transfer of wildlife or plants from one person to another person in the pursuit of gain or profit (50 CFR 17.3) [**Added April 2005**].
- *Jeopardize the Continued Existence of* - to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species (50 CFR 402.02).
- *List or Lists* - the Lists of Endangered and Threatened Wildlife and Plants found at 50 CFR 17.11(h) or 17.12(h) (50 CFR 424.02) [**Added April 2016**].
- *Listed Species* - any species of fish, wildlife, or plant which has been determined to be endangered or threatened under section 4 of the Act. Listed species are found in 50 CFR 17.11-17.12 (50 CFR 402.02) [**Added April 2013**].

- *Major Construction Activity* - a construction project (or other undertaking having similar physical impacts) which is a major Federal action significantly affecting the quality of the human environment as referred to in the National Environmental Policy Act [NEPA, 42 U.S.C. 4332(2)(C)] (50 CFR 402.02) [**Added April 2013**].
- *Management Practice (MP)* - practices that, although not mandated by law, are encouraged to promote safe operating procedures.
- *Marine Environment* - the oceans and the seas, including estuarine and brackish waters (50 CFR 216.3) [**Added July 2013**].
- *Marine Mammal* - those specimens of the following orders, which are morphologically adapted to the marine environment, and whether alive or dead, and any part thereof, including but not limited to, any raw, dressed or dyed fur or skin: Cetacea (whales, dolphins, and porpoises) and Pinnipedia, other than walrus (seals and sea lions) (50 CFR 216.3) [**Added July 2013**].
- *Military Installation* - as used in the Sikes Act, this term [**Added March 1998**]:
  1. means any land or interest in a land owned by the United States and administered by the Secretary of Defense or the Secretary of a military department, except land under jurisdiction of the Assistant Secretary of the Army having responsibility for civil works
  2. includes all public lands withdrawn from all forms of appropriation under public land laws and reserved for use by the Secretary of Defense or the Secretary of a military department
  3. does not include any land described in (a) or (b) that is subject to an approved recommendation for closure under the Defense Base Closure and Realignment Act of 1990 (part A of title XXIX of Public Law 101-510; 10 USC 2667 note).
- *Military Readiness Activity* - as defined in Pub. L. 107-314, Sec. 315(f), 116 Stat. 2458 (Dec. 2, 2002) [Pub. L. Sec. 319(c)(1)], includes all training and operations of the Armed Forces that relate to combat, and the adequate and realistic testing of military equipment, vehicles, weapons, and sensors for proper operation and suitability for combat use. It does not include (50 CFR 21.3) [**Added April 2007**]:
  1. routine operation of installation operating support functions, such as: administrative offices; military exchanges; commissaries; water treatment facilities; storage facilities; schools; housing; motor pools; laundries; morale, welfare, and recreation activities; shops; and mess halls,
  2. operation of industrial activities, or construction or demolition of facilities listed above.
- *Neighboring* - this definition is effective 6 February 2020. This term means (33 CFR 328.3(c)(2)) [**Added July 2015; Revised April 2018**]:
  1. all waters located within 100 ft of the ordinary high water mark of a water identified in paragraphs (1) through (5) of the definition for “Waters of the United States.” The entire water is neighboring if a portion is located within 100 ft of the ordinary high water mark;
  2. All waters located within the 100-year floodplain of a water identified in paragraphs (1) through (5) of the definition for “Waters of the United States” and not more than 1,500 ft from the ordinary high water mark of such water. The entire water is neighboring if a portion is located within 1,500 feet of the ordinary high water mark and within the 100-year floodplain;
  3. All waters located within 1,500 ft of the high tide line of a water identified in paragraphs (1) or (3) of the definition for “Waters of the United States,” and all waters within 1,500 ft of the ordinary high water mark of the Great Lakes. The entire water is neighboring if a portion is located within 1,500 ft of the high tide line or within 1,500 ft of the ordinary high water mark of the Great Lakes.

- *Operating Conservation Program* - those conservation management activities which are expressly agreed upon and described in a conservation plan or its Implementing Agreement, if any, and which are to be undertaken for the affected species when implementing an approved conservation plan, including measures to respond to changed circumstances (50 CFR 17.3) **[Added April 2005]**.
- *Ordinary High Water Mark* - that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas. This definition is effective 6 February 2020 (33 CFR 328.3(c)(6)) **[Added July 2007; Revised July 2015; Revised April 2018]**.
- *Physical or Biological Features* - the features that support the life-history needs of the species, including but not limited to, water characteristics, soil type, geological features, sites, prey, vegetation, symbiotic species, or other features. A feature may be a single habitat characteristic, or a more complex combination of habitat characteristics. Features may include habitat characteristics that support ephemeral or dynamic habitat conditions. Features may also be expressed in terms relating to principles of conservation biology, such as patch size, distribution distances, and connectivity (50 CFR 424.02) **[Added April 2016]**.
- *Population* - a group of fish or wildlife in the same taxon below the subspecific level, in common spatial arrangement that interbreed when mature (50 CFR 17.3) **[Added April 2005]**.
- *Population* - as used in 50 CFR 21.15, means a group of distinct, coexisting, conspecific individuals, whose breeding site fidelity, migration routes, and wintering areas are temporally and spatially stable, sufficiently distinct geographically (at some time of the year), and adequately described so that the population can be effectively monitored to discern changes in its status (50 CFR 21.3) **[Added April 2007]**.
- *Public Hearing* - an informal hearing to provide the public with the opportunity to give comments and to permit an exchange of information and opinion on a proposed rule (50 CFR 424.02) **[Added April 2016]**.
- *Raptor* - a live migratory bird of the Order Falconiformes or the Order Strigiformes, other than a bald eagle (*Haliaeetus leucocephalus*) or a golden eagle (*Aquila chrysaetos*) (50 CFR 21.3) **[Added July 2004]**.
- *Recovery* - improvement in the status of listed species to the point at which listing is no longer appropriate under the criteria set out in section 4(a)(1) of the Act (50 CFR 402.02) **[Added April 2013]**.
- *Resident Canada Geese* - Canada geese that nest within the conterminous United States and/or Canada geese which reside within the conterminous United States during the months of June, July, or August (50 CFR 21.3) **[Added July 2004]**.
- *Secretary of Defense* - the Secretary of Defense or any other national defense official who has been nominated by the President and confirmed by the Senate (50 CFR 21.3) **[Added April 2007]**.
- *Significant Adverse Effect on a Population* - as used in 50 CFR 21.15, means an effect that could, within a reasonable period of time, diminish the capacity of a population of migratory bird species to sustain itself at a biologically viable level. A population is "biologically viable" when its ability to maintain its genetic diversity, to reproduce, and to function effectively in its native ecosystem is not significantly harmed. This effect may be characterized by increased risk to the population from actions that cause direct mortality or a reduction in fecundity. Assessment of impacts should take into account yearly variations and migratory movements of the impacted species. Due to the significant variability in potential military readiness activities and the species that may be impacted, determinations of significant measurable decline will be made on a case-by-case basis (50 CFR 21.3) **[Added April 2007]**.

- *Significant Nexus* - this definition is effective 6 February 2020. That a water, including wetlands, either alone or in combination with other similarly situated waters in the region, significantly affects the chemical, physical, or biological integrity of a water identified in paragraphs (1) through (3) of the definition for “Waters of the United States.” The term “in the region” means the watershed that drains to the nearest water identified in paragraphs (1) through (3) of the definition for “Waters of the United States.”. For an effect to be significant, it must be more than speculative or insubstantial. Waters are similarly situated when they function alike and are sufficiently close to function together in affecting downstream waters. For purposes of determining whether or not a water has a significant nexus, the water’s effect on downstream (1) through (3) waters shall be assessed by evaluating the aquatic functions identified in paragraphs (1) through (9) of this definition below. A water has a significant nexus when any single function or combination of functions performed by the water, alone or together with similarly situated waters in the region, contributes significantly to the chemical, physical, or biological integrity of the nearest water identified in paragraphs (1) through (3) of the definition for “Waters of the United States.” Functions relevant to the significant nexus evaluation are the following (33 CFR 328.3(c)(5)) **[Added July 2015; Revised April 2018]**:
  1. Sediment trapping,
  2. Nutrient recycling,
  3. Pollutant trapping, transformation, filtering, and transport,
  4. Retention and attenuation of flood waters,
  5. Runoff storage,
  6. Contribution of flow,
  7. Export of organic matter,
  8. Export of food resources, and
  9. Provision of life cycle dependent aquatic habitat (such as foraging, feeding, nesting, breeding, spawning, or use as a nursery area) for species located in a water identified in paragraphs (1) through (3) of the definition for “Waters of the United States.”
- *Special Aquatic Sites* – those sites identified in 40 CFR 230, Subpart E. They are geographic areas, large or small, possessing special ecological characteristics of productivity, habitat, wildlife protection, or other important and easily disrupted ecological values. These areas are generally recognized as significantly influencing or positively contributing to the general overall environmental health or vitality of the entire ecosystem of a region (40 CFR 230.3(q-1)) **[Added April 2013]**.
- *Special Management Considerations or Protection* - methods or procedures useful in protecting the physical or biological features essential to the conservation of listed species (50 CFR 424.02) **[Added April 2016]**.
- *Species* - includes any species or subspecies of fish, wildlife, or plant, and any distinct population segment of any vertebrate species that interbreeds when mature. Excluded is any species of the Class Insecta determined by the Secretary to constitute a pest whose protection under the provisions of the Act would present an overwhelming and overriding risk to man (50 CFR 424.02) **[Added April 2016]**.
- *Specimen* - any animal or plant, or any part, product, egg, seed or root of any animal or plant (50 CFR 17.3) **[Added April 2005]**.
- *Take* – as defined in relation to the *Marine Mammal Protection Act* (MMPA), this term means to harass, hunt, capture, collect, or kill, or attempt to harass, hunt, capture, collect, or kill any marine mammal. This includes, without limitation, any of the following: The collection of dead animals, or parts thereof; the restraint or detention of a marine mammal, no matter how temporary; tagging a marine mammal; the negligent or intentional operation of an aircraft or vessel, or the doing of any other negligent or intentional act which results in disturbing or molesting a marine mammal; and feeding or attempting to feed a marine mammal in the wild (50 CFR 216.3) **[Added July 2013]**.
- *Threatened* - a species of wildlife listed in 50 CFR 17.11 or plant listed in 50 CFR 17.12 and designated as threatened (50 CFR 17.3) **[Added April 2005]**.

- *Threatened Species* - any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. Federally listed threatened species are officially designated by the DOI (50 CFR 81.21).

NOTE: As used in this definition, the phrase “significant portion of its range” has been clarified in a policy issued by the U.S. FWS and the National Marine Fisheries Services. According to the policy, “a portion of the range of a species is ‘significant’ if the species is not currently endangered or threatened throughout all of its range, but the portion’s contribution to the viability of the species is so important that, without the members in that portion, the species would be in danger of extinction, or likely to become so in the foreseeable future, throughout all of its range.” (<http://www.regulations.gov/#!documentDetail;D=FWS-R9-ES-2011-0031-0526>) (**Revised July 2014**).

- *Tidal Waters* - those waters that rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by hydrologic, wind, or other effects (33 CFR 328.3(f)) [**Added July 2007**].
- *Tributary and Tributaries* - a water that contributes flow, either directly or through another water (including an impoundment identified in paragraph (4) of the definition for “Waters of the United States”), to a water identified in paragraphs (1) through (3) of the definition for “Waters of the United States” that is characterized by the presence of the physical indicators of a bed and banks and an ordinary high water mark. These physical indicators demonstrate there is volume, frequency, and duration of flow sufficient to create a bed and banks and an ordinary high water mark, and thus to qualify as a tributary. A tributary can be a natural, man-altered, or man-made water and includes waters such as rivers, streams, canals, and ditches not excluded in the definition of “Waters of the United States.” A water that otherwise qualifies as a tributary under this definition does not lose its status as a tributary if, for any length, there are one or more constructed breaks (such as bridges, culverts, pipes, or dams), or one or more natural breaks (such as wetlands along the run of a stream, debris piles, boulder fields, or a stream that flows underground) so long as a bed and banks and an ordinary high water mark can be identified upstream of the break. A water that otherwise qualifies as a tributary under this definition does not lose its status as a tributary if it contributes flow through a water of the United States that does not meet the definition of tributary or through a non-jurisdictional water to a water identified in paragraphs (1) through (3) of the definition for “Waters of the United States.” This definition is effective 6 February 2020 (33 CFR 328.3(c)(3)) [**Added July 2015; Revised April 2018**].
- *Unforeseen Circumstances* - changes in circumstances affecting a species or geographic area covered by a conservation plan or agreement that could not reasonably have been anticipated by plan or agreement developers and the Service at the time of the conservation plan’s or agreement’s negotiation and development, and that result in a substantial and adverse change in the status of the covered species (50 CFR 17.3) [**Added April 2005**].
- *Wasteful Manner* - any taking or method of taking which is likely to result in the killing or injury of endangered or threatened wildlife beyond those needed for subsistence purposes, or which results in the waste of a substantial portion of the wildlife, and includes without limitation the employment of a method of taking which is not likely to assure the capture or killing of the wildlife, or which is not immediately followed by a reasonable effort to retrieve the wildlife (50 CFR 17.3) [**Added April 2005**].
- *Waters of the United States* – this definition is effective 6 February 2020. This phrase includes the following (33 CFR 328.3(a) and 328.3(b)) [**Added July 2007; Revised July 2015; Revised April 2018**]:
  1. All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
  2. All interstate waters, including interstate wetlands [see definition of *Wetlands*];
  3. The territorial seas;
  4. All impoundments of waters otherwise identified as waters of the United States under 40 CFR 110.1;
  5. All tributaries, [see definition of *Tributary*], of waters identified in paragraphs (1) through (3);
  6. All waters adjacent [see definition of *Adjacent*] to a water identified in paragraphs (1) through (5) of this definition, including wetlands, ponds, lakes, oxbows, impoundments, and similar waters;

7. All waters in paragraphs (a) through (e) of this paragraph (7) where they are determined, on a case-specific basis, to have a significant nexus to a water identified in paragraphs (1) through (3) of this definition. The waters identified in each of paragraphs (a) through (e) of this paragraph (7) are similarly situated and shall be combined, for purposes of a significant nexus analysis, in the watershed that drains to the nearest water identified in paragraphs (1) through (3) of this definition. Waters identified in this paragraph (7) shall not be combined with waters identified in paragraph (6) when performing a significant nexus analysis. If waters identified in this paragraph are also an adjacent water under paragraph (6), they are an adjacent water and no case-specific significant nexus analysis is required.
  - a. *Prairie* potholes. *Prairie* potholes are a complex of glacially formed wetlands, usually occurring in depressions that lack permanent natural outlets, located in the upper Midwest.
  - b. *Carolina bays* and *Delmarva bays*. *Carolina bays* and *Delmarva bays* are ponded, depressional wetlands that occur along the Atlantic coastal plain.
  - c. *Pocosins*. *Pocosins* are evergreen shrub and tree dominated wetlands found predominantly along the Central Atlantic coastal plain.
  - d. *Western vernal pools*. *Western vernal pools* are seasonal wetlands located in parts of California and associated with topographic depression, soils with poor drainage, mild, wet winters and hot, dry summers.
  - e. *Texas coastal prairie wetlands*. *Texas coastal prairie wetlands* are freshwater wetlands that occur as a mosaic of depressions, ridges, intermound flats, and mima mound wetlands located along the Texas Gulf Coast.
8. All waters located within the 100-year floodplain of a water identified in paragraphs (1) through (3) of this definition and all waters located within 4,000 feet of the high tide line or ordinary high water mark [see definition of *High Tide Line* and *Ordinary High Water Mark*] of a water identified in paragraphs ((1) through (5) of this definition where they are determined on a case-specific basis to have a significant nexus to a water identified in paragraphs ((1) through (3) of this definition. For waters determined to have a significant nexus, the entire water is a water of the United States if a portion is located within the 100-year floodplain of a water identified in paragraphs (1) through (3) of this definition or within 4,000 feet of the high tide line or ordinary high water mark. Waters identified in this paragraph (8) shall not be combined with waters identified in paragraph (6) of this definition when performing a significant nexus analysis. If waters identified in this paragraph (8) are also an adjacent water under paragraph (6), they are an adjacent water and no case-specific significant nexus analysis is required.

The following are not “waters of the United States” even where they otherwise meet the terms of paragraphs (4) through (8) above in this definition.

1. Waste treatment systems (other than cooling ponds meeting the criteria of this paragraph)
2. Prior converted cropland. Notwithstanding the determination of an area’s status as prior converted cropland by any other Federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.
3. The following ditches:
  - a. Ditches with ephemeral flow that are not a relocated tributary or excavated in a tributary.
  - b. Ditches with intermittent flow that are not a relocated tributary, excavated in a tributary, or drain wetlands
  - c. Ditches that do not flow, either directly or through another water, into a water identified in paragraphs (1) through (3) of the above definition of waters which are “waters of the United States”.
4. The following features:
  - a. Artificially irrigated areas that would revert to dry land should application of water to that area cease;
  - b. Artificial, constructed lakes and ponds created in dry land such as farm and stock watering ponds, irrigation ponds, settling basins, fields flooded for rice growing, log cleaning ponds, or cooling ponds;
  - c. Artificial reflecting pools or swimming pools created in dry land;
  - d. Small ornamental waters created in dry land;
  - e. Water-filled depressions created in dry land incidental to mining or construction activity, including pits excavated for obtaining fill, sand, or gravel that fill with water;
  - f. Erosional features, including gullies, rills, and other ephemeral features that do not meet the definition of tributary, non-wetland swales, and lawfully constructed grassed waterways; and
  - g. Puddles.

5. Groundwater, including groundwater drained through subsurface drainage systems.
6. Stormwater control features constructed to convey, treat, or store stormwater that are created in dry land.
7. Wastewater recycling structures constructed in dry land; detention and retention basins built for wastewater recycling; groundwater recharge basins; percolation ponds built for wastewater recycling; and water distributary structures built for wastewater recycling.

- *Wetlands* - those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. This definition is effective 6 February 2020 (33 CFR 328.3(c)(4)) [**Added July 2007; Revised July 2015; Revised April 2018**].
- *Wetlands* - those areas that are inundated or saturated by surface or groundwater at a frequency or duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include playa lakes, swamps, marshes, bogs, and similar areas such as sloughs, prairie potholes, wet meadows, prairie river overflows, mudflats, and natural ponds (40 CFR 110.2).
- *Wildlife or Fish and Wildlife* - any member of the animal kingdom, including without limitation, any vertebrate, mollusk, crustacean, arthropod, or other invertebrate, and includes any part, product, egg, or offspring thereof, or the dead body or parts thereof (50 CFR 424.02) [**Added April 2016**].

#### **F. Records To Review**

- Environmental Impact Statement/Assessments
- Master Plans
- Land Management Plan
- Fish and Wildlife Cooperative Agreement
- Outdoor Recreation Cooperative Agreement
- Forest Management Plan
- Grounds Maintenance Contracts
- Agricultural and Grazing Lease Contracts
- Threatened and Endangered Species Survey
- Environmental Protection Technical Specifications
- MOA or MOUs with other agencies
- Pesticide Management Plans
- All natural resource related permits

#### **G. Physical Features To Inspect**

- Construction sites (erosion control, runoff, sedimentation, and landscaping)
- Facilities constructed in the past 2 yr (erosion and landscaping)
- Wildlife containment areas (condition and management)
- Wildlife habitat and land and water resources (condition and management) including urban wildlife programs and wildlife programs in undeveloped land
- Equipment, such as tanks, which could damage wildlife, its habitat, or land and water resources (use and control)
- Grounds maintenance areas (beautification and condition) such as excessively large areas maintained in an improved condition
- Forest management areas (condition and management)
- Agricultural and grazing lease areas (condition and management)
- Stormwater drainage areas and improvements (condition)
- Erosion sites (condition and erosion)
- Shorelines

- Wetlands
- Gas/mineral lease areas
- Fire management areas
- Biodiversity areas
- Permitted natural resources related projects
- Areas with exotic species
- Training areas (coordination and management)

## H. Guidance for Natural Resources Management Checklist Users

	<b>REFER TO CHECKLIST ITEMS:</b>
All Facilities	NR.1.1.US. and NR.1.2.US.
Missing, Risk Management, and Positive Checklist Items	NR.2.1.US. through NR.2.3.US
Dredging	NR.5.1.US.
Land Management	NR.10.1.US. through NR.10.3.US.
Water Resources Management	NR.15.1.US through NR.15.8.US
Wildlife	NR.20.1.US. through NR.20.7.US.
Appendix 5-1, <i>Noxious Weeds</i> Appendix 5-2, <i>Withdrawn Lands</i>	



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<p><b>NR.1</b></p> <p><b>ALL FACILITIES</b></p> <p><b>NR.1.1.US.</b> The current status of any ongoing or unresolved consent orders, ESA biological opinions, Section 404 CWA permits, compliance agreements, notices of violation (NOVs), interagency agreements, or equivalent state enforcement actions is required to be examined (a finding under this checklist item will have the enforcement action/identifying information as the citation).</p> <p><b>NR.1.2.US.</b> When military installations are required to prepare an INRMP, the INRMP must meet certain standards (<i>Sikes Act</i>, 16 USC 670 et. seq) [<b>Added March 1998; Citation Revised July 2010; Revised July 2013</b>].</p>	<p>Determine if noncompliance issues have been resolved by reviewing a copy of the previous report, consent orders, ESA biological opinions, Section 404 CWA permits, compliance agreements, NOVs, interagency agreements, NEPA documentation, litigation settlement agreements, court imposed injunctions, or equivalent state enforcement actions.</p> <p>(NOTE: The Secretary of Defense is responsible for carrying out a program to provide for the conservation and rehabilitation of natural resources on military installations. The Secretary of each military department is responsible for preparing and implementing an INRMP for each military installation, unless the Secretary determines that the absence of significant natural resources on a particular installation makes preparation of such a plan inappropriate.)</p> <p>(NOTE: See component-specific Supplements for additional DOD, Air Force, and Army requirements pertaining to the INRMP. Additional requirements include definition of types of installations requiring an INRMP and expanded content requirements.)</p> <p>Verify that the INRMP, to the extent appropriate and applicable, provides for:</p> <ul style="list-style-type: none"> <li>– fish and wildlife management, land management, forest management, and fish and wildlife oriented recreation</li> <li>– fish and wildlife habitat enhancement or modifications</li> <li>– wetland protection, enhancement, and restoration, where necessary for support of fish, wildlife, or plants</li> <li>– integration of, and consistency among, the various activities conducted under the plan</li> <li>– establishment of specific natural resource management goals and objectives and time frames for proposed action</li> <li>– sustainable use by the public of natural resources to the extent that the use is not inconsistent with the needs of fish and wildlife resources</li> </ul>

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	<ul style="list-style-type: none"> <li>– public access to the military installation that is necessary or appropriate for the sustainable use by the public described above, subject to requirements necessary to ensure safety and military security</li> <li>– enforcement of applicable natural resource laws (including regulations)</li> <li>– no net loss in the capability of military installation lands to support the military mission of the installation</li> <li>– such other activities as the Secretary of the military department determines appropriate.</li> </ul> <p>Verify that the INRMP is prepared in coordination with Fish and Wildlife Service authorities.</p> <p>Verify that the INRMP is reviewed as to operation and effect on a regular basis, but not less often than every 5 yr.</p> <p>Verify that, once an INRMP is agreed to, no land covered by the plan is sold or leased unless the effects of the sale or leasing are compatible with the plan.</p> <p>(NOTE: The purposes of this program are to provide for:</p> <ul style="list-style-type: none"> <li>– the conservation and rehabilitation of natural resources on military installations</li> <li>– the sustainable multipurpose use of the resources, including hunting, fishing, trapping, and nonconsumptive uses</li> <li>– public access to military installations subject to safety requirements and military security.)</li> </ul> <p>(NOTE: The INRMP may provide for the issuance of special state hunting and fishing permits to individuals. Nominal fees may be required for these permits. The fees must be used for the protection, conservation, and management of fish and wildlife, including habitat improvement and related activities. The INRMP may provide for the CO of the installation or his designee to act as an agent for the state in enforcing the permit program and collecting, spending, administering, and accounting for the fees. The fees must be used with respect to the military installation on which collected. If the installation is subsequently closed, then the fees may be transferred to another installation, but must still be used for the same purposes.)</p> <p>(NOTE: The <i>National Defense Authorization Act for FY 2012</i> [P.L. 112-81], enacted on 31 December 2011, required INRMPs for state-owned lands supporting Army National Guard facilities.)</p> <p>(NOTE: USACE Civil Works Projects are not required to have INRMPs.)</p>

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<b>NR.2</b>  <b>MISSING, RISK MANAGEMENT, AND POSITIVE CHECKLIST ITEMS</b>  <b>NR.2.1.US.</b> Facilities are required to comply with all applicable Federal regulatory requirements not contained in this checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of finding).  <b>NR.2.2.US.</b> Risk management techniques should be promoted in environmental efforts (MP) [Added April 2002].  <b>NR.2.3.US.</b> Facilities should go above and beyond statutory and regulatory compliance (MP) [Added April 2002].	<p>Determine if any new regulations have been issued since the finalization of TEAM.</p> <p>Determine if the facility has activities or facilities that are Federally regulated, but not addressed in this checklist.</p> <p>Verify that the facility is in compliance with all applicable and newly issued regulations.</p> <p>Determine if risk management techniques are promoted in environmental efforts.</p> <p>Determine if the facility has gone above and beyond simply complying with environmental requirements.</p>



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<p><b>NR.5</b></p> <p><b>DREDGING</b></p> <p><b>NR.5.1.</b>US. Department of the Army permits are required for the discharge of dredged or fill material into waters of the United States (33 CFR 323.3(a) and 323.3(b)) [Revised June 1996; Revised July 2007; Revised July 2013].</p>	<p>(NOTE: Be sure to review any requirements associated with the state implementation of Section 401 of the CWA. Under the Coastal Zone Management Act [CZMA], states have the authority to require design changes or mitigation requirements be added to Section 404 permits to be consistent with the State coastal zone management plan.)</p> <p>Determine if there are wetlands.</p> <p>Verify that any activities involving dredging and filling wetlands are permitted by the Army Corps of Engineers.</p> <p>Verify that the parameters outlined in the permit are being met.</p> <p>(NOTE: Fill material means any material used for the primary purpose of replacing an aquatic area with dry land or changing the bottom elevation of a water body. The term does not include any pollutant discharged into the water primarily to dispose of waste, as that activity is regulated under section 402 of the CWA.)</p> <p>(NOTE: See the definition of “Waters of the United States.”)</p> <p>(NOTE: Under the joint EPA and Corps of Engineers Legal Memorandum, <i>Clean Water Act Jurisdiction Following the U.S. Supreme Court’s Decision in Rapanos v. United States &amp; Carabell v. United States</i>, the agencies will assert jurisdiction over:</p> <ul style="list-style-type: none"> <li>– traditional navigable waters which includes all the waters described in 33 CFR 328.3(a)(1) “All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide”</li> <li>– wetlands adjacent to traditional navigable waters, including over adjacent wetlands that do not have a continuous surface connection to traditional navigable waters</li> <li>– non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 mo</li> <li>– wetlands that directly abut such tributaries.</li> </ul> <p>The agencies will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with a traditional navigable water:</p> <ul style="list-style-type: none"> <li>– non-navigable tributaries that are not relatively permanent</li> <li>– wetlands adjacent to non-navigable tributaries that are not relatively permanent</li> <li>– wetlands adjacent to but that do not directly abut a relatively permanent non-navigable tributary.</li> </ul> <p>The agencies generally will not assert jurisdiction over the following features:</p>

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	<ul style="list-style-type: none"> <li>– swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow)</li> <li>– ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water.</li> </ul> <p>The agencies will apply the significant nexus standard as follows:</p> <ul style="list-style-type: none"> <li>– a significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical and biological integrity of downstream traditional navigable waters</li> <li>– significant nexus includes consideration of hydrologic and ecologic factors.)</li> </ul>

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<b>NR.10</b>  <b>LAND MANAGEMENT</b>  <b>NR.10.1.US.</b> Noxious weeds must not be moved through the United States unless allowed by a permit (7 CFR 360.100 through 360.300) [ <b>Revised April 2000</b> ].  <b>NR.10.2.US.</b> Checklist item deleted [ <b>Deleted October 2011</b> ].  <b>NR.10.3.US.</b> DoD Components occupying withdrawn lands are required to have a MOU with the SOI implementing a management plan developed by the SOI (PL 99-606, Section 3(c)).	<p>Verify that no one is moving a federal noxious weed into or through the United States, or interstate, unless:</p> <ul style="list-style-type: none"> <li>– a permit is obtained</li> <li>– the movement is consistent with the specific conditions contained in the permit.</li> </ul> <p>(NOTE: A list of noxious weeds is in Appendix 5-1.)</p> <p>(NOTE: To document inadequate management practices (MP) at floodplains, wetlands, or other natural resources use checklist item number NR.2.1.US.)</p> <p>Verify that a MOU has been entered into with SOI.</p> <p>Verify that a copy of the management plan is available and the requirements of the plan are being met.</p> <p>(NOTE: See Appendix 5-2 for a list of withdrawn lands.)</p>



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<p><b>NR.15</b></p> <p><b>WATER RESOURCES MANAGEMENT</b></p> <p><b>NR.15.1.US.</b> Checklist item deleted [Added October 2004, Deleted October 2014].</p> <p><b>NR.15.2.US.</b> Checklist item deleted [Added October 2004, Deleted October 2014].</p> <p><b>NR.15.3.US.</b> Checklist item deleted [Added October 2004, Deleted October 2014].</p> <p><b>NR.15.4.US.</b> Checklist item deleted [Added October 2004, Deleted October 2014].</p> <p><b>NR.15.5.US.</b> Checklist item deleted [Added October 2004, Deleted October 2014].</p> <p><b>NR.15.6.US.</b> Checklist item deleted [Added October 2004, Deleted October 2014].</p> <p><b>NR.15.7.US.</b> Checklist item deleted [Added October 2004, Deleted October 2014].</p> <p><b>NR.15.8.US.</b> Checklist item deleted [Added October 2004, Deleted October 2014].</p>	<p>(NOTE: This checklist item is deleted per the statements in 40 CFR 125.80(a) and 125.90(a) that the Best Technology Available for Minimizing Adverse Environmental Impact (BTA) for new and existing cooling water intake structures will be implemented through the NPDES permit program.)</p> <p>(NOTE: This checklist item is deleted per the statements in 40 CFR 125.80(a) and 125.90(a) that the Best Technology Available for Minimizing Adverse Environmental Impact (BTA) for new and existing cooling water intake structures will be implemented through the NPDES permit program.)</p> <p>(NOTE: This checklist item is deleted per the statements in 40 CFR 125.80(a) and 125.90(a) that the Best Technology Available for Minimizing Adverse Environmental Impact (BTA) for new and existing cooling water intake structures will be implemented through the NPDES permit program.)</p> <p>(NOTE: This checklist item is deleted per the statements in 40 CFR 125.80(a) and 125.90(a) that the Best Technology Available for Minimizing Adverse Environmental Impact (BTA) for new and existing cooling water intake structures will be implemented through the NPDES permit program.)</p> <p>(NOTE: This checklist item is deleted per the statements in 40 CFR 125.80(a) and 125.90(a) that the Best Technology Available for Minimizing Adverse Environmental Impact (BTA) for new and existing cooling water intake structures will be implemented through the NPDES permit program.)</p> <p>(NOTE: This checklist item is deleted per the statements in 40 CFR 125.80(a) and 125.90(a) that the Best Technology Available for Minimizing Adverse Environmental Impact (BTA) for new and existing cooling water intake structures will be implemented through the NPDES permit program.)</p> <p>(NOTE: This checklist item is deleted per the statements in 40 CFR 125.80(a) and 125.90(a) that the Best Technology Available for Minimizing Adverse Environmental Impact (BTA) for new and existing cooling water intake structures will be implemented through the NPDES permit program.)</p>

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<p><b>NR.20</b></p> <p><b>WILDLIFE</b></p> <p><b>NR.20.1.US.</b> Programs must be carried out for the conservation of Federally designated endangered and threatened species (50 CFR 402.01(a), 402.10, and 402.12).</p> <p><b>NR.20.2.US.</b> Proposed actions and activities must be reviewed to ensure that they are not likely to jeopardize the continued existence of a listed species or to destroy or adversely modify its critical habitat (50 CFR 402.01(a) and 40 CFR 1500).</p> <p><b>NR.20.3.US.</b> No person may take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird, or the parts, nests, or eggs of such bird without a permit (50 CFR 13.46, 20.36, 21.2, 21.11, 21.12, 21.15, 21.21(a), 21.22(a), 21.23(a), 21.24(a), 21.25(a), 21.27(a), 21.28(a), 21.30(a), 21.41(a) through 21.50) <b>[Revised January 1999; Revised July 2004; Revised April 2007; Revised October 2007; Revised July 2018].</b></p>	<p>Verify that a survey has been done to determine if there are any threatened or endangered species if conditions are present that such species could be present.</p> <p>Verify that consultations have been held with the U.S. Fish and Wildlife Service (FWS) and state conservation agency when revising management plans.</p> <p>Verify that measures have been initiated to maintain threatened and endangered species by checking records of FWS consultations/opinions received.</p> <p>Verify that action has been taken to comply with FWS requirements if a jeopardy biological opinion has been given.</p> <p>Verify that terms and conditions of any biological opinion are being met.</p> <p>Verify that the following documents are considered in the review process:</p> <ul style="list-style-type: none"> <li>– 40 CFR 1500 through 1508, <i>Council on Environmental Quality</i>.</li> <li>– 50 CFR 17, <i>Endangered and Threatened Wildlife and Plants</i>.</li> <li>– 50 CFR 402, <i>Interagency Cooperation-Endangered Species Act 1973, as amended</i>.</li> <li>– 50 CFR 450, <i>Endangered Species Exemption Process: General Provisions</i>.</li> <li>– 50 CFR 451, <i>Endangered Species Exemption Process: Application Procedures</i>.</li> </ul> <p>(NOTE: See also NR.20.7.US for requirements on reporting and recordkeeping.)</p> <p>Verify that no person takes, possesses, imports, exports, transports, sells, purchases, barter, or offers for sale, purchase, or barter, any migratory bird, or the parts, nests, or eggs of such bird except as may be permitted under the terms of a valid permit.</p> <p>(NOTE: Employees of the DOI authorized to enforce the provisions of the <i>Migratory Bird Treaty Act</i> of July 3, 1918, as amended (40 Stat. 755; 16 U.S.C. 703-711), may, without a permit, take or otherwise acquire, hold in custody, transport, and dispose of migratory birds or their parts, nests, or eggs as necessary in performing their official duties.)</p> <p>(NOTE: State game departments, municipal game farms or parks, and public museums, public zoological parks, accredited institutional members of the American Association of Zoological Parks and Aquariums (AAZPA) and public scientific or educational institutions may acquire by gift or purchase, possess, transport, and by gift or sale dispose of lawfully acquired migratory birds or their progeny, parts, nests, or eggs without a permit. But such birds must have been acquired only from persons authorized by this NOTE or by a permit issued to</p>

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	<p>possess and dispose of such birds, or from Federal or State game authorities by the gift of seized, condemned, or sick or injured birds.)</p> <p>Verify that seized, condemned, sick, or injured birds acquired without a permit, and any progeny therefrom, are disposed of only to persons authorized to acquire such birds without a permit.</p> <p>Verify that any person exercising a privilege to acquire seized, condemned, sick, or injured migratory birds keeps accurate records in English and for a period of 5 yrs following the end of the calendar year covered by the records of operations showing:</p> <ul style="list-style-type: none"> <li>– the species and number of birds acquired, possessed, and disposed of</li> <li>– the names and addresses of the persons from whom such birds were acquired</li> <li>– to whom such birds were donated or sold</li> <li>– the dates of such transactions.</li> </ul> <p>(NOTE: Employees of Federal, State, and local wildlife and land management agencies; employees of Federal, State, and local public health agencies; and laboratories under contract to such agencies may in the course of official business collect, possess, transport, and dispose of sick or dead migratory birds or their parts for analysis to confirm the presence of infectious disease.)</p> <p>Verify that sick or dead migratory birds, acquired without a permit, and any progeny therefrom are disposed of only to persons authorized to acquire such birds without a permit.</p> <p>Verify that no migratory game birds are left at any place (other than at his personal abode), or in the custody of another person for picking, cleaning, processing, shipping, transportation, or storage (including temporary storage), or for the purpose of having taxidermy services performed, unless such birds have a tag attached, signed by the hunter, stating his address, the total number and species of birds, and the date such birds were killed.</p> <p>(NOTE: Migratory game birds being transported in any vehicle as the personal baggage of the possessor shall not be considered as being in storage or temporary storage.)</p> <p>Verify that no person receives or has in custody any migratory game birds belonging to another person unless such birds are tagged as described above.</p> <p>Verify that any person exercising a privilege to acquire sick or dead migratory birds keeps accurate records in English for a period of 5 yrs following the end of the calendar year covered by the records of such operations showing:</p> <ul style="list-style-type: none"> <li>– the species and number of birds acquired, possessed, and disposed of</li> </ul>

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	<ul style="list-style-type: none"> <li>– the names and addresses of the persons from whom such birds were acquired or to whom such birds were donated or sold</li> <li>– the dates of such transactions.</li> </ul> <p>(NOTE: This regulation does not authorize:</p> <ul style="list-style-type: none"> <li>– the take of uninjured or healthy birds without prior authorization from the Service</li> <li>– the taking, collection, or possession of migratory birds when circumstances indicate reasonable probability that death, injury, or disability was caused by factors other than infectious disease and/or natural toxins.)</li> </ul> <p>Verify that, if the cause of death of a bird is determined to be other than natural causes or disease, Service law enforcement officials are contacted without delay.</p> <p>(NOTE: Licensed veterinarians are not required to obtain a Federal migratory bird permit to temporarily possess, stabilize, or euthanize sick and injured migratory birds. However, a veterinarian without a migratory bird rehabilitation permit must transfer any such bird to a federally permitted migratory bird rehabilitator within 24 h after the bird's condition is stabilized, unless the bird is euthanized. If a veterinarian is unable to locate a permitted rehabilitator within that time, the veterinarian must contact his or her Regional Migratory Bird Permit Office for assistance in locating a permitted migratory bird rehabilitator and/or to obtain authorization to continue to hold the bird.)</p> <p>Verify that veterinarians:</p> <ul style="list-style-type: none"> <li>– notify the local U.S. Fish and Wildlife Service Ecological Services Office immediately upon receiving a threatened or endangered migratory bird species (NOTE: Contact information for Ecological Services offices can be located on the Internet at <a href="http://offices.fws.gov">http://offices.fws.gov</a>)</li> <li>– euthanize migratory birds as required by Sec. 21.31(e)(4)(iii) and Sec. 21.31(e)(4)(iv), and dispose of dead migratory birds in accordance with Sec. 21.31(e)(4)(vi)</li> <li>– keep the following records for 5 yr of all migratory birds that die while in their care, including those they euthanize: <ul style="list-style-type: none"> <li>– the species of bird</li> <li>– the type of injury</li> <li>– the date of acquisition</li> <li>– the date of death</li> <li>– whether the bird was euthanized.</li> </ul> </li> </ul> <p>(NOTE: See the text of 50 CFR 21.13 and 21.14 for information on permit exemptions for captive-reared waterfowl.)</p> <p>Verify that, when the Armed Forces takes migratory birds incidental to military readiness activities they have, for those ongoing or proposed activities that the Armed Forces determine may result in a significant adverse effect on a population</p>

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	<p>of a migratory bird species, conferred and cooperated with the Service to develop and implement appropriate conservation measures to minimize or mitigate such significant adverse effects.</p> <p>Verify that, when conservation measures institutes when taking migratory birds incidental to military readiness activities, the Armed Forces retains records of any monitoring data for 5 yr from the date the Armed Forces started their action.</p> <p>Verify that, during Integrated Natural Resource Management Plan reviews, the Armed Forces reports to the Service migratory bird conservation measures implemented and the effectiveness of the conservation measures in avoiding, minimizing, or mitigating take of migratory birds.</p> <p>Verify that an import permit is obtained before any migratory birds, their parts, nests, or eggs are imported.</p> <p>Verify that an export permit is obtained before any migratory birds, their parts, nests, or eggs are exported.</p> <p>(NOTE: In certain situations:</p> <ul style="list-style-type: none"> <li>– captive-reared migratory game birds may be exported to Canada or Mexico without a permit</li> <li>– raptors lawfully possessed under a falconry permit may be exported to or imported from Canada or Mexico without a permit for the purposes of attending bona fide falconry meets, as long as the person importing or exporting the birds returns the same bird(s) to the country of export following any such meet.)</li> </ul> <p>Verify that a banding or marking permit is obtained before any capturing migratory birds for banding or marking purposes or use official bands issued by the Service for banding or marking any migratory bird.</p> <p>Verify that a scientific collecting permit is obtained before any person takes, transports, or possesses migratory birds, their parts, nests, or eggs for scientific research or educational purposes.</p> <p>Verify that a taxidermist permit is obtained before performing taxidermy services on migratory birds or their parts, nests, or eggs for any person other than himself.</p> <p>Verify that a waterfowl sale and disposal permit is obtained before any person lawfully sells, trades, donates, or otherwise disposes of, to another person, any species of captive-reared and properly marked migratory waterfowl or their eggs, except that such a permit is not required for such sales or disposals of captive-reared and properly marked mallard ducks or their eggs.</p> <p>Verify that a special purpose permit is obtained before any person lawfully takes, salvages, otherwise acquires, transports, or possesses migratory birds, their parts, nests, or eggs for any purpose not covered by the standard form permits.</p>

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	<p>Verify that a special purpose permit is obtained before any person sells, purchases, or barter captive-bred, migratory game birds, other than waterfowl, that are marked in compliance with 50 CFR 21.13(b).</p> <p>Verify that a falconry permit is obtained before any person takes, possesses, transports, sells, purchases, barter, offers to sell, purchase, or barter raptors for falconry purposes.</p> <p>Verify that a raptor propagation permit is obtained before any person takes, possesses, transports, imports, purchases, barter, or offers to sell, purchase, or barter any raptor, raptor egg, or raptor semen for propagation purposes.</p> <p>Verify that a depredation permit is obtained before any person takes, possesses, or transports migratory birds for depredation control purposes.</p> <p>(NOTE: No permit is required merely to scare or herd depredating migratory birds other than endangered or threatened species or bald or golden eagles.)</p> <p>(NOTE: Any person may remove a migratory bird from the interior of a building or structure under certain conditions:</p> <ul style="list-style-type: none"> <li>– humanely removing a trapped migratory bird from the interior of a residence or a commercial or government building without a Federal permit if the migratory bird meets one of the following: <ul style="list-style-type: none"> <li>– poses a health threat (for example, through damage to foodstuffs)</li> <li>– is attacking humans, or poses a threat to human safety because of its activities (such as opening and closing automatic doors)</li> <li>– poses a threat to commercial interests, such as through damage to products for sale</li> <li>– may injure itself because it is trapped</li> </ul> </li> <li>– humanely capturing the bird or birds without using adhesive traps to which birds may adhere (such as glue traps) or any other method of capture likely to harm the bird</li> <li>– unless there is a permit that allowing the conduct of abatement activities with a raptor, a raptor is not released into a building to either frighten or capture another bird</li> <li>– immediately release a captured bird to the wild in habitat suitable for the species, unless it is exhausted, ill, injured, or orphaned</li> <li>– if a bird is exhausted or ill, or is injured or orphaned during the removal, the property owner is responsible for immediately transferring it to a federally permitted migratory bird rehabilitator</li> <li>– a migratory bird is not legally taken for these purposes</li> <li>– when needed, for birds of species on the Federal List of Threatened or Endangered Wildlife, provided at 50 CFR 17.11(h), a Federal threatened or endangered species permit is obtained before removing the birds</li> <li>– a permit has been received from the Regional migratory bird permits office to remove a bald eagle or a golden eagle from a building</li> </ul>

<p style="text-align: center;"><b>COMPLIANCE CATEGORY:</b>  <b>NATURAL RESOURCES MANAGEMENT</b>  <b>U.S. TEAM Guide</b></p>	
<p><b>REGULATORY REQUIREMENTS:</b></p>	<p><b>REVIEWER CHECKS:</b>  <b>December 2018</b></p>
<p><b>NR.20.4.US.</b> Individuals may not take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter any endangered and/or threatened wildlife without a permit (50 CFR 17.4(a), 17.21 through 17.23, 17.31, and 17.32) [Added July 2001; Revised April 2005; Revised July 2018].</p>	<ul style="list-style-type: none"> <li>– actions must comply with State and local regulations and ordinances</li> <li>– if an active nest with eggs or nestlings is present, seek the assistance of a federally permitted migratory bird rehabilitator in removing the eggs or nestlings</li> <li>– if advice on dealing with a trapped bird is needed, contact the closest Fish and Wildlife Service office or the State wildlife agency.)</li> </ul> <p>(NOTE: If actions to remove a trapped migratory bird are likely to result in its lethal take, a Federal Migratory Bird Permit must be obtained. However, if a bird dies during the removal process, dispose of the carcass immediately unless there is reason to believe that a museum or scientific institution might be able to use it. In that case, contact the nearest Fish and Wildlife Service office or the State wildlife agency about donating the carcass.)</p> <p>(NOTE: See also NR.20.7.US for requirements on reporting and recordkeeping.)</p> <p>(NOTE: This checklist item does not apply to any activity involving endangered or threatened wildlife which was held in captivity or in a controlled environment on 28 December 1973 provided that:</p> <ul style="list-style-type: none"> <li>– the purposes of such holding were not contrary to the purposes of the Act; and</li> <li>– the wildlife was not held in the course of a commercial activity.)</li> </ul> <p>Verify that, unless permitted to do so, the facility does not import or to export any endangered wildlife.</p> <p>(NOTE: Any shipment in transit through the United States is an importation and exportation, whether or not it has entered the country for customs purposes.)</p> <p>Verify that, unless permitted to do so, the facility does not take endangered wildlife within the United States, within the territorial sea of the United States, or upon the high seas.</p> <p>(NOTE: The high seas are all waters seaward of the territorial sea of the United States, except waters officially recognized by the United States as the territorial sea of another country, under international law.)</p> <p>(NOTE: Any person may take endangered wildlife in defense of his own life or the lives of others. Any employee or agent of the FWS, any other Federal land management agency, the National Marine Fisheries Service, or a State conservation agency, who is designated by his agency for such purposes, may, when acting in the course of his official duties, take endangered wildlife without a permit if such action is necessary to:</p> <ul style="list-style-type: none"> <li>– aid a sick, injured or orphaned specimen</li> <li>– dispose of a dead specimen</li> <li>– salvage a dead specimen which may be useful for scientific study</li> <li>– remove specimens which constitute a demonstrable but nonimmediate threat to human safety, provided that the taking is done in a humane manner; the</li> </ul>

<b>COMPLIANCE CATEGORY: NATURAL RESOURCES MANAGEMENT U.S. TEAM Guide</b>	
<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS: December 2018</b>
	<p>taking may involve killing or injuring only if it has not been reasonably possible to eliminate such threat by live-capturing and releasing the specimen unharmed, in a remote area.)</p> <p>Verify that takings does for the preservation of human lives or by a designated official are reported in writing to the U.S. Fish and Wildlife Service, Office of Law Enforcement, 4401 North Fairfax Drive, LE-3000, Arlington, VA 22203, within 5 days.</p> <p>(NOTE: Any qualified employee or agent of a State Conservation Agency which is a party to a Cooperative Agreement with the Service, who is designated by his agency for such purposes, may, when acting in the course of his official duties take those endangered species which are covered by an approved cooperative agreement for conservation programs in accordance with the Cooperative Agreement, provided that such taking is not reasonably anticipated to result in:</p> <ul style="list-style-type: none"> <li>– the death or permanent disabling of the specimen;</li> <li>– the removal of the specimen from the State where the taking occurred;</li> <li>– the introduction of the specimen so taken, or of any progeny derived from such a specimen, into an area beyond the historical range of the species; or</li> <li>– the holding of the specimen in captivity for a period of more than 45 consecutive days.)</li> </ul> <p>Verify that the facility, or facility personnel do not possess, sell, deliver, carry, transport, or ship, by any means whatsoever, any endangered wildlife which was taken in violation of the requirements listed above in this checklist item.</p> <p>(NOTE: Federal and State law enforcement officers may possess, deliver, carry, transport or ship any endangered wildlife taken in violation of the Act as necessary in performing their official duties.)</p> <p>Verify that the facility or facility personnel do not deliver, receive, carry transport, or ship in interstate or foreign commerce, by any means whatsoever, and in the course of a commercial activity, any endangered wildlife.</p> <p>Verify that the facility or facility personnel do not sell or to offer for sale in interstate or foreign commerce any endangered wildlife.</p> <p>(NOTE: An advertisement for the sale of endangered wildlife which carries a warning to the effect that no sale may be consummated until a permit has been obtained from the U.S. Fish and Wildlife Service is not being considered an offer for sale.)</p> <p>(NOTE: Any person may take; export or re-import; deliver, receive, carry, transport or ship in interstate or foreign commerce, in the course of a commercial activity; or sell or offer for sale in interstate or foreign commerce any endangered wildlife that is bred in captivity in the United States provided that either of the following are true:</p>

<p style="text-align: center;"><b>COMPLIANCE CATEGORY:</b>  <b>NATURAL RESOURCES MANAGEMENT</b>  <b>U.S. TEAM Guide</b></p>	
<p><b>REGULATORY REQUIREMENTS:</b></p>	<p><b>REVIEWER CHECKS:</b>  <b>December 2018</b></p>
	<p>– that the wildlife is of the following taxon: bar-tailed pheasant (<i>Symaticus humiae</i>), Elliot's pheasant (<i>S. ellioti</i>), Mikado pheasant (<i>S. mikado</i>), brown eared pheasant (<i>Crossoptilon mantchuricum</i>), white eared pheasant (<i>C. crossoptilon</i>), cheer pheasant (<i>Catreus wallichii</i>), Edward's pheasant (<i>Lophura edwardsi</i>), Swinhoe's pheasant (<i>L. swinhoii</i>), Chinese monal (<i>Lophophorus lhuysii</i>), and Palawan peacock pheasant (<i>Polyplectron emphanum</i>); parakeets of the species <i>Neophema pulchella</i> and <i>N. splendida</i>; the Laysan duck (<i>Anas laysanensis</i>); the white-winged wood duck (<i>Cairina scutulata</i>); and the inter-subspecific crossed or “generic” tiger (<i>Panthera tigris</i>) (i.e., specimens not identified or identifiable as members of the Bengal, Sumatran, Siberian or Indochinese subspecies (<i>Panthera tigris tigris</i>, <i>P.t. sumatrae</i>, <i>P.t. altaica</i> and <i>P.t. corbetti</i>))</p> <p>– the following conditions are met:</p> <ul style="list-style-type: none"> <li>– the wildlife is of a species having a natural geographic distribution not including any part of the United States, or the wildlife is of a species that the Director has determined to be eligible</li> <li>– the purpose of such activity is to enhance the propagation or survival of the affected species</li> <li>– such activity does not involve interstate or foreign commerce, in the course of a commercial activity, with respect to non-living wildlife</li> <li>– each specimen of wildlife to be re-imported is uniquely identified by a band, tattoo or other means that was reported in writing to an official of the Service at a port of export prior to export from the United States</li> <li>– any person subject to the jurisdiction of the United States who engages in any of the activities authorized by this paragraph does so in accordance with paragraphs (g)(2), (3) and (4) of this section, and with all other applicable regulations in this Subchapter B.</li> </ul> <p>Verify that persons registered to take; export or re-import; deliver, receive, carry, transport or ship; or sell or offer for sale any endangered wildlife that is bred in captivity in the United States:</p> <ul style="list-style-type: none"> <li>– maintain accurate written records of activities conducted under the registration</li> <li>– allow reasonable access to Service agents for inspection purposes</li> <li>– submits to the Director an individual written annual report of activities, including all births, deaths and transfers of any type.</li> </ul> <p>Verify that any person subject to the jurisdiction of the United States seeking to export or conduct foreign commerce in captive-bred endangered wildlife that will not remain under the care of that person first obtains approval by providing written evidence to satisfy the Director that the proposed recipient of the wildlife has expertise, facilities or other resources adequate to enhance the propagation or survival of such wildlife and that the proposed recipient will use such wildlife for purposes of enhancing the propagation or survival of the affected species.</p> <p>Verify that individuals with permits for scientific purposes, enhancement of propagation or survival, or for incidental taking abides by the special condition that</p>

<p align="center"><b>COMPLIANCE CATEGORY:</b>  <b>NATURAL RESOURCES MANAGEMENT</b>  <b>U.S. TEAM Guide</b></p>	
<p align="center"><b>REGULATORY REQUIREMENTS:</b></p>	<p align="center"><b>REVIEWER CHECKS:</b>  <b>December 2018</b></p>
<p><b>NR.20.5.US.</b> No person, vessel, or conveyance subject to the jurisdiction of the U.S. may take any marine mammal in waters or on lands under the jurisdiction of the U.S. (50 CFR 216.11(b), 216.15, 216.21, 216.26, 216.33(a), 216.35(d), 216.35(f), 216.35(i), 216.35(j), 216.36, 216.38) [Added July 2013; Revised July 2018].</p>	<p>the escape of living wildlife covered by the permit shall be immediately reported to the Service office designated in the permit.</p> <p>Verify that the conditions stipulated in any permit are met.</p> <p>(NOTE: See also NR.20.7.US for requirements on reporting and recordkeeping.)</p> <p>Verify that no person, vessel, or conveyance takes any marine mammal in waters or on lands under the jurisdiction of the United States unless they have been granted an exception by law or a permit.</p> <p>(NOTE: The Marine Mammal Protection Act (MMPA) and these requirements do not apply to the extent that they are inconsistent with the provisions of any international treaty, convention or agreement, or any statute implementing the same relating to the taking or importation of marine mammals or marine mammal products, which was existing and in force prior to 21 December 1972, and to which the United States was a party. Specifically, these regulations and the provisions of the MMPA shall not apply to activities carried out pursuant to the Interim Convention on the Conservation of North Pacific Fur Seals signed at Washington on 9 February 1957, and the Fur Seal Act of 1966, 16 U.S.C. 1151 through 1187, as in each case, from time to time amended.)</p> <p>(NOTE: This checklist item does not address exceptions applicable to commercial fishing operations and native fishing.)</p> <p>Verify that, if any bones, teeth or ivory of any dead marine mammal are collected from a beach or from land within 1/4 of a mile of the ocean, they are registered and identified.</p> <p>(NOTE: The term ocean includes bays and estuaries.)</p> <p>Verify that, if soft parts that are sloughed, excreted, or discharged naturally by a living marine mammal in the wild are collected or imported for bona fide scientific research and enhancement (provided that collection does not involve the taking of a living marine mammal in the wild) they are registered, identified, and the scientific research or enhancement purpose for which the part was collected or imported stated.</p> <p>Verify that, when an activity is done under a permit, the permit holder does not take from the wild any marine mammal which at the time of taking is either unweaned or less than eight months old, or is a part of a mother-calf/pup pair, unless such take is specifically authorized in the conditions of the special exception permit.</p> <p>(NOTE: The permit holder is responsible for all activities of any individual who is operating under the authority of the permit.)</p>

<p style="text-align: center;"><b>COMPLIANCE CATEGORY:</b>  <b>NATURAL RESOURCES MANAGEMENT</b>  <b>U.S. TEAM Guide</b></p>	
<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b> <b>December 2018</b>
	<p>Verify that individuals conducting activities authorized under a permit possess qualifications commensurate with their duties and responsibilities, or are under the direct supervision of a person with such qualifications.</p> <p>(NOTE: Special exception permits are not transferable or assignable to any other person, and a permit holder may not require any direct or indirect compensation from another person in return for requesting authorization for such person to conduct the taking, import, or export activities authorized under the subject permit.)</p> <p>Verify that the permit holder or designated agent possesses a copy of the permit when engaged in a permitted activity, when the marine mammal is in transit incidental to such activity, and whenever marine mammals or marine mammal parts are in the possession of the permit holder or agent.</p> <p>Verify that a copy of the permit is affixed to any container, package, enclosure, or other means of containment, in which the marine mammals or marine mammal parts are placed for purposes of transit, supervision, or care.</p> <p>(NOTE: For marine mammals held captive and marine mammal parts in storage, a copy of the permit shall be kept on file in the holding or storage facility.)</p> <p>Verify that all conditions of the permit are met, including reporting.</p> <p>(NOTE: The following species or population stocks have been designated as depleted under the provisions of the MMPA:</p> <ul style="list-style-type: none"> <li>– Hawaiian monk seal (<i>Monachus schauinslandi</i>)</li> <li>– Bowhead whale (<i>Balaena mysticetus</i>)</li> <li>– North Pacific fur seal (<i>Callorhinus ursinus</i>). Pribilof Island population</li> <li>– Bottlenose dolphin (<i>Tursiops truncatus</i>), coastal-migratory stock along the U.S. mid-Atlantic coast</li> <li>– Eastern spinner dolphin (<i>Stenella longirostris orientalis</i>)</li> <li>– Northeastern offshore spotted dolphin (<i>Stenella attenuata</i>)</li> <li>– Cook Inlet, Alaska, stock of beluga whales (<i>Delphinapterus leucas</i>), including all beluga whales occurring in waters of the Gulf of Alaska north of 58° North latitude including, but not limited to, Cook Inlet, Kamishak Bay, Chinitna Bay, Tuxedni Bay, Prince William Sound, Yakutat Bay, Shelikof Strait, and off Kodiak Island and freshwater tributaries to these waters</li> <li>– Eastern North Pacific Southern Resident stock of killer whales (<i>Orcinus orca</i>), including all resident killer whales in pods J, K, and L in the waters of, but not limited to, the inland waterways of southern British Columbia and Washington, including the Georgia Strait, the Strait of Juan de Fuca, and Puget Sound</li> <li>– AT1 stock of killer whales (<i>Orcinus orca</i>), including all killer whales belonging to the AT1 group of transient killer whales occurring primarily in waters of Prince William Sound, Resurrection Bay, and the Kenai Fjords region of Alaska.)</li> </ul>

<p style="text-align: center;"><b>COMPLIANCE CATEGORY:</b>  <b>NATURAL RESOURCES MANAGEMENT</b>  <b>U.S. TEAM Guide</b></p>	
<p><b>REGULATORY REQUIREMENTS:</b></p>	<p><b>REVIEWER CHECKS:</b>  <b>December 2018</b></p>
<p><b>NR.20.6.US.</b> Experimental populations must be treated as if they are listed as threatened species (50 CFR 222.503) [Added July 2016].</p>	<p>Verify that experimental populations are treated as if it were listed as a threatened species.</p> <p>(NOTE: Experimental species are designated by the Secretary of Interior. When designating, or revising, an experimental population, the Secretary may also exercise his or her authority to include protective regulations necessary and advisable to provide for the conservation of the species as part of the special rule for the experimental population. Any protective regulations applicable to the species from which the experimental population was sourced do not apply to the experimental population unless specifically included in the special rule for the experimental population.)</p> <p>(NOTE: Under section 10(j) of the ESA, the SOI can designate reintroduced populations established outside the species' current range, but within its historical range, as "experimental." On the basis of the best available information, the Service determines whether an experimental population is "essential" or "nonessential" to the continued existence of the species. A "nonessential" designation for a 10(j) experimental population means that, on the basis of the best available information, the experimental population is not essential for the continued existence of the species. Regulatory restrictions are considerably reduced under a Nonessential Experimental Population (NEP) designation.)</p>
<p><b>NR.20.7.US.</b> Holders of a permit issued by U.S. FWS under Title 50 must meet reporting and recordkeeping requirements (50 CFR 13.44 through 13.46) [Added July 2018].</p>	<p>Verify that any permit issued under Title 50 of the U.S. Code of Federal Regulations is displayed for inspection upon request to the Director or his agent, or to any other person relying upon its existence.</p> <p>Verify that, if permittees are required to file reports of the activities conducted under the permit, the reports are filed not later than March 31 for the preceding calendar year ending December 31, or any portion thereof, during which a permit was in force, unless the permit provides for other reporting requirements.</p> <p>Verify that, from the date of issuance of the permit, the permittee maintains complete and accurate records of any taking, possession, transportation, sale, purchase, barter, exportation, or importation of plants obtained from the wild (excluding seeds) or wildlife pursuant to the permit.</p> <p>Verify that the permit-related records are kept current and include names and addresses of persons with whom any plant obtained from the wild (excluding seeds) or wildlife has been purchased, sold, bartered, or otherwise transferred, and the date of such transaction, and such other information as may be required or appropriate. Verify that records are legibly written or reproducible in English.</p> <p>Verify that records are maintained for five years from the date of expiration of the permit.</p> <p>(NOTE: Permittees who reside or are located in the United States and permittees conducting commercial activities in the United States who reside or are located</p>

<p align="center"><b>COMPLIANCE CATEGORY:</b>  <b>NATURAL RESOURCES MANAGEMENT</b>  <b>U.S. TEAM Guide</b></p>	
<p><b>REGULATORY REQUIREMENTS:</b></p>	<p><b>REVIEWER CHECKS:</b>  <b>December 2018</b></p>
	<p>outside the United States must maintain records at a location in the United States where the records are available for inspection.)</p>

## **Appendix 5-1**

### **Noxious Weeds (7 CFR 360.200)**

**[Revised July 1999, Revised October 2015]**

**The current State and Federal Noxious Weed List can be found at <http://plants.usda.gov/java/noxComposite>**



## Appendix 5-2

### Withdrawn Lands

<b>Army Withdrawn Lands</b>				
<b>MACOM AA (Corps of Engineers)</b>				
<b>PARNO</b>	<b>Parent</b>	<b>Installations</b>	<b>INSNO</b>	<b>PD ACRES</b>
32RPI	Nevada	Other	32555	7,671
<b>MACOM GA (Army National Guard)</b>				
<b>PARNO</b>	<b>Parent</b>	<b>Installations</b>	<b>INSNO</b>	<b>PD ACRES</b>
020NG	Alaska	National Guard	02451	1
			02481	1
			02502	1
			02512	0
			02521	1
			02531	1
			02541	2
			02545	1
			02547	1
			02551	0
			02555	1
			02561	1
			02565	1
			02568	1
			02591	2
			02594	1
			02596	1
			02597	1
			02598	1
			02608	1
			02611	1
			02631	0
			02635	1
			02645	1
			02655	1
			02659	1
020NG	Alaska	National Guard	02672	1
			02675	1

			02677	1
			02678	1
040NG	Arizona	National Guard	04685	1,481
280NG	Mississippi	National Guard	28485	35
250NG	New Mexico	Natinal Guard	35505	2,081
			35545	335
490NG	Utah	National Guard	49455	18,498
560NG	Wyoming	National Guard	56525	1,400
			56555	3,544
			56595	3,960
MACOM JA (U.S. Army Forces Command)				
PARNO	Parent	Installations	INSNO	PD ACRES
06205	Fort Hunter Ligett		06205	47,476
06225	Fort Irwin		06225	615,061
06305	Presidio of Monterey		06305	131
06625	Fort Ord		06255	0
06781	San Francisco Presidio		06781	1,264
08005	Fort Carson		08005	3,133
			16725	5
			30555	34
			49275	68
20605	Fort Riley		20605	19,067
53465	Fort Lewis		32775	5
			53465	3
			53975	54
			53995	27,525
55425	Fort McCoy		55425	551
MACOM NW (Pacific Command)				
PARNO	Parent	Installations	INSNO	PD ACRES
02341	Fort Greely		02130	494
			02135	2,779
			02322	19,000
			02341	638,912
MACOM NW (Pacific Command) (continued)				
PARNO	Parent	Installations	INSNO	PD ACRES

02781	Fort Richardson		02243	500
			02252	69
			02349	38
			02781	58,555
			02789	1
02871	Fort Wainwright		02222	2,285
			02262	120
02871			02357	20
			02871	652,792
			02975	287,043
02876	Whittier Anchorage Pipeline		02259	52
			02851	30
			02852	237
			02876	170
MACOM PA (Army Material Command)				
PARNO	Parent	Installations	INSNO	PD ACRES
04650	Navajo Depot Activity		04650	25,547
04985	Yuma Proving Ground		04985	829,908
06815	Sierra Army Depot		06815	7590
32225	Hawthorne AAP		32225	140,195
35955	White Sands Msl Rg		35955	1,350,498
			49350	1619
49295	Dugway Proving Grounds		49295	778,145
49575	Tooele Army Depot		35965	21,813
			41725	8280
			49245	15,166
			49575	3487
MACOM TD (Training and Doctrine Command)				
PARNO	Parent	Installations	INSNO	PD ACRES
01102	Fort McClellan		01102	1160
04005	Fort Huachuca		04005	13,463
			04009	640
			04011	27,387
05025	Fort Chaffee		05025	320
13025	Fort Benning		12045	13
20395	Fort Leavenworth		20395	7367
40755	Fort Sill		40755	51,231
48125	Fort Bliss		35125	845,250



### **Appendix 5-3**

#### **Migratory Birds (50 CFR 10.13)**

**[Added July 2004; Revised July 2016]**

For a current list of migratory birds, go to <https://www.fws.gov/birds/policies-and-regulations/laws-legislations/migratory-bird-treaty-act.php>



## SECTION 6

### OTHER ENVIRONMENTAL ISSUES U.S. TEAM Guide, December 2018

#### A. Applicability

This section addresses the following issues:

1. the National Environmental Policy Act (NEPA) process
2. environmental noise
3. the Installation Restoration Program (IRP)
4. pollution prevention
5. program management
6. waste military munitions.

Assessors are required to review state and local regulations and, if applicable, the appropriate Agency Supplement, to perform a comprehensive assessment.

#### B. Federal Regulations

*All*

- EO 12088, *Federal Compliance with Pollution Standards*. This EO, dated 13 October 1978, requires Federally owned and operated facilities to comply with applicable Federal, state, and local pollution control standards. It makes the head of each executive agency responsible for ensuring that the agencies, facilities, programs, and activities the Agency funds meet applicable Federal, state, and local environmental requirements for correcting situations that are not in compliance with such requirements. In addition, the EO requires that each agency ensure that sufficient funds for environmental compliance are included in the agency budget. Sections 1-4, "Pollution Control Plan" was revoked by EO 13148 **[Revised October 2002]**.
- EO 13327, *Federal Real Property Asset Management*. This EO, dated 4 February 2004, establishes the Federal Real Property Council (Council) to develop guidance for, and facilitate the success of, each agency's asset management plan. The Council is to be composed exclusively of all agency Senior Real Property Officers, the Controller of the Office of Management and Budget, the Administrator of General Services, and any other full-time or permanent part-time Federal officials or employees as deemed necessary by the Chairman of the Council. The Senior Real Property Officer is designated by the head a department of agency. The Senior Real Property Officer is required to develop and implement an agency asset management planning process that meets the form, content, and other requirements established by the Federal Real Property Council. In developing this plan, the Senior Real Property Officer shall:
  1. identify and categorize all real property owned, leased, or otherwise managed by the agency, including, where applicable, those properties outside the United States in which the lease agreements and arrangements reflect the host country currency or involve alternative lease plans or rental agreements;
  2. prioritize actions to be taken to improve the operational and financial management of the agency's real property inventory;
  3. make life-cycle cost estimations associated with the prioritized actions;
  4. identify legislative authorities that are required to address these priorities;
  5. identify and pursue goals, with appropriate deadlines, consistent with and supportive of the agency's asset management plan and measure progress against such goals;
  6. incorporate planning and management requirements for historic property under Executive Order 13287 of March 3, 2003, and for environmental management under Executive Order 13148 of April 21, 2000; and

7. identify any other information and pursue any other actions necessary to the appropriate development and implementation of the agency asset management plan.

Under EO 13327, para 2(a) “federal real property” is defined as any real property owned, leased, or otherwise managed by the Federal Government, both within and outside the United States, and improvements on Federal lands. For the purpose of this order, Federal real property shall exclude: interests in real property assets that have been disposed of for public benefit purposes pursuant to section 484 of title 40, United States Code, and are now held in private ownership; land easements or rights-of-way held by the Federal Government; public domain land (including lands withdrawn for military purposes) or land reserved or dedicated for national forest, national park, or national wildlife refuge purposes except for improvements on those lands; land held in trust or restricted fee status for individual Indians or Indian tribes; and land and interests in land that are withheld from the scope of this order by agency heads for reasons of national security, foreign policy, or public safety **[Added April 2004]**.

- Executive Order (EO) 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*. This EO, dated 24 January 2007, requires Federal agencies to lead by example in advancing the nation’s energy security and environmental performance by achieving goals outlined in the EO. This EO revokes the following EOs **[Added January 2007]**:
  1. Executive Order 13101, Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition of September 14, 1998;
  2. Executive Order 13123, Greening the Government Through Efficient Energy Management of June 3, 1999;
  3. Executive Order 13134, *Developing and Promoting Biobased Products and Bioenergy* of August 12, 1999, as amended;
  4. Executive Order 13148, Greening the Government through Leadership in Environmental Management of April 21, 2000; and
  5. Executive Order 13149, Greening the Government Through Federal Fleet and Transportation Efficiency of April 21, 2000.

## NEPA

- NEPA. The purpose of this act, 42 U.S. Code (USC) 4321-4370c, as last amended in November 1990, was to declare a national policy which will encourage productive and enjoyable harmony between man and his environment. Additionally, it provides for the promotion of efforts that will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man (42 USC 4321). Under NEPA, the continuing policy of the Federal government is to use all practicable means and measures in a manner calculated to foster and promote the general welfare, and to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans (42 USC 4331(a)). It is the continuing responsibility of the Federal government to use practicable means and resources to the end that the Nation may preserve important historic, cultural, and natural aspects of our national heritage (42 USC 4331(b)(4)).
- *Aligning National Environmental Policy Act Processes with Environmental Management Systems: A Guide for NEPA and EMS Practitioners* – This document, dated April 2007, introduces issues and provides information on how NEPA and EMS can be aligned. This guide does not establish new requirements, does not constitute formal CEQ guidance, and its recommendations should not be considered legally binding. See Appendix 6-0 for a table outlining the complementary elements of EMS and NEPA **[Added July 2007]**.
- Council on Environmental Quality (CEQ), Memorandum for Heads of Federal Departments and Agencies. This memo, titled “*Appropriate Use of Mitigation and Monitoring and Clarifying the Appropriate Use of Mitigated Findings of No Significant Impact*” was issued 14 January 2011. This guidance is for Federal departments and agencies on establishing, implementing, and monitoring mitigation commitments identified in analyzed in Environmental Assessments (EAs), Environmental Impact Statements (EIS), and adopted in the final decision documents. This guidance also clarifies the appropriate use of mitigated “Findings of No Significant Impact” under NEPA. The guidance explains the requirements of NEPA and the CEQ regulations, describes CEQ policies, and recommends procedures for agencies to use to help them comply with the requirements of NEPA and the

CEQ regulations when they establish mitigation planning and implementation procedures. A copy of this memo can be found at <http://www.whitehouse.gov/administration/eop/ceq/initiatives/nepa> [Added April 2011].

- Council on Environmental Quality (CEQ), Memorandum for Heads of Federal Departments and Agencies. This memo, titled “*Establishing, Applying, and Revising Categorical Exclusions under the National Environmental Policy Act*” was issued 23 November 2010. This guidance explains the requirements of NEPA and the CEQ regulations, describes CEQ policies, and recommends procedures for agencies to use to ensure that their use of categorical exclusions is consistent with applicable law and regulations. A copy of this memo can be found at <http://www.whitehouse.gov/administration/eop/ceq/initiatives/nepa> [Added April 2011].

#### *CERCLA Cleanup Sites*

- *Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)* of 1980. This act was amended by the *Superfund Amendments and Reauthorization Act (SARA)* of 1986, 42 USC 9601-11050, 10 USC 2701-2810 et. al. This act has four basic elements. The first element is the establishment of an information gathering and analysis system for the characterization of contaminated sites. This information is used in the development of the USEPA’s National Priorities List (NPL). The second element is the establishment of Federal authority to respond to hazardous substance emergencies and cleanup leaking sites. The third element is the creation of a trust fund to pay for removal and remedial actions. The fourth element makes persons who are responsible for hazardous substance releases liable for cleanup and restitution costs.
- *Community Environmental Response Facilitation Act*. This act, PL 102-426, amends CERCLA. It requires that, prior to the termination of Federal activities on any real property owned by the Federal Government, agencies must identify real property where no hazardous substance was stored, released, or disposed of. The purpose is to identify property that offers the greatest opportunity for reuse and redevelopment.
- EO 12580, *Superfund Implementation*. This EO, dated 23 January 1987, mandates the development of the National Response Team (NRT) and redelegates authority for various functions related to Superfund from the President to other Federal agencies.

#### *Environmental Noise*

- *The Noise Control Act* of 1972. This act, Public Law (PL) 92-574 (42 USC 4901-4918), as amended:
  1. establishes a means for effective coordination of Federal research and activities in noise control
  2. authorizes the establishment of Federal noise emission standards for products distributed in commerce
  3. provides information to the public respecting the noise emission and noise reduction characteristics of such products.

The following categories of products, which produce noise, are covered by this act:

1. construction equipment
2. transportation equipment (including recreational vehicles and related equipment)
3. any motor or engine (including any equipment of which an engine or motor is an integral part)
4. electrical or electronic equipment.

The following articles are not covered by the act (42 USC 4902(3):

1. any aircraft, aircraft engine, propeller, or appliance
2. any military weapons or equipment designed for combat use
3. any rockets or equipment designed for research, experimental, or developmental work to be performed by the National Aeronautics and Space Administration
4. any other machinery or equipment designed for use in experimental work done by or for the Federal Government.

- *Aviation Safety and Noise Abatement Act of 1979*. This act, PL 96-193 (49 USC Appendix 2103, 2104), as amended, relates to airport noise. Any airport operator may submit to the Secretary of Transportation a noise exposure map. Such a map shall set forth the noncompatible uses in each area of the map, a description of the projected aircraft operations at such an airport, and the ways in which such operations will affect such a map (49 USC 2103). Any airport operator, who has submitted a noise exposure map and the related information, may submit to the Secretary of Transportation a noise compatibility program. This program shall include measures which the operator has taken or proposes for the reduction of existing noncompatible uses and the prevention of the introduction of noncompatible uses within the area covered by the noise exposure map submitted (49 USC Appendix 2104).

#### *Pollution Prevention*

- *The Pollution Prevention Act of 1990*. This act encourages looking at waste more broadly with a view towards reducing pollution. All pollutants are to be minimized and waste creation is to be controlled, not just during the production process, but also in the design of products that will have less impact on the environment while in use and after disposal.
- EO 12844, *Federal Use of Alternative Fueled Vehicles*. This EO, dated 21 April 1993, directs each agency to adopt aggressive plans to substantially exceed the alternative fueled vehicles purchase requirements established by the *Energy Policy Act of 1992*. The head of each agency reports annually to the Secretary of Energy on actions and progress under this order.
- EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations*. This EO, dated 11 February 1994, directs each Federal agency to make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low income populations in the United States and its territories and possessions, the District of Columbia, the Commonwealth of Puerto Rico, and the Commonwealth of the Mariana Islands.
- EO 12902, *Energy Efficiency and Water Conservation at Federal Facilities*. This EO, dated 8 March 1994, addresses agency goals and reporting requirements for energy and water efficiency at Federal facilities as well as suggestions on how to achieve those goals.
- EO 13221, *Energy Efficient Standby Power Devices*. This EO, dated 31 July 2001, mandates the purchase of energy efficient standby power devices [**Added October 2006**].
- Office of the Press Secretary; Memorandum for the Heads of Executive Departments and Agencies, September 26, 2005: *Energy and Fuel Conservation by Federal Agencies*. This Memorandum directs heads of executive departments and agencies (agencies) to take appropriate actions to conserve natural gas, electricity, gasoline, and diesel fuel to the maximum extent consistent with the effective discharge of public responsibilities. All agencies should conserve fuel so we can reduce overall demand and allow extra supplies to be directed towards the hurricane relief effort [**Added December 2005**].

#### *Waste Munitions*

- *Federal Facilities Compliance Act (FFCA)*. Section 107 of the FFCA of 1992 amended the Resource Conservation and Recovery Act (RCRA) by adding a new section 3004(y) that requires the USEPA to propose, after consulting with the Department of Defense (DoD) and appropriate State officials, and then to finalize regulations that identify when conventional and chemical military munitions become hazardous waste subject to Subtitle C of RCRA, and that provide for the safe storage and transportation of such waste. Such regulations are to assure the protection of human health and the environment [**Added April 2003**].
- DoD 6055.9-STD, *Ammunition and Explosives Safety Standards*. This standard, dated 29 February 2008, is implemented by 40 CFR 266.205(a)(1)(iii). It is issued under the authority of DoD Directive 6055.9E, *Explosives Safety Management and DoD Explosives Safety Board*, 19 August 2005. These Standards are designed to manage

risks associated with DoD-titled ammunition and explosives (AE) by providing protection criteria to minimize serious injury, loss of life, and damage to property. It is DoD policy to comply with the applicable Federal and State laws and regulations. Where the Standard conflicts with such laws and regulations, DoD components shall ensure the safety of DoD personnel and the public while complying and notify the Chairman, DDESB, through its Board Member, of the conflict. These Standards are not intended to be so rigid as to prevent the DoD Components from accomplishing their assigned missions [Added April 2003, Revised April 2009].

- DoD Directive 6055.9E, Explosives Safety Management and DoD Explosives Safety Board. This directive, dated 19 August 2005, updates policies, authorities, and responsibilities for DoD Explosives Safety Management (ESM) and continues to operate the DoD Explosives Safety Board (DDESB) as a standing joint board [Added April 2009].

### C. State/Local Regulations

For information on regulations in specific states, see the State Supplements to TEAM Guide.

#### *Environmental Noise*

State, regional, and local governmental agencies may develop zoning and planning ordinances that have the potential to affect facilities and their operations. As a general rule, states tend to treat environmental noise as a source-specific pollutant whose emissions will be controlled by the locally affected community.

#### *Waste Munitions*

Under RCRA, USEPA may authorize a State or Territory, instead of the Federal government, to administer and enforce the RCRA hazardous waste program. While the regulations adopted by a State or Territory have to be at least as stringent as the Federal regulations, RCRA allows States and Territories to impose standards that are more stringent than those in the Federal program. Therefore, compliance requirements may differ from State to State or Territory. In the 12 February 1997 Federal Register, page 6625, the USEPA strongly encourages States to adopt 40 CFR 266, Subpart M for regulating military munitions, the USEPA acknowledges that States may adopt requirements with respect to military munitions that are more stringent or broader in scope than the Federal requirements [Added April 2003].

The waste munitions requirements in 40 CFR 266, Subpart M are not considered as part of the Hazardous and Solid Waste Amendments (HSWA). Therefore, although USEPA retains enforcement authority under RCRA sections 3008, 3013, and 7003, they are not Federally enforceable in an authorized State until the necessary changes to a States' authorization have been approved by USEPA. For a more detailed explanation, see the Military Munitions Rule preamble, page 6648, part V. State Authority of the 12 February 1997 Federal Register (FR),

Some states have adopted the equivalent of 40 CFR 266 Subpart M and have incorporated these requirements into their state HW program but have not yet been authorized by USEPA to incorporate these rules into the federal RCRA program. As of September 2002, 31 states have adopted 40 CFR 266 Subpart M rules. Of these, 21 have been authorized by USEPA to implement those rules as part of the federally authorized RCRA program. Eleven states have not received USEPA authorization, but may still implement these rules on the strength of their state statutory authority. See: [http://www.epa.gov/epaoswer/hazwaste/state/stats/stats\\_rulespecific.htm](http://www.epa.gov/epaoswer/hazwaste/state/stats/stats_rulespecific.htm).) [Added April 2003].

	Rule Adopted	Rule Authorized	Authorization Effective Date
AK	N	N	
AL	N	Y	02/20/2001 FR
AR	Y	Y	06/24/2002 FR
AZ	Y	N	
CA	N	N	
CO	Y	N	
CT	N	N	

DC	Y	Y	11/09/2001 FR
DE	Y	Y	09/11/2000 FR
FL	Y	N	
GA	Y	Y	12/13/1999 FR
GU	N	N	
HI	Y	Y	11/13/2001 FR
IA	N	N	
ID	Y	Y	07/01/2002 FR
IL	Y	N	
IN	Y	Y	01/04/2001 FR
KS	Y	N	
KY	N	N	
LA	Y	Y	11/01/1999 FR
MA	N	N	
MD	N	N	
ME	N	N	
MI	Y	Y	07/31/2002 FR
MN	N	N	
MO	N	N	
MS	Y	N	
MT	Y	N	
NC	Y	Y	04/29/2002 FR
ND	N	N	
NE	N	N	
NH	N	N	
NJ	Y	N	
NM	Y	Y	10/09/2001 FR
NV	Y	Y	03/30/1999 FR
NY	Y	Y	01/15/2002 FR
OH	N	N	
OK	Y	Y	05/30/2000 FR
OR	Y	Y	09/10/2002 FR
PA	Y	Y	11/27/2000 FR
RI	N	N	
SC	Y	Y	10/22/2001 FR
SD	Y	N	
TN	Y	Y	11/21/2000 FR
TX	Y	N	
UT	N	N	
VA	Y	N	
VT	N	N	
WA	Y	Y	04/11/2002 FR
WI	N	N	
WV	Y	Y	07/10/2000 FR
WY	N	N	

#### **D. Key Compliance Requirements**

- EO 13423 Goals - The following is a summary of the goals outlined in EO 13423 **[Added January 2007]**:
  1. Vehicles: Increase purchase of alternative fuel, hybrid, and plug-in hybrid vehicles when commercially available.
  2. Petroleum Conservation: Reduce petroleum consumption in fleet vehicles by 2% annually through 2015.
  3. Alternative Fuel Use: Increase alternative fuel consumption at least 10% annually.

4. Energy Efficiency: Reduce energy intensity 30% by 2015.
  5. Greenhouse Gases: Reduce greenhouse gas emissions through reduction of energy intensity by 3% annually or 30% by 2105.
  6. Renewable Power: At least 50% of current renewable energy purchases must come from new renewable sources (in service after January 1, 1999).
  7. Building Performance: Construct or renovate buildings in accordance with sustainability strategies, including resource conservation, reduction, and use; siting; and indoor environmental quality.
  8. Water Conservation: Reduce water consumption intensity by 2% annually through 2015.
  9. Procurement: Expand purchases of environmentally-sound goods and services, including biobased products.
  10. Pollution Prevention: Reduce use of chemicals and toxic materials and purchase lower risk chemicals and toxic materials from top priority list.
  11. Electronics Management: Annually, 95% of electronic products purchased must meet Electronic Product Environmental Assessment Tool standards where applicable; enable Energy Star® features on 100% of computers and monitors; and reuse, donate, sell, or recycle 100% of electronic products using environmentally sound management practices.
  12. Environmental Management Systems: By 2010, increase to at least 2,500 the number of Federal operations that implement environmental management systems, up from about 1,000 today.
- EISs/Environmental Assessments (EAs) - An EIS must be produced if a proposed action causes potential for significant degradation of environmental quality, significant threat to public health or safety, there is public controversy concerning significance or nature of the biophysical, environmental impact of an action, or potential for significant impact on protected natural or historic sources. An EA may be produced before any contract for action is entered into or action is begun to determine if an EIS is necessary. All EAs must prompt either the preparation of a finding of no significant impact (FONSI) or an EIS. When used, FONSI must meet certain requirements, such as the name of the action, a brief description of the action, a discussion of environmental effects, the conclusions that have led to the FONSI, and the date of approval and appropriate signature (40 CFR 1502.4, 1502.10 through 1502.13, 1503.4(i), 1508.9, and 1508.13).
  - Environmental Noise - See the Agency-specific Supplement.
  - CERCLA Cleanup Sites - Site investigations are required to be conducted of potentially contaminated sites. If further actions are needed, the staff is required to participate in a detailed process of investigations and community relations.
  - Comprehensive Procurement Guidelines (CPG) - Government agencies are required to increase their purchases of products containing recovered materials. Types of products for which recommended recycle content has been established include:
    1. paper and paper products, excluding building and construction paper grades
    2. vehicular products
    3. construction products
    4. transportation products
    5. park and recreation products
    6. landscaping products
    7. non-paper office products.

CPG requirements apply to all procuring agencies and to all procurement actions involving items designated by USEPA, where the procuring agency purchases \$10,000 or more worth of one of these items during the course of a fiscal year, or where the cost of such items or of functionally equivalent items purchased during the preceding fiscal year was \$10,000 or more. This guideline applies to Federal agencies, to state and local agencies using appropriated Federal funds to procure designated items, and to persons contracting with any such agencies with respect to work performed under such contracts. Federal procuring agencies should note that the requirements of RCRA section 6002 apply to them whether or not appropriated Federal funds are used for procurement of designated items. The \$10,000 threshold applies to procuring agencies as a whole rather than to agency subgroups

such as regional offices or subagencies of a larger department or agency. The CPG guidelines do not apply to purchases of designated items that are unrelated to or incidental to Federal funding, i.e., not the direct result of a contract or agreement with, or a grant, loan, or funds disbursement to, a procuring agency. The guidelines also do not apply to purchases made by private party recipients (e.g., individuals, non-profit organizations) of Federal funds pursuant to grants, loans, cooperative agreements, and other funds disbursements (RCRA, Section 6002(c)(1); 40 CFR 247.2 through 247.17) **[Added July 2000]**.

## **E. Key Compliance Definitions**

- *2-Cycle Engine Oils* - lubricants designed for use in 2-cycle engines to provide lubrication, decreased spark plug fouling, reduced deposit formation, and/or reduced engine wear (7 CFR 3201.25(a)) **[Added July 2008, Citation Revised October 2011]**.
- *Abandoned Property* - property that can be presumed to be deserted, or an intent to relinquish possession or control can be inferred from the general disrepair or lack of activity thereon such that a reasonable person could believe that there was an intent on the part of the current owner to surrender rights to the property (40 CFR 312.10) **[Added April 2006]**.
- *Aboveground Magazines* - any open area, vehicle, or any aboveground structure not meeting the requirements of an ECM that is used for explosives storage (DoD 6055.9-STD, Appendix 1, para AP1.1.) **[Added April 2003, Revised April 2009]**.
- *Acquisition* - the acquiring of supplies and services as defined in Part 2 the Federal Acquisition Regulation. (FAR) (*Instructions for Implementing EO 13423*, Section XIII, Definitions) **[Added July 2007]**.
- *Acquisition* - the acquiring by contract with appropriated funds of supplies or services (including construction) by and for the use of the Federal Government through purchase or lease, whether the supplies or services are already in existence or must be created, developed, demonstrated, and evaluated. Acquisition begins at the point when agency needs are established and includes the description of requirements to satisfy agency needs, solicitation and selection of sources, award of contracts, contract financing, contract performance, contract administration, and those technical and management functions directly related to the process of fulfilling agency needs by contract (48 CFR 2.101) **[Added January 2008]**.
- *Acquisition Planning* - the process by which the efforts of all personnel responsible for an acquisition are coordinated and integrated through a comprehensive plan for fulfilling the agency need in a timely manner and at a reasonable cost. It includes developing the overall strategy for managing the acquisition (48 CFR 2.101) **[Added January 2008]**.
- *Action* - all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies in the United States or upon the high seas. Examples include, but are not limited to (50 CFR 402.02):
  1. actions intended to conserve listed species or their habitat
  2. the promulgation of regulations
  3. the granting of licenses, contracts, leases, easements, rights-of-way, permits, or grants-in-aid
  4. actions directly or indirectly causing modifications to the land, water, or air.
- *Active Range* - a military range that is currently in service and is being regularly used for range activities (40 CFR 266.201) **[Added April 2003]**.
- *Adhesive and Mastic Removers* - solvent products formulated for use in removing asbestos, carpet, and tile mastics as well as adhesive materials, including glue, tape, and gum, from various surface types (7 CFR 3201.16(a)) **[Added July 2008, Citation Revised October 2011]**.

- *Adjoining Properties* - any real property or properties the border of which is (are) shared in part or in whole with that of the subject property, or that would be shared in part or in whole with that of the subject property but for a street, road, or other public thoroughfare separating the properties (40 CFR 312.10) **[Added April 2006]**.
- *Agency* – in relation to FEMP, each authority of the Government of the United States, whether or not it is within or subject to review by another agency, but does not include (10 CFR 436) **[Added April 2009]**:
  1. The Congress, and agencies thereof;
  2. The courts of the United States;
  3. The governments of the territories or possessions of the United States; or
  4. The government of the District of Columbia.
- *Agency* - an executive agency as defined in section 105 of title 5, United States Code, excluding the Government Accountability Office. For the purpose of the E.O., military departments, as defined in 5 U.S.C. 102, are covered under the auspices of DoD (*Instructions for Implementing EO 13423*, Section XIII, Definitions) **[Added July 2007]**.
- *Agency* - an executive agency as defined in section 105 of title 5, United States Code, excluding the Government Accountability Office (EO 13423, Section 9, paragraph a) **[Added January 2007]**.
- *Agency Head or Head of the Agency* - the Secretary, Attorney General, Administrator, Governor, Chairperson, or other chief official of an executive agency, unless otherwise indicated, including any deputy or assistant chief official of an executive agency (48 CFR 2.101) **[Added January 2008]**.
- *Agricultural Materials* - agricultural-based, including plant, animal, and marine materials, raw materials or residues used in the manufacture of commercial or industrial, nonfood/nonfeed products (7 CFR 3201.2) **[Added April 2005, Citation Revised October 2011]**.
- *Agricultural Spray Adjuvants* - products mixed in the spray tank with the herbicide, pesticide, or fertilizer formulas that will improve the efficiency and the effectiveness of the chemicals, including sticking agents, wetting agents, etc (7 CFR 3201.88) **[Added October 2012]**.
- *Air Fresheners and Deodorizers* - products used to alleviate the experience of unpleasant odors by chemical neutralization, absorption, anesthetization, or masking (7 CFR 3201.75(a)) **[Added April 2012]**.
- *Alternative Fuel* - defined by Section 301 of the *Energy Policy Act of 1992*, as modified from time to time by the Secretary of Energy by rule. See 10 CFR 490.2 (*Instructions for Implementing EO 13423*, Section XIII, Definitions) **[Added July 2007]**.
- *Alternate* - a substantive variation of a basic provision or clause prescribed for use in a defined circumstance. It adds wording to, deletes wording from, or substitutes specified wording for a portion of the basic provision or clause. The alternate version of a provision or clause is the basic provision or clause as changed by the addition, deletion, or substitution (see 48 CFR 52.105(a)) (48 CFR 2.101) **[Added January 2008]**.
- *Alternative Fuel Vehicle* - a dedicated, flexible-fuel, bi-fuel, or dual-fuel vehicle powered by alternative fuel as defined in section 301 of EPCA 1992 (*Instructions for Implementing EO 13423*, Section XIII, Definitions) **[Added July 2007]**.
- *Ammunition* - generic term related mainly to articles of military application consisting of all kinds of bombs, grenades, rockets, mines, projectiles and other similar devices or contrivances (DoD 6055.9-STD, Appendix 1, para AP1.12.) **[Added April 2003, Revised April 2009]**.
- *Ammunition Storage Unit (ASU)* - all types of explosives storage magazines (e.g., open storage areas, sheds, bunkers, ECM, and AGM) (DoD 6055.9-STD, Appendix 1, para AP1.14.) **[Added April 2003, Revised April 2009]**.

- *Animal Cleaning Products* - products designed to clean, condition, or remove substances from animal hair or other parts of an animal (7 CFR 3201.89) **[Added October 2012]**.
- *Animal Repellents* - products used to aid in deterring animals that cause destruction to plants and/or property (7 CFR 3201.61) **[Added October 2011]**.
- *ASTM International* - ASTM International, a nonprofit organization organized in 1898, is one of the largest voluntary standards development organizations in the world with about 30,000 members in over 100 different countries. ASTM provides a forum for the development and publication of voluntary consensus standards for materials, products, systems, and services (7 CFR 3201.2) **[Added April 2005, Citation Revised October 2011]**.
- *Asphalt and Tar Removers* - cleaning agents designed to remove asphalt or tar from equipment, roads, or other surfaces (7 CFR 3201.76(a)) **[Added April 2012]**.
- *Asphalt Restorers* - products designed to seal, protect, or restore poured asphalt and concrete surfaces (7 CFR 3201.77(a)) **[Added April 2012]**.
- *Awards and Plaques* - free-standing statues and boardlike products generally used as wall-hangings (40 CFR 247.3) **[Added April 2000]**.
- *BEES* - an acronym for “Building for Environmental and Economic Sustainability,” an analytic tool used to determine the environmental and health benefits and life cycle costs of items, developed by the U.S. Department of Commerce National Institute of Standards and Technology, with support from the U.S. Environmental Protection Agency, Office of Pollution Prevention and Toxics (BEES 3.0, Building for Environmental and Economic Sustainability Technical Manual and User Guide, NISTIR 6916, National Institute of Standards and Technology, U.S. Department of Commerce, October 2002). Also, see [http://www.bfrl.nist.gov/oe/software/bees\\_USDA.html](http://www.bfrl.nist.gov/oe/software/bees_USDA.html) for a discussion of how biobased feedstocks are addressed in the BEES Analysis (7 CFR 3201.2) **[Added April 2005, Citation Revised October 2011]**.
- *Bath Products* - personal hygiene products including bar soaps, liquids, or gels that are referred to as body washes, body shampoos, or cleansing lotions, but excluding products marketed as hand cleaners and/or hand sanitizers (7 CFR 3201.62) **[Added October 2011]**.
- *Bathroom and Spa Cleaners* - products that are designed to clean and/or prevent deposits on surfaces found in bathrooms and spas including, but not necessarily limited to, bath tubs and spas, shower stalls, shower doors, shower curtains, and bathroom walls, floors, doors, and counter and sink tops. Products in this item may be designed to be applied to a specific type of surface or to multiple surface types. They are available both in concentrated and ready-to-use forms (7 CFR 3201.35) **[Added July 2008, Citation Revised October 2011]**.
- *Biobased Components* - any intermediary biobased materials or parts that, in combination with other components, are functional parts of the biobased product (7 CFR 3201.2) **[Added April 2005, Citation Revised October 2011]**.
- *Biobased Content* - biobased content shall be determined based on the amount of biobased carbon in the material or product as a percent of weight (mass) of the total organic carbon in the material or product (7 CFR 3201.2) **[Added April 2005, Citation Revised October 2011]**.
- *Biobased Product* - (7 CFR 3201.2) **[Added April 2005; Revised April 2011, Citation Revised October 2011; Revised July 2015]**.

1. A product determined by USDA to be a commercial or industrial product (other than food or feed) that is:

- a. Composed, in whole or in significant part, of biological products, including renewable domestic agricultural materials and forestry materials; or
    - b. An intermediate ingredient or feedstock.
  2. The term ``biobased product'' includes, with respect to forestry materials, forest products that meet biobased content requirements, notwithstanding the market share the product holds, the age of the product, or whether the market for the product is new or emerging.
- *Biobased Product* - a product determined by the U.S. Department of Agriculture to be a commercial or industrial product (other than food or feed) that is composed, in whole or in significant part, of biological products, including renewable domestic agricultural materials and forestry materials (48 CFR 2.101) **[Added January 2008; Revised April 2012]**.
  - *Biodegradability* - a quantitative measure of the extent to which a material is capable of being decomposed by biological agents, especially bacteria (7 CFR 3201.2) **[Added April 2006, Citation Revised October 2011]**.
  - *Biological Products* - products derived from living materials other than agricultural or forestry materials (7 CFR 3201.2) **[Added April 2005, Citation Revised October 2011]**.
  - *Bioremediation Materials* - dry or liquid solutions (including those containing bacteria or other microbes but not including sorbent materials) used to clean oil, fuel, and other hazardous spill sites (7 CFR 3201.63) **[Added October 2011]**.
  - *Blanket Insulation* - relatively flat and flexible insulation in coherent sheet form, furnished in units of substantial area. Batt insulation is included in this term (40 CFR 247.3) **[Added July 1999]**.
  - *Blast Media* - abrasive particles sprayed forcefully to clean, remove contaminants, or condition surfaces, often preceding coating (7 CFR 3201.78(a)) **[Added April 2012]**.
  - *Board Insulation* - Semi-rigid insulation preformed into rectangular units having a degree of suppleness, particularly related to their geometrical dimensions (40 CFR 247.3) **[Added July 1999]**.
  - *Building Insulation* - a material, primarily designed to resist heat flow, which is installed between the conditioned volume of a building and adjacent unconditioned volumes or the outside. This term includes but is not limited to insulation products such as blanket, board, spray-in-place, and loose-fill that are used as ceiling, floor, foundation, and wall insulation (40 CFR 247.3) **[Added July 1999]**.
  - *Burning for Energy Recovery* – when solid waste is (40 CFR 261.2(c)(2)((i))) **[Added April 2003]**:
    1. burned to recover energy;
    2. used to produce a fuel or are otherwise contained in fuels (in which cases the fuel itself remains a solid waste).
  - *Candles and Wax Melts* - products composed of a solid mass and either an embedded wick that is burned to provide light or aroma, or that are wickless and melt when heated to produce an aroma (7 CFR 3201.79(a)) **[Added April 2012]**.
  - *Carpet and Upholstery Cleaners* – this include (7 CFR 3201.34) **[Added July 2008, Citation Revised October 2011]**:
    1. Cleaning products formulated specifically for use in cleaning carpets and upholstery, through a dry or wet process, found in locations such as houses, cars, and workplaces.
    2. Carpet and upholstery cleaners for which preferred procurement applies are:
      - a. General purpose cleaners. Carpet and upholstery cleaners formulated for use in cleaning large areas such as the carpet in an entire room or the upholstery on an entire piece of furniture.

- b. Spot removers. Carpet and upholstery cleaners formulated for use in removing spots or stains in a small confined area.
- *Carpet Cushion* - also known as carpet underlay, is padding placed beneath carpet to reduce carpet wear caused by foot traffic or furniture indentation, enhance comfort, and prolong appearance (40 CFR 247.3) **[Added April 2000]**.
- *Carpets* – floor coverings composed of woven, tufted, or knitted fiber and a backing system (7 CFR 3201.33) **[Added July 2008, Citation Revised October 2011]**.
- *Ceiling Fan* - a nonportable device that is suspended from a ceiling for circulating air via the rotation of fan blades (10 CFR 430.2) **[Added January 2006]**.
- *Ceiling Fan Light Kit* - equipment designed to provide light from a ceiling fan that can be (10 CFR 430.2) **[Added January 2006]**:
  - 1. Integral, such that the equipment is attached to the ceiling fan prior to the time of retail sale; or
  - 2. Attachable, such that at the time of retail sale the equipment is not physically attached to the ceiling fan, but may be included inside the ceiling fan at the time of sale or sold separately for subsequent attachment to the fan.
- *Cellulose Fiber Loose-Fill* - a basic material of recycled wood-based cellulosic fiber made from selected paper, paperboard stock, or ground wood stock, excluding contaminated materials which may reasonably be expected to be retained in the finished product, with suitable chemicals introduced to provide properties such as flame resistance, processing and handling characteristics. The basic cellulosic material may be processed into a form suitable for installation by pneumatic or pouring methods (40 CFR 247.3) **[Added July 1999]**.
- *CERCLIS* - This is the abbreviation of the CERCLA information system, U.S. Environmental Protection Agency's (USEPA) comprehensive database and management system that inventories and tracks releases addressed or needing to be addressed by the Superfund program (40 CFR 300.5).
- *Certification* - a statement of professional opinion based upon knowledge and belief (40 CFR 260.10) **[Added April 2003]**.
- *Chain and Cable Lubricants* - products designed to provide lubrication in such applications as bar and roller chains, sprockets, and wire ropes and cables. Products may also prevent rust and corrosion in these applications (7 CFR 3201.43(a)) **[Added January 2010, Citation Revised October 2011]**.
- *Chairman of the Council* - the Chairman of the Council on Environmental Quality (CEQ), including in the Chairman's capacity as Director of the Office of Environmental Quality (EO 13423, Section 9, paragraph b) **[Added January 2007]**.
- *Channelizers* - highly visible barrels or drums that can be positioned to direct traffic through detours (40 CFR 247.3) **[Added July 1999]**.
- *Characteristics of Hazardous Waste* - the characteristics of ignitability, corrosivity, reactivity, and toxicity that identify hazardous waste (40 CFR 261.20 through 261.24) **[Added April 2003]**.
- *Chemical Agent (CA)* - a chemical compound (to include experimental compounds) that, through its chemical properties, produces lethal or other damaging effects on human beings, and is intended for use in military operations to kill, seriously injure, or incapacitate persons through its physiological effects. Excluded are research, development, test and evaluation solutions; riot control agents; chemical defoliants and herbicides; smoke and other obscuration materials; flame and incendiary materials; and industrial chemicals (DoD 6055.9-STD, Appendix 1, para AP1.33.) **[Added April 2009]**.

- *Chemical Agent (CA) Hazard* - a condition where danger exists because CA is present in a concentration high enough to present potential unacceptable effects (e.g., death, injury, damage) to people, operational capability, or the environment (DoD 6055.9-STD, Appendix 1, para AP1.34.) **[Added April 2009]**.
- *Chemical Agents and Munitions* - an agent or munition that, through its chemical properties, produces lethal or other damaging effects on human beings, except that such term does not include riot control agents, chemical herbicides, smoke and other obscuration materials (50 U.S.C. section 1521(j)(1)) **[Added April 2003]**.
- *Chemical Warfare Material (CWM)* - items generally configured as a munition containing a chemical compound that is intended to kill, seriously injure, or incapacitate a person through its physiological effects. CWM includes V- and G-series nerve agents or H-series (mustard) and L-series (lewisite) blister agents in other-than-munition configurations; and certain industrial chemicals (e.g., Hydrogen Cyanide (AC), Cyanogen Chloride (CK), or Carbonyl Dichloride (called phosgene or CG)) configured as a military munition. Due to their hazards, prevalence, and military-unique application, chemical agent identification set (CAIS) are also considered CWM. CWM does not include: riot control devices; chemical defoliants and herbicides; industrial chemicals (e.g., AC, CK, or CG) not configured as a munition; smoke and other obscuration-producing items; flame- and incendiary-producing items; or soil, water, debris or other media contaminated with low concentrations of chemical agents where no CA hazards exist (DoD 6055.9-STD, Appendix 1, para AP1.36.) **[Added April 2009]**.
- *Chemical Warfare Material (CWM) Response* - munitions responses and other responses to address the chemical safety; explosives safety, when applicable; human health; or environmental risks presented by CA-filled munitions and CA in other than munitions configurations (DoD 6055.9-STD, Appendix 1, para AP1.37.) **[Added April 2009]**.
- *Commercial Item* – this means (48 CFR 2.101) **[Added January 2008]**:
  1. Any item, other than real property, that is of a type customarily used by the general public or by non-governmental entities for purposes other than governmental purposes, and:
    - a. Has been sold, leased, or licensed to the general public; or
    - b. Has been offered for sale, lease, or license to the general public;
  2. Any item that evolved from an item described in paragraph (1) of this definition through advances in technology or performance and that is not yet available in the commercial marketplace, but will be available in the commercial marketplace in time to satisfy the delivery requirements under a Government solicitation;
  3. Any item that would satisfy a criterion expressed in paragraphs (1) or (2) of this definition, but for:
    - a. Modifications of a type customarily available in the commercial marketplace; or
    - b. Minor modifications of a type not customarily available in the commercial marketplace made to meet Federal Government requirements. Minor modifications means modifications that do not significantly alter the nongovernmental function or essential physical characteristics of an item or component, or change the purpose of a process. Factors to be considered in determining whether a modification is minor include the value and size of the modification and the comparative value and size of the final product. Dollar values and percentages may be used as guideposts, but are not conclusive evidence that a modification is minor;
  4. Any combination of items meeting the requirements of paragraphs (1), (2), (3), or (5) of this definition that are of a type customarily combined and sold in combination to the general public;
  5. Installation services, maintenance services, repair services, training services, and other services if:
    - a. Such services are procured for support of an item referred to in paragraph (1), (2), (3), or (4) of this definition, regardless of whether such services are provided by the same source or at the same time as the item; and
    - b. The source of such services provides similar services contemporaneously to the general public under terms and conditions similar to those offered to the Federal Government;
  6. Services of a type offered and sold competitively in substantial quantities in the commercial marketplace based on established catalog or market prices for specific tasks performed or specific outcomes to be achieved and under standard commercial terms and conditions. For purposes of these services:

- a. Catalog price means a price included in a catalog, price list, schedule, or other form that is regularly maintained by the manufacturer or vendor, is either published or otherwise available for inspection by customers, and states prices at which sales are currently, or were last, made to a significant number of buyers constituting the general public; and
    - b. Market prices means current prices that are established in the course of ordinary trade between buyers and sellers free to bargain and that can be substantiated through competition or from sources independent of the offerors.
  - 7. Any item, combination of items, or service referred to in paragraphs (1) through (6) of this definition, notwithstanding the fact that the item, combination of items, or service is transferred between or among separate divisions, subsidiaries, or affiliates of a contractor; or
  - 8. A nondevelopmental item, if the procuring agency determines the item was developed exclusively at private expense and sold in substantial quantities, on a competitive basis, to multiple State and local governments.
- *Common Item* - material that is common to the applicable Government contract and the contractor's other work (48 CFR 2.101) **[Added January 2008]**.
  - *Composite Panels* – this include (7 CFR 3201.19(a)) **[Added July 2008, Citation Revised October 2011]**:
    - 1. Plastic lumber composite panels. Engineered products suitable for non-structural outdoor needs such as exterior signs, trash can holders, and dimensional letters.
    - 2. Acoustical composite panels. Engineered products designed for use as structural and sound deadening material suitable for office partitions and doors.
    - 3. Interior panels. Engineered products designed specifically for interior applications and providing a surface that is impact-, scratch-, and wear-resistant and that does not absorb or retain moisture.
    - 4. Structural interior panels. Engineered products designed for use in structural construction applications, including cabinetry, casework, paneling, and decorative panels.
    - 5. Structural wall panels. Engineered products designed for use in structural walls, curtain walls, floors and flat roofs in commercial buildings.
  - *Compost* - a thermophilic converted product with high humus content. Compost can be used as a soil amendment and can also be used to prevent or remediate pollutants in soil, air, and storm water run-off (40 CFR 247.3) **[Added April 2000; Revised October 2007]**.
  - *Compost Activators and Accelerators* - products in liquid or powder form designed to be applied to compost piles to aid in speeding up the composting process and to ensure successful compost that is ready for consumer use (7 CFR 3201.64) **[Added October 2011]**.
  - *Computer Monitor* - a video display unit used with a computer (48 CFR 23.701) **[Added January 2008]**.
  - *Concrete and Asphalt Cleaners* - chemicals used in concrete etching as well as to remove petroleum-based soils, lubricants, paints, mastics, organic soils, rust, and dirt from concrete, asphalt, stone and other hard porous surfaces. Products within this item include only those marketed for use in commercial or residential construction or industrial applications (7 CFR 3201.65) **[Added October 2011]**.
  - *Concrete and Asphalt Release Fluids* - products that are designed to provide a lubricating barrier between the composite surface materials (e.g., concrete or asphalt) and the container (e.g., wood or metal forms, truck beds, roller surfaces) (7 CFR 3201.36) **[Added July 2008, Citation Revised October 2011]**.
  - *Conditional Exemption (CE)* - an exemption from the regulatory definition of hazardous waste (and therefore from compliance with specific environmental requirements pertaining to the storage of hazardous waste) conditioned on compliance with certain criteria requirements as in 40 CFR 266.205 [NOTE: This is NOT the same classification as a hazardous waste conditionally exempt small quantity generator (CESQG).] (DoD 6055.9-STD, Appendix 1, para AP1.46.) **[Added April 2003, Citation Revised April 2009]**.

- *Construction* - construction, alteration, or repair (including dredging, excavating, and painting) of buildings, structures, or other real property. For purposes of this definition, the terms "buildings, structures, or other real property" include, but are not limited to, improvements of all types, such as bridges, dams, plants, highways, parkways, streets, subways, tunnels, sewers, mains, power lines, cemeteries, pumping stations, railways, airport facilities, terminals, docks, piers, wharves, ways, lighthouses, buoys, jetties, breakwaters, levees, canals, and channels. Construction does not include the manufacture, production, furnishing, construction, alteration, repair, processing, or assembling of vessels, aircraft, or other kinds of personal property (48 CFR 2.101) **[Added January 2008]**.
- *Contiguous United States (CONUS)* - the 48 contiguous States and the District of Columbia (48 CFR 2.101) **[Added January 2008]**.
- *Contract Action* - any oral or written action that results in the purchase, rent, or lease of supplies or equipment, services, or construction using appropriated dollars, including purchases below the micro-purchase threshold. Contract action does not include grants, cooperative agreements, other transactions, real property leases, requisitions from Federal stock, training authorizations, or other non-FAR based transactions (48 CFR 23.101) **[Added July 2011]**.
- *Contract Clause or Clause* - a term or condition used in contracts or in both solicitations and contracts, and applying after contract award or both before and after award (48 CFR 2.101) **[Added January 2008]**.
- *Contracting* - purchasing, renting, leasing, or otherwise obtaining supplies or services from nonfederal sources. Contracting includes description (but not determination) of supplies and services required, selection and solicitation of sources, preparation and award of contracts, and all phases of contract administration. It does not include making grants or cooperative agreements (48 CFR 2.101) **[Added January 2008]**.
- *Corrosion Preventatives* - products designed to prevent the deterioration (corrosion) of metals (7 CFR 3201.44(a)) **[Added January 2010, Citation Revised October 2011]**.
- *Council* - the Council on Environmental Quality (EO 13423, Section 9, paragraph c) **[Added January 2007]**.
- *Covered Product* - a product that is of a category for which an ENERGY STAR qualification or FEMP designation is established (10 CFR 436.41) **[Added April 2009]**.
- *Cuts, Burns, and Abrasions Ointments* - products designed to aid in the healing and sanitizing of scratches, cuts, bruises, abrasions, sun damaged skin, tattoos, rashes and other skin conditions (7 CFR 3201.66) **[Added October 2011]**.
- *dBA* - sound level in decibels, measured using the A-weighting network of a sound level meter.
- *dB(C)* - a sound level in decibels, measured using the C-weighting network of a sound level meter.
- *Data Gap* - a lack of or inability to obtain information required by the standards and practices listed in subpart C of this part despite good faith efforts by the environmental professional or persons identified under 40 CFR 312.1(b), as appropriate, to gather such information pursuant to 40 CFR 312.20(e)(1) and 312.20(e)(2) (40 CFR 312.10) **[Added April 2006]**.
- *Date of Acquisition or Purchase Date* - the date on which a person acquires title to the property (40 CFR 312.10) **[Added April 2006]**.
- *Decibel (dB)* - sound is measured in decibels. The zero on the decibel scale is based on the lowest sound level that a healthy, unimpaired human ear can hear. Decibels are not linear, but representative points on a sharply rising (exponential) curve.

- *Dehumidifier* - a self-contained, electrically operated, and mechanically encased assembly consisting of (10 CFR 430.2) **[Added January 2006]**:
  1. A refrigerated surface (evaporator) that condenses moisture from the atmosphere;
  2. A refrigerating system, including an electric motor;
  3. An air-circulating fan; and
  4. Means for collecting or disposing of the condensate.
- *Delineator* - a highly visible pavement marker that can be positioned to direct traffic or define boundaries (40 CFR 247.3) **[Added July 1999]**.
- *Deodorants* - products that are designed for inhibiting or masking perspiration and other body odors and that are often combined with an antiperspirant (7 CFR 3201.90) **[Added October 2012]**.
- *Designated Item* - a generic grouping of biobased products identified in subpart B that is eligible for the procurement preference established under section 9002 of FSRIA (7 CFR 3201.2) **[Added April 2005, Citation Revised October 2011]**.
- *Desktop Computer* - a computer designed for use on a desk or table (48 CFR 23.701) **[Added January 2008]**.
- *Dethatchers* - products used to remove non-decomposed plant material accumulated in grassy areas (7 CFR 3201.91) **[Added October 2012]**.
- *Diesel Fuel Additives* - any substance, other than one composed solely of carbon and/or hydrogen, that is intentionally added to diesel fuel [including any added to a motor vehicle's fuel system] and that is not intentionally removed prior to sale or use. Diesel fuel additive does not mean neat biodiesel [B100] when used as a fuel or blended biodiesel fuel [e.g., B20] (7 CFR 3201.13(a)) **[Added July 2008, Citation Revised October 2011]**.
- *Diluent* - a substance used to diminish the strength, scent, or other basic property of a substance (7 CFR 3201.2) **[Added April 2005, Citation Revised October 2011]**.
- *Discharge or Hazardous Waste Discharge* - the accidental or intentional spilling, leaking, pumping, pouring, emitting, emptying, or dumping of hazardous waste into or on any land or water (40 CFR 260.10) **[Added April 2003]**.
- *Dishwashing Products* - soaps and detergents used for cleaning and clean rinsing of tableware in either hand washing or dishwashing (7 CFR 3201.67) **[Added October 2011]**.
- *Disposal* - the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water so that such solid waste or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including groundwaters (40 CFR 260.10) **[Added April 2003]**.
- *Disposable Containers* - products designed to be used for temporary storage or transportation of materials including, but not limited to, food items (7 CFR 3201.21(a)) **[Added July 2008, Citation Revised October 2011]**.
- *Disposable Cutlery* - hand-held, disposable utensils designed for one-time use in eating food (7 CFR 3201.29(a)) **[Added July 2008, Citation Revised October 2011]**.
- *Disposable Tableware* - products made from, or coated with, plastic resins and used in dining, such as drink ware and dishware, including but not limited to cups, plates, bowls, and serving platters, and that are designed for one-

time use. This item does not include disposable cutlery, which is a separate item (7 CFR 3201.52) [Added January 2011, Citation Revised October 2011].

- *Disposal Facility* - a facility or part of a facility at which hazardous waste is intentionally placed into or on any land or water, and at which waste will remain after closure. The term disposal facility does not include a corrective action management unit into which remediation wastes are placed (40 CFR 260.10) [Added April 2003].
- *DoD Mishap* - an unplanned event or series of events that result in damage to DoD property, occupational illness to DoD military or civilian personnel, injury to DoD military personnel on or off duty, injury to on-duty civilian personnel; damage to public and private property, or injury and illness to non-DoD personnel as a result of DoD operations (DoD 6055.9-STD, Appendix 1, para AP1.1.1.31.) [Added April 2003].
- *Dust Suppressants* - products formulated to reduce or eliminate the spread of dust associated with gravel roads, dirt parking lots, or similar sources of dust, including products used in equivalent indoor applications (7 CFR 3201.32(a)) [Added July 2008, Citation Revised October 2011].
- *EIS (Environmental Impact Statement)* - a detailed statement by the responsible official on (40 CFR 1508.11):
  1. the environmental impact of the proposed action
  2. any adverse environmental effects which cannot be avoided should the proposal be implemented
  3. alternatives to the proposed action
  4. the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity
  5. any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.
- *Electronic and Information Technology (EIT)* – this phrase has the same meaning as “information technology” except EIT also includes any equipment or interconnected system or subsystem of equipment that is used in the creation, conversion, or duplication of data or information. The term EIT, includes, but is not limited to, telecommunication products (such as telephones), information kiosks and transaction machines, worldwide websites, multimedia, and office equipment (such as copiers and fax machines) (48 CFR 2.101) [Added January 2008].
- *Electronic Components Cleaners* - products that are designed to wash or remove dirt or extraneous matter from electronic parts, devices, circuits, or systems (7 CFR 3201.80(a)) [Added April 2012].
- *Energy Efficiency* - measures, practices, or programs that reduce the energy used by specific devices and systems, typically without adversely affecting the services provided. Such savings are generally achieved by substituting technically more advanced equipment or by improving operating procedures (e.g., operations and maintenance procedures) to produce the same level of end-use services (e.g., lighting, heating, motor drive) with less energy input (*Instructions for Implementing EO 13423*, Section XIII, Definitions) [Added July 2007].
- *Energy-Efficient Product* - a product that (48 CFR 2.101) [Added January 2008]:
  1. Meets Department of Energy and Environmental Protection Agency criteria for use of the Energy Star trademark label; or
  2. Is in the upper 25 percent of efficiency for all similar products as designated by the Department of Energy's Federal Energy Management Program.
- *Energy-Efficient Standby Power Devices* - products that use (48 CFR 2.101) [Added January 2008]:
  1. External standby power devices, or that contain an internal standby power function; and
  2. No more than one watt of electricity in their standby power consuming mode or meet recommended low standby levels as designated by the Department of Energy Federal Energy Management Program.

- *Energy Intensity* - energy consumption per square foot of building space, including industrial or laboratory facilities (EO 13423, Section 9, paragraph i) [**Added January 2007**].
- *Energy Intensity* - energy consumption per gross square foot of building space, including industrial and laboratory facilities (*Instructions for Implementing EO 13423*, Section XIII, Definitions) [**Added July 2007**].
- *Energy-Savings Performance Contract* - a contract that requires the contractor to (48 CFR 2.101) [**Added January 2008**]:
  1. Perform services for the design, acquisition, financing, installation, testing, operation, and where appropriate, maintenance and repair, of an identified energy conservation measure or series of measures at one or more locations;
  2. Incur the costs of implementing the energy savings measures, including at least the cost (if any) incurred in making energy audits, acquiring and installing equipment, and training personnel in exchange for a predetermined share of the value of the energy savings directly resulting from implementation of such measures during the term of the contract; and
  3. Guarantee future energy and cost savings to the Government.
- *Energy Savings Performance Contract (ESPC)* - a contract (such as a task ordered by DOE and awarded to an energy service company) that provides for the performance of services for the design, acquisition, financing, installation, testing, operation, and maintenance and repair, of an identified energy, water conservation or renewable energy measure or series of measures at one or more locations. Such contracts shall provide that the contractor must incur costs of implementing energy savings measures, including at least the cost (if any) incurred in making energy audits, acquiring and installing equipment, and training personnel in exchange for a predetermined share of the value of the energy savings directly resulting from implementation of such measures during the term of the contract. Payment to the contractor is contingent upon realizing a guaranteed stream of future energy and cost savings, with any savings in excess of that guaranteed by the contractor accruing to the Federal government (*Instructions for Implementing EO 13423*, Section XIII, Definitions) [**Added July 2007**].
- *Energy Star Product* - a product that is rated for energy efficiency under an Energy Star program (EPACT 2005, Section 104(a)(2)) [**Added October 2006**].
- *Energy Star Program* - the program established by section 324A of the Energy Policy and Conservation Act (EPACT 2005, Section 104(a)(3)) [**Added October 2006**].
- *ENERGY STAR Qualified Product* - a product that is rated for energy efficiency under an ENERGY STAR program established by section 324A of the Energy Policy and Conservation Act (42 U.S.C. 6294a) (10 CFR 436.41) [**Added April 2009**].
- *Engineered Wood Products* - products produced with a combination of wood, food fibers and adhesives (7 CFR 3201.2) [**Added April 2005, Citation Revised October 2011**].
- *Engine Lubricating Oils* - petroleum-based oils used for reducing friction in engine parts (40 CFR 247.3) [**Added July 1999**].
- *Environmental* - environmental aspects of internal agency operations and activities, including those aspects related to energy and transportation functions (48 CFR 23.001) [**Added July 2011**].
- *Environmental* - environmental aspects of internal agency operations and activities, including those environmental aspects related to energy and transportation functions (EO 13423, Section 9, paragraph d) [**Added January 2007**].
- *Environmental Assessment (EA)* - a concise public document for which a Federal agency is responsible that serves to briefly provide sufficient evidence and analysis for determining whether to prepare an EIS or a FONSI (40 CFR 1508.9).

- *Environmental Professional* (40 CFR 312.10) **[Added April 2006]**:
  1. a person who possesses sufficient specific education, training, and experience necessary to exercise professional judgment to develop opinions and conclusions regarding conditions indicative of releases or threatened releases (see 40 CFR 312.1(c)) on, at, in, or to a property, sufficient to meet the objectives and performance factors in 40 CFR 312.20(e) and 312.20(f).
  2. Such a person must:
    - a. Hold a current Professional Engineer's or Professional Geologist's license or registration from a state, tribe, or U.S. territory (or the Commonwealth of Puerto Rico) and have the equivalent of 3 yr of full-time relevant experience; or
    - b. Be licensed or certified by the federal government, a state, tribe, or U.S. territory (or the Commonwealth of Puerto Rico) to perform environmental inquiries as defined in 40 CFR 312.21 and have the equivalent of 3 yr of full-time relevant experience; or
    - c. Have a Baccalaureate or higher degree from an accredited institution of higher education in a discipline of engineering or science and the equivalent of 5 yr of full-time relevant experience; or
    - d. Have the equivalent of ten (10) years of full-time relevant experience.
  3. An environmental professional should remain current in his or her field through participation in continuing education or other activities.
  4. The definition of environmental professional provided above does not preempt state professional licensing or registration requirements such as those for a professional geologist, engineer, or site remediation professional. Before commencing work, a person should determine the applicability of state professional licensing or registration laws to the activities to be undertaken as part of the inquiry identified in 40 CFR 312.21(b).
  5. A person who does not qualify as an environmental professional under the foregoing definition may assist in the conduct of all appropriate inquiries in accordance with this part if such person is under the supervision or responsible charge of a person meeting the definition of an environmental professional provided above when conducting such activities.
- *Environmentally Preferable* - products or services that have a lesser or reduced effect on human health and the environment when compared with competing products or services that serve the same purpose. This comparison may consider raw materials acquisition, production, manufacturing, packaging, distribution, reuse, operation, maintenance, or disposal of the product or service (48 CFR 2.101) **[Added January 2008]**:
- *Environmentally Preferable* - products or services that have a lesser or reduced effect on human health and the environment when compared with competing products or services that serve the same purpose. This comparison may consider raw materials acquisition, product, manufacturing, packaging, distribution, reuse, operation, maintenance, or disposal of the product or service (*Instructions for Implementing EO 13423*, Section XIII, Definitions) **[Added July 2007]**.
- *EPA-designated Item* - an item designated by EPA in a Comprehensive Procurement Guideline and for which EPA recommended procurement practices, including recovered materials content levels, in a Recovered Materials Advisory Notice (RMAN) (*Instructions for Implementing EO 13423*, Section XIII, Definitions) **[Added July 2007]**.
- *EPA-designated Recovered Content Product* - a product, designated under the *Resource Conservation and Recovery Act*, that is subject to Federal procurement as specified in section 6002 of the *Solid Waste Disposal Act* (42 U.S.C. 6962), whereby Federal agencies must give preferred procurement to those products composed of the highest percentage of recovered materials practicable, subject to availability, cost, and performance (7 CFR 3201.2) **[Added April 2006, Citation Revised October 2011]**.
- *Erosion Control Materials* - woven or non-woven fiber materials manufactured for use on construction, demolition, or other sites to prevent wind or water erosion of loose earth surfaces, which may be combined with seed and/or fertilizer to promote growth (7 CFR 3201.68) **[Added October 2011]**.

- *Expanded Polystyrene (EPS) Foam Recycling Products* - products formulated to dissolve EPS foam to reduce the volume of recycled or discarded EPS items (7 CFR 3201.53) [Added January 2011, Citation Revised October 2011].
- *Explosive* - for the purposes of DoD 6055.9-STD, a substance or a mixture of substances that is capable by chemical reaction of producing gas at such temperature, pressure, and speed as to cause damage to the surroundings. The term “explosive” includes all substances variously known as high explosives and propellants, together with igniters, primers, initiators, and pyrotechnics (e.g., illuminant, smoke, delay, decoy, flare, and incendiary compositions) (DoD 6055.9-STD, Appendix 1, para AP1.85.) [Added April 2009].
- *Explosives Facility* - any structure or location containing ammunition and explosives excluding combat aircraft parking areas or ammunition and explosives aircraft cargo areas (DoD 6055.9-STD, Appendix 1, para AP1.1.1.37.) [Added April 2003].
- *Explosives or Munitions Emergency* - a situation involving the suspected or detected presence of unexploded ordnance (UXO), damaged or deteriorated explosives or munitions, an improvised explosive device (IED), other potentially explosive material or device, or other potentially harmful military chemical munitions or device, that creates an actual or potential imminent threat to human health, including safety, or the environment, including property, as determined by an explosives or munitions emergency response specialist. Such situation may require immediate and expeditious action by an explosives or munitions emergency response specialist to control, mitigate, or eliminate the threat (40 CFR 260.10 and 266.201) [Added April 2003].
- *Explosives or Munitions Emergency Response* - all immediate response activities by an explosives and munitions emergency response specialist to control, mitigate, or eliminate the actual or potential threat encountered during an explosives or munitions emergency. An explosives or munitions emergency response may include in-place render safe procedures, treatment, or destruction of the explosives or munitions and/or transporting those items to another location to be rendered safe, treated, or destroyed. Any reasonable delay in the completion of an explosives or munitions emergency response caused by a necessary, unforeseen, or uncontrollable circumstance will not terminate the explosives or munitions emergency. Explosives and munitions emergency responses can occur on either public or private lands and are not limited to responses at RCRA facilities (40 CFR 260.10 and 266.201) [Added April 2003].
- *Explosives or Munitions Emergency Response Specialist* - an individual trained in chemical or conventional munitions or explosives handling, transportation, render-safe procedures, or destruction techniques. Explosives or munitions emergency response specialists include Department of Defense (DoD) emergency explosive ordnance disposal (EOD), technical escort unit (TEU), and DoD-certified civilian or contractor personnel; and other Federal, State, or local government, or civilian personnel similarly trained in explosives or munitions emergency responses (40 CFR 260.10 and 266.201) [Added April 2003].
- *FCEA* - The Food, Conservation and Energy Act of 2008, Pub. L. 110-246 (7 CFR 3201.2) [Added April 2011, Citation Revised October 2011].
- *FONSI (Finding of No Significant Impact)* - a document that briefly presents the reasons why an action, not otherwise excluded, does not need an EIS (40 CFR 1508.13).
- *FSRIA* - the Farm Security and Rural Investment Act of 2002, Public Law 107-171, 116 Stat. 134 (7 U.S.C. 8102) (7 CFR 3201.2) [Added April 2005, Citation Revised October 2011].
- *Facility* - any building, installation, structure, land, and other property owned or operated by, or constructed or manufactured and leased to, the Federal Government, as well as any fixture. This term includes a group of facilities at a single or multiple location(s) managed as an integrated operation, as well as government-owned contractor operated facilities. For purposes of energy reporting, “facility” excludes land and sites where the utilities are not paid by the reporting agency (i.e., in cases where no separate periodic invoice for utilities is required to be paid) (*Instructions for Implementing EO 13423*, Section XIII, Definitions) [Added July 2007].

- *Feasibility Study (FS)* - a study undertaken by the lead agency to develop and evaluate options for remedial action (40 CFR 300.5).
- *Federal Agency* - any executive agency or independent establishment in the legislative or judicial branch of the Government (except the Senate, the House of Representatives, the Architect of the Capitol, and any activities under the Architect's direction) (7 CFR 3201.2) [Added April 2005, Citation Revised October 2011].
- *Federal Agency* - any department, agency, or other instrumentality of the Federal government; any independent agency or establishment of the Federal government including any government corporation; and the Government Printing Office (40 CFR 247.3) [Added July 1999].
- *FEMP Designated Product* - a product that is designated under the Federal Energy Management Program of the Department of Energy as being among the highest 25 percent of equivalent products for energy efficiency (EPACT 2005, Section 104(a)(4) and 10 CFR 436.41) [Added October 2006, Citation Revised April 2009].
- *Fertilizer Made From Recovered Organic Materials* - a single or blended substance, made from organic matter such as plant and animal by-products, manure-based or biosolid products, and rock and mineral powders, that contains one or more recognized plant nutrient(s) and is used primarily for its plant nutrient content and is designed for use or claimed to have value in promoting plant growth (40 CFR 247.3) [Added October 2007].
- *Fertilizers* - products formulated or processed to provide nutrients for plant growth and/or beneficial bacteria to convert nutrients into plant usable forms. Biobased fertilizers, which are likely to consist mostly of biobased components, may include both biobased and chemical components. (NOTE: Biobased fertilizers, as well as other fertilizers, may be made with recycled hazardous waste. Such fertilizers need to meet applicable land disposal restriction standards for any hazardous constituents they contain, as required under 40 CFR 266.20(d).) (7 CFR 3201.22) [Added July 2008, Citation Revised October 2011].
- *Fiberglass Insulation* - insulation which is composed principally of glass fibers, with or without binders (40 CFR 247.3) [Added July 1999].
- *Filler* - a substance added to a product to increase the bulk, weight, viscosity, strength, or other property.
- *Films* – this includes (7 CFR 3201.27) [Added July 2008, Citation Revised October 2011]:
  1. Products that are used in packaging, wrappings, linings, and other similar applications.
  2. Films for which preferred procurement applies are:
    - a. Semi-durable films. Films that are designed to resist water, ammonia, and other compounds, to be re-used, and to not readily biodegrade. Products in this item are typically used in the production of bags and packaging materials.
    - b. Non-durable films. Films that are intended for single use for short-term storage or protection before being discarded. Non-durable films that are designed to have longer lives when used are included in this item.
- *Firearm Lubricants* - lubricants that are designed for use in firearms to reduce the friction and wear between the moving parts of a firearm, and to keep the weapon clean and prevent the formation of deposits that could cause the weapon to jam (7 CFR 3201.38) [Added July 2008, Citation Revised October 2011].
- *Flexible Delineator* - a highly visible marker that can be positioned to direct traffic or define boundaries and that will flex if struck by a vehicle to prevent damage to the vehicle or the delineator (40 CFR 247.3) [Added July 1999].
- *Floor Cleaners and Protectors* - cleaning solutions for either direct application or use in floor scrubbers for wood, vinyl, tile, or similar hard surface floors. Products within this item are marketed specifically for use on industrial, commercial, and/or residential flooring (7 CFR 3201.69) [Added October 2011].

- *Floor Strippers* - products that are formulated to loosen waxes, resins, or varnishes from floor surfaces. They can be in either liquid or gel form, and may also be used with or without mechanical assistance (7 CFR 3201.39) **[Added July 2008, Citation Revised October 2011]**.
- *Flowable Fill* - a low strength material that is mixed to a wet, flowable slurry and used as an economical fill or backfill material in place of concrete, compacted soils, or sand (40 CFR 247.3) **[Added April 2000]**.
- *Floor Coverings (Non-Carpet)* - products, other than carpet products, that are designed for use as the top layer on a floor. Examples are bamboo, hardwood, and cork tiles (7 CFR 3201.81(a)) **[Added April 2012]**.
- *Fluid-filled Transformers* – this includes (7 CFR 3201.20(a)) **[Added July 2008, Citation Revised October 2011]**.
  1. Synthetic ester-based fluid-filled transformers which are electric power transformers that are designed to utilize a synthetic ester-based dielectric (non-conducting) fluid to provide insulating and cooling properties.
  2. Vegetable oil-based fluid-filled transformers which are electric power transformers that are designed to utilize a vegetable oil-based dielectric (non-conducting) fluid to provide insulating and cooling properties.
- *Foam-in-place Insulation* - this is rigid cellular foam produced by catalyzed chemical reactions that hardens at the site of the work. The term includes spray-applied and injected applications such as spray-in-place foam and pour-in-place (40 CFR 247.3) **[Added July 1999]**.
- *Food Cleaners* - anti-microbial products designed to clean the outer layer of various food products, such as fruit, vegetables, and meats (7 CFR 3201.45(a)) **[Added January 2010, Citation Revised October 2011]**.
- *Foot Care Products* - products formulated to be used in the soothing or cleaning of feet (40 CFR 3201.82(a)) **[Added April 2012]**.
- *Forest Product* - a product made from materials derived from the practice of forestry or the management of growing timber. The term "forest product" includes (7 CFR 3201.2) **[Added July 2015]**:
  1. Pulp, paper, paperboard, pellets, lumber, and other wood products; and
  2. Any recycled products derived from forest materials.
- *Forest Thinnings* - refers to woody materials removed from a dense forest, primarily to improve growth, enhance forest health, or recover potential mortality. (To recover potential mortality means to remove trees that are going to die in the near future) (7 CFR 3201.2) **[Added April 2005, Citation Revised October 2011]**.
- *Forestry Materials* - materials derived from the practice of planting and caring for forests and the management of growing timber. Such materials must come from short rotation woody crops (less than 10 yr old), sustainably managed forests, wood residues, or forest thinnings (7 CFR 3201.2) **[Added April 2005, Citation Revised October 2011]**.
- *Former or Non-Operational Range* - encompasses Closed, Transferred and Transferring Ranges as these terms are defined in federal regulations (40 CFR 266.201).
  1. A Closed military range has either been taken out of service as a range and has been put to new uses that are incompatible with range activities or that is no longer considered to be a potential range area. A Closed range is still under the control of a DoD Component.
  2. A Transferred range is a military range that is no longer under the control of a DoD Component and has been leased, transferred, or returned to another entity, to include other Federal, non-DoD entities, for use **[Added April 2003]**.

- *Forming Lubricants* - products designed to provide lubrication during metalworking applications that are performed under extreme pressure. Such metalworking applications include tube bending, stretch forming, press braking, and swaging (7 CFR 3201.46(a)) **[Added January 2010, Citation Revised October 2011]**.
- *Formulated Product* - a product that is prepared or mixed with other ingredients, according to a specified formula and includes more than one ingredient (7 CFR 3201.2) **[Added April 2005, Citation Revised October 2011]**.
- *Fuel Conditioners* - products formulated to improve the performance and efficiency of engines by providing benefits such as removing accumulated deposits, increasing lubricity, removing moisture, increasing the cetane number, and/or preventing microbial growths within the fuel system (7 CFR 3201.92) **[Added October 2012]**.
- *Functional Unit* - a measure of product technical performance that provides a common reference to which all environmental and economic impacts of the product are scaled. This reference is necessary to ensure comparability of performance results across competing products. Comparability of results is critical when competing product alternatives are being assessed to ensure that such comparisons are made on a common basis. For example, the functional unit for competing interior paint products may be defined as “protecting one square foot of interior wall surface for 50 years” (7 CFR 3201.2) **[Added April 2006, Citation Revised October 2011]**.
- *Furniture Cleaners and Protectors* - products designed to clean and provide protection to the surfaces of household furniture other than the upholstery (7 CFR 3201.83(a)) **[Added April 2012]**.
- *Garden Hose* - a flexible tubing that conducts water to a specific location (40 CFR 247.3) **[Added July 1999]**.
- *Gear Lubricants* - products, such as greases or oils, that are designed to reduce friction when applied to a toothed machine part (such as a wheel or cylinder) that meshes with another toothed part to transmit motion or to change speed or direction (7 CFR 3201.47(a)) **[Added January 2010, Citation Revised October 2011]**.
- *Gear Oils* - petroleum-based oils used for lubricating machinery gears (40 CFR 247.3) **[Added July 1999]**.
- *General Purpose De-icers* - chemical products (e.g., salt, fluids) that are designed to aid in the removal of snow and/or ice, and/or in the prevention of the buildup of snow and/or ice, in general use applications by lowering the freezing point of water. Specialized de-icer products, such as those used to de-ice aircraft and airport runways, are not included (7 CFR 3201.37) **[Added July 2008, Citation Revised October 2011]**.
- *General Purpose Household Cleaners* - products designed to clean multiple common household surfaces. This designated item does not include products that are formulated for use as disinfectants. Task-specific cleaning products, such as spot and stain removers, upholstery cleaners, bathroom cleaners, glass cleaners, etc., are not included in this item (7 CFR 3201.48(a)) **[Added January 2010, Citation Revised October 2011]**.
- *Generator* - any person, by site, whose act or process produces hazardous waste identified or listed in 40 CFR 261, or whose act first causes a hazardous waste to become subject to regulation. [NOTE: See also the definition for *Small Quantity Generator*.] (40 CFR 260.10) **Reviewed March 2000; Reviewed October 2001]**.
- *Glass Cleaners* - cleaning products designed specifically for use in cleaning glass surfaces, such as windows, mirrors, car windows, and computer monitors (7 CFR 3201.30) **[Added July 2008, Citation Revised October 2011]**.
- *Good Faith* - the absence of any intention to seek an unfair advantage or to defraud another party; an honest and sincere intention to fulfill one's obligations in the conduct or transaction concerned (40 CFR 312.10) **[Added April 2006]**.
- *Graffiti and Grease Removers* - industrial solvent products formulated to remove automotive, industrial, or kitchen soils and oils, including grease, paint, and other coatings, from hard surfaces (7 CFR 3201.24) **[Added July 2008, Citation Revised October 2011]**.

- *Greases* – this include (7 CFR 3201.31(a)) **[Added July 2008, Citation Revised October 2011]**.
  1. Lubricants composed of oils thickened to a semisolid or solid consistency using soaps, polymers or other solids, or other thickeners.
  2. Greases for which preferred procurement applies are:
    - a. Food grade greases which are lubricants that are designed for use on food-processing equipment as a protective anti-rust film, as a release agent on gaskets or seals of tank closures, or on machine parts and equipment in locations in which there is exposure of the lubricated part to food.
    - b. Multipurpose greases which are lubricants that are designed for general use.
    - c. Rail track greases which are lubricants that are designed for use on railroad tracks or heavy crane tracks.
    - d. Truck greases which are lubricants that are designed for use on the fifth wheel of tractor trailer trucks onto which the semi-trailer rests and pivots.
    - e. Greases not elsewhere specified which are lubricants that meet the general definition of greases as defined in paragraph (1), but are not otherwise covered by paragraphs (2)(a) through (d).
- *Greenhouse Gases* - carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride (EO 13423, Section 9, paragraph e) **[Added January 2007]**.
- *Greenhouse Gases* - carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride (48 CFR 23.001) **[Added July 2011]**.
- *Hair Care Products* – this includes (7 CFR 3201.70) **[Added October 2011]**:
  1. Personal hygiene products specifically formulated for hair cleaning and treating applications, including shampoos and conditioners.
  2. Hair care products for which Federal preferred procurement applies are:
    - a. Shampoos. These are products whose primary purpose is cleaning hair. Products that contain both shampoos and conditioners are included in this subcategory because the primary purpose of these products is cleaning the hair.
    - b. Conditioners. These are products whose primary purpose is treating hair to improve the overall condition of hair.
- *Hand Cleaners and Sanitizers* – this includes (7 CFR 3201.18(a)) **[Added July 2008, Citation Revised October 2011]**:
  1. Hand cleaners are products formulated for personal care use in removing a variety of different soils, greases, and similar substances from human hands with or without the use of water.
  2. Hand sanitizers are products formulated for personal care use in removing bacteria from human hands with or without the use of water. Personal care products that are formulated for use in removing a variety of different soils, greases and similar substances and bacteria from human hands with or without the use of water are classified as hand sanitizers for the purposes of 7 CFR 3201.
- *Hazardous Waste* - a solid waste identified as a characteristic or listed hazardous waste in 40 CFR 261.3 (40 CFR 260.10) **[Added April 2003]**.
- *Hazardous Waste Constituent* - a constituent that caused the hazardous waste to be listed in 40 CFR 261, Subpart D (lists of hazardous wastes from nonspecific and specific sources, and listed hazardous wastes, or a constituent listed in the table of maximum concentrations of contaminants for the toxicity characteristic) (NOTE: The table listing the maximum concentrations of contaminants for the toxicity characteristic appears in 40 CFR 261.24.) (40 CFR 260.10) **[Added April 2003]**.
- *Heat Transfer Fluids* - products with high thermal capacities used to facilitate the transfer of heat from one location to another, including coolants or refrigerants for use in HVAC applications, internal combustion engines, personal cooling devices, thermal energy storage, or other heating or cooling closed-loops (7 CFR 3201.54) **[Added January 2011, Citation Revised October 2011]**.

- *Hydraulic Fluids* - petroleum-based hydraulic fluids (40 CFR 247.3) [**Added July 1999**].
- *Hydraulic Mulch* - a mulch that is a cellulose-based (paper or wood) protective covering that is mixed with water and applied through mechanical spraying in order to aid the germination of seeds and to prevent soil erosion (40 CFR 247.3) [**Added July 1999**].
- *Hydroseeding* - the process of spraying seeds mixed with water through a mechanical sprayer (hydroseeder). Hydraulic mulch, fertilizer, a tacking agent, or a wetting agent can also be added to the water/seed mix for enhanced performance (40 CFR 247.3) [**Added July 1999**].
- *Inactive Range* - a military range that is not currently being used, but that is still under military control and considered by the military to be a potential range area, and that has not been put to a new use that is incompatible with range activities (40 CFR 266.201) [**Added April 2003**].
- *Industrial Cleaners* - products used to remove contaminants, such as adhesives, inks, paint, dirt, soil, and grease, from parts, products, tools, machinery, equipment, vessels, floors, walls, and other production-related work areas. The cleaning products within this item are usually solvents, but may take other forms. They may be used in either straight solution or diluted with water in pressure washers, or in hand wiping applications in industrial or manufacturing settings, such as inside vessels. Task-specific cleaners used in industrial settings, such as parts wash solutions, are not included in this definition (7 CFR 3201.49(a)) [**Added January 2010, Citation Revised October 2011**].
- *Industrial Drums* - cylindrical containers used for shipping and storing liquid or solid materials (40 CFR 247.3) [**Added April 2000**].
- *Ingredient* - a component; part of a compound or mixture; may be active or inactive (7 CFR 3201.2) [**Added April 2005, Citation Revised October 2011**].
- *Ink Removers And Cleaners* - chemical products designed to remove ink, haze, glaze, and other residual ink contaminants from the surfaces of equipment, such as rollers, used in the textile and printing industries (7 CFR 3201.55) [**Added January 2011, Citation Revised October 2011**].
- *Inks* - inks are liquid or powdered materials that are available in several colors and that are used to create the visual image on a substrate when writing, printing, and copying. Inks for which Federal preferred procurement applies are (7 CFR 3201.84(a)) [**Added April 2012**]:
  1. Specialty inks. Inks used by printers to add extra characteristics to their prints for special effects or functions. Specialty inks include, but are not limited to: CD printing, erasable, FDA compliant, invisible, magnetic, scratch and sniff, thermochromic, and tree marking inks.
  2. Inks (sheetfed--color). Pigmented inks (other than black inks) used on coated and uncoated paper, paperboard, some plastic, and foil to print in color on annual reports, brochures, labels, and similar materials.
  3. Inks (sheetfed--black). Black inks used on coated and uncoated paper, paperboard, some plastic, and foil to print in black on annual reports, brochures, labels, and similar materials.
  4. Inks (printer toner--<25 pages per minute (ppm)). Inks that are a powdered chemical, used in photocopying machines and laser printers, which is transferred onto paper to form the printed image. These inks are formulated to be used in printers with standard fusing mechanisms and print speeds of less than 25 ppm.
  5. Inks (printer toner--=25 ppm). Inks that are a powdered chemical, used in photocopying machines and laser printers, which is transferred onto paper to form the printed image. These inks are formulated to be used in printers with advanced fusing mechanisms and print speeds of 25 ppm or greater.
  6. Inks (news). Inks used primarily to print newspapers.

- *Institutional Controls* - non-engineered instruments, such as administrative and/or legal controls, that help to minimize the potential for human exposure to contamination and/or protect the integrity of a remedy (40 CFR 312.10) **[Added April 2006]**.
- *Interior Paints and Coatings* – this includes (7 CFR 3201.71) **[Added October 2011]**:
  1. Pigmented liquids, formulated for use indoors, that dry to form a film and provide protection and added color to the objects or surfaces to which they are applied.
  2. Interior paints and coatings products for which Federal preferred procurement applies are:
    - a. Interior latex and waterborne alkyd paints and coatings.
    - b. Interior oil-based and solventborne alkyd paints and coatings.
- *ISO* - the International Organization for Standardization, a network of national standards institutes from 145 countries working in partnership with international organizations, governments, industries, business, and consumer representatives (7 CFR 3201.2) **[Added April 2005, Citation Revised October 2011]**.
- *Laminated Paperboard* - board made from one or more plies of kraft paper bonded together, with or without facers, that is used for decorative, structural, or insulating purposes (40 CFR 247.3) **[Added July 1999]**.
- *Land Use Controls (LUC)* - physical, legal, or administrative mechanisms that restrict the use of, or limit access to, real property, to manage risks to human health and the environment. Physical mechanisms encompass a variety of engineered remedies to contain or reduce contamination, or physical barriers to limit access to real property, such as fences or signs (DoD 6055.9-STD, Appendix 1, para AP1.137.) **[Added April 2009]**.
- *Latex Paint* - a water-based decorative or protective covering having a latex binder (40 CFR 247.3) **[Added July 1999]**.
- *Laundry Products* – this includes (40 CFR 3201.40) **[Added July 2008, Citation Revised October 2011]**:
  1. Products that are designed to clean, condition, or otherwise affect the quality of the laundered material. Such products include but are not limited to laundry detergents, bleach, stain removers, and fabric softeners.
  2. Laundry products for which preferred procurement applies are:
    - a. Pretreatment/spot removers. These are laundry products specifically used to pretreat laundry to assist in the removal of spots and stains during laundering.
    - b. General purpose laundry products. These are laundry products used for regular cleaning activities.
- *Lawn Edging* - a barrier used between lawns and landscaped areas or garden beds to prevent grass roots or weeds from spreading to the landscaped areas (40 CFR 247.3) **[Added July 1999]**.
- *Leather, Vinyl, and Rubber Care Products* - products that help clean, nourish, protect, and restore leather, vinyl, and rubber surfaces, including cleaners, conditioners, protectants, polishes, waxes, etc (7 CFR 3201.93) **[Added October 2012]**.
- *Life Cycle Cost* - the sum of the present values of capital costs, installation costs, operating costs, maintenance costs, and disposal costs over the lifetime of the project, product, or measure (*Instructions for Implementing EO 13423*, Section XIII, Definitions) **[Added July 2007]**.
- *Life-cycle Cost-Effective* - the life-cycle costs of a product, project, or measure are estimated to be equal to or less than the base case (i.e., current or standard practice or product) (EO 13423, Section 9, paragraph f) **[Added January 2007]**.
- *Lip Care Products* - personal care products formulated to replenish the moisture and/or prevent drying of the lips (7 CFR 3201.26(a)) **[Added July 2008, Citation Revised October 2011]**.

- *Loose-fill Insulation* - insulation in granular, nodular, fibrous, powdery, or similar form, designed to be installed by pouring, blowing or hand placement (40 CFR 247.3) [**Added July 1999**].
- *Lotions and Moisturizers* - creams and oils used to soften and treat damaged skin (7 CFR 3201.94) [**Added October 2012**].
- *Magazine* - any building or structure used exclusively for the storage of AE (DoD 6055.9-STD, Appendix 1, para AP1.144.) [**Added April 2003, Revised April 2009**].
- *Management Practice (MP)* - practices that, although not mandated by law, are encouraged to promote safe operating procedures.
- *Manifest* - the shipping document originated and signed by the generator containing the information required by 40 CFR 262, Subpart B (40 CFR 260.10) [**Added April 2003**].
- *Manual-grade Strapping* - straps of material used with transport packaging to hold products in place on pallets or in other methods of commercial, bulk shipment. Strapping can also prevent tampering and pilferage during shipping (40 CFR 247.3) [**Added April 2000**].
- *Mats* - temporary or semi-permanent protective floor coverings used for numerous applications, including home and office carpet protection, car and truck floor board protection, traction on slippery surfaces, cushion from floor hardness, and reduction of injury risk during athletic events (40 CFR 247.3) [**Added April 2000**].
- *Medium Base Compact Fluorescent Lamp* - an integrally ballasted fluorescent lamp with a medium screw base, a rated input voltage range of 115 to 130 volts and which is designed as a direct replacement for a general service incandescent lamp; however, the term does not include (10 CFR 430.2) [**Added January 2006**]:
  1. Any lamp that is--
    - i. Specifically designed to be used for special purpose applications; and
    - ii. Unlikely to be used in general purpose applications, such as the applications described in the definition of “General Service Incandescent Lamp” in this section; or
  2. Any lamp not described in the definition of “General Service Incandescent Lamp” in this section that is excluded by the Secretary, by rule, because the lamp is:
    - i. Designed for special applications; and
    - ii. Unlikely to be used in general purpose applications.
- *Medium Screw Base* - an Edison screw base identified with the prefix E-26 in the “American National Standard for Electric Lamp Bases”, ANSI--IEC C81.61-2003, published by the American National Standards Institute.
- *Metalworking Fluids* – this includes (7 CFR 3201.41) [**Added July 2008, Citation Revised October 2011**]:
  1. Fluids that are designed to provide cooling, lubrication, corrosion prevention, and reduced wear on the contact parts of machinery used for metalworking operations such as cutting, drilling, grinding, machining, and tapping.
  2. Metalworking fluids for which preferred procurement applies are:
    - a. Straight oils. Metalworking fluids that are not diluted with water prior to use and are generally used for metalworking processes that require lubrication rather than cooling.
    - b. General purpose soluble, semi-synthetic, and synthetic oils. Metalworking fluids formulated for use in a re-circulating fluid system to provide cooling, lubrication, and corrosion prevention when applied to metal feedstock during normal grinding and machining operations.
    - c. High performance soluble, semi-synthetic, and synthetic oils. Metalworking fluids formulated for use in a re-circulating fluid system to provide cooling, lubrication, and corrosion prevention when applied to metal feedstock during grinding and machining operations involving unusually high temperatures or corrosion potential.

- *Military* - the Department of Defense (DoD), the Armed Services, Coast Guard, National Guard, Department of Energy (DOE), or other parties under contract or acting as an agent for the foregoing, who handle military munitions (40 CFR 266.201) **[Added April 2003]**.
- *Military Munitions* - all ammunition products and components produced or used by or for the U.S. DoD or the U.S. Armed Services for national defense and security, including military munitions under the control of the DoD, the Coast Guard, the DOE, and National Guard personnel. The term military munitions includes: confined gaseous, liquid, and solid propellants, explosives, pyrotechnics, chemical and riot control agents, smokes and incendiaries used by DoD components, including bulk explosives and chemical warfare agents, chemical munitions, rockets, guided and ballistic missiles, bombs, warheads, mortar rounds, artillery ammunition, small arms ammunition, grenades, mines, torpedoes, depth charges, cluster munitions and dispensers, demolition charges, and devices and components thereof. Military munitions do not include wholly inert items, improvised explosive devices, and nuclear weapons, nuclear devices, and nuclear components thereof. However, the term does include non-nuclear components of nuclear devices, managed under DOE's nuclear weapons program after all required sanitization operations under the Atomic Energy Act of 1954, as amended, have been completed (40 CFR 260.10) **[Added April 2003]**.
- *Military Munitions Burial Site* - a site, regardless of location, where military munitions or CA, regardless of configuration, were intentionally buried, with the intent to abandon or discard. This term includes burial sites used to dispose of military munitions or CA, regardless of configuration, in a manner consistent with applicable environmental laws and regulations or the national practice at the time of burial. It does not include sites where munitions were intentionally covered with earth during authorized destruction by detonation, or where in situ capping is implemented as an engineered remedy under an authorized response action (DoD 6055.9-STD, Appendix 1, para AP1.153.) **[Added April 2009]**.
- *Military Range* - designated land and water areas set aside, managed, and used to conduct research on, develop, test, and evaluate military munitions and explosives, other ordnance, or weapon systems, or to train military personnel in their use and handling. Ranges include firing lines and positions, maneuver areas, firing lanes, test pads, detonation pads, impact areas, and buffer zones with restricted access and exclusionary areas (40 CFR 266.201) **[Added April 2003]**.
- *Mineral Fiber Insulation* - insulation (rock wool or fiberglass) which is composed principally of fibers manufactured from rock, slag or glass, with or without binders (40 CFR 247.3) **[Added July 1999]**.
- *Mobile Equipment Hydraulic Fluids* - hydraulic fluids formulated for general use in non-stationary equipment, such as tractors, end loaders, or backhoes (7 CFR 3201.10(a)) **[Added July 2008, Citation Revised October 2011]**.
- *Mulch And Compost Materials* - products designed to provide a protective covering placed over the soil, primarily to keep down weeds and to improve the appearance of landscaping. Compost is the aerobically decomposed remnants of organic materials used in gardening and agriculture as a soil amendment, and commercially by the landscaping and container nursery industries (7 CFR 3201.56) **[Added January 2011, Citation Revised October 2011]**.
- *Multipurpose Cleaners* - products used to clean dirt, grease, and grime from a variety of items in both industrial and domestic settings. This designated item does not include products that are formulated for use as disinfectants (7 CFR 3201.50(a)) **[Added January 2010, Citation Revised October 2011]**.
- *Multipurpose Lubricants* - products designed to provide lubrication under a variety of conditions and in a variety of industrial settings to prevent friction or rust. Greases, which are lubricants composed of oils thickened to a semisolid or solid consistency using soaps, polymers or other solids, or other thickeners, are not included in this item. In addition, task-specific lubricants, such as chain and cable lubricants and gear lubricants, are not included in this item (7 CFR 3201.57) **[Added January 2011, Citation Revised October 2011]**.
- *NOI (Notice of Intent)* - a notice that an EIS will be prepared and considered. It should contain (40 CFR 1508.22):

1. a description of the proposed action and possible alternatives
  2. the proposed scoping process and schedule
  3. the name and address of the person who can give more information.
- *Neat Product* - a product that is made of only one ingredient and is not diluted or mixed with other substances (7 CFR 3201.2) [**Added April 2005, Citation Revised October 2011**].
  - *New Renewable Energy* - renewable sources placed in service after 1 January 1999 (*Instructions for Implementing EO 13423*, Section XIII, Definitions) [**Added July 2007**].
  - *New Renewable Sources* - sources of renewable energy placed into service after January 1, 1999 (EO 13423, Section 9, paragraph g) [**Added January 2007**].
  - *Non-Operational Military Ranges* - encompasses Closed, Transferred and Transferring Ranges as these terms are defined in federal regulations (40 CFR 266.201).
    1. A Closed military range has either been taken out of service as a range and has been put to new uses that are incompatible with range activities or that is no longer considered to be a potential range area. A Closed range is still under the control of a DoD Component.
    2. A Transferred range is a military range that is no longer under the control of a DoD Component and has been leased, transferred, or returned to another entity, to include other Federal, non-DoD entities, for use [**Added April 2003**].
  - *Non-petroleum Based Fuels* - as used in E.O. 13423, means alternative fuels consistent with the definition presented in section 301 of the EPA Act 1992 (*Instructions for Implementing EO 13423*, Section XIII, Definitions) [**Added July 2007**].
  - *Notebook Computer* - a portable-style or laptop-style computer system (48 CFR 23.701) [**Added January 2008**].
  - *Open Burning* - the combustion of any material without the following characteristics (40 CFR 260.10) [**Added April 2003**]:
    1. control of combustion air to maintain adequate temperature for efficient combustion
    2. containment of the combustion-reaction in an enclosed device to provide sufficient residence time and mixing for complete combustion
    3. control of emission of the gaseous combustion products.
  - *Ordinance* - See Waste Explosives.
  - *Oven and Grill Cleaners* - liquid or gel cleaning agents used on high temperature cooking surfaces such as barbeques, smokers, grills, stoves, and ovens to soften and loosen charred food, grease, and residue (7 CFR 3201.72) [**Added October 2011**].
  - *Ozone-depleting Substance* - any substance the Environmental Protection Agency designates in 40 CFR 82 as (48 CFR 2.101) [**Added January 2008**]:
    1. Class I, including, but not limited to, chlorofluorocarbons, halons, carbon tetrachloride, and methyl chloroform; or
    2. Class II, including, but not limited to, hydrochlorofluorocarbons.
  - *Ozone-depleting Substances* - any substance designated as a Class I or Class II substance by the EPA in 40 CFR 82 (*Instructions for Implementing EO 13423*, Section XIII, Definitions) [**Added July 2007**].
  - *Packing and Insulating Materials* - pre-formed and molded materials that are used to hold package contents in place during shipping or for insulating and sound proofing applications (7 CFR 3201.85(a)) [**Added April 2012**].

- *Pallet* - a portable platform for storing or moving cargo or freight (40 CFR 247.3) **[Added July 1999]**.
- *Paper* - one of two broad subdivisions of paper products, the other being paperboard. Paper is generally lighter in basis weight, thinner, and more flexible than paperboard. Sheets 0.012 inch or less in thickness are generally classified as paper. Its primary uses are for printing, writing, wrapping, and sanitary purposes. However, in this guideline, the term paper is also used as a generic term that includes both paper and paperboard (40 CFR 247.3) **[Added July 1999]**.
- *Paper Product* - any item manufactured from paper or paperboard. The term paper product is used in this guideline to distinguish such items as boxes, doilies, and paper towels from printing and writing papers (40 CFR 247.3) **[Added July 1999]**.
- *Park Benches and Picnic Tables* - recreational furniture found in parks, outdoor recreational facilities, and the grounds of office buildings and other facilities (40 CFR 247.3) **[Added April 2000]**.
- *Parking Stop* - a barrier used to mark parking spaces and keep parked vehicles from rolling beyond a designated parking area (40 CFR 247.3) **[Added July 1999]**.
- *Parts Wash Solutions* - products that are designed to clean parts in manual or automatic cleaning systems. Such systems include, but are not limited to, soak vats and tanks, cabinet washers, and ultrasonic cleaners (7 CFR 3201.51(a)) **[Added January 2010, Citation Revised October 2011]**.
- *Penetrating Lubricants* - products formulated to provide light lubrication and corrosion resistance in close tolerant internal and external applications including frozen nuts and bolts, power tools, gears, valves, chains, and cables (7 CFR 3201.14(a)) **[Added July 2008, Citation Revised October 2011]**.
- *Performance-Based Acquisition (PBA)* - an acquisition structured around the results to be achieved as opposed to the manner by which the work is to be performed (48 CFR 2.101) **[Added January 2008]**:
- *Performance Work Statement (PWS)* - a statement of work for performance-based acquisitions that describes the required results in clear, specific and objective terms with measurable outcomes (48 CFR 2.101) **[Added January 2008]**.
- *Perlite Composite Board* - insulation board composed of expanded perlite and fibers formed into rigid, flat, rectangular units with a suitable sizing material incorporated in the product. It may have on one or both surfaces a facing or coating to prevent excessive hot bitumen strike-in during roofing installation (40 CFR 247.3) **[Added July 1999]**.
- *Person* - an individual, trust, firm, joint stock company, corporation (including a government corporation), partnership, association, Federal agency, State, municipality, commission, political subdivision of a State, or any interstate body (40 CFR 247.3) **[Added July 1999]**.
- *Personal Computer Product* - a notebook computer, a desktop computer, or a computer monitor, and any peripheral equipment that is integral to the operation of such items. For example, the desktop computer together with the keyboard, the mouse, and the power cord would be a personal computer product. Printers, copiers, and fax machines are not included in peripheral equipment, as used in this definition (48 CFR 23.701) **[Added January 2008]**.
- *Phenolic Insulation* - insulation made with phenolic plastics which are plastics based on resins made by the condensation of phenols, such as phenol or cresol, with aldehydes (40 CFR 247.3) **[Added July 1999]**.
- *Plastic Fencing* - a barrier with an open-weave pattern that can be used to control drifting snow or sand by restricting the force of wind and to provide a warning or barrier in construction and other areas (40 CFR 247.3) **[Added July 1999]**.

- *Plastic Insulating Foam For Residential and Commercial Construction* - spray-in-place plastic foam products designed to provide a sealed thermal barrier for residential or commercial construction applications (7 CFR 3201.17(a)) **[Added July 2008, Citation Revised October 2011]**.
- *Plastic Lumber Landscaping Timbers and Posts* - used to enhance the appearance of and control erosion in parks, highways, housing developments, urban plazas, zoos, and the exteriors of office buildings, military facilities, schools, and other public use areas (40 CFR 247.3) **[Added April 2000]**.
- *Playground Equipment* - includes many components, like slides, merry-go-rounds, hand rails, etc., and is found in parks, schools, child care facilities, institutions, multiple family dwellings, restaurants, resort and recreational developments, and other public use areas (40 CFR 247.3) **[Added April 2000]**.
- *Pneumatic Equipment Lubricants* - lubricants designed specifically for pneumatic equipment, including air compressors, vacuum pumps, in-line lubricators, rock drills, jackhammers, etc (7 CFR 3201.86(a)) **[Added April 2012]**.
- *Pollution Prevention* - any practice that (48 CFR 2.101) **[Added January 2008]**:
  - 1.a. Reduces the amount of any hazardous substance, pollutant, or contaminant entering any waste stream or otherwise released into the environment (including fugitive emissions) prior to recycling, treatment, or disposal; and
  - b. Reduces the hazards to public health and the environment associated with the release of such substances, pollutants, and contaminants;
  2. Reduces or eliminates the creation of pollutants through increased efficiency in the use of raw materials, energy, water, or other resources; or
  3. Protects natural resources by conservation.
- *Pollution Prevention* – “source reduction” as defined in the *Pollution Prevention Act of 1990* (42 U.S.C. 13102), and other practices that reduce or eliminate the creation of pollutants through (*Instructions for Implementing EO 13423*, Section XIII, Definitions) **[Added July 2007]**:
 

increased efficiency in the use of raw materials, energy, water, or other resources, or the protection of natural resources by conservation.
- *Polyisocyanurate Insulation* - insulation produced principally by the polymerization of polymeric polyisocyanates, usually in the presence of polyhydroxyl compounds with the addition of cell stabilizers, blowing agents, and appropriate catalyst to produce a polyisocyanurate chemical structure (40 CFR 247.3) **[Added July 1999]**.
- *Polystyrene Insulation* - an organic foam composed principally of polymerized styrene resin processed to form a homogenous rigid mass of cells (40 CFR 247.3) **[Added July 1999]**.
- *Polyurethane Insulation* - insulation composed principally of the catalyzed reaction product of polyisocyanates and polyhydroxyl compounds, processed usually with a blowing agent to form a rigid foam having a predominantly closed cell structure (40 CFR 247.3) **[Added July 1999]**.
- *Postconsumer Fiber*- in relation to acquisition, this means (48 CFR 52.204-4(a)) **[Added April 2012]**:
  1. Paper, paperboard, and fibrous materials from retail stores, office buildings, homes, and so forth, after they have passed through their end usage as a consumer item, including: used corrugated boxes; old newspapers; old magazines; mixed waste paper; tabulating cards; and used cordage; or
  2. All paper, paperboard, and fibrous materials that enter and are collected from municipal solid waste; but not
  3. Fiber derived from printers’ over-runs, converters’ scrap, and over-issue publications.

- *Postconsumer Material* - a material or finished product that has served its intended use and has been diverted or recovered from waste destined for disposal, having completed its life as a consumer item. Postconsumer material is a part of the broader category of recovered materials (40 CFR 247.3) **[Added July 1999]**.
- *Postconsumer Recovered Paper* - this includes (40 CFR 247.3) **[Added July 1999]**:
  1. paper, paperboard and fibrous wastes from retail stores, office buildings, homes and so forth, after they have passed through their end-usage as a consumer item including: Used corrugated boxes; old newspapers; old magazines; mixed waste paper; tabulating cards and used cordage; and
  2. all paper, paperboard and fibrous wastes that enter and are collected from municipal solid waste.
- *Practicable* - capable of being used consistent with: Performance in accordance with applicable specifications, availability at a reasonable price, availability within a reasonable period of time, and maintenance of a satisfactory level of competition (40 CFR 247.3) **[Added July 1999]**.
- *Preliminary Assessment (PA)* - review of existing information and offsite reconnaissance, if appropriate, to determine is a release may require additional investigation or action. A PA may include an onsite reconnaissance if appropriate (40 CFR 300.5).
- *Printer Ribbon* - a nylon fabric designed to hold ink and used in dot matrix and other types of impact printers (40 CFR 247.3) **[Added July 1999]**.
- *Procurement Actions* - this includes (40 CFR 247.2(b)) **[Added July 1999]**:
  1. purchases made directly by a procuring agency and purchases made directly by any person (e.g., a contractor) in support of work being performed for a procuring agency, and
  2. any purchases of designated items made "indirectly" by a procuring agency, as in the case of procurements resulting from grants, loans, funds, and similar forms of disbursements of monies.
- *Procurement Item* - any device, good, substance, material, product, or other item, whether real or personal property, which is the subject of any purchase, barter, or other exchange made to procure such item (40 CFR 247.3) **[Added July 1999]**.
- *Procuring Agency* - any Federal agency, or any State agency or agency of a political subdivision of a State, which is using appropriated Federal funds for such procurement, or any person contracting with any such agency with respect to work performed under such contract (40 CFR 247.3) **[Added July 1999]**.
- *Procuring Agency* - any Federal agency that is using Federal funds for procurement or any person contracting with any Federal agency with respect to work performed under the contract (7 CFR 3201.2) **[Added October 2006, Citation Revised October 2011]**.
- *Product* - does not include any energy consuming product or system designed or procured for combat or combat-related missions (EPACT 2005, Section 104(a)(5)) **[Added October 2006]**.
- *Purchasing* - the act of and the function of responsibility for the acquisition of equipment, materials, supplies, and services, including: Buying, determining the need, selecting the supplier, arriving at a fair and reasonable price and terms and conditions, preparing the contract or purchase order, and follow-up (40 CFR 247.3) **[Added July 1999]**.
- *Railroad Grade Crossing Surfaces* - materials placed between railroad tracks, and between the track and the road at highway and street railroad crossings, to enhance automobile and pedestrian safety (40 CFR 247.3) **[Added April 2000]**.

- *Range-Related Debris* - debris, other than munitions debris, collected from operational ranges or from former ranges (e.g., target debris, military munitions packaging and crating material) (DoD 6055.9-STD, Appendix 1, para AP1.203.) **[Added April 2009]**.
- *Recovered Materials* - waste materials and byproducts which have been recovered or diverted from solid waste, but such term does not include those materials and byproducts generated from, and commonly reused within, an original manufacturing process (40 CFR 247.3) **[Added July 1999]**.
- *Recovered Materials, For Purposes of Purchasing Paper and Paper Products* - waste material and byproducts that have been recovered or diverted from solid waste, but such term does not include those materials and byproducts generated from, and commonly reused within, an original manufacturing process. In the case of paper and paper products, the term recovered materials includes (40 CFR 247.3) **[Added July 1999]**:
  1. Postconsumer materials such as--
    - a. paper, paperboard, and fibrous wastes from retail stores, office buildings, homes, and so forth, after they have passed through their end-usage as a consumer item, including: Used corrugated boxes; old newspapers; old magazines; mixed waste paper; tabulating cards; and used cordage; and
    - b. all paper, paperboard, and fibrous wastes that enter and are collected from municipal solid waste, and
  2. manufacturing, forest residues, and other wastes such as--
    - a. dry paper and paperboard waste generated after completion of the papermaking process (that is, those manufacturing operations up to and including the cutting and trimming of the paper machine reel in smaller rolls of rough sheets) including: Envelope cuttings, bindery trimmings, and other paper and paperboard waste, resulting from printing, cutting, forming, and other converting operations; bag, box, and carton manufacturing wastes; and butt rolls, mill wrappers, and rejected unused stock; and
    - b. finished paper and paperboard from obsolete inventories of paper and paperboard manufacturers, merchants, wholesalers, dealers, printers, converters, or others;
    - c. fibrous byproducts of harvesting, manufacturing, extractive, or wood-cutting processes, flax, straw, linters, bagasse, slash, and other forest residues;
    - d. wastes generated by the conversion of goods made from fibrous material (that is, waste rope from cordage manufacture, textile mill waste, and cuttings); and
    - e. fibers recovered from waste water which otherwise would enter the waste stream.
- *Re-refined Oils* - used oils from which the physical and chemical contaminants acquired through previous use have been removed through a refining process (40 CFR 247.3) **[Added July 1999]**.
- *Relative Price* - the price of a product as compared to the price of other products on the market that have similar performance characteristics (7 CFR 3201.2) **[Added April 2005, Citation Revised October 2011]**.
- *Relevant Experience* - as used in the definition of environmental professional in this section, means: participation in the performance of all appropriate inquiries investigations, environmental site assessments, or other site investigations that may include environmental analyses, investigations, and remediation which involve the understanding of surface and subsurface environmental conditions and the processes used to evaluate these conditions and for which professional judgment was used to develop opinions regarding conditions indicative of releases or threatened releases (see 40 CFR 312.1(c)) to the subject property (40 CFR 312.10) **[Added April 2006]**.
- *Remedial Design (RD)* - the technical analysis and procedures which follow the selection of a remedy for a site and results in a detailed set of plans and specifications for implementation of the remedial action (40 CFR 300.5).
- *Remedial Investigation (RI)* - a process undertaken by the lead agency to determine the nature and extent of the problem presented by the release (40 CFR 300.5).
- *Renewable Chemical* - a monomer, polymer, plastic, formulated product, or chemical substance produced from renewable biomass (7 CFR 3201.2) **[Added July 2015]**.

- *Renewable Energy* - energy produced by solar, wind, geothermal, biomass, landfill gas, ocean (including tidal, wave, current, and thermal), municipal solid waste, or new hydroelectric generation capacity achieved from increased efficiency or additions of new capacity at an existing hydroelectric project (Energy Policy Act of 2005, 42 U.S.C. 15852) (48 CFR 2.101(b)(2)) **[Added January 2007, Revised July 2011]**.
- *Renewable Energy Technology* – this phrase means (48 CFR 2.101) **[Added January 2008]**:
  1. Technologies that use renewable energy to provide light, heat, cooling, or mechanical or electrical energy for use in facilities or other activities; or
  2. The use of integrated whole-building designs that rely upon renewable energy resources, including passive solar design.
- *Replacement Ballast* - a ballast that (10 CFR 430.2) **[Added January 2006]**:
  1. Is designed for use to replace an existing fluorescent lamp ballast in a previously installed luminaire;
  2. Is marked “FOR REPLACEMENT USE ONLY”;
  3. Is shipped by the manufacturer in packages containing not more than 10 fluorescent lamp ballasts; and
  4. Has output leads that when fully extended are a total length that is less than the length of the lamp with which the ballast is intended to be operated.
- *Residues* - that which remains after a part is taken, separated, removed, or designated; a remnant; a remainder; and, for this purpose, is from agricultural materials, biological products, or forestry materials (7 CFR 3201.2) **[Added April 2005, Citation Revised October 2011]**.
- *Restroom Divider/Partition* - a barrier used to provide privacy in public restroom facilities (40 CFR 247.3) **[Added July 1999]**.
- *Retread Tire* - a worn automobile, truck, or other motor vehicle tire whose tread has been replaced (40 CFR 247.3) **[Added July 1999]**.
- *Rock Wool Insulation* - insulation which is composed principally from fibers manufactured from slag or natural rock, with or without binders (40 CFR 247.3) **[Added July 1999]**.
- *Roof Coatings* - coatings formulated for use in commercial roof deck systems to provide a single-coat monolith coating system (7 CFR 3201.11(a)) **[Added July 2008, Citation Revised October 2011]**.
- *Scrap* - personal property that has no value except its basic metallic, mineral, or organic content (48 CFR 2.101) **[Added January 2008]**.
- *Secretary* - the Secretary of the United States Department of Agriculture (7 CFR 3201.2) **[Added April 2005, Citation Revised October 2011]**.
- *Shaving Products* - products designed for every step of the shaving process, including shaving creams, gels, soaps, lotions, and aftershave balms (7 CFR 3201.95) **[Added October 2012]**.
- *Shower Divider/Partition* - a water-proof barrier used to provide privacy in public shower facilities (40 CFR 247.3) **[Added July 1999]**.
- *Signage* - (including sign posts and supports) is used for identification and directional purposes for public roads and highways, and inside and outside office buildings, museums, parks, and other public places (40 CFR 247.3) **[Added April 2000]**.
- *Slide Way Lubricants* - products used to provide lubrication and eliminate stick-slip and table chatter by reducing friction between mating surfaces, or slides, found in machine tools (7 CFR 3201.73) **[Added October 2011]**.

- *Small and Emerging Private Business Enterprise* - any private business which will employ 50 or fewer new employees and has less than \$1 million in projected annual gross revenues (7 CFR 3201.2) [**Added April 2005, Citation Revised October 2011**].
- *Small Quantity Generator (SQG)* - a generator that generates less than 1000 kg [approx. 2205 lb] of hazardous waste in a calendar month. [NOTE: As commonly used, an SQG generates more than 100 kg [approx. 220 lb] and  $\leq$  1 kg of acute waste in a calendar month. If less than 100 kg [approx. 220 lb] and  $\leq$  1 kg of acute waste is generated in a calendar month, the generator is considered a Conditionally exempt Small Quantity Generator (CESQG)] (40 CFR 260.10) [**Added April 2003**].
- *Soaker Hose* - a perforated flexible tubing that is used to deliver gentle irrigation to plants (40 CFR 247.3) [**Added July 1999**].
- *Solid Waste Military Munitions* - a military munition is not a solid waste when (40 CFR 266.202):
  1. used for its intended purpose, including:
    - a. use in training military personnel or explosives and munitions emergency response specialists (including training in proper destruction of unused propellant or other munitions)
    - b. use in research, development, testing, and evaluation of military munitions, weapons, or weapon systems
    - c. recovery collection, and on range destruction of unexploded ordnance and munitions fragments during range clearance activities at active or inactive ranges. However, “use for intended purposes” does not include the on-range disposal or burial of unexploded ordnance and contaminants when the burial is not a result of product use.
  2. an unused munition, or component thereof, is being repaired, reused, recycled, reclaimed, disassembled, reconfigured, or otherwise subjected to materials recovery activities, unless such activities involve use constituting disposal or burning for energy recovery.

An unused military munition is a solid waste when any of the following occurs:

1. the munition is abandoned by being disposed of, burned, detonated (except during intended use), incinerated, or treated prior to disposal
2. the munition is removed from storage in a military magazine or other storage area for the purpose of being disposed of, burned, or incinerated, or treated prior to disposal; or
3. the munition is deteriorated or damaged (e.g., the integrity of the munition is compromised by cracks, leaks, or other damage) to the point that it cannot be put into serviceable condition, and cannot reasonably be recycled or used for other purposes
4. the munition has been declared a solid waste by an authorized military official.

A used or fired military munition is a solid waste:

1. when transported off range or from the site of use, where the site of use is not a range, for the purpose of storage, reclamation, treatment, disposal, or treatment prior to disposal
2. if recovered, collected, and then disposed of by burial, or landfilling either on or off a range.

See Appendix 6-3 for additional interpretive information as to when a military munitions is a solid waste, including as it is used on ranges [**Added April 2003**].

- *Sorbents* - materials formulated for use in the cleanup and bioremediation of oil and chemical spills, the disposal of liquid materials, or the prevention of leakage or leaching in maintenance applications, shop floors, and fuel storage areas (7 CFR 3201.23(a)) [**Added July 2008, Citation Revised October 2011**].
- *Sorbents (i.e., absorbents and adsorbents)* - materials used to retain liquids and gases in a diverse number of environmental, industrial, agricultural, medical, and scientific applications. Absorbents incorporate a substance while adsorbents gather substances on their surfaces (40 CFR 247.3) [**Added April 2000**].

- *Specialty Precision Cleaners and Solvents* - cleaners and solvents used in specialty applications. These materials may be used in neat solution, diluted with water, or in hand wiping applications (7 CFR 3201.96) **[Added October 2012]**.
- *Specification* - a description of the technical requirements for a material, product, or service that includes the criteria for determining whether these requirements are met. In general, specifications are in the form of written commercial designations, industry standards, and other descriptive references (40 CFR 247.3) **[Added July 1999]**.
- *Spray-in-place Insulation* - insulation material that is sprayed onto a surface or into cavities and includes cellulose fiber spray-on as well as plastic rigid foam products (40 CFR 247.3) **[Added July 1999]**.
- *Spray-in-place Foam* - rigid cellular polyurethane or polyisocyanurate foam produced by catalyzed chemical reactions that hardens at the site of the work. The term includes spray-applied and injected applications (40 CFR 247.3) **[Added July 1999]**.
- *Stationary Equipment Hydraulic Fluids* - fluids formulated for use in stationary hydraulic equipment systems that have various mechanical parts, such as cylinders, pumps, valves, pistons, and gears, that are used for the transmission of power (and also for lubrication and/or wear, rust, and oxidation protection)(7 CFR 3201.28) **[Added July 2008, Citation Revised October 2011]**.
- *Steering Committee* - the Steering Committee on Strengthening Federal Environmental, Energy, and Transportation Management established under subsection 4(b) of this EO (EO 13423, Section 9, paragraph j) **[Added January 2007]**.
- *Structural Fiberboard* - a fibrous-felted, homogenous panel made from lignocellulosic fibers (usually wood, cane, or paper) and having a density of less than 31 lb/ft<sup>3</sup> but more than 10 lb/ft<sup>3</sup>. It is characterized by an integral bond which is produced by interfelting of the fibers, but which has not been consolidated under heat or pressure as a separate stage of manufacture (40 CFR 247.3) **[Added July 1999]**.
- *Sun Care Products* - products including sunscreens, sun blocks, and suntan lotions that are topical products that absorb or reflect the sun's ultraviolet radiation to protect the skin (7 CFR 3201.97) **[Added October 2012]**.
- *Sustainable* - to create and maintain conditions, under which humans and nature can exist in productive harmony, that permit fulfilling the social, economic, and other requirements of present and future generations of Americans (EO 13423, Section 9, paragraph k) **[Added January 2007]**.
- *Sustainable Acquisition* - acquiring goods and services in order to create and maintain conditions (48 CFR 2.101(b)(2)) **[Added July 2011]**:
  1. Under which humans and nature can exist in productive harmony; and
  2. That permit fulfilling the social, economic, and other requirements of present and future generations.
- *Sustainably Managed Forests* - refers to the practice of a land stewardship ethic that integrates the reforestation, management, growing, nurturing, and harvesting of trees for useful products while conserving soil and improving air and water quality, wildlife, fish habitat, and aesthetics (7 CFR 3201.2) **[Added April 2005, Citation Revised October 2011]**.
- *Thermal Shipping Containers* – these include (7 CFR 3201.74) **[Added October 2011]**:
  1. Insulated containers designed for shipping temperature-sensitive materials.
  2. Thermal shipping containers for which Federal preferred procurement applies are:
    - a. Durable thermal shipping container. These are thermal shipping containers that are designed to be reused over an extended period of time.

- b. Non-durable thermal shipping containers. These are thermal shipping containers that are designed to be used once.
- *Tire* - the following types of tires: Passenger car tires, light- and heavy-duty truck tires, high-speed industrial tires, bus tires, and special service tires (including military, agricultural, off-the-road, and slow-speed industrial) (40 CFR 247.3) **[Added July 1999]**.
- *Topical Pain Relief Products* - products that can be balms, creams and other topical treatments used for the relief of muscle, joint, headache, and nerve pain, as well as sprains, bruises, swelling, and other aches (7 CFR 3201.59) **[Added January 2011, Citation Revised October 2011]**.
- *Torchiere* - a portable electric lamp with a reflector bowl that directs light upward to give indirect illumination (10 CFR 430.2) **[Added January 2006]**.
- *Toxic Chemical* - as used in 48 CFR 23, means a chemical or chemical category listed in 40 CFR 372.65 (48 CFR 23.001) **[Added January 2008]**.
- *Toxic Chemical Agent* - a substance intended for military use with lethal or incapacitating effects on personnel through its chemical properties. Excluded from toxic chemical agents for purposes of this document are riot control agents, chemical herbicides, smoke- and flame-producing items, and individual dissociated components of toxic chemical agent munitions (DoD 6055.9-STD, Appendix 1, para AP1.241) **[Added April 2009]**.
- *Treatment* - any method, technique, or process, including neutralization, designed to change the physical, chemical, or biological character or composition of any hazardous waste to neutralize the waste, recover energy or material resources from the waste, or render the waste nonhazardous or less hazardous; safer to transport, store, or dispose of; or amenable for recovery, amenable for storage, or reduced in volume (40 CFR 260.10) **[Added April 2003]**.
- *Turbine Drip Oils* - products that are lubricants for use in drip lubrication systems for water well line shaft bearings, water turbine bearings for irrigation pumps, and other turbine bearing applications (7 CFR 3201.60) **[Added January 2011, Citation Revised October 2011]**.
- *Unexploded Ordnance* - [NOTE: This definition only applies to requirements based on DoD 6055.9-STD.] explosive ordnance that has been primed, fused, armed, or otherwise prepared for action, and that has been fired, dropped, launched, projected, or placed in such a manner as to constitute a hazard to operations, installations, personnel, or material and remains unexploded either by malfunction or design or for any other cause (DoD 6055.9-STD, Appendix 1, para AP1.1.1.95.) **[Added April 2003]**.
- *Unexploded Ordnance (UXO)* – [NOTE: This definition only applies to requirements based on 40 CFR 266.] military munitions that have been primed, fused, armed, or otherwise prepared for action, and have been fired, dropped, launched, projected, or placed in a such a manner as to constitute a hazard to operations, installation, personnel, or material and remain unexploded either by malfunction, design, or any other cause (40 CFR 266.201) **[Added April 2003]**.
- *United States* - when used in a geographical sense, means the fifty states, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the United States Virgin Islands, and the Northern Mariana Islands, and associated territorial waters and airspace (EO 13423, Section 9, paragraph 1) **[Added January 2007]**.
- *Used In A Manner Constituting Disposal* – when solid wastes is (40 CFR 261.2(d)(2)(i)) **[Added April 2003]**:
  1. applied to or placed on the land in a manner that constitutes disposal; or
  2. used to produce products that are applied to or placed on the land or are otherwise contained in products that are applied to or placed on the land (in which cases the product itself remains a solid waste).

- *Utility Energy Service Contract (UESC)* - a contract between a Federal agency and a local utility providing energy, water, or sewage services, as well as provision of technical services and/or upfront project financing for energy efficiency, water conservation, and renewable energy investments, allowing Federal agencies to pay for the services over time, either on their utility bill, or through a separate agreement (*Instructions for Implementing EO 13423*, Section XIII, Definitions) [**Added July 2007**].
- *Waste Explosives* - waste that has the potential to detonate and bulk military propellants that cannot be safely disposed of through other modes of treatment (40 CFR 265.382) [**Added April 2003**].
- *Waste Military Munition* - military munitions are waste when they are solid or hazardous waste under the regulations (42 USC 9601, et seq., reference (ff)) implementing RCRA Subpart EE of 40 CFR 264 or defined as a waste under a DoD Component's written procedures). Waste military munitions are defined in 40 CFR 266.202. (NOTE: Decisions about whether specific munitions are or are not waste should be made with reference to 40 CFR 260.10 and 266.200 through 266.206.) (DoD 6055.9-STD, Appendix 1, para AP1.1.1.97.) [**Added April 2003**].

An unused military munition is a solid waste when any of the following occurs:

1. The munition is abandoned by being disposed of, burned, detonated (except during intended use), incinerated, or treated before disposal;
2. The munition is removed from storage in a military magazine or other storage area for the purpose of being disposed of, burned, or incinerated, or treated prior to disposal;
3. The munition is deteriorated or damaged (e.g., the integrity of the munition is compromised by cracks, leaks, or other damage) to the point that it cannot be put into serviceable condition and cannot reasonably be recycled or used for other purposes; or,
4. An authorized military official has declared the munition a solid waste. (NOTE: Declaration by an "authorized official" that munitions are solid waste has a very limited meaning and applicability. The only example is a declaration by the Army in 1984 that M55 rockets are waste. The USEPA expects that such a declaration would be in writing. A decision that munitions are unserviceable, or that they are to be transferred into a demilitarization account does not, by itself, constitute a decision that the munitions are solid waste.

A used or fired military munition is a solid waste, if as follows:

1. When transported off-range or from the site of use, where the site of use is not a range, for the purposes of storage, reclamation, treatment, disposal, or treatment before disposal; or
  2. If recovered, collected, and then disposed of by burial or landfilling either on or off a range.
  3. For RCRA, a used or fired military munition is a solid waste and, therefore, is potentially subject to RCRA corrective action authorities if the munition lands off-range and is not promptly rendered safe and/or retrieved. Any imminent and substantial threats associated with any remaining material must be addressed. If remedial action is not possible, the operator of the range must maintain a record of the event for as long as any threat remains. The record must include the type of munition and its location (to the extent the location is known).
- *Waste Prevention* - any change in the design, manufacturing, purchase, or use of materials or products, including packaging, to reduce their amount or toxicity before they are discarded. Waste prevention also refers to the reuse of products or materials (*Instructions for Implementing EO 13423*, Section XIII, Definitions) [**Added July 2007**].
  - *Waste Reduction* - preventing or decreasing the amount of waste being generated through waste prevention, recycling, or purchasing recycled and environmentally preferable products (48 CFR 2.101) [**Added January 2008**].
  - *Water Consumption Intensity* - water consumption per square foot of building space (48 CFR 2.101(b)(2)) [**Added July 2011**].

- *Wastewater Systems Coatings* - coatings that protect wastewater containment tanks, liners, roofing, flooring, joint caulking, manholes and related structures from corrosion. Protective coatings may cover the entire system or be used to fill cracks in systems (7 CFR 3201.98) **[Added October 2012]**.
- *Water Clarifying Agents* - products designed to clarify and improve the quality of water by reducing contaminants such as excess nitrites, nitrates, phosphates, ammonia, and built-up sludge from decaying waste and other organic matter (7 CFR 3201.99) **[Added October 2012]**.
- *Water Tank Coatings* - coatings formulated for use in potable water storage systems (7 CFR 3201.12(a)) **[Added July 2008, Citation Revised October 2011]**.
- *Wood and Concrete Sealers* – this includes (7 CFR 3201.42) **[Added July 2008, Citation Revised October 2011]**:
  1. Products that are penetrating liquids formulated to protect wood and/or concrete, including masonry and fiber cement siding, from damage caused by insects, moisture, and decaying fungi and to make surfaces water resistant.
  2. Wood and concrete sealers for which preferred procurement applies are:
    - a. Penetrating liquids. Wood and concrete sealers that are formulated to penetrate the outer surface of the substrate.
    - b. Membrane concrete sealers. Concrete sealers that are formulated to form a protective layer on the surface of the substrate.
- *Wood and Concrete Stains* - products that are designed to be applied as a finish for concrete and wood surfaces and that contain dyes or pigments to change the color without concealing the grain pattern or surface texture (7 CFR 3201.87(a)) **[Added April 2012]**.

#### **F. Records To Review**

- EISs
- EAs
- FONSI
- Pollution Prevention Plans
- MOAs
- Administrative Records
- PAs
- REC
- ROD
- NOI
- CXs
- Environmental agreements
- Maps of CERCLA sites
- Federal Agency property transfer contracts
- Groundwater data for monitoring wells
- Manifests for shipments of WMM to off-site RCRA-permitted TSDFs
- Requests made by the installation to the DDA for determinations of status of munitions,
- DDA declarations of waste (i.e. declaring something to be subject to WMM, including the date each declaration is made)
- Instructions issued by the DDA regarding temporary or interim management of munitions pending decisions on final disposition
- Notices of Ammunition Reclassification (NARs)
- Reports of emergency response activities to address imminent threats
- Emergency permits for on-site treatment and/or disposal (including all documentation required by such permits)

- Documentation of inspections conducted by munitions custodians
- WMM characterization data (including generator knowledge as well as analytical results – e.g. TCLP results)
- Contracts with non-DoD entities on the installation for production, manufacture, or modification of military munitions
- Notifications for alternative use or training requirement associated with munitions that had been previously designated WMM
- Emergency preparedness, contingency, and security plans for facilities that store MM, including conditionally exempt WMM
- EPCRA reports regarding military munitions
- Personnel training records
- Annual inventories of WMM stored in conditionally exempt storage facilities
- Quarterly inspections of conditionally exempt WMM storage facilities
- Transportation-related documentation

#### **G. Physical Features To Inspect**

- Sites that are the subject of EISs or EAs
- Training Sites
- IRP Sites
- Disposal sites
- ASUs

## H. Guidance for Other Environmental Issues Checklist Users

	<b>REFER TO CHECKLIST ITEMS:</b>
NEPA	
All Facilities	O1.1.1.US
Missing, Risk Management and Positive Checklist Items	O1.2.1.US through O1.2.3.US
Documentation	O1.5.1.US through O1.5.15.US
Environmental Noise	
All Facilities	O2.1.1.US
Missing, Risk Management, and Positive Checklist Items	O2.2.1.US through O2.2.3.US
CERCLA Cleanup Sites	
All Facilities	O3.1.1.US through O3.1.8.US
Missing, Risk Management, and Positive Checklist Items	O3.2.1.US through O3.2.3.US
Administrative Record	
Community Relations	O3.5.1.US and O3.5.2.US
All Appropriate Inquiries	O3.10.1.US through O3.10.5.US
NPL Sites	O3.12.1.US. through O3.12.12.US. O3.15.1.US. and O3.15.2.US.
Pollution Prevention	
All Facilities	O4.1.1.US
Missing, Risk Management, and Positive Checklist Items	O4.2.1.US through O4.2.3.US
Plans and Programs	O4.5.1.US and O4.5.4.US
Procurement	O4.6.1.US through O4.6.22.US
ODCs	O4.9.1.US
Program Management	
All Facilities	O5.1.1.US and O5.1.2.US
Missing, Risk Management, and Positive Checklist Items	O5.2.1.US through O5.2.3.US
Waste Munitions	
All Facilities	O6.1.1.US.
Missing, Risk Management, and Positive Checklist Items	O6.2.1.US through O6.2.3.US
Personnel Training	O6.30.1.US
Conditionally Exempt Waste Munitions Storage	O6.50.1.US through O6.50.5.US
Hazardous Waste Munitions	O6.70.1.US and O6.70.2.US
Emergency Response	O6.90.1.US through O6.90.3.US
Transportation	O6.100.1.US
Contaminated Property	O6.150.1.US through O6.150.5.US
TSDFs	O6.200.1.US through O6.200.5.US
EMS (NOTE: These checklist items have been moved to Chapter 14.)	

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Appendix 6-0, *Complementary Elements of EMS and NEPA*

Appendix 6-1, *Recommended Recovered Materials Content Levels for CPG Products*

Appendix 6-2, *Federal Acquisition Clauses*

Appendix 6-2a, *DOE Specifications for Premium Efficient Motors*

Appendix 6-2b, *EPEAT Contract/Solicitation Clauses*

Appendix 6-2c: *Products in the Biobased Preferred Procurement Program*

Appendix 6-3, *Military Munitions as Solid Waste*

Appendix 6-4, *Major Components of an EMS*

Appendix 6-5, *USEPA Position Statement on Environmental Management Systems (EMSs)*

Appendix 6-6, *Identification of Aspects and Impacts*

Appendix 6-7, *Examples of Activities, Products and Services and Their Associated Environmental Aspects, Objectives, Targets, Programs, Indicators, Operational Control, and Monitoring and Measurement.*

Appendix 6-8, *Examples of Environmental Training That Can Be Provided by a Facility*

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<b>COMPLIANCE CATEGORY: OTHER ENVIRONMENTAL ISSUES U.S. TEAM Guide</b>	
<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS: December 2018</b>
<p><b>NEPA</b></p> <p><b>O1.1 All Facilities</b></p> <p><b>O1.1.1.US.</b> The current status of any ongoing or unresolved consent orders, compliance agreements, notice of violations (NOVs), inter-agency agreements, or equivalent state enforcement actions is required to be examined (a finding under this checklist item will have the enforcement action/identifying information as the citation).</p>	<p>Determine if noncompliance issues have been resolved by reviewing a copy of the previous report, consent orders, compliance agreements, NOVs, interagency agreements, or equivalent state enforcement actions.</p>



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<p><b>NEPA</b></p> <p><b>O1.2</b>  <b>Missing, Risk Management, and Positive Checklist Items</b></p> <p><b>O1.2.1.US.</b> Facilities are required to comply with all applicable Federal regulatory requirements not contained in this checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of finding).</p> <p><b>O1.2.2.US.</b> Risk management techniques should be promoted in environmental efforts (MP) [Added April 2002].</p> <p><b>O1.2.3.US.</b> Facilities should go above and beyond statutory and regulatory compliance (MP) [Added April 2002].</p>	<p>Determine if any new regulations have been issued since the finalization of TEAM.</p> <p>Determine if the facility has activities or facilities that are regulated, but not addressed in this checklist.</p> <p>Verify that the facility is in compliance with all applicable and newly issued regulations</p> <p>Determine if risk management techniques are promoted in environmental efforts.</p> <p>Determine if the facility has gone above and beyond simply complying with environmental requirements.</p> <p>.</p>



<p style="text-align: center;"><b>COMPLIANCE CATEGORY:</b>  <b>OTHER ENVIRONMENTAL ISSUES</b>  <b>U.S. TEAM Guide</b></p>	
<p style="text-align: center;"><b>REGULATORY REQUIREMENTS:</b></p>	<p style="text-align: center;"><b>REVIEWER CHECKS:</b>  <b>December 2018</b></p>
<p><b>NEPA</b></p> <p><b>01.5</b> <b>Documentation</b></p> <p><b>01.5.1.US.</b> The NEPA process must be integrated into planning for projects as early as possible in order to prevent delays in project implementation (40 CFR 1501.1 and 1501.2) [<b>Revised July 2007</b>].</p> <p><b>01.5.2.US.</b> An EA must be produced, under certain circumstances, to determine if an EIS is necessary (40 CFR 1501.1(b), 1501.4(a), and 1508.9) [<b>Revised May 1996; Revised July 2007; Revised April 2011</b>].</p>	<p>(NOTE: The April 2007 CEQ document <i>Aligning NEPA Processes with EMS: A Guide for NEPA and EMS Practitioners</i> conveys how EMS aspects can inform the development of NEPA analyses and documentation, see Appendix 6-0. Additionally the completed NEPA process can provide information to update the EMS aspects.)</p> <p>Verify that the NEPA process is routinely reviewed as a part of new project development and potentially environmentally significant issues identified.</p> <p>Verify that early cooperative consultation among agencies, such as SHPO, Fish and Wildlife Service, Indian Tribes, is also a part of new project development.</p> <p>Verify that environmental effects and values are identified in adequate detail so they can be compared to economic and technical analysis.</p> <p>Verify that appropriate alternatives are developed and described to recommended actions in any proposal that involves unresolved conflicts concerning alternative uses of available resources.</p> <p>Verify that USEPA documents are used to evaluate and compare reasonable alternatives to recommend actions in any proposals.</p> <p>(NOTE: The April 2007 CEQ document <i>Aligning NEPA Processes with EMS: A Guide for NEPA and EMS Practitioners</i> details how EMS aspects can inform an agency's identification of the type of activities that normally merit an EA or an EIS, see Appendix 6-0. Additionally the completed NEPA process can provide information to update the EMS aspects.)</p> <p>Determine if an EA has been completed and submitted for review before any contract for action is entered into or action is begun unless:</p> <ul style="list-style-type: none"> <li>– the action normally requires an EIS</li> <li>– qualifies for a categorical exclusion (CX).</li> </ul> <p>Verify that the assessment was prepared according to agency policies.</p> <p>(NOTE: The Council on Environmental Quality (CEQ) has issued memo for federal departments and agencies concerning categorical exclusions on 23 November 2010. This memorandum may result in changes to what is considered a CX in different departments and/or agencies. Consult departmental/and agency</p>

<p style="text-align: center;"><b>COMPLIANCE CATEGORY: OTHER ENVIRONMENTAL ISSUES U.S. TEAM Guide</b></p>	
<p style="text-align: center;"><b>REGULATORY REQUIREMENTS:</b></p>	<p style="text-align: center;"><b>REVIEWER CHECKS: December 2018</b></p>
<p><b>01.5.3.US.</b> An EIS must be produced if certain conditions exist due to a proposed action (40 CFR 1501.4(a), 1501.4(c), and 1502.4) <b>[Revised July 2007]</b>.</p>	<p>NEPA-related policy for potential changes. The memorandum is available at <a href="http://www.whitehouse.gov/administration/eop/ceq/initiatives/nepa">http://www.whitehouse.gov/administration/eop/ceq/initiatives/nepa</a>.)</p> <p>(NOTE: Title 40 CFR 1501.3 states that agencies will adopt procedures to indicate when an EA is required to be done. See the Agency-specific Supplement.)</p> <p>(NOTE: The April 2007 CEQ document <i>Aligning NEPA Processes with EMS: A Guide for NEPA and EMS Practitioners</i> details how EMS aspects can inform an agency's identification of the type of activities that normally merit an EA or an EIS, see Appendix 6-0. Additionally the completed NEPA process can provide information to update the EMS aspects.)</p> <p>Verify that an EIS is produced for any activity which normally required an EIS including:</p> <ul style="list-style-type: none"> <li>– the adoption of new Agency programs or regulations that cover broad Federal actions</li> <li>– technological developments with significant affect on the quality of the environment</li> <li>– an EA indicates it is necessary.</li> </ul> <p>(NOTE: Federal agencies are required to develop policies indicating what types of actions require an EIS. See the Agency-specific Supplement.)</p>
<p><b>01.5.4.US.</b> If, due to the results of an EA, an EIS is not going to be prepared, a FONSI must be prepared according to specific parameters (40 CFR 1501.4(e) and 1508.13) <b>[Revised April 2011]</b>.</p>	<p>Verify that FONSI include the following information:</p> <ul style="list-style-type: none"> <li>– the name of the action</li> <li>– a brief description of the action (including any alternatives considered)</li> <li>– a short discussion of anticipated environmental effects</li> <li>– the conclusions that have led to the FONSI.</li> </ul> <p>Verify that the FONSI is made available for public review for 30 days prior to making a final determination whether to prepare an EIS and before the action begins when:</p> <ul style="list-style-type: none"> <li>– the proposed action is, or is closely similar to, one which normally requires the preparation of an EIS by the Federal Agency</li> <li>– the nature of the proposed action is without precedence.</li> </ul> <p>(NOTE: The Council on Environmental Quality (CEQ) has issued memo for federal departments and agencies concerning mitigation and monitoring and specifically addresses the appropriate use of mitigated FONSI. This memo may result in changes in departmental/agency policies. Consult departmental/and</p>

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<p><b>01.5.5.US.</b> When two or more agencies propose or are involved in the same action or are involved in a group of actions directly related to each other because of their functional interdependencies or geographical proximity, a lead agency will supervise the preparation of the EIS (40 CFR 1501.5 and 1501.6).</p>	<p>agency NEPA-related policy for potential changes. The memorandum is available at <a href="http://www.whitehouse.gov/administration/eop/ceq/initiatives/nepa">http://www.whitehouse.gov/administration/eop/ceq/initiatives/nepa</a>.)</p> <p>Determine if the Federal facility is involved in an EIS that includes agencies other than their own.</p> <p>Determine and identify the lead agency.</p> <p>(NOTE: Federal, state, or local agencies, including at least one Federal agency may act as joint lead agencies to prepare an EIS.)</p> <p>Verify that there is a letter or memorandum indicating which agency is the lead Federal agency and which are the cooperating agencies.</p> <p>Verify that if the Federal facility is a lead agency it:</p> <ul style="list-style-type: none"> <li>– requests the participation of each cooperating agency in the NEPA process at the earliest possible time</li> <li>– uses the environmental analysis and proposals of cooperating agencies with jurisdiction by law or special expertise, to the maximum extent possible consistent with its responsibility as lead agency</li> <li>– meets with a cooperating agency at the cooperating agency’s request.</li> </ul> <p>Verify that cooperating agency’s roles and responsibilities are clear.</p>
<p><b>01.5.6.US.</b> As a part of the EIS process, a notice of intent (NOI) must be published and scoping must be done according to specific requirements (40 CFR 1501.7(a), 1501.7(b), and 1508.22).</p>	<p>Determine if a NOI of the proposed action is published in the Federal Register and made available to the media in the areas potentially affected by the proposed action.</p> <p>Verify that after the NOI has been published, scoping procedures begin to determine the relative significance of issues and to what depth they must be addressed in the EIS.</p> <p>Verify that in the scoping process the lead agency:</p> <ul style="list-style-type: none"> <li>– invites the participation of affected Federal, state, and local agencies, any affected Indian tribe, the proponent of the action and other interested persons unless there is a limited exception as defined by agency regulations</li> <li>– determines the scope and the significant issues to be analyzed in depth in the EIS</li> <li>– identifies and eliminates from detailed study the issues which are not significant or which have been covered by prior environmental review</li> </ul>

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<p><b>01.5.7.US.</b> A draft EIS must be prepared according to a specific format and process (40 CFR 1502.6 and 1502.9 through 1502.18).</p>	<ul style="list-style-type: none"> <li>– allocates assignments for preparation of the EIS among the lead and cooperating agencies with the lead agency retaining responsibility for the statement</li> <li>– indicates any public EAs and other EISs which are being or will be prepared that are related but are not part of the scope of the EIS under consideration</li> <li>– identifies other environmental review and consultation requirements so that other analyses and studies may be prepared concurrently with, and integrated with the EIS</li> <li>– indicates the relationship between the timing of the preparation of environmental analyses and the agency’s tentative planning and decision making schedules.</li> </ul> <p>(NOTE: The lead agency may:</p> <ul style="list-style-type: none"> <li>– set page limits on environmental documents</li> <li>– set time limits</li> <li>– adopt procedures to combine an environmental assessment process with the scoping process</li> <li>– hold an early scoping meeting or meetings that may be integrated with any other early planning meetings the agency has.)</li> </ul> <p>Verify that, for projects directly undertaken by a Federal Agency, the EIS is prepared at the feasibility analysis stage.</p> <p>Verify that a preliminary draft is prepared from the scoping procedure with the following format:</p> <ul style="list-style-type: none"> <li>– cover sheet: list of responsible agencies; title of proposed action; name, address, and telephone number of the person at the agency who can supply further information; the designation of the statement as draft, final, or draft or final supplement; a one paragraph abstract; date by which comments must be received</li> <li>– summary: must adequately summarize the statement, stressing major conclusions, areas of controversy, and issues to be resolved</li> <li>– table of contents</li> <li>– purpose of and need for action briefly specifying the underlying purpose and need to which the Federal facility is responding in proposing the alter natives including the proposed action</li> <li>– alternatives including the proposed action: explore and objectively evaluate all reasonable alternatives, identify preferred alternative with justification</li> <li>– affected environment: description of the area(s) to be affected or created by the alternatives under considerations</li> <li>– environmental consequences: discussion of direct effects and their significance, indirect effects and their significance, possible conflicts between the proposed action and the objectives of NEPA, environmental effects of alternatives, energy requirements and conservation potential of various</li> </ul>

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<p><b>O1.5.8.US.</b> Public involvement is a required part of the EIS process (40 CFR 1506.6).</p>	<p>alternatives and mitigation measures, natural or depletable resource requirements and conservation potential of various alternatives and mitigation measures, means to mitigate adverse effects</p> <ul style="list-style-type: none"> <li>– list of preparers: names and qualifications of persons primarily responsible for preparing the EIS or background papers</li> <li>– list of agencies, organizations, and persons to whom copies of the statement are sent</li> <li>– index</li> <li>– appendix: material prepared in coordination with the EIS, normally analytic and relevant to discussions being made.</li> </ul> <p>Verify that the EIS is prepared using an interdisciplinary approach.</p> <p>Verify that a diligent effort has been made to involve the public including:</p> <ul style="list-style-type: none"> <li>– providing public notice of NEPA-related hearings, public meetings, and the availability of environmental documentation such as:</li> <li>– mailing of notices to those who have requested it on an individual action</li> <li>– notice in the Federal Register and mailings to national organizations reasonably expected to be interested if the action is of national concern</li> <li>– notice to the state, local Indian tribes, local newspapers and other local media if the action is of local concern</li> <li>– notice to potentially interested community organizations including small business associations</li> <li>– publication in newsletters that may be expected to reach potentially interested persons</li> <li>– direct mailing to owners and occupants of nearby or affected property</li> <li>– posting of notice on and offsite in the area where the action is to be located</li> <li>– holding or sponsoring public meetings in response to:</li> <li>– substantial environmental controversy or substantial interest in holding the meeting</li> <li>– a request for a hearing by another agency with jurisdiction over the action supported by reasons the hearing would be helpful</li> <li>– soliciting appropriate information from the public</li> <li>– explanations of where individuals can get information or status reports.</li> </ul>
<p><b>O1.5.9.US.</b> After the preparation of the draft EIS, comments are required to be requested and obtained from specific individuals (40 CFR 1502.19 and 1503.1).</p>	<p>Verify that the entire draft and final EIS are circulated to the following:</p> <ul style="list-style-type: none"> <li>– any Federal agency with jurisdiction by law or special expertise with respect to any environmental impact involved or which is authorized to develop and enforce environmental standards</li> <li>– the applicant, if any</li> <li>– any person, organization, or agency requesting the entire EIS</li> </ul>

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<p><b>O1.5.10.US.</b> When preparing the final EIS specific actions are required (40 CFR 1503.4).</p> <p><b>O1.5.11.US.</b> Under certain circumstances, supplements to the draft or final EIS must be prepared (40 CFR 1502.9(c)(1) and 1502.9(c)(4)).</p>	<p>– in the case of a final EIS, any person, organization, or agency which submitted substantive comments.</p> <p>Verify that prior to preparing the final EIS, comments have been obtained of any Federal agency with jurisdiction by law or special expertise with respect to any environmental impact involved or which is authorized to develop and enforce environmental standards.</p> <p>Verify that prior to preparing the final EIS, comments were requested from the following:</p> <ul style="list-style-type: none"> <li>– appropriate state and local agencies which are authorized to develop and enforce environmental standards</li> <li>– Indian tribes, when the effects may be on a reservation</li> <li>– any agency that has requested that it receives statements on actions of the kind proposed.</li> </ul> <p>Verify that comments were requested from the public.</p> <p>Verify that, when preparing the final EIS, all comments are assessed and considered and responded to in one of the following ways:</p> <ul style="list-style-type: none"> <li>– the alternatives are modified, including the proposed action</li> <li>– alternatives not previously given serious consideration by the agency are developed and evaluated</li> <li>– the analysis is supplemented, improved, or modified</li> <li>– an explanation is provided as to why the comments do not warrant further agency response.</li> </ul> <p>Verify that all substantive comments received on the draft (or a summary of the comments) are attached to the final statement whether or not the comment is thought to merit individual discussion.</p> <p>Verify that a supplement is prepared if one of the following occurs:</p> <ul style="list-style-type: none"> <li>– there are substantial changes made in the proposed action that are relevant to environmental concern</li> <li>– there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.</li> </ul> <p>Verify that the supplement is prepared, circulated, and filed in the same way that a draft and final statement unless alternate procedures have been approved by the Council on Environmental Quality (CEQ).</p>

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<p style="text-align: center;"><b>REGULATORY REQUIREMENTS:</b></p>	<p style="text-align: center;"><b>REVIEWER CHECKS:</b>  <b>December 2018</b></p>
<p><b>01.5.12.US.</b> At the time of a decision, a concise public record of decision is required to be prepared (40 CFR 1505.2).</p>	<p>Verify that the record states what the decision was and:</p> <ul style="list-style-type: none"> <li>– identifies all alternatives considered in reaching the decision, specifying the alternative or alternatives considered to be environmentally preferable</li> <li>– a statement as to whether all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted, and if not, why not.</li> </ul>
<p><b>01.5.13.US.</b> Specific requirements are required to be met when implementing the record of decision (40 CFR 1505.3) <b>[Revised April 2011]</b>.</p>	<p>Verify that mitigation and other conditions established in the EIS or during its review and committed as a part of the decision are implemented.</p> <p>Verify that appropriate conditions are included in grants, permits, or other approvals.</p> <p>Verify that funding is based on actions of mitigation.</p> <p>Verify that results of relevant monitoring are made available upon request.</p> <p>Verify that appropriate permits and approvals are obtained.</p> <p>(NOTE: The Council on Environmental Quality (CEQ) has issued memo for federal departments and agencies concerning mitigation and monitoring. This memo may result in changes in departmental/agency policies. Consult departmental/and agency NEPA-related policy for potential changes. The memorandum is available at <a href="http://www.whitehouse.gov/administration/eop/ceq/initiatives/nepa">http://www.whitehouse.gov/administration/eop/ceq/initiatives/nepa</a>.)</p>
<p><b>01.5.14.US.</b> A monitoring and enforcement program will be adopted and summarized where applicable for any mitigation (40 CFR 1502.2(c)) <b>[Revised July 2007; Revised April 2011]</b>.</p>	<p>(NOTE: The April 2007 CEQ document <i>Aligning NEPA Processes with EMS: A Guide for NEPA and EMS Practitioners</i> details how monitoring and mitigation commitments made in a ROD or a FONSI can be incorporated into the EMS and carried through the system, see Appendix 6-0.)</p> <p>Determine if any mitigation commitments are made in the NEPA documents.</p> <p>Verify that the mitigation is funded and implemented as planned.</p> <p>Verify that the mitigation actions are effective.</p> <p>Verify that remedies for ineffective mitigation actions are enforced.</p> <p>(NOTE: The Council on Environmental Quality (CEQ) has issued memo for federal departments and agencies concerning mitigation and monitoring. This memo may result in changes in departmental/agency policies. Consult departmental/and agency NEPA-related policy for potential changes. The memorandum is available at <a href="http://www.whitehouse.gov/administration/eop/ceq/initiatives/nepa">http://www.whitehouse.gov/administration/eop/ceq/initiatives/nepa</a>.)</p>

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<b>01.5.15.US.</b> EISs together with comments and responses must be filed with the EPA (40 CFR 1506.9) [Added October 2005; Revised April 2013].	<p>(NOTE: This checklist item was modified based on a Notice issued in the Federal Register on 14 January 2011.)</p> <p>Verify that when filing an EIS, EPA is provided with four copies of the complete EIS, including appendices and at least one copy of the entire EIS is a paper copy.</p> <p>(NOTE: The remaining 3 copies can be on appropriate electronic storage devices- e.g., compact discs (CDs), USB flash drives, or memory cards. Please note that if a Federal agency prepares an abbreviated Final EIS (as described in 40 CFR 1503.4(c)), it should include copies of the Draft EIS when filing the Final EIS.)</p> <p>(NOTE: To file an EIS by using the U.S. Postal Service (including USPS Express Mail), please use the following address: U.S. Environmental Protection Agency, Office of Federal Activities, EIS Filing Section, Mail Code 2252A, Ariel Rios Building (South Oval Lobby), 1200 Pennsylvania Avenue, NW., Washington, DC 20460.)</p> <p>(NOTE: When filing an EIS in person or by commercial express service [including Federal Express or UPS], use the following address: U.S. Environmental Protection Agency, Office of Federal Activities, EIS Filing Section, Ariel Rios Building (South Oval Lobby), Room 7220, 1200 Pennsylvania Avenue, NW., Washington, DC 20004. If the documents are to be hand-delivered, ask the security guards to phone (202) 564-5400, so you can be escorted to the EIS Filing Section.)</p> <p>(NOTE: Telephone inquiries can also be made to: (202) 564-1399 or (202) 564-7146.)</p> <p>(NOTE: EPA encourages Federal agencies to make their EISs available on the internet. Those that do should send EPA a copy of the Web address (i.e., URL) for the document. The appropriate information should be e-mailed to: EIS-Filing@epa.gov concurrent with filing the EIS as required above.)</p> <p>Verify that the EISs are filed no earlier than they are transmitted to commenting agencies and made available to the public.</p> <p>(NOTE: EPA may issue guidelines to agencies to implement its responsibilities under this section.)</p>

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<b>ENVIRONMENTAL NOISE</b>  <b>O2.1</b> <b>All Facilities</b>  <b>O2.1.1.US.</b> The current status of any ongoing or unresolved consent orders, Compliance agreements, notice of violations (NOVs), inter agency agreements, or equivalent state enforcement actions is required to be examined (a finding under this checklist item will have the enforcement action/identifying information as the citation).	Determine if noncompliance issues have been resolved by reviewing a copy of the previous report, consent orders, compliance agreements, NOVs, interagency agreements, or equivalent state enforcement actions.



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<b>ENVIRONMENTAL NOISE</b>  <b>O2.2 Missing, Risk Management, and Positive Checklist Items</b>  <b>O2.2.1.US.</b> Facilities are required to comply with all applicable Federal regulatory requirements not contained in this checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of finding).  <b>O2.2.2.US.</b> Risk management techniques should be promoted in environmental efforts (MP) [Added April 2002].  <b>O2.2.3.US.</b> Facilities should go above and beyond statutory and regulatory compliance (MP) [Added April 2002].	<p>Determine if any new regulations have been issued since the finalization of TEAM.</p> <p>Determine if the facility has activities or facilities that are regulated, but not addressed in this checklist.</p> <p>Verify that the facility is in compliance with all applicable and newly issued regulations.</p> <p>Determine if risk management techniques are promoted in environmental efforts.</p> <p>Determine if the facility has gone above and beyond simply complying with environmental requirements.</p>



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<b>CERCLA CLEANUP SITES</b>  <b>O3.1</b> <b>All Facilities</b>  <b>O3.1.1.US.</b> The current status of any ongoing or unresolved consent orders, compliance agreements, notice of violations (NOVs), inter-agency agreements, or equivalent state enforcement actions is required to be examined (a finding under this checklist item will have the enforcement action/identifying information as the citation).  <b>O3.1.2.US.</b> When there is a hazardous substance contaminated site, which might require CERCLA response actions, a removal site evaluation is required to be done (40 CFR 300.410) [Revised May 1996].	<p>Determine if noncompliance issues have been resolved by reviewing a copy of the previous report, consent orders, compliance agreements, NOVs, interagency agreements, or equivalent state enforcement actions.</p> <p>Determine if there is a contaminated site that might need to undergo CERCLA response actions.</p> <p>Verify that a removal site evaluation is done as quickly as possible.</p> <p>(NOTE: In response to a petition by potentially affected people, a removal preliminary assessment may be performed based on readily available information.)</p> <p>Verify that the removal site evaluation is not terminated until the following is determined:</p> <ul style="list-style-type: none"> <li>– there is no release</li> <li>– the source is neither a vessel or a facility (see definitions)</li> <li>– the release involves neither a hazardous substance nor a pollutant that may present an imminent and substantial danger to the public health or welfare</li> <li>– the release is one of the following which is subject to limited response:             <ul style="list-style-type: none"> <li>– it is of a naturally occurring substance in its unaltered form, or altered solely through naturally occurring processes or phenomena, from a location where it is naturally found</li> <li>– it is from products that are a part of the structure of, and result in exposure within, residential buildings or business or community structures</li> <li>– it is into public or private drinking water supplies due to deterioration of the system of ordinary use</li> </ul> </li> <li>– the amount, quantity, or concentration released does not warrant Federal response</li> </ul>

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<p><b>03.1.3.US.</b> When removal actions are required as a result of the site evaluation, specific actions must be taken (40 CFR 300.415(a) through 300.415(f)) <b>[Revised May 1996]</b>.</p> <p><b>03.1.4.US.</b> The remedial design/remedial action (RD/RA) is required to be in conformance with the remedy selected and set forth in the ROD or other decision document (40 CFR 300.435).</p>	<p>– a party responsible for the release, or any other person, is providing appropriate response, and on-scene monitoring by the government is not required.</p> <p>Verify that the results of the removal site evaluation are documented.</p> <p>Verify that, if natural resources are, or may be, injured by the release, state and Federal trustees of the property are notified.</p> <p>(NOTE: The removal site evaluation may indicate that a removal action is not required but that remediation action may be necessary.)</p> <p>(NOTE: The requirements listed here do not apply to removal studies and investigations conducted pursuant to Section 104(b) of CERCLA.)</p> <p>Verify that, when it is determined that removal actions are appropriate, the actions begin as soon as possible.</p> <p>Verify that, when there is a planning period of at least 6 mo before onsite activities are initiated, the following are done:</p> <ul style="list-style-type: none"> <li>– an engineering evaluation/cost analysis (EE/CA) or its equivalent is done</li> <li>– sampling and analysis plans are developed if environmental samples are going to be collected.</li> </ul> <p>(NOTE: Examples of removal actions include the following:</p> <ul style="list-style-type: none"> <li>– fences, warning signs, or other security and site control precautions</li> <li>– drainage controls</li> <li>– stabilization of berms, dikes, or impoundments or drainage or closing of lagoons</li> <li>– capping of contaminated soils or sludges</li> <li>– using chemicals or other materials to retard the spread of the contamination</li> <li>– excavation, consolidation, or removal of highly contaminated soils from drainage or other areas</li> <li>– removal of drums, barrels, tanks or other bulk containers</li> <li>– containment, treatment, disposal or incineration of hazardous materials</li> <li>– provision of alternate water supply.)</li> </ul> <p>Verify that the RD/RA activities meet the requirements outlined in the ROD or IAG, including meeting deadlines.</p>

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<p><b>03.1.5.US.</b> A remedial site evaluation consists of a remedial preliminary assessment (PA) and a remedial site inspection (SI) (40 CFR 300.420) [<b>Revised May 1996</b>].</p>	<p>(NOTE: The principal model for a PA is, Guidance for Performing Preliminary Assessments Under CERCLA, USEPA/540/G91-013.)</p> <p>Verify that the remedial PA includes the following:</p> <ul style="list-style-type: none"> <li>– a review of existing information about a release such as information on the pathways of exposure, exposure targets, and source</li> <li>– offsite reconnaissance as appropriate</li> <li>– onsite reconnaissance as appropriate.</li> </ul> <p>Verify that a remedial PA is done for all sites listed in CERCLIS <a href="http://www.epa.gov/superfund/sites/cursites/">http://www.epa.gov/superfund/sites/cursites/</a>.</p> <p>Verify that a PA report is developed that includes:</p> <ul style="list-style-type: none"> <li>– a description of the release</li> <li>– a description of the probable nature of the release</li> <li>– a recommendation on whether further action is warranted, which lead agency should conduct further action and whether a SI or removal action or both should be undertaken.</li> </ul> <p>Verify that a remedial SI is done when a PA is inconclusive in order to:</p> <ul style="list-style-type: none"> <li>– eliminate from further consideration releases that pose no significant threat</li> <li>– determine the potential need for removal action</li> <li>– collect or develop additional data to evaluate the release.</li> </ul> <p>Verify that the remedial SI builds upon information gathered in the remedial PA and involves, as appropriate both on and offsite field investigatory efforts and sampling.</p> <p>Verify that, prior to conducting field sampling as a part of the SI, sampling and analysis plan is developed.</p> <p>Verify that, upon completion of the remedial SI, a report is generated that includes:</p> <ul style="list-style-type: none"> <li>– a description /history/nature of waste handling</li> <li>– a description of known contaminants</li> <li>– a description of known pathways of contaminated migration</li> <li>– an identification and description of human and environmental targets</li> <li>– a recommendation on whether further action is warranted.</li> </ul>
<p><b>03.1.6.US.</b> When a remedial investigation/feasibility study (RI/FS) is done to assess site conditions and evaluate</p>	<p>Verify that the RI/FS includes the following activities:</p>

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<p>alternatives, specific tasks are required as a part of the RI/FS (40 CFR 300.430(a)(2)) <b>[Revised May 1996]</b>.</p> <p><b>03.1.7.US.</b> Engineering and institutional controls may be used as appropriate for short- and long-term management to prevent or limit exposure hazardous substances, pollutants, or contaminants (40 CFR 300.430(a)(1)(iii)(B) and 300.430(a)(1)(iii)(D) and 300.430(e)(3)(ii) and 300.430(f)(4)(ii)) <b>[Added July 2004]</b>.</p> <p><b>03.1.8.US.</b> Specific procedures and planning must occur for implementing offsite response actions (40 CFR 300.440) <b>[Added April 2005]</b>.</p>	<ul style="list-style-type: none"> <li>– assembling and evaluating data on the site, including the results of any removal actions, remedial preliminary assessment and site inspections, and NPL listing process</li> <li>– evaluation of the data and development of conceptual site understanding or model</li> <li>– identification of response scenarios and potentially applicable technologies and operable units that may address site problems</li> <li>– identification of the need for treatability studies</li> <li>– identification of the type, quantity, and quality of data that will be collected to support decisions regarding remedial response activities</li> <li>– site specific health and safety plans</li> <li>– notification of state and Federal trustees if natural resources are or may be injured by the release</li> <li>– sampling and analysis plans</li> <li>– initial identification of potential state and Federal ARARs and as appropriate, other criteria, advisories, or guidance to be considered.</li> </ul> <p>Verify that the ROD and proposed plans have also been reviewed.</p> <p>Verify that the scope and timing of these activities is tailored to the nature and complexity of the problem and the response alternatives being considered.</p> <p>Determine if the installation has any engineering or institutional controls in place by:</p> <ul style="list-style-type: none"> <li>– checking for any land use controls (LUCs)</li> <li>– checking decision documents, detailed operations and maintenance plan, LUC implementation plan and/or permits.</li> </ul> <p>Verify that the remedy is protective of human health and the environment</p> <p>Verify that the controls are monitored and maintained by checking the following:</p> <ul style="list-style-type: none"> <li>– check inspections records</li> <li>– physical check of LUC.</li> </ul> <p>Verify that the 5-yr reviews document the LUC’s continued protection of human health and the environment.</p> <p>(NOTE: This checklist item applies to any remedial or removal action involving the off-site transfer of any hazardous substance, pollutant, or contaminant as defined under CERCLA sections 101(14) and 101(33) [“CERCLA waste”] that is conducted by EPA, States, private parties, or other Federal agencies, that is Fund-financed and/or is taken pursuant to any CERCLA authority, including cleanups at Federal facilities under section 120 of CERCLA, and cleanups under section 311 of the <i>Clean Water Act</i> [except for cleanup of petroleum exempt under CERCLA].</p>

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	<p>Applicability extends to those actions taken jointly under CERCLA and another authority.)</p> <p>(NOTE: In cases of emergency removal actions under CERCLA, emergency actions taken during remedial actions, or response actions under section 311 of the <i>Clean Water Act</i> where the release poses an immediate and significant threat to human health and the environment, the On-Scene Coordinator (OSC) may determine that it is necessary to transfer CERCLA waste offsite without following the requirements of this checklist item.)</p> <p>(NOTE: This checklist item applies to CERCLA wastes from cleanup actions based on CERCLA decision documents signed or consent decrees lodged after 17 October 1986 ["post-SARA CERCLA wastes"] as well as those based on CERCLA decision documents signed and consent decrees lodged prior to 17 October 1986 ["pre-SARA CERCLA wastes"]. Pre-SARA and post-SARA CERCLA wastes are subject to the same acceptability criteria.)</p> <p>(NOTE: EPA (usually the EPA Regional Office) will determine the acceptability under this checklist item of any facility selected for the treatment, storage, or disposal of CERCLA waste. EPA will determine if there are relevant releases or relevant violations at a facility prior to the facility's initial receipt of CERCLA waste. A facility which has previously been evaluated and found acceptable under this rule (or the preceding policy) is acceptable until the EPA Regional Office notifies the facility otherwise.)</p> <p>Verify that the following CERCLA wastes are not transferred back to the CERCLA site unless the Remedial Project Manager or OSC assures the proper management of the CERCLA waste samples or residues and gives permission to the laboratory or treatment facility for the samples and/or residues to be returned to the site:</p> <ul style="list-style-type: none"> <li>– samples of CERCLA wastes sent to a laboratory for characterization</li> <li>– RCRA hazardous wastes that are being transferred from a CERCLA site for treatability studies and that meet the requirements for an exemption for RCRA under 40 CFR 261.4(e)</li> <li>– non-RCRA wastes that are being transferred from a CERCLA site for treatability studies and that are below the quantity threshold established at 40 CFR 261.4(e)(2).</li> </ul> <p>(NOTE: Off-site transfers of the following laboratory samples and treatability study CERCLA wastes from CERCLA sites are not subject to the requirements of this checklist item:</p> <ul style="list-style-type: none"> <li>– samples of CERCLA wastes sent to a laboratory for characterization</li> <li>– RCRA hazardous wastes that are being transferred from a CERCLA site for treatability studies and that meet the requirements for an exemption for RCRA under 40 CFR 261.4(e)</li> </ul>

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	<ul style="list-style-type: none"> <li>– non-RCRA wastes that are being transferred from a CERCLA site for treatability studies and that are below the quantity threshold established at 40 CFR 261.4(e)(2).)</li> </ul> <p>Verify that a facility is deemed in compliance for the purpose of any remedial or removal action involving the off-site transfer of any hazardous substance, pollutant, or contaminant if there are no relevant violations at or affecting the unit or units receiving CERCLA waste:</p> <ul style="list-style-type: none"> <li>– for treatment to standards specified in 40 CFR 268, subpart D, including any pre-treatment or storage units used prior to treatment</li> <li>– for treatment to substantially reduce its mobility, toxicity or persistence in the absence of a defined treatment standard, including any pre-treatment or storage units used prior to treatment</li> <li>– for storage or ultimate disposal of CERCLA waste not treated to the previous criteria at the same facility.</li> </ul> <p>(NOTE: Relevant violations include significant deviations from regulations, compliance order provisions, or permit conditions designed to: ensure that CERCLA waste is destined for and delivered to authorized facilities; prevent releases of hazardous waste, hazardous constituents, or hazardous substances to the environment; ensure early detection of such releases; or compel corrective action for releases. Criminal violations which result in indictment are also relevant violations. In addition, violations of the following requirements may be considered relevant:</p> <ul style="list-style-type: none"> <li>– applicable subsections of sections 3004 and 3005 of RCRA or, where applicable, other Federal laws (such as the Toxic Substances Control Act and subtitle D of RCRA);</li> <li>– applicable sections of State environmental laws</li> <li>– in addition, land disposal units at RCRA subtitle C facilities receiving RCRA hazardous waste from response actions authorized or funded under CERCLA must be in compliance with RCRA section 3004(o) minimum technology requirements. Exceptions may be made only if the unit has been granted a waiver from these requirements under 40 CFR 264.301.)</li> </ul> <p>Verify that releases from units at a facility designated for offsite transfer of CERCLA waste are addressed as follows:</p> <ul style="list-style-type: none"> <li>– CERCLA wastes may be transferred to an offsite unit regulated under subtitle C of RCRA, including a facility regulated under the permit-by-rule provisions of 40 CFR 270.60(a), (b) or (c), only if that unit is not releasing any hazardous waste, hazardous constituent, or hazardous substance into the ground water, surface water, soil or air</li> <li>– CERCLA wastes are not transferred to any unit at a RCRA subtitle C land disposal facility where a non-receiving unit is releasing any hazardous waste, hazardous constituent, or hazardous substance into the groundwater, surface water, soil, or air, unless that release is controlled by an enforceable agreement</li> </ul>

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	<p>for corrective action under subtitle C of RCRA or other applicable Federal or State authority</p> <ul style="list-style-type: none"> <li>– CERCLA wastes are not transferred to any unit at a RCRA subtitle C treatment, storage or permit-by-rule facility, where a release of any hazardous waste, hazardous constituent, or hazardous substance from non-receiving units poses a significant threat to public health or the environment, unless that release is controlled by an enforceable agreement for corrective action under subtitle C of RCRA or other applicable Federal or State authority</li> <li>– CERCLA wastes are not transferred to any unit at an other-than-RCRA subtitle C facility if the EPA Regional Office has information indicating that an environmentally significant release of hazardous substances has occurred at that facility, unless the release is controlled by an enforceable agreement for corrective action under an applicable Federal or State authority.</li> </ul> <p>(NOTE: Releases under this checklist item do not include:</p> <ul style="list-style-type: none"> <li>– de minimis releases</li> <li>– releases permitted under Federal programs or under Federal programs delegated to the States (Federally permitted releases are defined in 40 CFR 300.5), except to the extent that such releases are found to pose a threat to human health and the environment</li> <li>– releases to the air that do not exceed standards promulgated pursuant to RCRA section 3004(n), or absent such standards, or where such standards do not apply, releases to the air that do not present a threat to human health or the environment.)</li> </ul> <p>Verify that, if a State finds that a facility within its jurisdiction is operating in non-compliance with state law requirements including the requirements of any Federal program for which the State has been authorized, EPA determines, after consulting with the State as appropriate, if the violation is relevant under the rule and if so, issues an initial determination of unacceptability.</p> <p>Verify that, if a State finds that releases are occurring at a facility regulated under State law or a Federal program for which the State is authorized, EPA determines, after consulting with the State as appropriate, if the release is relevant under the rule and if so, issue an initial determination of unacceptability.</p> <p>(NOTE: EPA may also issue initial determinations of unacceptability based on its own findings. EPA can undertake any inspections, data collection and/or assessments necessary. EPA will then notify with the State about the results and issue a determination notice if a relevant violation or release is found.)</p> <p>(NOTE: Upon initial determination by the EPA Regional Office that a facility being considered for the offsite transfer of any CERCLA waste does not meet the criteria for acceptability, the EPA Region will notify the owner/operator of such facility, and the responsible agency in the State in which the facility is located, of the unacceptability finding. The notice will be sent by certified and first-class mail, return receipt requested. The certified notice, if not acknowledged by the return</p>

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	<p>receipt card, should be considered to have been received by the addressee if properly sent by regular mail to the last address known to the EPA Regional Office. The notice shall generally: state that based on available information from a RCRA Facility Assessment (RFA), inspection, or other data sources, the facility has been found not to meet the requirements of 40 CFR 300.440; cite the specific acts, omissions, or conditions which form the basis of these findings; and inform the owner/operator of the procedural recourse available under this regulation.)</p> <p>(NOTE: A facility which was previously evaluated and found acceptable may continue to receive CERCLA waste for 60 calendar days after the date of issuance of the notice, unless otherwise determined.)</p> <p>(NOTE: Details of the process for determining acceptability or unacceptability are in the text of 40 CFR 300.440(d) through 400.440(f).)</p>

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<b>CERCLA CLEANUP SITES</b>  <b>O3.2 Missing, Risk Management, and Positive Checklist Items</b>  <b>O3.2.1.US.</b> Facilities are required to comply with all applicable Federal regulatory requirements not contained in this checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of finding).  <b>O3.2.2.US.</b> Risk management techniques should be promoted in environmental efforts (MP) [Added April 2002].  <b>O3.2.3.US.</b> Facilities should go above and beyond statutory and regulatory compliance (MP) [Added April 2002].	<p>Determine if any new regulations have been issued since the finalization of TEAM.</p> <p>Determine if the facility has activities or facilities that are regulated, but not addressed in this checklist.</p> <p>Verify that the facility is in compliance with all applicable and newly issued regulations.</p> <p>Determine if risk management techniques are promoted in environmental efforts.</p> <p>Determine if the facility has gone above and beyond simply complying with environmental requirements.</p>





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	<ul style="list-style-type: none"> <li>– the administrative record is made available for public inspection when the EE/CA is made available</li> <li>– a notice of the availability of the administrative file is published in a newspaper of general circulation</li> <li>– a public comment period is provided for</li> <li>– a written response to significant comments is included in the administrative file</li> <li>– public participation procedures as outlined in 40 CFR 300.415(m) (see checklist item O3.10) are done.</li> </ul> <p>Verify that if it is determined that a removal action is appropriate and there is not a planning period of 6 mo:</p> <ul style="list-style-type: none"> <li>– the administrative record file is made public no later than 60 days after the start of onsite removal activity</li> <li>– a notice of availability is published in a local newspaper of general circulation</li> <li>– a public comment period of at least 30 days is provided for beginning at the time the administrative record is made available to the public</li> <li>– a written response to significant comments is placed in the administrative file.</li> </ul>

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<b>CERCLA CLEANUP SITES</b>  <b>O3.10 Community Relations</b>  <b>O3.10.1.US.</b> In the case of a removal action, specific community relations' activities are required to be done (40 CFR 300.415(m) and CERCLA Section 300.40(m)(1)).	<p>Verify that if a removal action has been conducted, a spokesperson was appointed.</p> <p>Verify that, when it is determined based on the site evaluation, that removal is appropriate and less than 6 mo exists before onsite removal activity begins, the following is done:</p> <ul style="list-style-type: none"> <li>– a notice of availability of the administrative record is published in a major local newspaper of general circulation within 60 day of the start of removal activity</li> <li>– a public comment period of not less than 30 days is provided from the time the administrative record file is made available for public inspection</li> <li>– a written response is prepared for significant comments.</li> </ul> <p>Verify that, for removal actions where onsite actions are expected to extend beyond 120 days from the start of onsite removal activities, the following is done by the end of the 120 day period:</p> <ul style="list-style-type: none"> <li>– local officials, community residents, public interest groups, or other interested parties are interviewed to solicit their concerns and how they would like to be involved in the Superfund process</li> <li>– prepare a formal community relations plan (CRP) specifying actions that will be taken</li> <li>– establish at least one local information repository at or near the location of the response action.</li> </ul> <p>Verify that, when there is a planning period of at least 6 mo prior to the start of onsite removal actions, the following are done:</p> <ul style="list-style-type: none"> <li>– prior to the completion of the EE/CA:             <ul style="list-style-type: none"> <li>– local officials, community residents, public interest groups, or other interested parties are interviewed to solicit their concerns and how they would like to be involved in the Superfund process</li> <li>– prepare a formal CRP specifying actions that will be taken</li> <li>– establish at least one local information repository at or near the location of the response action no later than when the EE/CA approval memo is signed</li> </ul> </li> <li>– publish a notice of availability and brief description of the EE/CA in a major local newspaper of general circulation</li> <li>– provide a reasonable opportunity of not less than 30 days for comments</li> <li>– prepare a written response to comments.</li> </ul>

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<p><b>O3.10.2.US.</b> Specific community relations' activities are required to occur in relation to a remedial investigation (40 CFR 300.430(c)).</p>	<p>(NOTE: These community relations requirements apply to all remedial activities undertaken pursuant to CERCLA section 104 and to section 106 or section 122 consent orders or decrees, or section 106 administrative orders.)</p> <p>Verify that the following are done prior to starting field work for remedial investigations:</p> <ul style="list-style-type: none"> <li>– local officials, community residents, public interest groups, or other interested parties are interviewed to solicit their concerns and how they would like to be involved in the Superfund process</li> <li>– prepare a formal CRP specifying actions that will be taken</li> <li>– establish at least one local information repository at or near the location of the response action</li> <li>– inform the community of the availability of technical assistance grants.</li> </ul>
<p><b>O3.10.3.US.</b> During the process of selecting a remedy, specific community relations' activities are required to occur (40 CFR 300.430(f)(3)).</p>	<p>Verify that after preparation of the proposed plan, the following activities are done:</p> <ul style="list-style-type: none"> <li>– publication of a notice of availability of the proposed plan in a major local newspaper of general circulation</li> <li>– the proposed plan and supporting analysis and information are made available in the administrative record</li> <li>– at least 30 days is provided for oral and written comments</li> <li>– the opportunity for a public meeting is provided during the public comment period at or near the site at issue</li> <li>– creation of a transcript of the public meeting and the transcript is made available to the public</li> <li>– preparation of a written summary of the significant comments, criticisms, and new relevant information submitted during the comment period and the lead agency's response to each.</li> </ul> <p>Verify that if additional information which has a significant impact becomes available after the publication of the proposed plan and prior to the adoption of the selected remedy in the record decision, the Federal facility:</p> <ul style="list-style-type: none"> <li>– includes a discussion in the record of decision (ROD)/decision document (DD) of the changes and reasons for changes</li> <li>– seeks additional public comment on the revised proposed plan.</li> </ul> <p>(NOTE: ROD is only appropriate for NPL, Non-NPL sites still require a DD.)</p>
<p><b>O3.10.4.US.</b> When the ROD/DD is signed, a notice of availability must be published</p>	<p>Verify that, when the ROD/DD was signed, a notice was published in a major local newspaper of general circulation.</p>

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<p>and the record made available for public inspection (40 CFR 300.430(f)(6)).</p> <p><b>03.10.5.US.</b> Specific community relations' activities are required to occur during the remedial design/remedial action (RD/RA) phase of the IRP (40 CFR 300.435(c)(2) and 300.435(c)(3)) [Revised October 2013].</p>	<p>Verify that the ROD/DD is available for public inspection and copying at or near the facility prior to the start of any remedial activities.</p> <p>Verify that if the RA or enforcement action taken, or the settlement or consent decree entered into, differs significantly from the remedy selected in the ROD with respect to cost, scope, or performance, one of the following is done:</p> <ul style="list-style-type: none"> <li>– publish an explanation of the significant differences when the differences in the remedial or enforcement action, settlement, or consent decree significantly change but do not fundamentally alter the remedy selected in the ROD with respect to scope, performance, or cost by: <ul style="list-style-type: none"> <li>– making the explanation of the significant difference and supporting information available to the public in the Administrative Record and the information repository</li> <li>– publishing a notice that briefly summarizes the explanation of significant difference, including the reasons for the differences, in a major local newspaper of general circulation</li> </ul> </li> <li>– propose an amendment to the ROD if the differences in the remedial or enforcement action, settlement, or consent decree fundamentally alter the basic features of the selected remedy with respect to scope, performance, or cost by: <ul style="list-style-type: none"> <li>– issuing a notice of availability and brief description of the proposed amendment to the ROD in a major local newspaper of general circulation</li> <li>– providing a reasonable opportunity, not less than 30 calendar days, for submission of written or oral comments on the amendment to the ROD</li> <li>– providing the opportunity for a public meeting to be held during the public comment period at or near the facility at issue</li> <li>– keeping a transcript of comments received at the public meeting held during the public comment period</li> <li>– including in the amended ROD a brief explanation of the amendment and the response to each of the significant comments, criticisms, and new relevant information submitted during the public comment period</li> <li>– publishing a notice of the availability of the amended ROD in a major local newspaper of general circulation</li> <li>– making the amended ROD and supporting information available to the public in the administrative record and information repository prior to the commencement of the remedial action affected by the amendment.</li> </ul> </li> </ul> <p>Verify that after the completion of the final engineering design, a fact sheet is issued and a public briefing is done, as appropriate, prior to the initiation of the remedial action.</p>



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<p><b>CERCLA CLEANUP SITES</b></p> <p><b>03.12</b>  <b>All Appropriate Inquiries</b></p> <p><b>03.12.1.US.</b> Certain investigations are required under CERCLA (312.1(a) through 312.1(c)(1) and 312.1(d)) [Added April 2006].</p> <p><b>03.12.2.US.</b> Persons conducting site characterization and assessments with the use of a grant awarded under CERCLA section 104(k)(2)(B) must investigate the release and/or threatened release of specific substances (40 CFR</p>	<p>(NOTE: The purpose of 40 CFR 312 is to provide standards and practices for “All Appropriate Inquiries” for the purposes of CERCLA sections 101(35)(B)(i)(I) and 101(35)(B)(ii) and 101(35)(B)(iii).)</p> <p>(NOTE: These requirements apply to:</p> <ul style="list-style-type: none"> <li>– persons seeking to establish: <ul style="list-style-type: none"> <li>– the innocent landowner defense pursuant to CERCLA sections 101(35) and 107(b)(3)</li> <li>– the bona fide prospective purchaser liability protection pursuant to CERCLA sections 101(40) and 107(r)</li> <li>– the contiguous property owner liability protection pursuant to CERCLA section 107(q)</li> </ul> </li> <li>– persons conducting site characterization and assessments with the use of a grant awarded under CERCLA section 104(k)(2)(B).)</li> </ul> <p>Verify that persons seeking to establish the innocent landowner defense, the bona fide prospective purchaser liability protection, or the contiguous property owner liability protection conducts the required investigations to identify conditions indicative of releases or threatened releases, as defined in CERCLA section 101(22), of hazardous substances, as defined in CERCLA section 101(14).</p> <p>(NOTE: None of the requirements of 40 CFR 312 limits or expands disclosure obligations under any federal, state, tribal, or local law, including the requirements under CERCLA sections 101(40)(c) and 107(q)(1)(A)(vii) requiring persons, including environmental professionals, to provide all legally required notices with respect to the discovery of releases of hazardous substances. It is the obligation of each person, including environmental professionals, conducting the inquiry to determine his or her respective disclosure obligations under federal, state, tribal, and local law and to comply with such disclosure requirements.)</p> <p>Verify that the required investigations are performed to identify conditions indicative of releases and threatened releases of hazardous substances, as defined in CERCLA section 101(22), and as applicable per the terms and conditions of the grant or cooperative agreement, releases and threatened releases of:</p> <ul style="list-style-type: none"> <li>– pollutants and contaminants, as defined in CERCLA section 101(33)</li> <li>– petroleum or petroleum products excluded from the definition of “hazardous substance” as defined in CERCLA section 101(14)</li> <li>– controlled substances, as defined in 21 U.S.C. 802.</li> </ul>

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<p>312.1(c)(2)) [Added April 2006].</p> <p><b>O3.12.3.US.</b> “All Appropriate Inquiries” pursuant to CERCLA section 101(35)(B) must be conducted within 1 yr prior to the date of acquisition of the subject property according to specific parameters (40 CFR 312.20(a) through 312.20(d)) [Added April 2006].</p>	<p>(NOTE: This checklist item applies to the persons defined in O3.12.1.US.)</p> <p>Verify that “All Appropriate Inquiries” pursuant to CERCLA section 101(35)(B) are conducted within 1 yr prior to the date of acquisition of the subject property.</p> <p>Verify that “All Appropriate Inquiries” include:</p> <ul style="list-style-type: none"> <li>– an inquiry by an environmental professional, as provided in 40 CFR 312.21</li> <li>– the collection of information pursuant to 40 CFR 312.22 by persons identified under 40 CFR 312.1(b)</li> <li>– searches for recorded environmental cleanup liens, as required in 40 CFR 312.25.</li> </ul> <p>Verify that the following components of the “All Appropriate Inquiries” are conducted or updated within 180 days of and prior to the date of acquisition of the subject property:</p> <ul style="list-style-type: none"> <li>– interviews with past and present owners, operators, and occupants (see 40 CFR 312.23)</li> <li>– searches for recorded environmental cleanup liens (see 40 CFR 312.25)</li> <li>– reviews of federal, tribal, state, and local government records (see 40 CFR 312.26)</li> <li>– visual inspections of the facility and of adjoining properties (see 40 CFR 312.27)</li> <li>– the declaration by the environmental professional (see 40 CFR 312.21(d)).</li> </ul> <p>(NOTE: “All Appropriate Inquiries” may include the results of and information contained in an inquiry previously conducted by, or on the behalf of, persons who are responsible for the inquiries for the subject property, provided:</p> <ul style="list-style-type: none"> <li>– such information was collected during the conduct of All Appropriate Inquiries in compliance with the requirements of CERCLA sections 101(35)(B), 101(40)(B) and 107(q)(A)(viii)</li> <li>– such information was collected or updated within one year prior to the date of acquisition of the subject property;</li> <li>– the following components of the inquiries were conducted or updated within 180 days of and prior to the date of acquisition of the subject property: <ul style="list-style-type: none"> <li>– interviews with past and present owners, operators, and occupants (see 40 CFR 312.23)</li> <li>– searches for recorded environmental cleanup liens (see 40 CFR 312.25)</li> <li>– reviews of federal, tribal, state, and local government records (see 40 CFR 312.26)</li> <li>– visual inspections of the facility and of adjoining properties (see 40 CFR 312.27)</li> </ul> </li> </ul>

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<p><b>O3.12.4.US.</b> When conducting “All Appropriate Inquiries” certain information must be gathered about subject properties (40 CFR 312.20(e) and 312.20(g)) [Added April 2006].</p>	<ul style="list-style-type: none"> <li>– the declaration by the environmental professional (see 40 CFR 312.21(d))</li> <li>– previously collected information is updated to include relevant changes in the conditions of the property and specialized knowledge, as outlined in 40 CFR 312.28, of the persons conducting the all appropriate inquiries for the subject property.</li> </ul> <p>(NOTE: All appropriate inquiries can include the results of reports, that have been prepared by or for other persons, provided that:</p> <ul style="list-style-type: none"> <li>– the reports meets the objectives and performance factors of this regulation</li> <li>– the person seeking to use the previously collected information reviews the information and conducts the additional inquiries and the all appropriate inquiries are updated, as necessary.)</li> </ul> <p>(NOTE: This checklist item applies to the persons defined in O3.12.1.US.)</p> <p>(NOTE: The standards and practices set forth here for All Appropriate Inquiries are intended to result in the identification of conditions indicative of releases and threatened releases of hazardous substances on, at, in, or to the subject property.:</p> <p>Verify that, in performing the all appropriate inquiries, personnel seek to identify the following types of information about the subject property:</p> <ul style="list-style-type: none"> <li>– current and past property uses and occupancies</li> <li>– current and past uses of hazardous substances</li> <li>– waste management and disposal activities that could have caused releases or threatened releases of hazardous substances</li> <li>– current and past corrective actions and response activities undertaken to address past and on-going releases of hazardous substances</li> <li>– engineering controls</li> <li>– institutional controls</li> <li>– properties adjoining or located nearby the subject property that have environmental conditions that could have resulted in conditions indicative of releases or threatened releases of hazardous substances to the subject property.</li> </ul> <p>(NOTE: In the case of persons conducting site characterization and assessments with the use of a grant awarded under CERCLA section 104(k)(2)(B), the standards and practices for All Appropriate Inquiries are intended to result in the identification of conditions indicative of releases and threatened releases of hazardous substances, pollutants, contaminants, petroleum and petroleum products, and controlled substances (as defined in 21 U.S.C. 802) on, at, in, or to the subject property.)</p> <p>Verify that, in the case of persons conducting site characterization and assessments with the use of a grant awarded under CERCLA section 104(k)(2)(B), the following types of information about the subject property is sought:</p>

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<p><b>03.12.5.US.</b> When conducting “All Appropriate Inquiries” certain information must be gathered about subject properties (40 CFR 312.20(f), 312.20(h), and 312.22) [Added April 2006].</p>	<ul style="list-style-type: none"> <li>– current and past property uses and occupancies</li> <li>– current and past uses of hazardous substances, pollutants, contaminants, petroleum and petroleum products, and controlled substances (as defined in 21 U.S.C. 802)</li> <li>– waste management and disposal activities</li> <li>– current and past corrective actions and response activities undertaken to address past and on-going releases of hazardous substances pollutants, contaminants, petroleum and petroleum products, and controlled substances (as defined in 21 U.S.C. 802)</li> <li>– engineering controls</li> <li>– institutional controls</li> <li>– properties adjoining or located nearby the subject property that have environmental conditions that could have resulted in conditions indicative of releases or threatened releases of hazardous substances, pollutants, contaminants, petroleum and petroleum products, and controlled substances (as defined in 21 U.S.C. 802) to the subject property.</li> </ul> <p>(NOTE: To the extent there are data gaps in the information developed as part of the above inquiries that affect the ability of persons (including the environmental professional) conducting the all appropriate inquiries to identify conditions indicative of releases or threatened releases in each area of inquiry under each standard and practice, the data gaps and the sources of information consulted to address such data gaps must be identifies, and comments made upon the significance of the data gaps with regard to the ability to identify conditions indicative of releases or threatened releases of hazardous substances, pollutants, contaminants, petroleum and petroleum products, and controlled substances (as defined in 21 U.S.C. 802)] on, at, in, or to the subject property as appropriate. Sampling and analysis may be conducted to develop information to address data gaps.)</p> <p>(NOTE: This checklist item applies to the persons defined in 03.12.1.US.)</p> <p>Verify that personnel conducting “All Appropriate Inquiries” seek to:</p> <ul style="list-style-type: none"> <li>– gather the information that is required for each standard and practice listed in this regulation that is publicly available, obtainable from its source within reasonable time and cost constraints, and which can practicably be reviewed</li> <li>– review and evaluate the thoroughness and reliability of the information gathered in complying with each required standard and practice, taking into account information gathered in the course of complying with the other standards and practices of this regulation.</li> </ul> <p>Verify that releases and threatened releases identified as part of the all appropriate inquiries are noted in the report of the inquiries.</p> <p>(NOTE: The intent is not require the identification in the written report prepared pursuant to 40 CFR 312.21(c) of quantities or amounts, either individually or in the</p>

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<p><b>O3.12.6.US.</b> Inquiry of an environmental professional must meet certain standards and research specific records (40 CFR 312.21 and 312.23) [Added April 2006].</p>	<p>aggregate, of hazardous substances pollutants, contaminants, petroleum and petroleum products, and controlled substances (as defined in 21 U.S.C. 802) that because of said quantities and amounts, generally would not pose a threat to human health or the environment.)</p> <p>Verify that personnel conducting “All Appropriate Inquiries” provide the following information associated with such inquiries to the responsible environmental professional:</p> <ul style="list-style-type: none"> <li>– if not otherwise obtained by the environmental professional, environmental cleanup liens against the subject property that are filed or recorded under federal, tribal, state, or local law</li> <li>– specialized knowledge or experience of the person personnel conducting the “All Appropriate Inquiry”</li> <li>– the relationship of the purchase price to the fair market value of the subject property, if the property was not contaminated; and</li> <li>– if not otherwise obtained by the environmental professional, commonly known or reasonably ascertainable information about the subject property.</li> </ul> <p>(NOTE: This checklist item applies to the persons defined in O3.12.1.US.)</p> <p>Verify that the inquiry of the environmental professional includes:</p> <ul style="list-style-type: none"> <li>– interviews with past and present owners</li> <li>– reviews of historical sources</li> <li>– reviews of government records</li> <li>– visual inspections</li> <li>– commonly known or reasonably ascertainable information</li> <li>– degree of obviousness of the presence contamination</li> <li>– the ability to detect the contamination.</li> </ul> <p>Verify that the inquiry of the environmental professional takes into account information provided to the environmental professional as a result of the additional inquiries conducted by individuals to which 40 CFR 312 applies and in accordance with the requirements of 40 CFR 312.22.</p> <p>Verify that the results of the inquiry by an environmental professional are documented in a written report that, at a minimum, includes the following:</p> <ul style="list-style-type: none"> <li>– an opinion as to whether the inquiry has identified conditions indicative of releases or threatened releases of hazardous substances, pollutants, contaminants, petroleum and petroleum products, and controlled substances (as defined in 21 U.S.C. 802)] on, at, in, or to the subject property as appropriate</li> <li>– an identification of data gaps in the information developed as part of the inquiry that affect the ability of the environmental professional to identify</li> </ul>

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	<p>conditions indicative of releases or threatened releases of hazardous substances, pollutants, contaminants, petroleum and petroleum products, and controlled substances (as defined in 21 U.S.C. 802)] on, at, in, or to the subject property as appropriate</p> <ul style="list-style-type: none"> <li>– comments regarding the significance of any data gaps on the environmental professional's ability to provide an opinion as to whether the inquiry has identified conditions indicative of releases or threatened releases on, at, in, or to the subject property.</li> <li>– notation if there are data gaps such that the environmental professional cannot reach an opinion regarding the identification of conditions indicative of releases and threatened releases</li> <li>– the qualifications of the environmental professional(s).</li> </ul> <p>Verify that the environmental professional places the following statements in the written document and signs the document:</p> <ul style="list-style-type: none"> <li>– “[I, We] declare that, to the best of [my, our] professional knowledge and belief, [I, we] meet the definition of Environmental Professional as defined in 40 CFR 312.10.”</li> <li>– [I, We] have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. [I, We] have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.”</li> </ul> <p>Verify that the inquiry of the environmental professional includes interviewing the current owner and occupant of the subject property.</p> <p>(NOTE: If the property has multiple occupants, the inquiry of the environmental professional shall include interviewing major occupants, as well as those occupants likely to use, store, treat, handle or dispose of hazardous substances, pollutants, contaminants, petroleum and petroleum products, and controlled substances as appropriate, or those who have likely done so in the past.)</p> <p>Verify that the inquiry of the environmental professional also includes interviewing one or more of the following persons:</p> <ul style="list-style-type: none"> <li>– current and past facility managers with relevant knowledge of uses and physical characteristics of the property</li> <li>– past owners, occupants, or operators of the subject property</li> <li>– employees of current and past occupants of the subject property.</li> </ul> <p>Verify that, in the case of inquiries conducted at “abandoned properties,” where there is evidence of potential unauthorized uses of the subject property or evidence of uncontrolled access to the subject property, the environmental professional's inquiry includes interviewing one or more (as necessary) owners or occupants of neighboring or nearby properties from which it appears possible to have observed</p>

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<p><b>O3.12.7.US.</b> As a part of the “All Appropriate Inquiries,” historical records; Federal, State, Tribal, and local government records; and recorded environmental cleanup liens must be reviewed (40 CFR 312.24 through 312.26) [<b>Added April 2006</b>].</p>	<p>uses of, or releases at, such abandoned properties for the purpose of gathering information necessary to achieve the required information.</p> <p>(NOTE: This checklist item applies to the persons defined in O3.12.1.US.)</p> <p>Verify that historical documents and records are reviewed that cover a period of time as far back in the history of the subject property as it can be shown that the property contained structures or from the time the property was first used for residential, agricultural, commercial, industrial, or governmental purposes.</p> <p>(NOTE: Historical documents and records may include, but are not limited to, aerial photographs, fire insurance maps, building department records, chain of title documents, and land use records. The environmental professional may exercise professional judgment in context of the facts available at the time of the inquiry as to how far back in time it is necessary to search historical records.)</p> <p>Verify that all appropriate inquiries include a search for the existence of environmental cleanup liens against the subject property that are filed or recorded under federal, tribal, state, or local law.</p> <p>Verify that Federal, tribal, state, and local government records or data bases of government records of the subject property and adjoining properties are reviewed, including:</p> <ul style="list-style-type: none"> <li>– records of reported releases or threatened releases, including site investigation reports for the subject property</li> <li>– records of activities, conditions, or incidents likely to cause or contribute to releases or threatened releases, including landfill and other disposal unit location records and permits, storage tank records and permits, hazardous waste handler and generator records and permits, federal, tribal and state government listings of sites identified as priority cleanup sites, and spill reporting records</li> <li>– CERCLIS records</li> <li>– public health records</li> <li>– Emergency Response Notification System records</li> <li>– registries or publicly available lists of engineering controls</li> <li>– registries or publicly available lists of institutional controls, including environmental land use restrictions, applicable to the subject property.</li> </ul> <p>Verify that, with regard to nearby or adjoining properties, the review of federal, tribal, state, and local government records or databases of government records includes the identification of the following:</p> <ul style="list-style-type: none"> <li>– properties for which there are government records of reported releases or threatened releases such as: <ul style="list-style-type: none"> <li>– records of NPL sites or tribal- and state-equivalent sites (1 mi)</li> <li>– RCRA facilities subject to corrective action (1 mi)</li> </ul> </li> </ul>

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<p><b>03.12.8.US.</b> As a part of the “All Appropriate Inquiries,” the property must undergo visual inspection (40 CFR 312.27) [Added April 2006].</p>	<ul style="list-style-type: none"> <li>– records of federally-registered, or state-permitted or registered, hazardous waste sites identified for investigation or remediation, such as sites enrolled in state and tribal voluntary cleanup programs and tribal- and state-listed brownfields sites (1/2 mi)</li> <li>– records of leaking underground storage tanks (1/2 mi)</li> <li>– properties that previously were identified or regulated by a government entity due to environmental concerns at the property, such as: <ul style="list-style-type: none"> <li>– records of delisted NPL sites (1/2 mi)</li> <li>– registries or publicly available lists of engineering controls (1/2 mi)</li> <li>– records of former CERCLIS sites with no further remedial action notices (1/2 mi)</li> </ul> </li> <li>– properties for which there are records of federally-permitted, tribal-permitted or registered, or state-permitted or registered waste management activities, such as: <ul style="list-style-type: none"> <li>– records of RCRA small quantity and large quantity generators (adjoining properties)</li> <li>– records of federally-permitted, tribal-permitted, or state-permitted (or registered) landfills and solid waste management facilities (1/2 mi)</li> <li>– records of registered storage tanks (adjoining property)</li> </ul> </li> </ul> <p>(NOTE: A review of additional government records with regard to the types of sites listed on this checklist item may be necessary in the judgment of the environmental professional. The search distance from the subject property boundary for reviewing government records or databases of government records may be modified based upon the professional judgment of the environmental professional. The rationale for such modifications must be documented by the environmental professional. The environmental professional may consider one or more of the following factors in determining an alternate appropriate search distance:</p> <ul style="list-style-type: none"> <li>– the nature and extent of a release</li> <li>– geologic, hydrogeologic, or topographic conditions of the subject property and surrounding environment</li> <li>– land use or development densities</li> <li>– the property type</li> <li>– existing or past uses of surrounding properties</li> <li>– potential migration pathways (e.g., groundwater flow direction, prevalent wind direction)</li> <li>– other relevant factors.</li> </ul> <p>(NOTE: This checklist item applies to the persons defined in 03.12.1.US.)</p> <p>Verify that the environmental professional performs a visual on-site inspection of the subject property and facilities and improvements on the subject property, including a visual inspection of the areas where hazardous substances may be or may have been used, stored, treated, handled, or disposed.</p>

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<p><b>O3.12.9.US.</b> As a part of the “All Appropriate Inquiries,” specialized knowledge or</p>	<p>Verify that physical limitations to the visual inspection are noted.</p> <p>Verify that the environmental professional performs a visual inspection of adjoining properties, from the subject property line, public rights-of-way, or other vantage point (e.g., aerial photography), including a visual inspection of areas where hazardous substances may be or may have been stored, treated, handled or disposed.</p> <p>Verify that physical limitations to the inspection of adjacent properties are noted.</p> <p>Verify that persons conducting site characterization and assessments using a grant awarded under CERCLA section 104(k)(2)(B) include visual inspections of areas where hazardous substances, and may include, as applicable per the terms and conditions of the grant or cooperative agreement, pollutants and contaminants, petroleum and petroleum products, and controlled substances as defined in 21 U.S.C. 802 may be or may have been used, stored, treated, handled or disposed at the subject property and adjoining properties.</p> <p>(NOTE: A visual on-site inspection of the subject property must be conducted. In the unusual circumstance where an on-site visual inspection of the subject property cannot be performed because of physical limitations, remote and inaccessible location, or other inability to obtain access to the property, provided good faith efforts have been taken to obtain such access, an on-site inspection will not be required. The mere refusal of a voluntary seller to provide access to the subject property does not constitute an unusual circumstance.)</p> <p>Verify that, in the unusual circumstance where an on-site visual inspection of the subject property cannot be performed, the inquiry of the environmental professional includes:</p> <ul style="list-style-type: none"> <li>– visually inspecting the subject property via another method (such as aerial imagery for large properties), or visually inspecting the subject property from the nearest accessible vantage point (such as the property line or public road for small properties)</li> <li>– documentation of efforts undertaken to obtain access and an explanation of why such efforts were unsuccessful</li> <li>– documentation of other sources of information regarding releases or threatened releases at the subject property that were consulted in accordance.</li> </ul> <p>Verify that documentation includes comments by the environmental professional on the significance of the failure to conduct a visual on-site inspection of the subject property with regard to the ability to identify conditions indicative of releases or threatened releases on, at, in, or to the subject property, if any.</p> <p>(NOTE: This checklist item applies to the persons defined in O3.12.1.US.)</p>

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<p>experience must be taken into account (40 CFR 312.28) [Added April 2006].</p> <p><b>O3.12.10.US.</b> As a part of the “All Appropriate Inquiries,” the relationship of the purchase price to the value of the property if the property was not contaminated must be taken into account (40 CFR 312.29) [Added April 2006].</p> <p><b>O3.12.11.US.</b> As a part of the “All Appropriate Inquiries,” commonly known or reasonably ascertainable information about the property must be taken into account (40 CFR 312.30) [Added April 2006].</p>	<p>Verify that personnel conducting “All Appropriate Inquiries” take into account their specialized knowledge of the subject property, the area surrounding the subject property, the conditions of adjoining properties, and any other experience relevant to the inquiry, for the purpose of identifying conditions indicative of releases or threatened releases at the subject property.</p> <p>(NOTE: All appropriate inquiries are not complete unless the results of the inquiries take into account the relevant and applicable specialized knowledge and experience of the persons responsible for undertaking the inquiry.)</p> <p>(NOTE: This checklist item applies to the persons defined in O3.12.1.US.)</p> <p>Verify that personnel conducting “All Appropriate Inquiries” consider whether the purchase price of the subject property reasonably reflects the fair market value of the property, if the property were not contaminated.</p> <p>Verify that persons who conclude that the purchase price of the subject property does not reasonably reflect the fair market value of that property, if the property were not contaminated, consider whether or not the differential in purchase price and fair market value is due to the presence of releases or threatened releases of hazardous substances.</p> <p>Verify that persons conducting site characterization and assessments with the use of a grant awarded under CERCLA section 104(k)(2)(B) and who know that the purchase price of the subject property does not reasonably reflect the fair market value of that property, if the property were not contaminated, consider whether or not the differential in purchase price and fair market value is due to the presence of releases or threatened releases of hazardous substances, pollutants, contaminants, petroleum and petroleum products, or controlled substances as defined in 21 U.S.C. 802.</p> <p>(NOTE: This checklist item applies to the persons defined in O3.12.1.US.)</p> <p>Verify that personnel conducting “All Appropriate Inquiries” and environmental professionals conducting the inquiry take into account commonly known or reasonably ascertainable information within the local community about the subject property and consider such information when seeking to identify conditions indicative of releases or threatened releases.</p> <p>(NOTE: Commonly known information may include information about releases or threatened releases at the subject property that is incidental to the information obtained during the inquiry of the environmental professional.)</p> <p>Verify that, to the extent necessary to achieve the objectives and performance factors of 40 CFR 312.20(e) and 312.20 (f), persons conducting “All Appropriate Inquiries” and the environmental professional gather information from varied</p>

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<p><b>O3.12.12.US.</b> As a part of the “All Appropriate Inquiries,” the degree of obviousness of the presence or likely presence of contamination at the property, and the ability to detect the contamination by appropriate investigation must be taken into account (40 CFR 312.31) [Added April 2006].</p>	<p>sources whose input either individually or taken together may provide commonly known or reasonably ascertainable information about the subject property.</p> <p>(NOTE: The environmental professional may refer to one or more of the following sources of information:</p> <ul style="list-style-type: none"> <li>– current owners or occupants of neighboring properties or properties adjacent to the subject property</li> <li>– local and state government officials who may have knowledge of, or information related to, the subject property</li> <li>– others with knowledge of the subject property</li> <li>– other sources of information (e.g., newspapers, Web sites, community organizations, local libraries and historical societies).)</li> </ul> <p>(NOTE: This checklist item applies to the persons defined in O3.12.1.US.)</p> <p>Verify that personnel conducting “All Appropriate Inquiries” and environmental professionals conducting an inquiry of a property take into account the information collected under 40 CFR 312.23 through 312.30 in considering the degree of obviousness of the presence of releases or threatened releases at the subject property.</p> <p>Verify that personnel conducting “All Appropriate Inquiries” and environmental professionals conducting an inquiry of a property take into account the information collected under 40 CFR 312.23 through 312.30 in considering the ability to detect contamination by appropriate investigation.</p> <p>Verify that the inquiry of the environmental professional includes an opinion regarding additional appropriate investigation, if any</p>



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<b>CERCLA CLEANUP SITES</b>  <b>03.15 NPL Sites</b>  <b>03.15.1.US.</b> Sites on the NPL are required to appoint a remedial project manager (40 CFR 300.120(c) and 300.120(d)).  <b>03.15.2.US.</b> Federal facilities on the NPL are required to have an IAG with the USEPA (CERCLA, Section 120(e)(2) and 120(e)(4)).	<p>Verify that, for releases of hazardous substances, pollutants, or contaminants on, or the sole source of the release is from, any Federal facility or vessel, there is an appointed remedial project manager and onscene coordinator.</p> <p>(NOTE: DoD is the removal response authority for incidents involving DoD military weapons and munitions or weapons and munitions under the jurisdiction, custody, or control of DoD.)</p> <p>Verify that an IAG is in place and contains the following:</p> <ul style="list-style-type: none"> <li>– a review of alternative remedial actions and selection of a remedial action by the head of the relevant department, agency, or instrumentality and the administrator or, if unable to reach agreement on selection of a remedial action, selection of the administrator</li> <li>– a schedule for the completion of the remedial action</li> <li>– arrangements for long term operation and maintenance of the facility.</li> </ul> <p>Verify that the terms of the IAG are being met.</p>



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<b>POLLUTION PREVENTION</b>  <b>O4.1 All Facilities</b>  <b>O4.1.1.US.</b> The current status of any ongoing or unresolved consent Orders, Compliance agreements, notice of violations (NOVs), inter agency agreements, or equivalent state enforcement actions is required to be examined (a finding under this checklist item will have the enforcement action/identifying information as the citation).  <b>O4.1.2.US.</b> No later than 1 January 2010, at least 1 renewable fuel pump will be installed at each Federal fleet fueling center in the United States ( <i>Energy Security and Independence Act (ESIA)</i> , Section 246) [ <b>Added January 2008</b> ].	<p>Determine if noncompliance issues have been resolved by reviewing a copy of the previous report, consent orders, compliance agreements, NOVs, interagency agreements, or equivalent state enforcement actions.</p> <p>Verify that, no later than 1 January 2010, at least 1 renewable fuel pump is installed at each Federal fleet fueling center in the United States.</p> <p>(NOTE: This does not apply to a DoD fueling center with a fuel turnover rate of less than 100,000 gal/yr of fuel.)</p> <p>(NOTE: The ESIA does not include a definition of the term “Federal fleet fueling center.”)</p>



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<b>POLLUTION PREVENTION</b>  <b>O4.2 Missing, Risk Management, and Positive Checklist Items</b>  <b>O4.2.1.US.</b> Facilities are required to comply with all applicable Federal regulatory requirements not contained in this checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of finding).  <b>O4.2.2.US.</b> Risk management techniques should be promoted in environmental efforts (MP) [Added April 2002].  <b>O4.2.3.US.</b> Facilities should go above and beyond statutory and regulatory compliance (MP) [Added April 2002].	Determine if any new regulations have been issued since the finalization of TEAM.  Determine if the facility has activities or facilities that are Federally regulated, but not addressed in this checklist.  Verify that the facility is in compliance with all applicable and newly issued regulations.  Determine if risk management techniques are promoted in environmental efforts.  Determine if the facility has gone above and beyond simply complying with environmental requirements.



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<b>POLLUTION PREVENTION</b>  <b>O4.5 Plans and Programs</b>  <b>O4.5.1.US.</b> Checklist item deleted [ <b>Deleted July 2000</b> ].  <b>O4.5.2.US.</b> Checklist item deleted [ <b>Revised July 1999; Deleted January 2007</b> ].  <b>O4.5.3.US.</b> Checklist item deleted [ <b>Added October 2006; Deleted January 2007</b> ].  <b>O4.5.4.US.</b> Checklist item deleted [ <b>Added October 2006; Deleted January 2007</b> ].	<p>Checklist item deleted due to the revocation of EO 12856 by EO 13148, 21 April 2000. The requirement for a P2 plan has been encompassed in the scope of a broader plan required under EO 13148. See checklist item O5.1.2.US.</p> <p>Checklist item deleted due to the revocation of EO 13101 by EO 13423, 24 January 2007.</p> <p>Checklist item deleted due to the revocation of EO 13123 by EO 13423, 24 January 2007.</p> <p>Checklist item deleted due to the revocation of EO 13123 by EO 13423, 24 January 2007.</p>



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<p><b>POLLUTION PREVENTION</b></p> <p><b>O4.6 Procurement</b></p> <p><b>O4.6.1.US.</b> Government agencies are required to increase their purchases of products containing recovered materials (RCRA, Section 6002(c)(1); 40 CFR 247.2 through 247.17) [Added July 1999; Revised April 2000; Revised July 2004; Revised October 2007; Revised October 2011; Revised April 2013].</p>	<p>(NOTE: This applies to all procuring agencies and to all procurement actions involving items designated by USEPA, where the procuring agency purchases \$10,000 or more worth of one of these items during the course of a fiscal year, or where the cost of such items or of functionally equivalent items purchased during the preceding fiscal year was \$10,000 or more. This guideline applies to Federal agencies, to state and local agencies using appropriated Federal funds to procure designated items, and to persons contracting with any such agencies with respect to work performed under such contracts. Federal procuring agencies should note that the requirements of RCRA section 6002 apply to them whether or not appropriated Federal funds are used for procurement of designated items. The \$10,000 threshold applies to procuring agencies as a whole rather than to agency subgroups such as regional offices or subagencies of a larger department or agency.)</p> <p>Verify that procured Comprehensive Procurement Guideline (CPG) designated items are composed of the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, considering such guidelines.</p> <p>(NOTE: For each designated CPG, USEPA has issued a Recovered Materials Advisory Notice (RMAN), which establishes the recommended recycle content level for a given product. See Appendix 6-1 for examples of the RMANs for designated CPGs. The following is the current list of CPG categories and products:</p> <ul style="list-style-type: none"> <li>– paper and paper products, excluding building and construction paper grades</li> <li>– vehicular products: <ul style="list-style-type: none"> <li>– lubricating oils containing re-refined oil, including engine lubricating oils, hydraulic fluids, and gear oils, excluding marine and aviation oils</li> <li>– tires, excluding airplane tires</li> <li>– reclaimed engine coolants, excluding coolants used in non-vehicular applications</li> <li>– rebuilt vehicular parts</li> </ul> </li> <li>– construction products: <ul style="list-style-type: none"> <li>– building insulation products, including the following items: <ul style="list-style-type: none"> <li>– loose-fill insulation, including but not limited to cellulose fiber, mineral fibers (fiberglass and rock wool), vermiculite, and perlite</li> <li>– blanket and batt insulation, including but not limited to mineral fibers (fiberglass and rock wool)</li> <li>– board (sheathing, roof decking, wall panel) insulation, including but not limited to structural fiberboard and laminated paperboard products, perlite composite board, polyurethane, polyisocyanurate, polystyrene, phenolics, and composites</li> </ul> </li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– spray-in-place insulation, including but not limited to foam-in-place polyurethane and polyisocyanurate, and spray-on cellulose</li> <li>– structural fiberboard and laminated paperboard products for applications other than building insulation, including building board, sheathing, shingle backer, sound deadening board, roof insulating board, insulating wallboard, acoustical and non-acoustical ceiling tile, acoustical and non-acoustical lay-in panels, floor underlayments, and roof overlay (coverboard)</li> <li>– cement and concrete, including concrete products such as pipe and block, containing coal fly ash or ground granulated blast furnace (GGBF) slag</li> <li>– carpet made of polyester fiber for moderate end uses</li> <li>– floor tiles and patio blocks containing recovered rubber or plastic</li> <li>– shower and restroom dividers/partitions containing recovered plastic or steel</li> <li>– consolidated latex paint used for covering graffiti</li> <li>– reprocessed latex paint used for interior and exterior architectural applications such as wallboard, ceilings, and trim; gutter boards; and concrete, stucco, masonry, wood, and metal surfaces</li> <li>– modular threshold ramps</li> <li>– nonpressure pipe</li> <li>– roofing materials</li> <li>– transportation products: <ul style="list-style-type: none"> <li>– traffic barricades and traffic cones used in controlling or restricting vehicular traffic</li> <li>– parking stops made from concrete or containing recovered plastic or rubber</li> <li>– channelizers containing recovered plastic or rubber</li> <li>– delineators containing recovered plastic, rubber, or steel</li> <li>– flexible delineators containing recovered plastic</li> </ul> </li> <li>– park and recreation products: <ul style="list-style-type: none"> <li>– playground surfaces and running tracks containing recovered rubber or plastic</li> <li>– plastic fencing containing recovered plastic for use in controlling snow or sand drifting and as a warning/safety barrier in construction or other applications</li> <li>– park benches and picnic tables containing recovered steel, aluminum, plastic, or concrete</li> <li>– playground equipment containing recovered plastic, steel, or aluminum</li> <li>– bike racks</li> </ul> </li> <li>– landscaping products: <ul style="list-style-type: none"> <li>– hydraulic mulch products containing recovered paper or recovered wood used for hydroseeding and as an over-spray for straw mulch in landscaping, erosion control, and soil reclamation</li> <li>– compost made from recovered organic materials</li> </ul> </li> </ul>

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<p><b>O4.6.2.US.</b> Contracts for procurement by federal facilities are required to</p>	<ul style="list-style-type: none"> <li>– shrubs, and in erosion control and soil reclamation, garden and soaker hoses containing recovered plastic or rubber</li> <li>– lawn and garden edging containing recovered plastic or rubber</li> <li>– plastic lumber landscaping timbers and posts containing recovered materials</li> <li>– fertilizer made from recovered organic materials</li> <li>– non-paper office products: <ul style="list-style-type: none"> <li>– office recycling containers and office waste receptacles</li> <li>– plastic desktop accessories</li> <li>– toner cartridges</li> <li>– plastic-covered binders containing recovered plastic; chipboard and pressboard binders containing recovered paper; and solid plastic binders containing recovered plastic</li> <li>– plastic trash bags</li> <li>– printer ribbons</li> <li>– plastic envelopes</li> <li>– plastic clipboards containing recovered plastic</li> <li>– plastic file folders containing recovered plastic</li> <li>– plastic clip portfolios containing recovered plastic</li> <li>– plastic presentation folders containing recovered plastic</li> <li>– office furniture</li> </ul> </li> <li>– miscellaneous products: <ul style="list-style-type: none"> <li>– pallets containing recovered wood, plastic, or paperboard</li> <li>– sorbents containing recovered materials for use in oil and solvent clean-ups and as animal bedding</li> <li>– industrial drums containing recovered steel, plastic, or paper</li> <li>– awards and plaques containing recovered glass, wood, paper, or plastic</li> <li>– mats containing recovered rubber and/or plastic</li> <li>– non-road signs containing recovered plastic or aluminum and road signs containing recovered aluminum</li> <li>– sign supports and posts containing recovered plastic or steel</li> <li>– manual-grade strapping containing recovered steel or plastic</li> <li>– blasting grit.</li> </ul> </li> </ul> <p>(NOTE: The CPG guidelines do not apply to purchases of designated items that are unrelated to or incidental to Federal funding, i.e., not the direct result of a contract or agreement with, or a grant, loan, or funds disbursement to, a procuring agency. The guidelines also do not apply to purchases made by private party recipients (e.g., individuals, non-profit organizations) of Federal funds pursuant to grants, loans, cooperative agreements, and other funds disbursements.)</p> <p>(NOTE: Title 48 of the Code of Federal Regulations is titled the “Federal Acquisition Regulations System.”)</p>

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<p>contain specific environmentally-related clauses (48 CFR 23.704(a)(2), 23.704(c) and 23.705; 52.204-4, 52.223-1 through 52.223-5, 52.223-9, 52.223-10, 52.223-13, 52.223-14, 52.223-15, and 52.223-16) [Added July 2001; Revised January 2009; Revised October 2011, Revised April 2012; Revised July 2014; Revised October 2015].</p>	<p>Verify that the following clauses are included in appropriate contracts:</p> <ul style="list-style-type: none"> <li>– FAR 52.204-4, <i>Printed or Copied Double-sided on Post-Consumer Fiber Content Paper</i></li> <li>– FAR 52.223-1, <i>Biobased Product Certification</i></li> <li>– FAR.223-2, <i>Affirmative Procurement of Biobased Products Under Service and Construction Contracts</i></li> <li>– FAR 52.223-3, <i>Hazardous Materials Identification and Material Safety Data</i></li> <li>– FAR 52.223-4, <i>Recovered Materials Certification</i></li> <li>– FAR 52.223-5, <i>Pollution Prevention and Right-to-Know Information</i></li> <li>– FAR 52.223-9, <i>Estimate of Percentage of Recovered Material Content for EPA Designated Items</i></li> <li>– FAR 52.223-10, <i>Waste Reduction Program</i></li> <li>– FAR 52-223-13, <i>Acquisition of EPEAT Registered Imaging Equipment</i></li> <li>– FAR 52.223-14, <i>Acquisition of EPEAT Registered Televisions</i></li> <li>– FAR 52.223-15, <i>Affirmative Procurement of EPA-designated Items in Service and Construction Contracts</i></li> <li>– FAR 52.223-16, <i>Acquisition of EPEAT Registered Personal Computer Products.</i></li> </ul> <p>(NOTE: See Appendix 6-2 for the actual text of the above clauses.)</p> <p>Verify that contractors are required to submit paper documents, such as offers, letters, or reports that are printed or copied double-sided on paper containing at least 30 percent postconsumer fiber, whenever practicable, when not using electronic commerce methods to submit information or data to the Government.</p> <p>Verify that the clauses concerning FAR 52.223-10, <i>Waste Reduction Program</i> are included in all solicitations and contracts for contractor operation of Government-owned or -leased facilities and all solicitations and contracts for support services at Government-owned or -operated facilities, see Appendix 6-2.</p> <p>(NOTE: When acquiring an electronic product, contracting officers are required to acquire an EPEAT-registered product unless the agency determines that the EPEAT-registered product will not be cost-effective over the life of the product or one of the following is true:</p> <ul style="list-style-type: none"> <li>– there is no EPEAT® standard for the product</li> <li>– no EPEAT®-registered product meets the acquisition requirements</li> <li>– The agency has provided an exemption.</li> </ul> <p>(NOTE: In relation to FAR 52.223-16, agencies may use the clause with its Alternate I when there are sufficient EPEAT® Silver registered products available to meet agency needs.)</p> <p>(NOTE: In relation to FAR 52.223-16, agencies will establish procedures for granting exceptions to the use of EPEAT®.)</p>

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<p style="text-align: center;"><b>REGULATORY REQUIREMENTS:</b></p>	<p style="text-align: center;"><b>REVIEWER CHECKS:</b>  <b>December 2018</b></p>
<p><b>O4.6.3.US.</b> Federal facilities will develop a procurement program for biobased products (7 CFR 3201.3, 3201.4(a), 3201.4(b), and 3201.5(c)) [Added April 2005; Revised April 2006; Revised October 2006; Revised July 2008; Revised January 2010; Revised April 2011; Citation Revised October 2011; Revised July 2015].</p>	<p>Verify that the clauses are enforced.</p> <p>(NOTE: Consult <a href="http://www.biobased.oce.usda.gov">http://www.biobased.oce.usda.gov</a> for details on the status of the Biobased Products Preferred Procurement Program.)</p> <p>(NOTE: The guidelines in this checklist item apply to all procurement actions by procuring agencies involving items designated by USDA in this part, where the procuring agency purchases \$10,000 or more worth of one of these items during the course of a fiscal year, or where the quantity of such items or of functionally equivalent items purchased during the preceding fiscal year was \$10,000 or more. The \$10,000 threshold applies to Federal agencies as a whole rather than to agency subgroups such as regional offices or subagencies of a larger Federal department or agency.)</p> <p>(NOTE: This checklist item does not apply to purchases of designated items that are unrelated to or incidental to Federal funding; i.e., not the direct result of a contract or agreement with persons supplying items to a procuring agency or providing support services that include the supply or use of items.)</p> <p>(NOTE: The following applications are exempt from the preferred procurement requirements:</p> <ul style="list-style-type: none"> <li>– military equipment which is defined as products or systems designed or procured for combat or combat-related missions</li> <li>– spacecraft systems and launch support equipment.)</li> </ul> <p>(NOTE: On or before 11 January 2006, each Federal agency shall develop a procurement program which will assure that items composed of biobased products will be purchased to the maximum extent practicable and which is consistent with applicable provisions of Federal procurement laws. Each procurement program shall contain:</p> <ul style="list-style-type: none"> <li>– a preference program for purchasing qualified biobased products</li> <li>– a promotion program to promote the preference program</li> <li>– provisions for the annual review and monitoring of the effectiveness of the procurement program</li> <li>– provisions for reporting quantities and types of biobased products purchased by the Federal agency.)</li> </ul> <p>(NOTE: Motor vehicle fuels, heating oil, and electricity are excluded by statute from this program. USDA additionally will not designate items for preferred procurement that are determined to have mature markets. USDA will determine mature market status by whether the item had significant national market penetration in 1972.)</p> <p>Verify that, in developing the preference program, one of the following options is adopted, or a substantially equivalent alternative, as part of the procurement program:</p>

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<p><b>O4.6.4.US.</b> Checklist item deleted [Added April 2006; Revised July 2008; Deleted January 2010].</p>	<ul style="list-style-type: none"> <li>– a policy of awarding contracts to the vendor offering a designated item composed of the highest percentage of biobased product practicable except when such items meet one of the following:               <ul style="list-style-type: none"> <li>– are not available within a reasonable time</li> <li>– fail to meet performance standards set forth in the applicable specifications, or the reasonable performance standards of the Federal agency</li> <li>– are available only at an unreasonable price</li> </ul> </li> <li>– a policy of setting minimum biobased products content specifications in such a way as to assure that the biobased products content required is consistent with FSRIA section 9002 and the requirements of the guidelines except when such items meet one of the following:               <ul style="list-style-type: none"> <li>– they are not available within a reasonable time</li> <li>– they fail to meet performance standards for the use to which they will be put, or the reasonable performance standards of the Federal agency</li> <li>– they are available only at an unreasonable price.</li> </ul> </li> </ul> <p>(NOTE: In implementing the preference program, Federal agencies shall treat as eligible for the preference biobased products from “designated countries,” as that term is defined in section 25.003 of the Federal Acquisition Regulation (FAR), provided that those products otherwise meet all requirements for participation in the preference program.)</p> <p>(NOTE: For any procurement by any procuring agency that is subject to regulations of the EPA under section 6002 of the <i>Solid Waste Disposal Act</i> as amended by the <i>Resource Conservation Act</i> of 1976 (40 CFR 247), these guidelines do not apply to the extent that the requirements of this part are inconsistent with such regulations [See checklist item O4.6.1.US].)</p> <p>(NOTE: The Farm Security and Rural Investment Act of 2002 (FSRIA) section 9002(c)(1) requires Federal agencies to procure designated items composed of the highest percentage of biobased products practicable or such items that comply with the regulations issued under section 103 of Public Law 100-556 (42 U.S.C. 6914b-1), consistent with maintaining a satisfactory level of competition, considering these guidelines. Federal agencies may decide not to procure such items if they are not reasonably priced or readily available or do not meet specified or reasonable performance standards.)</p> <p>(NOTE: See Appendix 6-2c for information on specific products.)</p> <p>(NOTE: This checklist item concerning the procurement of bio-based mobile equipment hydraulic fluid, diesel fuel additives, penetrating lubricants, 2-cycle engine oil, greases, and stationary equipment hydraulic fluids has been incorporated into checklist item O4.6.3.US and Appendix 6-2c.)</p>

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<p><b>04.6.5.US.</b> In the case of electric motors of 1 to 500 horsepower, only premium efficient motors that meet a specification designated by the Secretary of Energy will be selected and purchased as of 18 August 2006 (<i>Energy Policy Act</i> (EPACT) of 2005, Section 104(a)) [Added October 2006].</p>	<p>Verify that, in the case of electric motors of 1 to 500 horsepower, only premium efficient motors that meet the specification designated by the Secretary of Energy are selected and purchased.</p> <p>(NOTE: See Appendix 6-2a for DOE specifications.)</p>
<p><b>04.6.6.US.</b> Only external standby powers devices using no more than one watt in their standby power consuming mode will be purchased (EO 13221, Section 1) [Added October 2006; Revised July 2011].</p>	<p>Verify that, when purchasing commercially available, off-the-shelf products that use external standby power devices, or that contain an internal standby power function, the products purchased will use no more than one watt in their standby power consuming mode.</p> <p>(NOTE: See the FEMP website on products with low standby by power for examples of devices covered here.  <a href="http://www1.eere.energy.gov/femp/technologies/buying_low_standby.html">http://www1.eere.energy.gov/femp/technologies/buying_low_standby.html</a>.)</p> <p>(NOTE: If such products are not available, purchase products with the lowest standby power wattage while in their standby power consuming mode.)</p> <p>(NOTE: Agencies shall adhere to these requirements, when life-cycle cost-effective and practicable and where the relevant product's utility and performance are not compromised as a result. Annually the DoE, in consultation with the Department of Defense and the General Services Administration, compiles a preliminary list of products to be subject to these requirements.)</p>
<p><b>04.6.7.US.</b> ENERGY STAR®-qualified or FEMP-designated products will be chosen when acquiring energy-using products (10 CFR 436.40, 436.42, 436.43 and 48 CFR 23.203(a)(1)(i), 23.203(a)(2), 23.203(b), 23.204, 23.206, and 52.223-15) [Added October 2006; Citation Revised January 2007; Revised January 2008, Revised April 2009, Citation Revised April 2012].</p>	<p>(NOTE: Title 48 of the Code of Federal Regulations is titled the "Federal Acquisition Regulations System.")</p> <p>Verify that the procurement of ENERGY STAR and FEMP designated products is required in new service contracts and other existing service contracts as they are recompeted.</p> <p>Verify that, to the extent possible, ENERGY STAR and FEMP designated product requirements and preferences into existing contracts as they are modified or extended through options.</p> <p>Verify that, when acquiring energy using products listed in ENERGY STAR® Program or the Federal Energy Management Program (FEMP), ENERGY STAR® or FEMP products are purchased.</p>

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	<p>Verify that the use of ENERGY STAR® or other energy-efficient items listed on the FEMP Product Energy Efficiency Recommendations product list is included when contracting for services or construction.</p> <p>Verify that criteria for energy efficiency that are consistent with the criteria used for rating qualified products are included in the factors for the evaluation of:</p> <ul style="list-style-type: none"> <li>– offers received for procurements involving covered products</li> <li>– offers received for construction, renovation, and services contracts that include provisions for covered products.</li> </ul> <p>Verify that the use of ENERGY STAR and FEMP products are considered in the following circumstances:</p> <ul style="list-style-type: none"> <li>– design, design/build, renovation, retrofit and services contracts; facility maintenance and operations contracts</li> <li>– energy savings performance contracts and utility energy service contracts</li> <li>– if applicable, lease agreements for buildings or equipment, including build-to-lease contracts.</li> </ul> <p>(NOTE: ENERGY STAR qualified and FEMP designated products may be assumed to be life-cycle cost-effective. In making a determination that a covered product is not life-cycle cost-effective, rely on the life-cycle cost analysis method in 10 CFR 436, Subpart A.)</p> <p>(NOTE: For product groups where ENERGY STAR® labels are not yet available, select products that are in the upper 25 percent of energy efficiency as designated by FEMP.)</p> <p>(NOTE: Procurement of an Energy Star® product or FEMP-designated product is not required if one of the following is true and is documented in writing:</p> <ul style="list-style-type: none"> <li>– no Energy Star® or FEMP-designated product is cost-effective over the life of the product taking energy cost savings into account</li> <li>– no Energy Star® or FEMP-designated product is reasonably available that meets the functional requirements of the agency. )</li> </ul> <p>(NOTE: See the following website for information about FEMP products <a href="http://energy.gov/eere/femp/federal-energy-management-program">http://energy.gov/eere/femp/federal-energy-management-program</a>.)</p> <p>(NOTE: See <a href="http://www.energystar.gov/products">http://www.energystar.gov/products</a> for information specific to ENERGY STAR.)</p> <p>Verify that the clause at 52.223-15 Energy Efficiency in Energy-Consuming Products is inserted in solicitations and contracts when energy-consuming products listed in the Energy Star® Program or FEMP will be:</p>

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<p><b>O4.6.8.US.</b> Procurement of products that consume power in a standby mode and are listed on FEMP’s Standby Power Devices product listing must be done according to specific parameters (48 CFR 23.203(a)(1)(ii), 23.203(b), and 23.204) [Added October 2006; Revised January 2008].</p> <p><b>O4.6.9.US.</b> Checklist item deleted [Added October 2006; Revised January 2008, Deleted April 2009].</p> <p><b>O4.6.10.US.</b> Checklist item deleted [Added January 2008; Citation Revised July 2011; Deleted October 2011].</p>	<ul style="list-style-type: none"> <li>– delivered</li> <li>– acquired by the contractor for use in performing services at a Federally-controlled facility</li> <li>– furnished by the contractor for use by the Government</li> <li>– specified in the design of a building or work, or incorporated during its construction, renovation, or maintenance.</li> </ul> <p>(NOTE: Title 48 of the Code of Federal Regulations is titled the “Federal Acquisition Regulations System.”)</p> <p>Verify that, for products that consume power in a standby mode and are listed on FEMP’s Standby Power Devices product listing, agencies do one of the following:</p> <ul style="list-style-type: none"> <li>– purchase items which meet FEMP’s standby power wattage recommendation or document the reason for not purchasing such items</li> <li>– if FEMP has listed a product without a corresponding wattage recommendation, purchase items which use no more than one watt in their standby power consuming mode.</li> </ul> <p>(NOTE: When it is impracticable to meet the one watt requirement, agencies shall purchase items with the lowest standby wattage practicable.)</p> <p>(NOTE: The FEMP Standby Power Devices product listing is available at <a href="http://www.eere.energy.gov/femp/procurement/eeep_standby_power.cfm">http://www.eere.energy.gov/femp/procurement/eeep_standby_power.cfm</a>.)</p> <p>(NOTE: Procurement of an Energy Star® product or FEMP-designated product is not required if one of the following is true and is documented in writing:</p> <ul style="list-style-type: none"> <li>– no Energy Star® or FEMP-designated product is cost-effective over the life of the product taking energy cost savings into account</li> <li>– no Energy Star® or FEMP-designated product is reasonably available that meets the functional requirements of the agency. )</li> </ul> <p>(NOTE: See <a href="http://www.eere.energy.gov/femp/procurement/eeep_model_lang.cfm">http://www.eere.energy.gov/femp/procurement/eeep_model_lang.cfm</a> for model language that can be inserted (customizing as necessary) into contracts which involve energy consuming products and systems.)</p> <p>Checklist item rolled into O4.6.7.US.</p> <p>(NOTE: This checklist item has been incorporated into O4.6.2.US.)</p>

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<p><b>O4.6.11.US.</b> When life-cycle cost effective, an energy-savings performance contract (ESPC) must be used to reduce energy use and cost at facilities and operations (48 CFR 23.204(a)) [Added January 2008].</p> <p><b>O4.6.12.US.</b> When acquiring light duty motor vehicles or medium duty passenger vehicles, a low greenhouse gas emitting vehicle must be procured (<i>Energy Policy Act of 1992</i> as amended by the <i>Energy Independence and Security Act (EISA)</i>, Section 141) [Added January 2008, Revised April 2009; Citation Revised July 2018].</p>	<p>Verify that, when life-cycle cost effective, an energy-savings performance contract (ESPC) is used to reduce energy use and cost at facilities and operations.</p> <p>(NOTE: For this checklist item, the term “Federal agency” does not include any office of the legislative branch, except in certain instances members of the House of Representatives.)</p> <p>(NOTE: See 41 CFR 102-34 for GSA acquisition and operation requirements. The updated version of these regulations is available at <a href="http://edocket.access.gpo.gov/2009/E9-6152.htm">http://edocket.access.gpo.gov/2009/E9-6152.htm</a>.)</p> <p>(NOTE: A Medium duty Passenger Vehicle means a vehicle which would satisfy the criteria in 49 CFR 523.5 (relating to light trucks) but for its gross vehicle weight rating or its curb weight, which is rated at more than 8,500 lbs GVWR or has a vehicle curb weight of more than 6,000 lbs or has a basic vehicle frontal area in excess of 45 ft<sup>2</sup>, and which is designed primarily to transport passengers, but does not include a vehicle that meets one of the following:</p> <ul style="list-style-type: none"> <li>– is an “incomplete truck” as defined in 49 CFR</li> <li>– has a seating capacity of more than 12 persons</li> <li>– is designed for more than 9 persons in seating rearward of the driver's seat</li> <li>– is equipped with an open cargo area (for example, a pick-up truck box or bed) of 72.0 inches in interior length or more.</li> </ul> <p>A covered box not readily accessible from the passenger compartment will be considered an open cargo area for purposes of this definition.)</p> <p>Verify that no Federal agency acquires a light duty motor vehicle or medium duty passenger vehicle that is not a low greenhouse gas emitting vehicle.</p> <p>(NOTE: This prohibition does not apply to acquisition of a vehicle if the head of the agency certifies in writing, in a separate certification for each individual vehicle purchased, either:</p> <ul style="list-style-type: none"> <li>– that no low greenhouse gas emitting vehicle is available to meet the functional needs of the agency and details in writing the functional needs that could not be met with a low greenhouse gas emitting vehicle</li> <li>– that the agency has taken specific alternative more cost-effective measures to reduce petroleum consumption that meets one of the following: <ul style="list-style-type: none"> <li>– have reduced a measured and verified quantity of greenhouse gas emissions equal to or greater than the quantity of greenhouse gas reductions that would have been achieved through acquisition of a low greenhouse gas emitting vehicle over the lifetime of the vehicle</li> </ul> </li> </ul>

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<p><b>O4.6.13.US.</b> Checklist item deleted [Added July 2008; Deleted January 2010].</p> <p><b>O4.6.14.US.</b> Checklist item deleted [Added July 2008; Deleted January 2010].</p> <p><b>O4.6.15.US.</b> Checklist item deleted [Added July 2008; Deleted January 2010].</p> <p><b>O4.6.16.US.</b> Checklist item deleted [Added July 2008; Deleted January 2010].</p> <p><b>O4.6.17.US.</b> Checklist item deleted [Added July 2008; Deleted January 2010].</p> <p><b>O4.6.18.US.</b> Checklist item deleted [Added July 2008; Deleted January 2010].</p> <p><b>O4.6.19.US.</b> Checklist item deleted [Added July 2008; Deleted January 2010].</p> <p><b>O4.6.20.US.</b> Checklist item deleted [Added July 2008; Deleted January 2010].</p> <p><b>O4.6.21.US.</b> Contracts for contractor operation of a Government-owned or -leased facility and contracts for support services at a</p>	<p>– will reduce each year a measured and verified quantity of greenhouse gas emissions equal to or greater than the quantity of greenhouse gas reductions that would have been achieved each year through acquisition of a low greenhouse gas emitting vehicle.</p> <p>(NOTE: There is a special rule for vehicles provided by funds contained in members' representational allowance, including an acquisition under a long-term lease.)</p> <p>(NOTE: This checklist item concerning the procurement of roofing coating, biobased water tank coatings, and biobased concrete and asphalt release fluids has been incorporated into checklist item O4.6.3.US and Appendix 6-2c.)</p> <p>(NOTE: This checklist item concerning the procurement of adhesive and mastic remover, plastic insulating foam for residential and commercial construction, composite panels, metalworking fluids, and wood and concrete sealers has been incorporated into checklist item O4.6.3.US and Appendix 6-2c.)</p> <p>(NOTE: This checklist item concerning the procurement of hand cleaners and sanitizers, lip care products, graffiti and grease removers, laundry products, and bathroom/spa cleaners has been incorporated into checklist item O4.6.3.US and Appendix 6-2c.)</p> <p>(NOTE: This checklist item concerning the procurement of bio-based fluid-filled transformers and bio-based films has been incorporated into checklist item O4.6.3.US and Appendix 6-2c.)</p> <p>(NOTE: This checklist item concerning the procurement of bedding, bed linen, and towels; disposal cutlery, disposable containers, and glass cleaners has been incorporated into checklist item O4.6.3.US and Appendix 6-2c.)</p> <p>(NOTE: This checklist item concerning the procurement of fertilizers, sorbents, and dust suppressants has been incorporated into checklist item O4.6.3.US and Appendix 6-2c.)</p> <p>(NOTE: This checklist item concerning the procurement of carpets, floor strippers, and carpet and upholstery cleaners has been incorporated into checklist item O4.6.3.US and Appendix 6-2c.)</p> <p>(NOTE: This checklist item concerning the procurement of deicers and firearm lubricants has been incorporated into checklist item O4.6.3.US and Appendix 6-2c.)</p> <p>Verify that contracts for contractor operation of a Government-owned or -leased facility and contracts for support services at a Government-owned or -operated facility include provisions that obligate the contractor to comply with the requirements of EO 13423 to the same extent as the agency would be required to comply if the agency operated or supported the facility.</p>

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<p>Government-owned or -operated facility include provisions that obligate the contractor to comply with the requirements of EO 13423 (48 CFR 23.002) [Added July 2011].</p> <p><b>O4.6.22.US.</b> Water will be used and managed through water-efficient means (48 CFR 23.202(b)) [Added July 2011].</p>	<p>(NOTE: Compliance includes developing programs to promote and implement cost-effective waste reduction.)</p> <p>Verify that, in accordance with EO 13514, dated October 5, water is used and managed through water-efficient means by:</p> <ul style="list-style-type: none"> <li>– reducing potable water consumption intensity to include lowflow fixtures and efficient cooling towers</li> <li>– reducing agency, industry, landscaping, and agricultural water consumption; and</li> <li>– stormwater management in accordance with section 438 of the Energy Independence and Security Act of 2007 (42 U.S.C. 17094) as implemented in <a href="http://www.epa.gov/nps/lid/section438">http://www.epa.gov/nps/lid/section438</a>.</li> </ul>

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<b>POLLUTION PREVENTION</b>  <b>O4.9 ODCs</b>  <b>O4.9.1.US.</b> Actions will be taken to maximize the efficiency of air conditioning and refrigeration equipment (EPACT 2005 Section 104(a)) [Added October 2006].	<p>Verify that facilities take actions to maximize the efficiency of air conditioning and refrigeration equipment, including appropriate cleaning and maintenance.</p> <p>Verify that facilities use any system treatment or additive that will reduce the electricity consumed by air conditioning and refrigeration equipment.</p> <p>Verify that any such treatment or additive is:</p> <ul style="list-style-type: none"> <li>– determined by the Secretary to be effective in increasing the efficiency of air conditioning and refrigeration equipment without having an adverse impact on air conditioning performance (including cooling capacity) or equipment useful life</li> <li>– determined by the Administrator of the EPA to be environmentally safe</li> <li>– shown to increase seasonal energy efficiency ratio (SEER) or energy efficiency ratio (EER) when tested by the National Institute of Standards and Technology according to Department of Energy test procedures without causing any adverse impact on the system, system components, the refrigerant or lubricant, or other materials in the system.</li> </ul> <p>(NOTE: For purposes of this checklist item, a hardware device or primary refrigerant shall not be considered an additive.)</p>



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<b>PROGRAM MANAGEMENT</b>  <b>O5.1</b> <b>All Facilities</b>  <b>O5.1.1.US.</b> The current status of any ongoing or unresolved consent orders, compliance agreements, notice of violations (NOVs), inter-agency agreements, or equivalent state enforcement actions is required to be examined (a finding under this checklist item will have the enforcement action/identifying information as the citation).  <b>O5.1.2.US.</b> Checklist item deleted [Added July 2000; Deleted July 2003].	<p>Determine if noncompliance issues have been resolved by reviewing a copy of the previous report, consent orders, compliance agreements, NOVs, interagency agreements, or equivalent state enforcement actions.</p> <p>(NOTE: This checklist item was deleted and moved to O7.1.3.US.)</p>



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<b>PROGRAM MANAGEMENT</b>  <b>O5.2</b> <b>Missing, Risk Management, and Positive Checklist Items</b>  <b>O5.2.1.US.</b> Federal facilities are required to comply with all applicable regulatory requirements not contained in this checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of finding).  <b>O5.2.2.US.</b> Risk management techniques should be promoted in environmental efforts (MP) [Added April 2002].  <b>O5.2.3.US.</b> Facilities should go above and beyond statutory and regulatory compliance (MP) [Added April 2002].	<p>Determine if any new regulations have been issued since the finalization of TEAM.</p> <p>Determine if the Federal facility has activities or facilities that are regulated, but not addressed in this checklist.</p> <p>Verify that the Federal facility is in compliance with all applicable and newly issued regulations.</p> <p>Determine if risk management techniques are promoted in environmental efforts.</p> <p>Determine if the facility has gone above and beyond simply complying with environmental requirements.</p>



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<b>WASTE MUNITIONS</b>  <b>O6.1</b> <b>All Facilities</b>  <b>O6.1.1.US.</b> The current status of any ongoing or unresolved consent orders, Compliance agreements, notice of violations (NOVs), inter agency agreements, or equivalent state enforcement actions is required to be examined (a finding under this checklist item will have the enforcement action/identifying information as the citation) [ <b>Added April 2003</b> ].	Determine if noncompliance issues have been resolved by reviewing a copy of the previous report, consent orders, compliance agreements, NOVs, interagency agreements, or equivalent state enforcement actions.



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<b>WASTE MUNITIONS</b>  <b>O6.2</b> <b>Missing, Risk Management, and Positive Checklist Items</b>  <b>O6.2.1.US.</b> Facilities are required to comply with all applicable Federal regulatory requirements not contained in this checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of finding) <b>[Added April 2003]</b> .  <b>O6.2.2.US.</b> Risk management techniques should be promoted in environmental efforts (MP) <b>[Added April 2003]</b> .  <b>O6.2.3.US.</b> Facilities should go above and beyond statutory and regulatory compliance (MP) <b>[Added April 2003]</b> .	<p>Determine if any new regulations have been issued since the finalization of TEAM.</p> <p>Determine if the facility has activities or facilities that are regulated, but not addressed in this checklist.</p> <p>Verify that the facility is in compliance with all applicable and newly issued regulations.</p> <p>Determine if risk management techniques are promoted in environmental efforts.</p> <p>Determine if the facility has gone above and beyond simply complying with environmental requirements.</p>



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<b>WASTE MUNITIONS</b>  <b>O6.30</b> <b>Personnel Training</b>  <b>O6.30.1.US.</b> All who work directly with chemical agents and ammunition are required to receive enough training to enable them to work safely and to understand the relative significance of agent exposures (DoD 6055-9 STD, para C11.7.2) [Added April 2003, Revised April 2009].	<p>Verify that anyone who works with toxic chemical munitions and agents (e.g., agent workers, firefighters, medical, and security personnel) receives training to enable them to work safely and to understand the significance of toxic chemical agent exposures.</p> <p>Verify that the training includes, but is not limited to, information on sources of exposure, adverse health effects, practices and controls used to limit exposures, environmental issues, medical monitoring procedures, and employee responsibilities in health protection programs.</p>



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<p><b>WASTE MUNITIONS</b></p> <p><b>O6.50.</b>  <b>Conditionally Exempt Waste Munitions Storage</b></p> <p><b>O6.50.1.US.</b> When storing non-chemical waste munitions as Conditionally Exempt (CE), certain parameters must be met (40 CFR 266.205(a), 266.205(c), and 266.205(e)) <b>[Revised June 1998; Revised April 2003].</b></p>	<p>(NOTE: Nonchemical waste munitions being stored according to these requirements are commonly referred to as Conditionally Exempt (CE) Waste Military Munitions in storage. This is NOT the same classification as a hazardous waste conditionally exempt small quantity generator (CESQG).)</p> <p>(NOTE: According to the Military Munitions Rule preamble, page 6636 of the 12 February 1997 Federal Register (FR), the conditional exemption applies only to waste military nonchemical munitions that are subject to the jurisdiction of Department of Defense Explosives Safety Board (DDESB) (which could include military-owned munitions at contractor-operated facilities), including products that DoD determines are solid wastes (see definition for <i>Solid Waste Military Munitions</i>) and unexploded ordnance (UXO) recovered from ranges and moved into storage prior to treatment or disposal. USEPA is not extending the conditional exemption option to owners or operators of storage facilities storing non-military waste munitions and explosives, nor to persons storing “military munitions” who are not subject to the jurisdiction of the DDESB [e.g., DOE or other non-DoD Federal agencies or contractor facilities not directly or by contract subject to DDESB controls].)</p> <p>(NOTE: According to the Military Munitions Rule preamble, page 6638 of the 12 February 1997 Federal Register [FR], USEPA is not extending the conditional exemption to waste chemical agents and munitions.)</p> <p>Verify that, when waste military munitions in storage exhibit a hazardous waste characteristic or are listed as hazardous waste, they are managed as hazardous waste (i.e., subject to the requirements in 40 CFR 260 through 40 CFR 279), unless all of the following conditions are met:</p> <ul style="list-style-type: none"> <li>– the waste military munitions are not chemical agents or chemical munitions</li> <li>– the waste military munitions are subject to the jurisdiction of the DDESB</li> <li>– the waste military munitions are stored in accordance with DDESB storage standards applicable to waste military munitions</li> <li>– within 90 days of 12 August 1997, or within 90 days of when a storage unit is first used to store waste military munitions, whichever is later, the USEPA Director is notified of the location of any waste storage unit used to store waste military munitions for which the conditional exemption is claimed</li> <li>– inventory the waste military munitions annually</li> <li>– inspect the waste military munitions at least quarterly for compliance with the requirements for maintaining conditional exemption status</li> <li>– maintain records of findings of inventories and inspections for at least 3 yr</li> </ul>

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	<p>– limit access to the stored waste military munitions to appropriately trained and authorized personnel.</p> <p>(NOTE: This exemption applies only to storage requirements, not transportation, treatment, or disposal.)</p> <p>Verify that oral notice is provided to the USEPA Director within 24 h from the time the owner or operator becomes aware of any loss or theft of the waste military munitions or of any failure to meet the requirements to maintain conditional exemption status.</p> <p>Verify that written submission of the theft circumstances is provided within 5 days from the time of theft awareness or any failure to meet the requirements to maintain conditional exemption status.</p> <p>(NOTE: If a facility loses its conditional exemption, an application may be filed with the USEPA Director for reinstatement. If the Director does not take action on the reinstatement application within 60 days after receipt of the application, then reinstatement shall be deemed granted, retroactive to the date of the application. However, the Director may terminate a conditional exemption reinstated by default in the preceding sentence if he/she finds that reinstatement is inappropriate based on factors such as the owner's or operator's failure to provide a satisfactory explanation of the circumstances of the violation, or failure to demonstrate that the violations are not likely to recur.)</p> <p>(NOTE: According to the Military Munitions Rule preamble, page 6637 of the 12 February 1997 FR, if a military facility claims the conditional exemption, but fails to store waste military munitions in compliance with the provisions of that exemption, that facility's mismanaged waste, and any unit in which that waste was mismanaged, would no longer be exempt. Accordingly, the facility would be subject to additional regulatory requirements [e.g., a RCRA storage permit] and could be subject to enforcement action [or citizen suit] for violations of hazardous waste requirements.)</p> <p>(NOTE: According to the Military Munitions Rule preamble, page 6638 of the 12 February 1997 FR, USEPA understands that DoD officials have authority, in some circumstances, to grant waivers or exemptions from DDESB standards for military munitions, where necessitated by strategic or other compelling reasons. However, USEPA believes that a waiver for waste military munitions could be inconsistent with the basis for the conditional exemption. Therefore, a waiver from otherwise applicable DDESB storage standards will terminate the eligibility of affected waste munitions for the conditional exemption, subject to reinstatement by USEPA. The existence of a waiver will not preclude the owner or operator from storing waste military munitions in compliance with the requirements of 40 CFR 264 or 265, subpart EE.)</p>

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<p><b>O6.50.2.US.</b> Special storage procedures must be followed for the storage of CE waste military munitions (40 CFR 266.205(a)(1)(iii) implementing DoD 6055.9-STD, para C1.3, C14.2, C14.3.2.2, C14.3.2.3) [Added April 2003, Revised April 2009].</p>	<p>(NOTE: The DDESB storage standards applicable to waste military munitions are DoD 6055.9-STD in effect on 8 November 1995. Any amendments to the DDESB storage standards shall become effective for purposes maintaining conditional exemption status on the date the DoD publishes notice in the Federal Register that the DDESB standards have been amended.)</p> <p>(NOTE: Nonchemical waste munitions being stored according to these requirements are commonly referred as CE Waste Military Munitions in storage. This is NOT the same classification as a hazardous waste CESQG.)</p> <p>(NOTE: Waivers and exemptions from DoD 6055.9-STD are not authorized for ammunition and explosives storage facilities [ammunition storage units (ASUs)] storing CE waste military munitions. Waivers and exemptions from this Standard are only available to DoD Components storing waste munitions under RCRA unit standards (e.g., Subpart EE of 40 CFR 264). The approval authority for these waivers and exemptions is the Secretary of the Military Department, who may delegate the authority no lower than an assistant secretary.)</p> <p>Verify that waste military munitions are physically separate (e.g., on a separate pallet or shelf) from nonwaste military munitions when both are stored in the same ASU.</p> <p>Verify that the physically separated waste military munitions are clearly marked to ensure proper identification.</p> <p>(NOTE: The standards in DoD 6055.9 govern DoD facilities apply as follows:</p> <ul style="list-style-type: none"> <li>– DoD titled AE wherever it is located</li> <li>– DoD personnel and property when potentially endangered by known host-nation or off-installation AE hazards</li> <li>– DoD facilities siting and construction except: <ul style="list-style-type: none"> <li>– existing facilities, or those approved for construction under then-current editions of these Standards if: <ul style="list-style-type: none"> <li>– the facility continues to be used for its intended purpose</li> <li>– the explosives safety hazards are not increased</li> <li>– redesign or modification is not practicable</li> <li>– the quantity of AE cannot be reduced for reasons of operational necessity</li> </ul> </li> <li>– planned facilities that do not meet these standards, but have been certified by the head of the DoD Component as essential for operational or other compelling reasons</li> <li>– other situations that, upon analysis by the DoD Component and the DDESB, are determined to provide the required degree of safety through use of protective construction or other specialized safety features.</li> </ul> </li> </ul> <p>The excepted deviations must be documented in the installation's permanent records. The documentation must show the date the applicable standard was first</p>

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<p><b>O6.50.3.US.</b> Special documentation procedures must be followed for the storage of CE waste military munitions (40 CFR 266.205(a)(1)(iii); DoD 6055.9-STD, para C1.3, C14.2, C14.3.2.1, C14.3.2.4, and C14.3.2.5) [Added April 2003; Revised April 2009].</p>	<p>published and the date the deviant facility was either approved, from an explosives safety viewpoint, for use or was first used in the deviating manner.)</p> <p>(NOTE: Nonchemical waste munitions being stored according to these requirements are commonly referred as CE Waste Military Munitions in storage. This is NOT the same classification as a hazardous waste CESQG.)</p> <p>(NOTE: Waivers and exemptions from DoD 6055.9-STD are not authorized for ammunition and explosives storage facilities [ammunition storage units (ASUs)] storing CE waste military munitions. Waivers and exemptions from this Standard are only available to DoD Components storing waste munitions under RCRA unit standards (e.g., Subpart EE of 40 CFR 264). The approval authority for these waivers and exemptions is the Secretary of the Military Department, who may delegate the authority no lower than an assistant secretary.)</p> <p>Verify that installations and responsible activities maintain records of stored waste munitions for a minimum of 3 yr from the date they were last stored and the records are distinguished by type.</p> <p>Verify that a separate record or line item is present for each type of munition in any mixed lot of munitions received for storage.</p> <p>Verify that the record includes the following:</p> <ul style="list-style-type: none"> <li>– the type of waste military munitions stored by standard nomenclature, Lot Number, Federal Supply Class (FSC), National Stock Number (NSN), Department of Defense Ammunition Code (DoDAC), and condition code</li> <li>– the quantity of waste military munitions stored</li> <li>– the date the munitions were identified as “waste”</li> <li>– the date the munitions left storage</li> <li>– the storage location or locations (e.g., building number or storage pad, and grid coordinates) where they were stored</li> <li>– the means (e.g., destroyed, demilitarized, and shipped) and date of disposition of the munitions</li> <li>– when applicable, the sending and receiving sites for those waste military munitions received from or shipped to offsite sources.</li> </ul> <p>Verify that each ASU storing waste military munitions or explosives under CE is included in a DDESB-approved explosives safety site plan that the installation keeps on file.</p> <p>Verify that those portions of the site plan addressing ASUs storing waste military munitions under CE are made available to applicable Federal or State environmental regulatory authority on request.</p> <p>Verify that there is a Standing Operating Procedure (SOP) or plans that are designed to provide safety, security, and environmental protection.</p>

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<p><b>O6.50.4.US.</b> Certain actions must be taken when CE status is lost due to noncompliance with CE conditions (40 CFR 266.205(c) and DoD 6055.9-STD, para C1.3, C13.3, C13.4, C14.3.3.1, and C14.5 [February 1997; Revised January 2003, Revised April 2009].</p>	<p>Verify that the SOPs or plans are coordinated with the applicable Federal, state, and local emergency response authorities (e.g., law enforcement, fire departments, and hospitals) and local established planning committees.</p> <p>(NOTE: The standards in DoD 6055.9 govern DoD facilities apply as follows:</p> <ul style="list-style-type: none"> <li>– DoD titled AE wherever it is located</li> <li>– DoD personnel and property when potentially endangered by known host-nation or off-installation AE hazards.</li> <li>– DoD facilities siting and construction except: <ul style="list-style-type: none"> <li>– existing facilities, or those approved for construction under then-current editions of these Standards if: <ul style="list-style-type: none"> <li>– the facility continues to be used for its intended purpose</li> <li>– the explosives safety hazards are not increased</li> <li>– redesign or modification is not practicable</li> <li>– the quantity of AE cannot be reduced for reasons of operational necessity</li> </ul> </li> <li>– planned facilities that do not meet these standards, but have been certified by the head of the DoD Component as essential for operational or other compelling reasons</li> <li>– other situations that, upon analysis by the DoD Component and the DDESB, are determined to provide the required degree of safety through use of protective construction or other specialized safety features.</li> </ul> </li> </ul> <p>The excepted deviations must be documented in the installation's permanent records. The documentation must show the date the applicable standard was first published and the date the deviant facility was either approved, from an explosives safety viewpoint, for use or was first used in the deviating manner.)</p> <p>(NOTE: Nonchemical waste munitions being stored according to these requirements are commonly referred as CE Waste Military Munitions in storage. This is NOT the same classification as a hazardous waste CESQG.)</p> <p>(NOTE: If any waste military munition loses its conditional exemption, an application may be filed with the Director for reinstatement of the conditional exemption from hazardous waste storage regulation with respect to such munition as soon as the munition is returned to compliance with the conditions of 40 CFR 266.205(a)(1) [see checklist item O6.50.1.US]. If the Director finds that reinstatement of the conditional exemption is appropriate based on factors such as the owner's or operator's provision of a satisfactory explanation of the circumstances of the violation, or a demonstration that the violations are not likely to recur, the Director may reinstate the conditional exemption. If the Director does not take action on the reinstatement application within 60 days after receipt of the application, then reinstatement shall be deemed granted, retroactive to the date of the application. However, the Director may terminate a conditional exemption reinstated by default if he/she finds that reinstatement is inappropriate based on factors such as the owner's or operator's failure to provide a satisfactory explanation</p>

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	<p>of the circumstances of the violation, or failure to demonstrate that the violations are not likely to recur. In reinstating the conditional exemption, the Director may specify additional conditions as are necessary to ensure and document proper storage to protect human health and the environment.)</p> <p>Verify that installations and responsible activities notify their chain of command, the DDESB Chairman (through the DoD Component channels), the applicable state environmental regulatory authority, and established local committees of the loss of CE as follows:</p> <ul style="list-style-type: none"> <li>– telephonically or, in the case of the DoD Component and the DDESB, electronically (by e-mail message or facsimile), within 24 h from the time the installation or responsible activity becomes aware of any unpermitted or uncontrolled detonation, release, discharge, or migration of waste military munitions out of any storage unit (e.g., loss or theft, or as a result of fire or explosion) that may endanger human health or the environment</li> <li>– in writing, if the initial report was telephonic, within 5 days from the time the installation or responsible activity becomes aware of any unpermitted or uncontrolled detonation, release, discharge, or migration of waste military munitions out of any storage unit (e.g., loss or theft, or as a result of fire or explosion) that may endanger human health or the environment.</li> </ul> <p>(NOTE: The unpermitted or uncontrolled detonation, release, discharge, or migration [e.g., loss or theft, or as a result of a fire or explosion] of waste military munitions out of any storage unit that might endanger human health or the environment will result in the immediate loss of CE for those waste military munitions.)</p> <p>Verify that the following data is provided as soon as possible:</p> <ul style="list-style-type: none"> <li>– name and location of the reporting activity</li> <li>– location of accident (activity, city, installation, building number or designation, road names, or similar information)</li> <li>– item nomenclature or description (e.g., Mark (Mk), model, Federal Supply Class (FSC), National Identification Number (NIN), Department of Defense Ammunition Code (DoDAC), Navy Ammunition Logistic Code (NALC), or Ammonium Nitrate/Fuel Oil (ANFO))</li> <li>– quantity involved (number of items and NEWQD)</li> <li>– day, date, and local time of initial significant event and when discovered</li> <li>– narrative of the event (include type of operation involved)</li> <li>– number of fatalities (military, DoD civilian, or other civilian)</li> <li>– number of persons injured (military, DoD Civilian, or other civilian)</li> <li>– description of material damage (government or non-government)</li> <li>– immediate action taken or planned (corrective, investigative, or EOD assistance)</li> <li>– details of any chemical agent hazard or contamination, if applicable</li> </ul>

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	<p>– description of news media attention.</p> <p>(NOTE: Regardless of format, mishap reports prepared or received in compliance with other DoD Component regulatory documents may be used to satisfy these reporting requirements whenever they contain similar data.)</p> <p>(NOTE: Follow-up reports to the DoD Component and the DDESB are only required when pertinent information, which was not previously reported, becomes known.)</p> <p>Verify that, when accident investigations are concluded, the following accident reporting data, as applicable, is provided to the DDESB:</p> <ul style="list-style-type: none"> <li>– Event Circumstances: type of operation or transportation mode engaged in at time of the accident (include reference to applicable standing operating procedure or regulatory document), including: <ul style="list-style-type: none"> <li>– description of accident</li> <li>– quantity, type, lot number, configuration, and packaging of AE or chemical agents involved in accident</li> <li>– type of reaction or reactions, such as: <ul style="list-style-type: none"> <li>– single reaction, such as detonation, deflagration, fire, release, or activation</li> <li>– multiple reaction, such as detonation and fire</li> <li>– communication of reactions, such as fire-caused fire, fire-caused detonation, and detonation-caused detonation, and the time between events</li> </ul> </li> <li>– possible or suspected causes</li> </ul> </li> <li>– Event Effects: a copy of aerial and ground photographs taken of the accident site shall be submitted to the DDESB as soon as possible after the occurrence. When applicable, include photographs (color, whenever possible), maps, charts, and overlays, showing or listing the following data: <ul style="list-style-type: none"> <li>– number of persons killed or injured (military, DoD civilian, or other civilian). Indicate cause of fatalities and injuries, and location of affected persons with respect to the accident origin</li> <li>– property damage at the accident origin (government or non-government)</li> <li>– area containing property with complete destruction</li> <li>– area containing property damage beyond economical repair</li> <li>– area containing repairable property damage</li> <li>– radii of glass breakage, including type and dimensions of glass broken at farthest point if possible</li> <li>– locations and dimensions of craters</li> <li>– when direct propagation has occurred, identify distances from the accident origin and whether propagation resulted from blast, fragments, or firebrands</li> <li>– approximate number, size, and location of hazardous fragments and debris</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– effect on production, operation, mission, or other activity</li> <li>– Factors Contributing to or Limiting Event Effects: when applicable, describe the influence of the following factors on the accident: <ul style="list-style-type: none"> <li>– environmental and meteorological conditions (e.g., lightning, cloud cover, wind direction and velocity, temperature, relative humidity, EMR, and electrostatic buildup or discharge)</li> <li>– topography (e.g., hills, forests, and lakes) structural features at the accident origin (e.g., exterior and interior walls and bulkheads, roofs and overheads, doors and hatches, cells or magazines, earth cover, and barricades)</li> <li>– safety features, other than structural, at the accident origin (e.g., remote controls, sprinkler or deluge systems, detectors, alarms, blast traps, and suppressive shielding)</li> </ul> </li> <li>– Structures: when applicable, provide position, orientation, and type of construction of all structures, damaged or not, located within the maximum radius of damage or the applicable QD, whichever is greater</li> <li>– Vessels, Vehicles, and Mobile Equipment: when applicable, provide their location within the maximum radius of damage, or the applicable QD requirement, whichever is greater</li> <li>– Personnel: when applicable, provide their location within the maximum radius of damage, or the applicable QD requirements, whichever is greater</li> <li>– AE and Chemical Agents: When applicable, provide the location, type, configuration, and amounts of AE and chemical agents in adjacent locations, and describe the protection provided by structures at adjacent locations (NOTE: This information is required out to the maximum radius of damage to any AE or chemical agents, or the applicable IMD or ILD requirements, whichever is greater)</li> <li>– Report: Provide analyses, conclusions, and recommendations.</li> </ul> <p>(NOTE: The standards in DoD 6055.9 govern DoD facilities apply as follows:</p> <ul style="list-style-type: none"> <li>– DoD titled AE wherever it is located</li> <li>– DoD personnel and property when potentially endangered by known host-nation or off-installation AE hazards.</li> <li>– DoD facilities siting and construction except: <ul style="list-style-type: none"> <li>– existing facilities, or those approved for construction under then-current editions of these Standards if: <ul style="list-style-type: none"> <li>– the facility continues to be used for its intended purpose</li> <li>– the explosives safety hazards are not increased</li> <li>– redesign or modification is not practicable</li> <li>– the quantity of AE cannot be reduced for reasons of operational necessity</li> </ul> </li> <li>– planned facilities that do not meet these standards, but have been certified by the head of the DoD Component as essential for operational or other compelling reasons</li> <li>– other situations that, upon analysis by the DoD Component and the DDESB, are determined to provide the required degree of safety</li> </ul> </li> </ul>

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<p><b>O6.50.5.US.</b> The closure of a CE waste military munitions storage facility is required to meet specific parameters (40 CFR 266.205(b), DoD 6055.9-STD, para C1.3, C1.4, and C14.6) [Added April 2003, Revised April 2009].</p>	<p>through use of protective construction or other specialized safety features.</p> <p>The excepted deviations must be documented in the installation's permanent records. The documentation must show the date the applicable standard was first published and the date the deviant facility was either approved, from an explosives safety viewpoint, for use or was first used in the deviating manner.)</p> <p>Verify that the USEPA Director has been notified if a facility previously identified to the Director as meeting the requirements for conditionally exempt nonchemical waste munitions storage will no longer be used to store nonchemical waste military munitions.</p> <p>(NOTE: The requirement to notify the USEPA Director is from 40 CFR 266.205(b).)</p> <p>Verify that, besides the explosives safety requirements of DoD 6055.9-STD, Chapter 12 (see checklist item O6.150.1.US through O6.150.5.US), when an ASU that stored waste military munitions under CE is permanently taken out of service for the storage of nonwaste and waste military munitions, installations, and responsible activities ensure that such ASUs are appropriately closed.</p> <p>Verify that installations or responsible activities notify the applicable Federal or state environmental regulatory authority in writing at least 45 days before the closure activities begin.</p> <p>(NOTE: Initiation of those closure procedures should occur within 180 days after the date the decision is made to permanently stop using the ASU for the storage of military munitions.)</p> <p>Verify that, on completion of closure activities, a "Certification of Closure," signed by the installation or responsible activity commander, or other equivalent level authority, and by an independent (i.e., an individual not assigned within the commander's or equivalent-level authority's chain of command) registered professional engineer is submitted to the applicable Federal or state environmental regulatory authority within 90 days of completing the closure activities.</p> <p>Verify that the Certificate of Closure states, at a minimum, that each of the following explosives safety requirements have been met and that waste military munitions and residues are removed in such a manner as to protect the public and the environment consistent with the planned use of the ASU and of the property:</p> <ul style="list-style-type: none"> <li>– the storage facility is emptied of all ammunition and explosives and related materials</li> <li>– the storage facility is cleaned, as required, to remove any visible explosives residue</li> </ul>

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	<ul style="list-style-type: none"> <li>– visual inspection is done of the storage facility for the presence of remaining ammunition or explosives or visible explosives residue by a knowledgeable individual that the installation or responsible activity commander appoints</li> <li>– all fire and chemical hazard symbols and markings are removed and the storage facility is marked as empty</li> <li>– the storage facility is secured to prevent inadvertent use or access</li> <li>– the applicable emergency response and regulatory authorities are notified of the change in the storage facility use</li> <li>– the date the storage facility was inspected; the name and position of the inspector, and the results are recorded in the permanent real estate record.</li> </ul> <p>Verify that, if closure certification cannot be rendered, the installation or responsible activity contacts the applicable Federal and state environmental regulatory agency to determine the appropriate course of action.</p> <p>Verify that, when an ASU that stored waste military munitions under CE is permanently taken out of service for the storage of non-waste and waste military munitions installations and responsible activities ensure that waste military munitions and residues are removed.</p> <p>(NOTE: The standards in DoD 6055.9 govern DoD facilities apply as follows:</p> <ul style="list-style-type: none"> <li>– DoD titled AE wherever it is located</li> <li>– DoD personnel and property when potentially endangered by known host-nation or off-installation AE hazards.</li> <li>– DoD facilities siting and construction except: <ul style="list-style-type: none"> <li>– existing facilities, or those approved for construction under then-current editions of these Standards if: <ul style="list-style-type: none"> <li>– the facility continues to be used for its intended purpose</li> <li>– the explosives safety hazards are not increased</li> <li>– redesign or modification is not practicable</li> <li>– the quantity of AE cannot be reduced for reasons of operational necessity</li> </ul> </li> <li>– planned facilities that do not meet these standards, but have been certified by the head of the DoD Component as essential for operational or other compelling reasons</li> <li>– other situations that, upon analysis by the DoD Component and the DDESB, are determined to provide the required degree of safety through use of protective construction or other specialized safety features.</li> </ul> </li> </ul> <p>The excepted deviations must be documented in the installation's permanent records. The documentation must show the date the applicable standard was first published and the date the deviant facility was either approved, from an explosives safety viewpoint, for use or was first used in the deviating manner.)</p>









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<p><b>WASTE MUNITIONS</b></p> <p><b>O6.90</b> <b>Emergency Response</b></p> <p><b>O6.90.1.US.</b> Emergencies involving munitions or explosives are required to be handled according to specific parameters (40 CFR 266.204) [Added April 2003].</p>	<p>(NOTE: The requirements for 40 CFR 262, 263, 264, and 265 do not apply to a person engaged in treatment or containment activities during immediate response to an immediate threat to human health, public safety, property or the environment, from the known or suspected presence of military munitions, other explosive materials, or an explosive device, as determined by an explosive or munitions emergency response specialist.)</p> <p>(NOTE: According to the Military Munitions Rule preamble, page 6623 of the 12 February 1997 FR, the emergency response requirements apply to non-military munitions and explosives and nonmilitary personnel as well as military.)</p> <p>Verify that an explosive or munitions emergency response specialist makes the determination as to whether an immediate response is required.</p> <p>Verify that the response to explosives and munitions emergencies involving military munitions or explosives are appropriate based on the need, or lack of need, for an immediate or time-critical responses</p> <p>(NOTE: According to the Military Munitions Rule preamble, page 6642-6643 of the 12 February 1997 FR, USEPA considers immediate or time-critical responses to explosives or munitions emergency responses to be an immediate response to a discharge or imminent and substantial threat of a discharge of a hazardous waste under 40 CFR 264.1(g)(8), 265.1(c)(11), and 270.1(c)(3). Such responses are, therefore, exempt from RCRA permitting, and other substantive requirements, including emergency permits, conducting risk assessments for OB/OD permits under 40 CFR 264, subpart X, and interim status requirements under 40 CFR 265, subpart P. This immediate response is called a Level I Response in the DoD and only EOD personnel may conduct Level 1 Responses. Situations where an immediate response is needed would include instances where the public or property is potentially threatened by an explosion.)</p> <p>(NOTE: According to the Military Munitions Rule preamble, page 6642-6643 of the 12 February 1997 FR, if an immediate response is clearly not necessary to address the situation, and a response can be delayed without compromising safety or increasing the risks posed to life, property, health, or the environment, the responding personnel, if time permits, should consult with the regulatory agency regarding the appropriate course of action [e.g., whether or not to seek a RCRA emergency permit under 40 CFR 270.6l, or regular facility permit under 40 CFR 270]. This is called a Level 2 Response by DoD and may involve locations both on and off DoD installations and may be determined, conducted, and terminated by EOD personnel or other qualified explosives or munitions emergency response</p>

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<p><b>O6.90.2.US.</b> Certain reporting is required for any unpermitted or uncontrolled detonation, release, discharge, or migration of waste military munitions out of any storage unit (e.g., loss or theft, or as a result of fire or explosion; etc.) that may endanger human health or the environment (DoD 6055.9-STD, para C1.3, C13.3, C13.4, C13.5, and C14.5) [Added April 2003, Revised April 2009].</p>	<p>specialist. Situations where an immediate response is clearly not necessary would include instances where the public or property is not threatened by a potential explosion (e.g., in remote areas such as some former ranges or where immediate action is not necessary to prevent explosion or exposure).</p> <p>(NOTE: According to the Military Munitions Rule preamble, page 6643 of the 12 February 1997 FR, if an emergency response specialist at the site determines it to be appropriate, the explosive material may be removed and transported to a safer location to be defused, detonated, or otherwise rendered safe without a RCRA manifest, and the transporter is not required to have a RCRA identification number. Such transport could be to an open space or an EOD range at a military installation.)</p> <p>Verify that, in the case of emergencies involving military munitions, the responding emergency response specialists' organization unit retains records for 3 yr identifying:</p> <ul style="list-style-type: none"> <li>– the date of the response</li> <li>– the responsible persons responding (include name and grade)</li> <li>– the type, description, and quantity of material addressed</li> <li>– the disposition of the material.</li> </ul> <p>Verify that installations and responsible activities notify their chain of command, the DDESB Chairman (through the DoD Component channels), the applicable state environmental regulatory authority, and established local committees as follows:</p> <ul style="list-style-type: none"> <li>– telephonically or, in the case of the DoD Component and the DDESB, electronically (by e-mail message or facsimile), within 24 h from the time the installation or responsible activity becomes aware of any unpermitted or uncontrolled detonation, release, discharge, or migration of waste military munitions out of any storage unit (e.g., loss or theft, or as a result of fire or explosion) that may endanger human health or the environment</li> <li>– in writing, if the initial report was telephonic, within 5 days from the time the installation or responsible activity becomes aware of any unpermitted or uncontrolled detonation, release, discharge, or migration of waste military munitions out of any storage unit (e.g., loss or theft, or as a result of fire or explosion) that may endanger human health or the environment.</li> </ul> <p>Verify that the following data is provided as soon as possible:</p> <ul style="list-style-type: none"> <li>– name and location of the reporting activity</li> <li>– location of accident (activity, city, installation, building number or designation, road names, or similar information)</li> <li>– item nomenclature or description (e.g., Mark (Mk), model, Federal Supply Class (FSC), National Identification Number (NIN), Department of Defense Ammunition Code (DoDAC), Navy Ammunition Logistic Code (NALC), or Ammonium Nitrate/Fuel Oil (ANFO))</li> </ul>

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	<ul style="list-style-type: none"> <li>– quantity involved (number of items and NEWQD)</li> <li>– day, date, and local time of initial significant event and when discovered</li> <li>– narrative of the event (include type of operation involved)</li> <li>– number of fatalities (military, DoD civilian, or other civilian)</li> <li>– number of persons injured (military, DoD Civilian, or other civilian)</li> <li>– description of material damage (government or non-government)</li> <li>– immediate action taken or planned (corrective, investigative, or EOD assistance)</li> <li>– details of any chemical agent hazard or contamination, if applicable</li> <li>– description of news media attention.</li> </ul> <p>(NOTE: Regardless of format, mishap reports prepared or received in compliance with other DoD Component regulatory documents may be used to satisfy these reporting requirements whenever they contain similar data.)</p> <p>(NOTE: Follow-up reports to the DoD Component and the DDESB are only required when pertinent information, which was not previously reported, becomes known.)</p> <p>Verify that, when accident investigations are concluded, the following accident reporting data, as applicable, is provided to the DDESB:</p> <ul style="list-style-type: none"> <li>– Event Circumstances: type of operation or transportation mode engaged in at time of the accident (include reference to applicable standing operating procedure or regulatory document), including: <ul style="list-style-type: none"> <li>– description of accident</li> <li>– quantity, type, lot number, configuration, and packaging of AE or chemical agents involved in accident</li> <li>– type of reaction or reactions, such as: <ul style="list-style-type: none"> <li>– single reaction, such as detonation, deflagration, fire, release, or activation</li> <li>– multiple reaction, such as detonation and fire</li> <li>– communication of reactions, such as fire-caused fire, fire-caused detonation, and detonation-caused detonation, and the time between events</li> </ul> </li> <li>– possible or suspected causes</li> </ul> </li> <li>– Event Effects: a copy of aerial and ground photographs taken of the accident site shall be submitted to the DDESB as soon as possible after the occurrence. When applicable, include photographs (color, whenever possible), maps, charts, and overlays, showing or listing the following data: <ul style="list-style-type: none"> <li>– number of persons killed or injured (military, DoD civilian, or other civilian). Indicate cause of fatalities and injuries, and location of affected persons with respect to the accident origin</li> <li>– property damage at the accident origin (government or non-government)</li> <li>– area containing property with complete destruction</li> <li>– area containing property damage beyond economical repair</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– area containing repairable property damage</li> <li>– radii of glass breakage, including type and dimensions of glass broken at farthest point if possible</li> <li>– locations and dimensions of craters</li> <li>– when direct propagation has occurred, identify distances from the accident origin and whether propagation resulted from blast, fragments, or firebrands</li> <li>– approximate number, size, and location of hazardous fragments and debris</li> <li>– effect on production, operation, mission, or other activity</li> <li>– Factors Contributing to or Limiting Event Effects: when applicable, describe the influence of the following factors on the accident: <ul style="list-style-type: none"> <li>– environmental and meteorological conditions (e.g., lightning, cloud cover, wind direction and velocity, temperature, relative humidity, EMR, and electrostatic buildup or discharge)</li> <li>– topography (e.g., hills, forests, and lakes)</li> </ul> </li> <li>– structural features at the accident origin (e.g., exterior and interior walls and bulkheads, roofs and overheads, doors and hatches, cells or magazines, earth cover, and barricades)</li> <li>– safety features, other than structural, at the accident origin (e.g., remote controls, sprinkler or deluge systems, detectors, alarms, blast traps, and suppressive shielding)</li> <li>– Structures: when applicable, provide position, orientation, and type of construction of all structures, damaged or not, located within the maximum radius of damage or the applicable QD, whichever is greater</li> <li>– Vessels, Vehicles, and Mobile Equipment: when applicable, provide their location within the maximum radius of damage, or the applicable QD requirement, whichever is greater</li> <li>– Personnel: when applicable, provide their location within the maximum radius of damage, or the applicable QD requirements, whichever is greater</li> <li>– AE and Chemical Agents: When applicable, provide the location, type, configuration, and amounts of AE and chemical agents in adjacent locations, and describe the protection provided by structures at adjacent locations (NOTE: This information is required out to the maximum radius of damage to any AE or chemical agents, or the applicable IMD or ILD requirements, whichever is greater)</li> <li>– Report: Provide analyses, conclusions, and recommendations.</li> </ul> <p>(NOTE: The standards in DoD 6055.9 govern DoD facilities apply as follows:</p> <ul style="list-style-type: none"> <li>– DoD titled AE wherever it is located</li> <li>– DoD personnel and property when potentially endangered by known host-nation or off-installation AE hazards.</li> <li>– DoD facilities siting and construction except: <ul style="list-style-type: none"> <li>– existing facilities, or those approved for construction under then-current editions of these Standards if:</li> <li>– the facility continues to be used for its intended purpose</li> </ul> </li> </ul>

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<p><b>O6.90.3.US.</b> Chemical agent mishap reports are required to contain additional information (DoD 6055.9-STD, para C1.3 and C13.5) [Added April 2003, Revised April 2009].</p>	<ul style="list-style-type: none"> <li>– the explosives safety hazards are not increased</li> <li>– redesign or modification is not practicable</li> <li>– the quantity of AE cannot be reduced for reasons of operational necessity</li> <li>– planned facilities that do not meet these standards, but have been certified by the head of the DoD Component as essential for operational or other compelling reasons</li> <li>– other situations that, upon analysis by the DoD Component and the DDESB, are determined to provide the required degree of safety through use of protective construction or other specialized safety features.</li> </ul> <p>The excepted deviations must be documented in the installation's permanent records. The documentation must show the date the applicable standard was first published and the date the deviant facility was either approved, from an explosives safety viewpoint, for use or was first used in the deviating manner.)</p> <p>Verify that, in addition to the data required by DoD 6055.9-STD, para C13.5 (see checklist items O6.50.4.US and O6.90.2.US), for ammunition and explosives mishaps, each chemical agent mishap investigation report contains the following information:</p> <ul style="list-style-type: none"> <li>– Personnel: <ul style="list-style-type: none"> <li>– chemical agent safety training received</li> <li>– the availability, type, and use of protective equipment</li> <li>– a description of the emergency measures taken or performed at the scene of the accident</li> <li>– a summary of applicable medical data</li> <li>– a diagram showing locations where injuries occurred and indicating the distance and direction from the agent source</li> </ul> </li> <li>– Accident Area: in addition to the environmental and meteorological data required at the accident site., provide the following: <ul style="list-style-type: none"> <li>– facility filter types and the facility ventilation and air turnover rates</li> <li>– rate and manner of agent release and any other data used to determine the downwind hazard</li> <li>– status and disposition of any chemical agent remaining at the accident site</li> <li>– details of any remaining chemical agent hazard and contamination, if applicable.</li> </ul> </li> </ul> <p>(NOTE: The standards in DoD 6055.9 govern DoD facilities apply as follows:</p> <ul style="list-style-type: none"> <li>– DoD titled AE wherever it is located</li> <li>– DoD personnel and property when potentially endangered by known host-nation or off-installation AE hazards.</li> <li>– DoD facilities siting and construction except: <ul style="list-style-type: none"> <li>– existing facilities, or those approved for construction under then-current editions of these Standards if:</li> <li>– the facility continues to be used for its intended purpose</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– the explosives safety hazards are not increased</li> <li>– redesign or modification is not practicable</li> <li>– the quantity of AE cannot be reduced for reasons of operational necessity</li> <li>– planned facilities that do not meet these standards, but have been certified by the head of the DoD Component as essential for operational or other compelling reasons</li> <li>– other situations that, upon analysis by the DoD Component and the DDESB, are determined to provide the required degree of safety through use of protective construction or other specialized safety features.</li> </ul> <p>The excepted deviations must be documented in the installation's permanent records. The documentation must show the date the applicable standard was first published and the date the deviant facility was either approved, from an explosives safety viewpoint, for use or was first used in the deviating manner.)</p>

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<p><b>WASTE MUNITIONS</b></p> <p><b>O6.100. Transportation</b></p> <p><b>O6.100.1.US.</b> When transporting non-chemical waste munitions as Conditionally Exempt (CE), certain parameters must be met (40 CFR 266.203) [<b>Added April 2003</b>].</p>	<p>Verify that transported waste military munitions that exhibit a hazardous waste characteristic or are listed as hazardous waste under 40 CFR 261, are listed or identified as a hazardous waste unless all the following conditions are met:</p> <ul style="list-style-type: none"> <li>– the waste military munitions are not chemical agents or chemical munitions</li> <li>– the waste military munitions are transported in accordance with the DoD shipping controls applicable to the transport of military munitions</li> <li>– the waste military munitions are transported from a military owned or operated installation to a military owned or operated treatment, storage, or disposal facility (TSDF).</li> </ul> <p>(NOTE: According to the Military Munitions Rule preamble, page 6634 of the 12 February 1997 FR, this provision applies to waste munitions that are not chemical munitions or chemical agents and that are transported by commercial carriers who are under contract with the military and have signed a contractual compliance agreement with the Military Traffic Management Command, and who operate under the DoD system of shipping controls for military munitions. USEPA is not extending the conditional exemption in 40 CFR 266.203 to persons transporting “military munitions” who are not required to comply with the DoD military munitions shipping controls (e.g., DOE or other non-DoD Federal agencies or their contractors). This provision also does not apply to the transport of waste military munitions to a commercial TSDF. Finally, this provision does not apply to waste munitions shipped by the military but not under DoD's shipping controls designed for its munitions inventory.)</p> <p>Verify that the transporter of the waste provides oral notice to the Director within 24 h from the time the transporter becomes aware of any loss or theft of the waste military munitions, or that the waste does not meet the CE conditions and may endanger health or the environment.</p> <p>Verify that a written submission describing the circumstances is provided within 5 days from the time the transporter becomes aware of any loss or theft of the waste military munitions or any failure to meet the CE exemptions from being transported as a hazardous waste.</p> <p>Verify that, if any waste military munitions exempted from being transported as hazardous waste are not received by the receiving facility within 45 days of the day the waste was shipped, the owner or operator of the receiving facility reports this nonreceipt to the Director within 5 days.</p>

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	<p>(NOTE: The exemption from regulation as hazardous waste applies only to the transportation of nonchemical waste military munitions. It does not affect the regulatory status of waste military munitions as hazardous wastes with regard to storage, treatment, or disposal.)</p> <p>(NOTE: If any waste military munition loses its conditional exemption, an application may be filed with the USEPA Director for reinstatement. If the Director does not take action on the reinstatement application within 60 days after receipt of the application, then reinstatement shall be deemed granted, retroactive to the date of the application. However, the Director may terminate a conditional exemption reinstated by default in the preceding sentence if he/she finds that reinstatement is inappropriate based on factors such as the owner's or operator's failure to provide a satisfactory explanation of the circumstances of the violation, or failure to demonstrate that the violations are not likely to recur.)</p> <p>(NOTE: The DoD shipping controls applicable to the transport of military munitions are Government Bill of Lading (GBL) (GSA Standard Form 1109), requisition tracking form DD Form 1348, the Signature and Talley Record (DD Form 1907), Special Instructions for Motor Vehicle Drivers (DD Form 836), and the Motor Vehicle Inspection Report (DD Form 626) in effect on 8 November 1995. Any amendments to the DoD shipping controls shall become effective on the date the DoD publishes notice in the FR that the shipping controls have been amended.)</p> <p>(NOTE: According to the Military Munitions Rule preamble, page 6635 of the 12 February 1997 FR, the USEPA has decided to provide the manifest exemption to DoD, DOE, the Coast Guard, the National Guard, commercial transporters and other parties under contract to or acting as an agent for DoD, who are obligated to operate under the DoD shipping requirements. The USEPA has not provided a similar exemption to commercial or other Federal transporters who are not subject to the DoD transportation standards, even if they voluntarily follow the DoD standards.)</p> <p>(NOTE: According to the Military Munitions Rule preamble, page 6635 of the 12 February 1997 FR, if a transporter of waste military munitions claims the conditional exemption, but fails to transport waste military munitions in compliance with this checklist item, the noncompliant waste would no longer be exempt, so the transporter would be subject to additional regulatory requirements and could be subject to enforcement action (or citizen suit) for violations of hazardous waste requirements. For example, where waste military munitions lose their conditional exemption due to a violation of a condition, the transporter of the waste could face penalties for transportation of hazardous waste without a manifest.)</p>



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<p><b>WASTE MUNITIONS</b></p> <p><b>O6.150</b>  <b>Contaminated Property</b></p> <p><b>O6.150.1.US.</b> Permanent contamination of real property by final disposal of ammunition and explosives or chemical agents is prohibited (DoD 6055.9-STD, para C12.2.4) [Added April 2003, Revised April 2009].</p> <p><b>O6.150.2.US.</b> Checklist item deleted [Added April 2003, Deleted April 2009].</p> <p><b>O6.150.3.US.</b> Installations are required to manage property contaminated with ammunition, explosives or chemical agents according to certain parameters (DoD 6055.9-STD, para C12.2.1, C12.2.2, C12.2.3, and C12.3.1) [Added April 2003, Revised April 2009].</p>	<p>(NOTE: The particular policies and procedures outlined in this checklist item are necessary to provide protection to personnel as a result of DoD ammunition, explosives, or chemical agent contamination of real property currently and formerly owned, leased, or used by the DoD.)</p> <p>Verify that there is no disposal (e.g., burying, dumping) of military munitions on land or in water except when specifically authorized by the DoD Component.</p> <p>Verify that authorized disposal actions comply with applicable regulatory requirements.</p> <p>(NOTE: This disposal prohibition does not preclude:</p> <ul style="list-style-type: none"> <li>– the covering of munitions with earth to control fragments and noise during authorized destruction by detonation</li> <li>– the use of in situ capping when implemented as an engineered remedy under an authorized response action.</li> </ul> <p>Checklist item deleted due to the revision of DoD 6055.09-STD.</p> <p>Verify that, in order to ensure explosives and CA safety risk is identified and controlled on real property currently or formerly under the jurisdiction, custody, or control of a DoD Component, DoD Components:</p> <ul style="list-style-type: none"> <li>– identify all areas known or suspected to present explosive or CA hazards (Geographic Information Systems [GIS] should be used): <ul style="list-style-type: none"> <li>– in installation master plans for active installations (NOTE: In some cases, these areas are also required to be identified in other documents)</li> <li>– in DoD’s Military Munitions Response Site Inventory for those sites that are included in the Military Munitions Response Program (see Management Guidance for the Defense Environmental Restoration Program (DERP) (Reference (ag)) and 10 U.S.C. 2710(a) (Reference (ah)))</li> </ul> </li> <li>– maintain permanent records of those areas identified as contaminated and ensure such records are readily available to current and future users of the property</li> <li>– retain records for areas such as operational ranges, former ranges, current or former munitions manufacturing facilities, current or former sites used for</li> </ul>

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	<p>munitions demilitarization activities, and locations previously used for the burial of munitions.</p> <p>Verify that records include:</p> <ul style="list-style-type: none"> <li>– when practicable, the nomenclature and the known or suspected location</li> <li>– a summary of any clearance or response (removal or remediation) actions, or explosives or munitions emergency responses previously conducted within the area.</li> </ul> <p>Verify that unnecessary access is prohibited and appropriate actions are taken to deter unauthorized access to areas under DoD control that are known or suspected of containing potential explosive or CA hazards.</p> <p>(NOTE: Appropriate actions may include establishing access controls (e.g., fencing the area, establishing roving security patrols), which may be risk-based, or providing public notifications of any potential hazards (e.g., posting unexploded ordnance (UXO)-hazard warning signs, conducting UXO-safety education programs). When used, signs must be kept legible and, when appropriate, in the predominant languages of the region, or as pictograms.)</p> <p>(NOTE: When the DoD does not have ownership, jurisdiction, or control of the area (e.g., Formerly Used Defense Sites (FUDS)), the responsible DoD Component, at a minimum, provides written notification of the potential explosive or CA hazards to the property owner and any known tenants. A record of this notification must be maintained as a permanent record.)</p> <p>(NOTE: DoD Components should, unless there is evidence to the contrary, assume the following areas present explosive hazards:</p> <ul style="list-style-type: none"> <li>– impact areas on operational ranges (NOTE: Exceptions are ranges known to have been exclusively used for training with only small arms ammunition)</li> <li>– former ranges known or suspected to contain MEC</li> <li>– outdoor demolition areas, to include locations used for open burning (OB) or open detonation (OD)</li> <li>– areas that are associated with military munitions production, demilitarization, renovation, or similar processes (e.g., operating buildings and any installed equipment) that generated explosives residues (e.g., dust, vapors, liquids) and that might have become contaminated with such residues in concentrations sufficient to present explosive hazards, to include areas receiving processing wastewater (e.g., settling ponds, drainage swales).</li> </ul> <p>(NOTE: DoD Components should, unless there is evidence to the contrary, assume the following areas present CA hazards:</p> <ul style="list-style-type: none"> <li>– former CWM or CA burial sites</li> <li>– former CWM or CA disposal areas</li> <li>– former CWM impact areas</li> </ul>

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	<ul style="list-style-type: none"> <li>– former training areas used for training with CWM or CA</li> <li>– former CWM or CA production and demilitarization facilities.)</li> </ul> <p>Verify that, when access to areas known or suspected to present explosive or CA hazards is necessary, a risk assessment to evaluate the potential hazards associated with the proposed activity is completed and methods to mitigate any potential exposures are implemented before access is allowed.</p> <p>(NOTE: When access is necessary to real property not under DoD ownership, custody, or control, the DoD Component should obtain a right of entry for the property.)</p> <p>Verify that plans for munitions responses to MEC or CWM responses:</p> <ul style="list-style-type: none"> <li>– ensure close coordination, as applicable, between DoD explosives and CA safety organizations, DoD environmental organizations, and appropriate regulatory agencies and stakeholders</li> <li>– specify those actions necessary to protect DoD personnel, installation-related personnel, and the public from exposure to explosive and CA hazards</li> <li>– provide the design for and explain the execution of: <ul style="list-style-type: none"> <li>– munitions responses, when MEC has been determined to present an unacceptable risk</li> <li>– CWM responses, when CA, regardless of configuration, has been determined to present an unacceptable risk</li> </ul> </li> <li>– explain how the selected response actions will achieve a degree of protectiveness necessary for the current, determined, or reasonably anticipated future land use, including: <ul style="list-style-type: none"> <li>– providing the rationale for selection of technologies to be used to detect anomalies that can indicate the presence of MEC or CA, regardless of CA configuration</li> <li>– addressing how periodically (e.g., during 5-yr reviews or consistent with long-term monitoring agreements) completed response actions will be reviewed to ensure the response remains effective, including: <ul style="list-style-type: none"> <li>– the explosives safety aspects of munitions responses to MEC</li> <li>– the CA safety and, when applicable, the explosives safety aspects of CWM responses</li> </ul> </li> </ul> </li> <li>– address how the personnel qualification provisions of DDESB TP No. 18 (Reference (ai)) will be met</li> <li>– be approved by the DDESB for compliance with these Standards</li> <li>– provide for the submission of an After Action Report (AAR) to the DDESB upon completion of the response (NOTE: AAR are not provided for DDESB approval, but are used to close out files maintained by the DDESB Staff.)</li> </ul> <p>(NOTE: Some areas that the military has used for munitions-related activities (e.g., live-fire training or testing, OB/OD) or for CA-related activities may not be appropriate, even after the performance of response activities, for certain uses (e.g.,</p>

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<p><b>O6.150.4.US.</b> Checklist item deleted [Added April 2003, Deleted April 2009].</p> <p><b>O6.150.5.US.</b> Checklist item deleted [Added April 2003, Deleted April 2009].</p>	<p>residential development). Such areas include former military range impact areas on which the military has used munitions containing either high explosives or CA and sites used for either OB or OD. Such areas may, after a response, be better suited for uses that restrict or limit intrusive activities (e.g., wildlife refuges, surface recreational areas). Some MEC or CA, regardless of CA configuration, might not be detected or removed during a response. Although residual risks can be managed (e.g., by use of agreed-upon LUC, to include safety education; recurring reviews; and construction support), residual hazards might still exist.)</p> <p>(NOTE: From an explosives and, when applicable, CA safety perspective, the degree to which MEC or CA removal is undertaken depends largely on the current, determined, or reasonably anticipated future land use. When MEC or CA, regardless of CA configuration, cannot be removed to the degree necessary to safely allow the current, determined, or reasonably anticipated future land use, the use must be changed or appropriately restricted to obtain DDESB approval of the relevant plan.)</p> <p>(NOTE: The need for such periodic reviews is particularly important in areas where natural phenomena [e.g., frost heave, soil erosion, droughts, or tidal action) could expose MEC or CA, regardless of CA configuration, or where Land Use Controls (LUC) constitute a major element of the response.)</p> <p>Verify that, when DoD does not control the land and the imposition of LUC is not possible [e.g., on FUDS], the responsible DoD Component, at a minimum, provides the property owner, and any known tenants, written notification of the potential residual explosive or CA hazards and the risks inherent in any use of property that is inconsistent with those hazards.</p> <p>Checklist item deleted due to revision of DoD 6055.09-STD.</p> <p>Checklist item deleted, the contents have been incorporated into O6.150.3.US.</p>

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<p><b>WASTE MUNITIONS</b></p> <p><b>O6.200 TSDFs</b></p> <p><b>O6.200.1.US.</b> Hazardous waste munitions and explosive storage units are required to meet general design and operating requirements (40 CFR 264.1200, 264.1201(a), 264.1201(c) through 264.1201(f); 265.1200, 265.1201(a), 265.1201(c) through 265.1201(f)) [Added April 2003].</p>	<p>(NOTE: This checklist item applies to owners or operators who store munitions and explosive hazardous waste. Depending on explosive hazards, hazardous waste munitions and explosives may also be managed in other types of storage units, including:</p> <ul style="list-style-type: none"> <li>– containment buildings [40 CFR 264/265.1100 through 264/265.1102, see checklist items HW.125.1.US through HW.125.7.US in the <i>Hazardous Waste Management</i> section of the U.S. TEAM Guide]</li> <li>– tanks [40 CFR 264/265.190 through 264/265.200, see checklist items ST.110.1.US through ST.110.21.US in the <i>Storage Tank Management</i> section of the U.S. TEAM Guide]</li> <li>– containers [40 CFR 264/265.170 through 264/265.179, see checklist items HW.180.3.US through HW.180.5.US in the <i>Hazardous Waste Management</i> section of the U.S. TEAM Guide].)</li> </ul> <p>Verify that hazardous waste munitions and explosives storage units are designed and operated with containment systems, controls, and monitoring, that:</p> <ul style="list-style-type: none"> <li>– minimize the potential for detonation or other means of release of hazardous waste, hazardous constituents, hazardous decomposition products, or contaminated run-off, to the soil, ground water, surface water, and atmosphere</li> <li>– provide a primary barrier, which may be a container (including a shell) or tank, designed to contain the hazardous waste</li> <li>– for wastes stored outdoors, provide that the waste and containers will not be in standing precipitation</li> <li>– for liquid wastes, provide a secondary containment system that assures that any released liquids are contained and promptly detected and removed from the waste area, or vapor detection system that assures that any released liquids or vapors are promptly detected and an appropriate response taken (e.g., additional containment, such as overpacking, or removal from the waste area)</li> <li>– provide monitoring and inspection procedures that assure the controls and containment systems are working as designed and that releases that may adversely impact human health or the environment are not escaping from the unit.</li> </ul> <p>(NOTE: Hazardous waste munitions and explosives stored at TSDFs may be stored in one of the following [see checklist item HW.167.1.US through HW.167.5.US:</p> <ul style="list-style-type: none"> <li>– earth-covered magazine</li> <li>– aboveground magazine</li> <li>– outdoor or open storage area.)</li> </ul>

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<p><b>O6.200.2.US.</b> When hazardous waste munitions and explosives are stored in earth-covered magazines, specific design and operating requirements must be met (40 CFR 264.1200, 264.1201(b)(1); 265.1200, 265.1201(b)(1)) [Added April 2003].</p>	<p>Verify that hazardous waste munitions and explosives are stored in accordance with a SOP specifying procedures to ensure safety, security, and environmental protection.</p> <p>(NOTE: If these procedures serve the same purpose as the following, then these procedures will be used to fulfill the requirements:</p> <ul style="list-style-type: none"> <li>– security and inspection requirements of 40 CFR 264.14/265.14 [see checklist item HW.105.4.US in the <i>Hazardous Waste Management</i> section of the U.S. TEAM Guide]</li> <li>– preparedness and prevention procedures of 40 CFR 264/265, Subpart C [see checklist item HW.105.5.US in the <i>Hazardous Waste Management</i> section of the U.S. TEAM Guide]</li> <li>– the contingency plan and emergency procedures requirements of 40 CFR 264/265, Subpart D [see checklist items HW.105.9.US, HW.105.10.US, HW.145.3.US, and HW.145.4.US in the <i>Hazardous Waste Management</i> section of the U.S. TEAM Guide].)</li> </ul> <p>Verify that hazardous waste munitions and explosives are packaged to ensure safety in handling and storage.</p> <p>Verify that hazardous waste munitions and explosives are inventoried at least annually.</p> <p>Verify that hazardous waste munitions and explosives and their storage units are inspected and monitored as necessary to ensure explosives safety and to ensure that there is no migration of contaminants out of the unit.</p> <p>(NOTE: See 40 CFR 266.205 [checklist items O6.50.1.US through O6.50.5.US and O6.70.1.US] for storage of waste military munitions.)</p> <p>Verify that, when hazardous waste munitions and explosives are stored in earth – covered magazines, the earth-covered magazine is:</p> <ul style="list-style-type: none"> <li>– constructed of waterproofed, reinforced concrete or structural steel arches, with steel doors that are kept closed when not being accessed</li> <li>– designed and constructed to be of sufficient strength and thickness to support the weight of any explosives or munitions stored and any equipment used in the unit</li> <li>– designed and constructed to provide working space for personnel and equipment in the unit</li> <li>– designed and constructed to withstand movement activities that occur in the unit</li> <li>– located and designed, with walls and earthen covers that direct an explosion in the unit in a safe direction, so as to minimize the propagation of an explosion to adjacent units and to minimize other effects of any explosion.</li> </ul>

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<p style="text-align: center;"><b>REGULATORY REQUIREMENTS:</b></p>	<p style="text-align: center;"><b>REVIEWER CHECKS:</b>  <b>December 2018</b></p>
<p><b>O6.200.3.US.</b> When hazardous waste munitions and explosives are stored in aboveground magazines, specific design and operating requirements must be met (40 CFR 264.1200, 264.1201(b)(2); 265.1200, and 265.1201(b)(2)) [<b>Added April 2003</b>].</p>	<p>(NOTE: This checklist item applies to owners or operators who store munitions and explosive hazardous waste. Depending on explosive hazards, hazardous waste munitions and explosives may also be managed in other types of storage units, including:</p> <ul style="list-style-type: none"> <li>– containment buildings [40 CFR 264/265.1100 through 264/265.1102, see checklist items HW.125.1.US through HW.125.7.US in the <i>Hazardous Waste Management</i> section of the U.S. TEAM Guide]</li> <li>– tanks [40 CFR 264/265.190 through 264/265.200, see checklist items ST.110.1.US through ST.110.21.US in the <i>Storage Tank Management</i> section of the U.S. TEAM Guide]</li> <li>– containers [40 CFR 264/265.170 through 264/265.179, see checklist items HW.180.3.US through HW.180.5.US in the <i>Hazardous Waste Management</i> section of the U.S. TEAM Guide].)</li> </ul> <p>(NOTE: See 40 CFR 266.205 [checklist items O6.50.1.US through O6.50.5.US and O6.70.1.US] for storage of waste military munitions.)</p> <p>Verify that aboveground magazines are located and designed so as to minimize the propagation of an explosion to adjacent units and to minimize other effects of any explosion.</p> <p>(NOTE: This checklist item applies to owners or operators who store munitions and explosive hazardous waste. Depending on explosive hazards, hazardous waste munitions and explosives may also be managed in other types of storage units, including:</p> <ul style="list-style-type: none"> <li>– containment buildings [40 CFR 264/265.1100 through 264/265.1102, see checklist items HW.125.1.US through HW.125.7.US in the <i>Hazardous Waste Management</i> section of the U.S. TEAM Guide]</li> <li>– tanks [40 CFR 264/265.190 through 264/265.200, see checklist items ST.110.1.US through ST.110.21.US in the <i>Storage Tank Management</i> section of the U.S. TEAM Guide]</li> <li>– containers [40 CFR 264/265.170 through 264/265.179, see checklist items HW.180.3.US through HW.180.5.US in the <i>Hazardous Waste Management</i> section of the U.S. TEAM Guide].)</li> </ul> <p>(NOTE: See 40 CFR 266.205 [checklist items O6.50.1.US through O6.50.5.US and O6.70.1.US] for storage of waste military munitions.)</p>
<p><b>O6.200.4.US.</b> When hazardous waste munitions and explosives are stored in outdoor or open storage areas, specific design and operating requirements must be met (40 CFR 264.1200, 264.1201(b)(3); 265.1200 and</p>	<p>Verify that outdoor or open storage areas are located and designed so as to minimize the propagation of an explosion to adjacent units and to minimize other effects of any explosion.</p> <p>(NOTE: This checklist item applies to owners or operators who store munitions and explosive hazardous waste. Depending on explosive hazards, hazardous waste munitions and explosives may also be managed in other types of storage units, including:</p>

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<p style="text-align: center;"><b>REGULATORY REQUIREMENTS:</b></p>	<p style="text-align: center;"><b>REVIEWER CHECKS:</b>  <b>December 2018</b></p>
<p>265.1201(b)(3)) [Added April 2003].</p> <p><b>O6.200.5.US.</b> The closure and post-closure care of hazardous waste munitions and explosive storage units is required to meet specific requirements (40 CFR 264.1200, 264.1202; 265.1200 and 265.1202) [Added April 2003].</p>	<ul style="list-style-type: none"> <li>– containment buildings [40 CFR 264/265.1100 through 264/265.1102, see checklist items HW.125.1.US through HW.125.7.US in the <i>Hazardous Waste Management</i> section of the U.S. TEAM Guide]</li> <li>– tanks [40 CFR 264/265.190 through 264/265.200, see checklist items ST.110.1.US through ST.110.21.US in the <i>Storage Tank Management</i> section of the U.S. TEAM Guide]</li> <li>– containers [40 CFR 264/265.170 through 264/265.179, see checklist items HW.180.3.US through HW.180.5.US in the Hazardous Waste Management section of the U.S. TEAM Guide].)</li> </ul> <p>(NOTE: See 40 CFR 266.205 [checklist items O6.50.1.US through O6.50.5.US and O6.70.1.US] for storage of waste military munitions.)</p> <p>Verify that, at closure of a magazine or unit which stored hazardous waste munitions or explosives, the owner or operator removes or decontaminates all waste residues, contaminated containment system components, contaminated subsoils, and structures and equipment contaminated with waste, and manage them as hazardous waste unless:</p> <ul style="list-style-type: none"> <li>– in the case of any solid waste, it does not exhibit any of the characteristics of hazardous waste</li> <li>– it is not a listed hazardous waste.</li> </ul> <p>Verify that the closure plan, closure activities, cost estimates for closure, and financial responsibility for magazines or units meets all of the requirements specified 40 CFR 264, Subparts G and H (see checklist items HW.170.1.US through HW.170.5.US in the <i>Hazardous Waste</i> section of the U.S. TEAM Guide as well as the text of financial requirements in 40 CFR 264.140 through 264.151), except that the owner or operator may defer closure of the unit as long as it remains in service as a munitions or explosives magazine or storage unit.</p> <p>Verify that, if, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment, the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, the facility is closed and post-closure care performed in accordance with the closure and post-closure requirements that apply to landfills (see checklist items HW.165.9.US and HW.165.10.US in the <i>Hazardous Waste</i> section of the U.S. TEAM Guide.)</p> <p>(NOTE: This checklist item applies to owners or operators who store munitions and explosive hazardous waste. Depending on explosive hazards, hazardous waste munitions and explosives may also be managed in other types of storage units, including:</p> <ul style="list-style-type: none"> <li>– containment buildings [40 CFR 264/265.1100 through 264/265.1102, see checklist items HW.125.1.US through HW.125.7.US in the <i>Hazardous Waste Management</i> section of the U.S. TEAM Guide]</li> </ul>

<b>COMPLIANCE CATEGORY: OTHER ENVIRONMENTAL ISSUES U.S. TEAM Guide</b>	
<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS: December 2018</b>
	<p>– tanks [40 CFR 264/265.190 through 264/265.200, see checklist items ST.110.1.US through ST.110.21.US in the <i>Storage Tank Management</i> section of the U.S. TEAM Guide]</p> <p>– containers [40 CFR 264/265.170 through 264/265.179, see checklist items HW.180.3.US through HW.180.5.US in the Hazardous Waste Management section of the U.S. TEAM Guide].)</p> <p>(NOTE: See 40 CFR 266.205 [checklist items O6.50.1.US through O6.50.5.US and O6.70.1.US] for storage of waste military munitions.)</p>



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<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b> <b>December 2018</b>
<b>EMS</b>  <b>O7.1</b> <b>All Facilities</b>  <b>O7.1.1.US.</b> Checklist item moved to Chapter 14, EM.1.1.US. [Added July 2003; Moved July 2007].  <b>O7.1.2.US.</b> Checklist item deleted [Added July 2003; Deleted January 2007].  <b>O7.1.3.US.</b> Checklist item deleted [Added July 2003; Deleted January 2007].	<p>This checklist item was moved to Chapter 14, EM.1.1.US.</p> <p>NOTE: This checklist item was deleted with the publication of EO 13423 which revoked EO 13148.</p> <p>NOTE: This checklist item was deleted with the publication of EO 13423 which revoked EO 13148.</p>



<b>COMPLIANCE CATEGORY:</b> <b>OTHER ENVIRONMENTAL ISSUES</b> <b>U.S. TEAM Guide</b>	
<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b> <b>December 2018</b>
<p><b>EMS</b></p> <p><b>O7.2</b>  <b>Missing, Risk Management,</b>  <b>and Positive Checklist Items</b></p> <p><b>O7.2.1.US.</b> Checklist item moved to Chapter 14, EM.2.1.US. <b>[Added July 2003; Moved July 2007].</b></p> <p><b>O7.2.2.US.</b> Checklist item moved to Chapter 14, EM.2.2.US. <b>[Added July 2003; Moved July 2007].</b></p> <p><b>O7.2.3.US.</b> Checklist item moved to Chapter 14, EM.2.3.US. <b>[Added July 2003; Moved July 2007].</b></p>	<p>This checklist item was moved to Chapter 14, EM.2.1.US.</p> <p>This checklist item was moved to Chapter 14, EM.2.2.US.</p> <p>This checklist item was moved to Chapter 14, EM.2.3.US.</p>



<b>COMPLIANCE CATEGORY: OTHER ENVIRONMENTAL ISSUES U.S. TEAM Guide</b>	
<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS: December 2018</b>
<b>EMS</b>  <b>O7.10 Policy</b>  <b>O7.10.1.US.</b> Checklist item moved to Chapter 14, EM.10.1.US. [Added July 2003; Revised April 2005; Moved July 2007].  <b>O7.10.2.US.</b> Checklist item moved to Chapter 14, EM.10.2.US. [Added July 2003; Revised April 2005; Moved July 2007].	<p>This checklist item was moved to Chapter 14, EM.10.1.US.</p> <p>This checklist item was moved to Chapter 14, EM.10.2.US.</p>



<b>COMPLIANCE CATEGORY: OTHER ENVIRONMENTAL ISSUES U.S. TEAM Guide</b>	
<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS: December 2018</b>
<b>EMS</b>  <b>O7.20 Planning</b>  <b>O7.20.1.US.</b> Checklist item moved to Chapter 14, EM.20.1.US. [Added July 2003; Revised April 2005; Moved July 2007].  <b>O7.20.2.US.</b> Checklist item moved to Chapter 14, EM.20.2.US. [Added July 2003; Revised April 2005; Moved July 2007].  <b>O7.20.3.US.</b> Checklist item moved to Chapter 14, EM.20.3.US. [Added July 2003; Revised April 2005; Moved July 2007].  <b>O7.20.4.US.</b> Checklist item moved to Chapter 14, EM.20.4.US. [Added July 2003; Revised April 2005; Moved July 2007].  <b>O7.20.5.US.</b> Checklist item moved to Chapter 14, EM.20.5.US. [Added July 2003; Revised April 2005; Moved July 2007].  <b>O7.20.6.US.</b> Checklist item moved to Chapter 14, EM.20.6.US. [Added July 2003; Revised April 2005; Moved July 2007].	<p>This checklist item was moved to Chapter 14, EM.20.1.US.</p> <p>This checklist item was moved to Chapter 14, EM.20.2.US.</p> <p>This checklist item was moved to Chapter 14, EM.20.3.US.</p> <p>This checklist item was moved to Chapter 14, EM.20.4.US.</p> <p>This checklist item was moved to Chapter 14, EM.20.5.US.</p> <p>This checklist item was moved to Chapter 14, EM.20.6.US.</p>



<b>COMPLIANCE CATEGORY: OTHER ENVIRONMENTAL ISSUES U.S. TEAM Guide</b>	
<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS: December 2018</b>
<b>EMS</b>  <b>O7.30 Implementation</b>  <b>O7.30.1.US.</b> Checklist item moved to Chapter 14, EM.30.1.US. [Added July 2003; Revised April 2005; Moved July 2007].  <b>O7.30.2.US.</b> Checklist item moved to Chapter 14, EM.30.2.US. [Added July 2003; Revised April 2005; Moved July 2007].  <b>O7.30.3.US.</b> Checklist item moved to Chapter 14, EM.30.3.US. [Added July 2003; Revised April 2005; Moved July 2007].  <b>O7.30.4.US.</b> Checklist item moved to Chapter 14, EM.30.4.US. [Added July 2003; Revised April 2005; Moved July 2007].  <b>O7.30.5.US.</b> Checklist item moved to Chapter 14, EM.30.5.US. [Added July 2003; Revised April 2005; Moved July 2007].  <b>O7.30.6.US.</b> Checklist item moved to Chapter 14, EM.30.6.US. [Added July 2003; Revised April 2005; Moved July 2007].  <b>O7.30.7.US.</b> Checklist item moved to Chapter 14, EM.30.7.US. [Added April 2005; Moved July 2007].	<p>This checklist item was moved to Chapter 14, EM.30.1.US.</p> <p>This checklist item was moved to Chapter 14, EM.30.2.US.</p> <p>This checklist item was moved to Chapter 14, EM.30.3.US.</p> <p>This checklist item was moved to Chapter 14, EM.30.4.US.</p> <p>This checklist item was moved to Chapter 14, EM.30.5.US.</p> <p>This checklist item was moved to Chapter 14, EM.30.6.US.</p> <p>This checklist item was moved to Chapter 14, EM.30.7.US.</p>



<b>COMPLIANCE CATEGORY: OTHER ENVIRONMENTAL ISSUES U.S. TEAM Guide</b>	
<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS: December 2018</b>
<b>EMS</b>  <b>O7.40</b> <b>Monitoring and Measuring</b>  <b>O7.40.1.US.</b> Checklist item moved to Chapter 14, EM.40.1.US. [Added July 2003; Revised April 2005; Moved July 2007].  <b>O7.40.2.US.</b> Checklist item moved to Chapter 14, EM.40.2.US. [Added July 2003; Moved July 2007].  <b>O7.40.3.US.</b> Checklist item moved to Chapter 14, EM.40.3.US. [Added July 2003; Revised April 2005; Revised January 2007; Moved July 2007].  <b>O7.40.4.US.</b> Checklist item moved to Chapter 14, EM.40.4.US. [Added July 2003; Revised April 2005; Moved July 2007].	<p>This checklist item was moved to Chapter 14, EM.40.1.US.</p> <p>This checklist item was moved to Chapter 14, EM.40.2.US.</p> <p>This checklist item was moved to Chapter 14, EM.40.3.US.</p> <p>This checklist item was moved to Chapter 14, EM.40.4.US.</p>



<b>COMPLIANCE CATEGORY: OTHER ENVIRONMENTAL ISSUES U.S. TEAM Guide</b>	
<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS: December 2018</b>
<b>EMS</b>  <b>O7.50 Management Review</b>  <b>O7.50.1.US.</b> Checklist item moved to Chapter 14, EM.50.1.US. [Added July 2003; Revised April 2005; Moved July 2007].  <b>O7.50.2.US.</b> Checklist item moved to Chapter 14, EM.50.2.US. [Added July 2003; Revised April 2005; Moved July 2007].	<p>This checklist item was moved to Chapter 14, EM.50.1.US.</p> <p>This checklist item was moved to Chapter 14, EM.50.2.US.</p>

## Appendix 6-0

### Complementary Elements of EMS and NEPA

*(Aligning National Environmental Policy Act Processes with Environmental Management Systems: A Guide for NEPA and EMS Practitioners)*  
*[Added July 2007]*

EMS Element	NEPA	EMS and NEPA Complementary Examples
<p><b>Policy</b></p> <p>The organization states its commitment to environmental compliance, environmental protection, and continual improvement within the scope of the organization's activities and products and services covered by its EMS.</p>	<p>Several provisions in CEQ Regulations address the national environmental policy Congress declared for Federal agencies in Section 101 of the <i>National Environmental Policy Act</i>. The primary provision is at 40 CFR 1500.2 (Policy). Other relevant provisions include 40 CFR 1500.1 (Purpose), 40 CFR 1505.1 (Agency decisionmaking procedures), and 40 CFR 1507.2 (Agency capability to comply).</p>	<p>The EMS Policy Statement defines the scope of the agency's organization and activities covered by the EMS; this is likely to include activities for which NEPA analyses are required or have been prepared.</p> <p>In Section 101 of NEPA, Congress provided a common environmental policy statement for all Federal agencies. This policy statement is a general statement of the Federal government's commitment to environmental protection and interagency coordination in the implementation of that policy. The policy goals of Section 101 can serve as a basis for commitments to prevent pollution and comply with other environmental laws.</p>
<p><b>Environmental Aspects</b></p> <p>An EMS includes procedure(s) to identify, and keep up-to-date environmental aspects and impacts of activities and products and services it can control and influence, including ongoing and new projects. Significant aspects must be taken into account in establishing, implementing, and maintaining the EMS.</p>	<p>Under NEPA, an agency evaluates a new project at the proposal stage to identify how it or reasonable alternatives will interact with the environment, and what the related impacts will be. Impacts are characterized as to significance based on the setting of the proposed action and the intensity of its impacts.</p> <p>NEPA analyses and documentation are described in the CEQ NEPA Regulations at 40 CFR 1500-1508. The relevant provisions include</p> <p>40 CFR 1501.2 (Apply NEPA early in the process);</p> <p>40 CFR 1501.3 (When to prepare an environmental assessment);</p>	<p>The EMS aspects can inform the development and preparation of NEPA analyses and documentation. Aspects can inform an agency's identification of the types of activities that normally merit an EA or EIS which should be included in its agency NEPA procedures developed in accordance with 40 CFR 1507.3(b).</p> <p>An EMS can include procedure(s) that consider the identification of new impacts or the significance of impacts in existing NEPA documents<sup>14</sup> when establishing associated significant aspects. The completed NEPA process can provide information to update the EMS aspects. Aspects addressed in the EMS should be reviewed and updated as new NEPA reviews are</p>

EMS Element	NEPA	EMS and NEPA Complementary Examples
	<p>40 CFR 1501.4 (Whether to prepare an environmental impact statement);</p> <p>1501.7 (Scoping);</p> <p>1502.15 (Affected environment);</p> <p>1502.16 (Environmental Consequences);</p> <p>and</p> <p>1508.27 (Significantly).</p>	<p>completed or as relevant associated monitoring data become available.</p> <p>Thresholds of impact significance considered in the preparation of an EA or EIS may be considered as significance criteria for the EMS aspects procedure.<sup>15</sup></p>
<p><b>Legal and Other Requirements</b></p> <p>An EMS includes procedure(s) to identify and have access to legal and other requirements related to an organization's environmental aspects.</p>	<p>The requirements for complying with the National Environmental Policy Act are found throughout the CEQ NEPA regulations and agency NEPA procedures. Project- and program related NEPA analysis and document preparation processes are conducted in accordance with these procedures.</p> <p>Provisions that address the legal status of the NEPA requirements are at 40 CFR 1500.6 (Agency authority) and 40 CFR 1506.5 (Agency responsibility). Agency compliance requirements are set out in 40 CFR 1507.</p> <p>Decisions made <i>after</i> considering the environmental consequences may establish new requirements. Relevant provisions in the CEQ NEPA Regulations include 40 CFR 1505.2 (Record of decision in cases requiring EISs) and 40 CFR 1505.3 (Implementing the decision).</p>	<p>NEPA imposes requirements which must be identified as part of the EMS "legal and other requirements" where applicable. The requirements could include the procedures to meet NEPA requirements that are in place (e.g., Council on Environmental Quality and agency NEPA regulations and procedures).</p> <p>Regulatory requirements applicable to alternatives should be identified in the NEPA analysis (e.g., permitting, endangered species, etc.).</p> <p>Requirements applicable to the chosen alternative can then be integrated into the EMS. Mitigation and monitoring commitments made in a ROD or FONSI can be incorporated into the EMS and carried through the system.</p>
<p><b>Objectives, Targets, and Environmental Management Programs (EMPs)</b></p> <p>Objectives and targets are established to address significant aspects and legal requirements, unless they can be fully addressed with operational controls, and lead to continual improvement.</p>	<p>Numerous provisions of CEQ's NEPA regulations require activities and performance that can be used to develop objectives, targets and EMPs.</p>	<p>EMS objectives may include complying with requirements established under NEPA. For example, 40 CFR 1501.8 (Time limits) provides for setting dates for NEPA process milestones (i.e., targets) as well as for completing the process (i.e., objectives).</p> <p>The NEPA process can provide information to help establish</p>

EMS Element	NEPA	EMS and NEPA Complementary Examples
<p>EMPs identify the means and responsibilities for achieving objectives and targets. EMPs are developed for each objective, describing specific tasks, milestones, responsible parties, and measurement parameters.</p>		<p>relevant objectives, and the performance measures needed to assess attainment of objectives and targets.</p> <p>Mitigation measures identified in a ROD or FONSI can be incorporated in EMS objectives. An EMS may use the results of NEPA review and associated monitoring data, where applicable, to update its objectives and targets.</p>
<p><b>Resources, Roles, Responsibility and Authority</b></p> <p>Management must ensure resources are available to establish, implement, maintain and improve the EMS. Roles, responsibilities and authorities must be defined, documented and communicated.</p>	<p>The overarching resources, roles, responsibility and authority for complying with NEPA are addressed in the CEQ NEPA regulations at 40 CFR 1506.5 (Agency responsibility) and 40 CFR 1507 (Agency Compliance). Several other relevant provisions include 40 CFR 1501.5 (Lead agencies) and 40 CFR 1501.6 (Cooperating agencies).</p> <p>Decisions on how to proceed are made at the conclusion of the NEPA process, and are identified in the EA/FONSI and EIS/ROD.</p>	<p>The EMS can identify roles and responsibilities and the resources necessary to carry out NEPA review and decision-making requirements.</p> <p>The EMS can define roles and responsibilities for carrying out the chosen alternative, as well as mitigation measures identified in a ROD (EIS) or FONSI (EA).</p> <p>Identifying the resources and responsibilities for EMS monitoring activities may assist the NEPA process when monitoring is necessary to allow, for example, an adaptive management approach. A much stronger case can be made for using adaptive management when the responsibilities and resources for carrying it out are clearly identified in the EMS.</p>
<p><b>Competence, Training and Awareness</b></p> <p>Person(s) performing tasks for the organization or on its behalf that have the potential for significant impacts must be competent as a result of education, training, or experience.</p>	<p>Staff that contributes to, or uses information from, the NEPA process should be knowledgeable about the CEQ NEPA regulations in addition to agency NEPA procedures (see 40 CFR 1507, Agency Compliance). In addition, individuals responsible for the management of agency programs and projects that may have a significant effect on the environment should be aware of specific aspects of the NEPA process, such as those set out in 40 CFR 1506.1 (Limitations on actions</p>	<p>Training that is relevant to the achievement of environmental policies, objectives, and targets should be provided to all person(s) within and working on behalf of the agency covered by the EMS.</p> <p>When NEPA is an integral part of the EMS or linked to the agency's environmental aspects, or when NEPA outcomes are linked to the objectives and targets, the EMS can facilitate the NEPA process by requiring appropriate staff be trained on NEPA and related</p>

EMS Element	NEPA	EMS and NEPA Complementary Examples
	during NEPA process) and 40 CFR 1506.10 (Timing of agency action).	environmental analysis requirements (e.g., how to conduct the process, and how to prepare and document the analysis).
<p><b>Communication</b></p> <p>Procedures are established in an EMS for communicating internally and documenting and responding to relevant external communications. An organization has discretion about communicating externally on significant environmental aspects; however, Federal agencies are in a special position to emphasize the importance of ongoing communication and cooperation with the public and interested parties.</p>	<p>One of NEPA's goals is to effectively communicate environmental information to decisionmakers and the public and to facilitate involvement in decisions which affect the quality of the human environment (40 CFR 1500.2).</p> <p>In addition to the mandate that agencies shall make diligent efforts to involve the public in implementing their NEPA procedures set forth in 40 CFR 1501.4(b) and 1506.6, the CEQ NEPA Regulations address specific stages of the NEPA process when communication with other agencies and the public are required such as 40 CFR 1501.7 (Scoping), 1502.19 (Circulation of the EIS) and 1502.25 (Environmental review and consultation requirements).</p>	<p>The EMS can be used as a platform for ongoing communication and cooperation with the public and interested parties. For example:</p> <ul style="list-style-type: none"> <li>• NEPA procedures for public comment and public involvement at the Scoping stage, and for the Draft and Final EIS, can be part of the EMS procedures for external communication; and</li> <li>• progress toward meeting ROD or FONSI requirements/ commitments may be shared with the public as part of the ongoing EMS communication procedures.</li> </ul> <p>In developing EMS objectives, the agency should consider the views of interested parties. Comments received during the NEPA review process may provide useful insight when developing objectives.</p>
<p><b>Documentation</b></p> <p>Documentation for the EMS must include documents and records necessary for planning, operation and control of processes related to significant environmental aspects.</p>	<p>The CEQ NEPA regulations primarily address the contents of the EA/FONSI in 40 CFR 1508.9 and 1508.13, and the contents of EIS/ROD in 40 CFR 1502.</p> <p>The CEQ NEPA regulations provide for efficient documentation in 40 CFR 1500.4.</p>	<p>NEPA documents may be essential for planning or controlling processes related to significant environmental aspects. In such a case, EMS documentation would include the NEPA documents.</p> <p>The EA/FONSI and EIS/ROD developed during the NEPA process should be reviewed for inclusion in the EMS documentation, particularly when they set forth agency commitments.</p>
<p><b>Control of Documents</b></p> <p>Documents required by the EMS must be controlled using procedures to, among other things, approve documents for adequacy</p>	<p>The process for finalizing EISs described in CEQ NEPA regulations at 40 CFR 1505.2 and 1502.9 are document control procedures that help ensure adequacy, and assist re-approval and updating NEPA documents.</p>	<p>For NEPA documents required by the EMS, there must be an established procedure for ensuring adequacy, and a process for updating and re-approval if necessary.</p>

EMS Element	NEPA	EMS and NEPA Complementary Examples
and update and reapprove as necessary.	Additional relevant provisions include 40 CFR 1502.9(c) (supplemental statements), 1502.20 (Tiering), and 1502.21 (Incorporation by reference).	
<p><b>Operational Control</b></p> <p>In an EMS, an “operational control” is a procedure associated with an operation that is an identified significant environmental aspect.</p> <p>Procedures are established to ensure operations related to significant aspects do not deviate from environmental policy or objectives and targets.</p> <p>Operational controls are process controls necessary for ensuring the system functions as intended.</p> <p>Procedures are required for any operation when their absence can lead to a deviation from EMS requirements.</p>	<p>Agency identification of actions that normally require an EA or EIS, or are categorically excluded, are the foundation for using the NEPA process as part of an environmental management program’s system of operational controls.</p> <p>The CEQ NEPA regulations describe procedures for conducting the NEPA process to review proposed operations—including, but certainly not limited to:</p> <p>Part 1501 NEPA and Agency Planning;</p> <p>Part 1502 Environmental Impact Statement; and</p> <p>Part 1505 NEPA and Agency Decisionmaking.</p> <p>The following sections of the regulations provide examples of elements of the NEPA process that can be operational controls: 1501.8 (Time limits); 40 CFR 1505.1 (Agency decisionmaking procedures); 40 CFR 1506.1 (Limitations on actions during NEPA process); 40 CFR 1506.2 (Elimination of duplication with State and local procedures); 40 CFR 1506.5 (Agency responsibility for: information to applicants; for applicant prepared EAs; for contractor prepared EISs); and 40 CFR 1506.10 (Timing of agency action).</p>	<p>Procedures to perform the NEPA process can be a key operational control.</p> <p>Specific activities and operations (including mitigation) described in a NEPA document can be incorporated into EMS operational procedures.</p> <p>The procedures can include steps to ensure information regarding aspects developed during preparation of an EA or EIS is reviewed for inclusion in the aspects inventory.</p>
<p><b>Emergency Preparedness and Response</b></p> <p>Procedures are required for identifying potential emergencies and accidents and for preventing</p>	<p>CEQ NEPA regulations at 40 CFR 1506.11 set out alternative arrangements that can be used for proposed actions that respond to an emergency and have the potential</p>	<p>EMS procedures developed for emergency planning should include provisions for using NEPA emergency procedures.</p> <p>Decisions regarding what action or</p>

EMS Element	NEPA	EMS and NEPA Complementary Examples
adverse environmental impacts from those emergencies and accidents.	<p>for significant environmental effects.</p> <p>Many NEPA analyses are done for contingency plans or emergency response plans and for actions with potential for accidents or other types of emergency situations.</p>	alternative to take could be used to inform emergency preparedness and response procedures for an EMS
<p><b>Monitoring and Measurement</b></p> <p>An EMS specifies procedures to monitor and measure key characteristics of its operations that can have significant environmental impacts. These include monitoring of performance, operational controls, and conformance with objectives and targets.</p>	<p>40 CFR 1505.2(c) of the CEQ NEPA regulations call for the adoption of a monitoring and enforcement program, where applicable, for mitigation measures identified in an EIS record of decision.</p> <p>Other relevant provisions of the CEQ NEPA regulations address:</p> <p>(1) When supplemental analyses should be prepared (40 CFR 1502.9(c));</p> <p>(2) How to deal with incomplete or unavailable information (40 CFR 1502.22); and</p> <p>(3) Methodology and scientific accuracy (40 CFR 1502.24).</p>	<p>Existing EMS monitoring data may inform analysis and support predictions of environmental impacts throughout the NEPA process.</p> <p>Performance metrics related to activities and mitigation measures identified in the EIS ROD or EA FONSI, may be part of the EMS evaluation process. This can ensure that activities associated with EMS objectives and targets or operational controls are occurring as planned, and the intended results are being achieved.</p> <p>When a monitoring and enforcement program is established through the NEPA process, it can be incorporated into EMS monitoring and measurement activities.</p> <p>An essential component of the adaptive management model (i.e., predict, mitigate, implement, monitor and adapt) is monitoring to assess whether predictions of environmental effects are correct, and that any mitigation implemented is functioning as intended.</p> <p>Monitoring activities implemented for an EMS may subsume or complement the monitoring needed to accomplish adaptive management in the NEPA process.</p>
<b>Evaluation of Compliance</b>	An agency's responsibilities to comply with NEPA requirements	When NEPA compliance is an applicable legal or other requirement within the EMS,

EMS Element	NEPA	EMS and NEPA Complementary Examples
<p>The EMS must include procedures to periodically evaluate compliance with applicable legal and other requirements</p>	<p>are specifically addressed in Part 1507.</p> <p>Other compliance responsibilities identified in the CEQ NEPA regulations include the responsibility to develop alternatives when there are unresolved conflicts concerning alternative uses of resources (40 CFR 1501.2) and the responsibility to implement mitigation that is committed as part of the decision (40 CFR 1505.3).</p>	<p>procedures developed for the EMS must address how the agency will evaluate compliance with NEPA. This can lend support to the agency's NEPA implementation efforts.</p> <p>The EMS would also evaluate compliance with other applicable environmental laws which can inform the NEPA process.</p>
<p><b>Nonconformity, Corrective and Preventive Action</b></p> <p>The EMS must include procedures for identifying and correcting nonconformities, mitigating their environmental impacts, and defining actions to avoid nonconformity occurrence. Procedures must also define requirements for reviewing the effectiveness of the corrective and preventive actions taken.</p> <p>Findings, conclusions, and recommendations reached as a result of monitoring and audits of the EMS are the basis for corrective and preventive actions and the systematic follow-up to ensure their effectiveness.</p>	<p>NEPA requirements are assessed as part of ongoing reviews. Nonconformance in conducting the NEPA process would be addressed by corrective and preventive actions.</p> <p>Relevant provisions of the CEQ NEPA regulations include sections 40 CFR 1502.9(c) (preparation of supplemental analyses), 40 CFR 1503.4 (responding to comments), 40 CFR 1506.1 (limitations that should be included in instructions to applicants), and 40 CFR 1507.3(a) (review NEPA policies and procedures).</p> <p>40 CFR 1505.3 of the CEQ NEPA regulations calls for agencies to ensure mitigation committed to in the "decision" is implemented by making the mitigation a condition of grants, permits or other approvals and funding actions. And cooperating and commenting agencies can request information on the progress of carrying out the mitigation, which can help to ensure the mitigation conforms to stakeholder expectations.</p>	<p>In cases where NEPA procedures are key to maintaining operational controls or meeting objectives and targets, and are not being followed, corrective action should be identified and taken.</p> <p>Changes in procedures as a result of corrective action must be documented.</p> <p>For agency actions reviewed under NEPA and also covered by an EMS, monitoring and adaptation associated with adaptive management may fall squarely within the purview of an EMS's preventive and corrective action program.</p> <p>The checking and corrective action elements of an EMS may also identify instances when environmental mitigation commitments in the EIS ROD or EA FONSI are not being implemented and nonconformance in implementing actions would be addressed by the corrective and preventive actions.</p>
<p><b>Control of Records</b></p> <p>An EMS includes procedures for maintaining records necessary to demonstrate conformance with the</p>	<p>Procedures for controlling NEPA documents that are also EMS records can be added to the agency NEPA procedures developed in accordance with the provisions in</p>	<p>To the extent that NEPA documents are EMS records, they should be maintained in accordance with EMS records management procedures.</p>

EMS Element	NEPA	EMS and NEPA Complementary Examples
EMS standard.	the CEQ NEPA regulations 40 CFR 1505.1 (Agency decisionmaking procedures), and 40 CFR 1507.3 (Agency procedures). They should include procedures for filing records (40 CFR 1506.9) and incorporation by reference (40 CFR 1502.21).	
<b>Internal Audits</b>  An EMS defines audit programs and processes to assess the EMS itself (e.g., assessing conformity to the EMS standard) at planned intervals. The results of audits must be presented to management.	There is no equivalent NEPA requirement.	Commitments for mitigation made pursuant to the NEPA process may be reviewed in an EMS audit when such commitments are linked to objectives and targets or operational controls in the EMS. In these cases, the EMS audit is another means for ensuring that agency commitments made under NEPA are appropriately implemented.  As part of the EMS audit, NEPA processes may be spot-checked and evaluated, and adjustments made to those processes if necessary.
<b>Management Review</b>  Senior management reviews the EMS at regularly scheduled intervals to ensure suitability and effectiveness. Reviews assess the need for change in EMS policy or objectives and targets.	Each agency must be capable of complying with the requirements set out in 40 CFR 1507.2.	Management review of the EMS is an opportunity to assess the effectiveness of the NEPA program, adjust procedures to take advantage of NEPA/EMS synergy, and enhance areas in which NEPA and EMS procedures are complementary.  NEPA procedures that are relevant to maintaining operational controls or meeting objectives and targets should be included in the management review.

## Appendix 6-1

### Recommended Recovered Materials Content Levels for CPG Products

(<http://www.epa.gov/epaoswer/non-hw/procure/products.htm>)

[Added July 2000]

This is a selection of the recommended recovered materials content levels for CPG products. This Appendix does not contain the recommendations for all CPG products. See the above website for more information on product procurement.

### Selected Non-Paper Office Products

#### USEPA's Recommended Recovered Materials Content Levels for Binders, Clipboards, File Folders, Clip Portfolios, and Presentation Folders <sup>1</sup>

Item	Material	Postconsumer Content (%)	Total Recovered Materials Content (%)
<b>Binders</b>	Plastic-covered	--	25-50
	Paper-covered	75-100	90-100
	Pressboard	20	50
	Solid plastic		
	<u>HDPE</u>	90	90
	<u>PE</u>	30-50	30-50
	<u>PET</u>	100	100
	Misc. plastics	80	80
Plastic clipboards	HDPE	90	90
	<u>PS</u>	50	50
	Misc. plastics	15	15-80
Plastic file folders	HDPE	90	90
Plastic clip portfolios	HDPE	90	90
Plastic presentation folders	HDPE	90	90

<sup>1</sup> USEPA's recommendations do not preclude a procuring agency from purchasing binders, clipboards, file folders, clip portfolios, or presentation folders made from another material. They simply require that procuring agencies, when purchasing these items made from the materials above, purchase them made from recovered materials when these items meet applicable specifications and performance requirements.

#### USEPA's Recommended Recovered Materials Content Levels for Plastic Trash Bags <sup>1</sup>

Product:	Material (%):	Postconsumer Content (%):
Plastic Trash Bags	Plastic	10-100

<sup>1</sup> USEPA's recommendation does not preclude procuring agencies from purchasing a trash bag manufactured using another material, such as paper. It merely recommends that procuring agencies, when purchasing plastic trash bags, purchase items made from recovered materials.

**USEPA's Recommended Recovered Materials Content Levels for Office Recycling Containers and Office Waste Receptacles <sup>1</sup>**

<b>Materials</b>	<b><u>Postconsumer</u> Content (%):</b>	<b>Total <u>Recovered</u> Materials Content (%):</b>
Plastic	20 - 100	--
Steel <sup>2</sup>	16	25-30
Paper		
-Corrugated	25-50	25-50
-Solid Fiber Boxes	40	--
-Industrial Paperboard	40-80	100

<sup>1</sup> USEPA's recommendations do not preclude a procuring agency from purchasing containers or receptacles manufactured using another material such as wood. They simply require that procuring agencies, when purchasing office recycling containers or office waste receptacles manufactured from plastic, paper, or steel, purchase such containers made with recovered materials when they meet applicable specifications and performance requirements.

<sup>2</sup> The recommended recovered materials content levels for steel in this table reflect the fact that the designated items are made from steel manufactured in a Basic Oxygen Furnace (BOF). Steel from the BOF process contains 25-30% total recovered materials, of which 16% is postconsumer steel.

**Selected Paper and Paper Products**

**EPA's Recommended Recovered Fiber Content Levels for Uncoated Printing and Writing Papers<sup>1</sup>**

<b>Item</b>	<b><u>Postconsumer</u> Fiber (%):</b>	<b><u>Recovered</u> Fiber (%):</b>
Reprographic Paper (e.g., mimeo and duplicator paper, high-speed copier paper, and bond paper*)	30	30
Offset Paper (e.g., offset printing paper*, book paper*, and bond paper*)	30	30
Tablet Paper (e.g., offset paper such as note pads, stationery*, and other writing* papers)	30	30
Forms Bond (e.g., forms, computer printout paper, and ledger*)	30	30
Envelope Paper		
Wove	30	30
Kraft		
• White and colored (including manila)	10-20	10-20
• Unbleached	10	10

<b>Item</b>	<b><u>Postconsumer</u> Fiber (%) :</b>	<b><u>Recovered</u> Fiber (%) :</b>
Cotton Fiber Paper (e.g., cotton fiber papers, ledger*, stationery* and matching envelopes, and other writing* papers)	30	30
Text & Cover Paper (e.g., cover stock, book paper*, stationery* and matching envelopes, and other writing* paper)	30	30
Supercalendered	10	10
Machine Finish Groundwood	10	10
Papeteries	30	30
Check Safety Paper	10	10

\*These items can be made from a variety of printing and writing papers, depending on the performance characteristics of the item. Some of the papers are a commodity-type and some are specialty papers. USEPA recommends that procuring agencies determine the performance characteristics required of the paper prior to establishing minimum content standards. Bond, ledger, or stationery made from cotton fiber paper or a text & cover paper, for example, have different characteristics than similar items made from commodity papers.

#### **EPA's Recommended Recovered Fiber Content Levels for Coated Printing and Writing Papers**

<b>Item</b>	<b><u>Postconsumer</u> Fiber (%) :</b>	<b><u>Recovered</u> Fiber (%) :</b>
Coated Printing Paper	10	10
Carbonless	30	30

#### **USEPA's Recommended Recovered Fiber Content Levels for Bristols**

<b>Item</b>	<b><u>Postconsumer</u> Fiber (%) :</b>	<b><u>Recovered</u> Fiber (%) :</b>
File Folders (manila and colored)	30	30
Dyed Filing Products	20	20-50
Cards (index, postal, and other, including index sheets)	20	50
Pressboard Report Covers and Binders	20	50
Tags and Tickets	20	20-50

NOTE: The content levels for all USEPA recommendations should be read as X% recovered fiber, including Y% postconsumer fiber and not as X% recovered fiber plus Y% postconsumer fiber.



## Selected Parks and Recreation Products

### EPA's Recommended Recovered Materials Content Levels for Playground Equipment<sup>1</sup>

<b>Material</b>	<b><u>Postconsumer</u> Content (%)</b>	<b>Total <u>Recovered Materials</u> Content (%)</b>
Plastics <sup>2</sup>	90-100	100
Plastic composites	50-75	95-100
Steel <sup>3</sup>	16 67	25-30 100
Aluminum	25	25

<sup>1</sup> USEPA's recommendations do not preclude a procuring agency from purchasing playground equipment manufactured from other materials. They simply require that a procuring agency, when purchasing playground equipment made from plastic, steel, wood, or aluminum, purchase these items with recovered materials when those items meet applicable specifications and performance requirements.

<sup>2</sup> "Plastics" includes both single and mixed plastic resins. Playground equipment made with recovered plastics may also contain other recovered materials such as wood or fiberglass. The percentage of these materials contained in the product would also count toward the recovered materials content level of the item.

<sup>3</sup> The recommended recovered materials content levels for steel in this table reflect the fact that the designated items can be made from steel manufactured in either a Basic Oxygen Furnace (BOF) or an Electric Arc Furnace (EAF). Steel from the BOF process contains 25-30% total recovered materials, of which 16% is postconsumer steel. Steel from the EAF process contains a total of 100% recovered steel, of which 67% is postconsumer.

### USEPA's Recommended Recovered Materials Content Levels for Fencing Containing Recovered Plastic <sup>1, 2</sup>

<b>Material:</b>	<b><u>Postconsumer</u> Content (%):</b>	<b>Total <u>Recovered Materials</u> Content (%):</b>
Plastic	60-100	90-100

<sup>1</sup> USEPA's recommendation does not preclude a procuring agency from purchasing fencing manufactured from another material, such as wood. It simply requires that a procuring agency, when purchasing plastic fencing, purchase this item made with recovered materials when this item meets applicable specifications and performance requirements.

<sup>2</sup> Designation includes fencing containing recovered plastic for use in controlling snow or sand drifting and as a warning/safety barrier in construction or other applications.

### Selected Landscaping Products

#### USEPA's Recommended Recovered Materials Content Levels for Plastic Lumber Landscaping Timbers and Posts <sup>1</sup>

Material	Postconsumer Content (%)	Total <u>Recovered</u> Materials Content (%)
<a href="#">HDPE</a>	25-100	75-100
Mixed plastics/Sawdust	50	100
HDPE/Fiberglass	75	95
Other mixed resins	50-100	95-100

<sup>1</sup> USEPA's recommendations do not preclude a procuring agency from purchasing wooden landscaping timbers and posts. They simply require that procuring agencies, when purchasing plastic landscaping timbers and posts, purchase these items made with recovered materials when the items meet applicable specifications and performance requirements.

### Selected Construction Products

#### USEPA's Recommended Recovered Materials Content Levels for Building Insulation <sup>1</sup>

Product	Material	Postconsumer Content (%)	Total <u>Recovered</u> Materials Content (%)
Rock Wool	Slag	--	75
Fiberglass	Glass Cullet	--	20-25
Cellulose Loose-Fill and Spray-On	Postconsumer Paper	75	75
Perlite Composite Board	Postconsumer Paper	23	23
Plastic Rigid Foam, Polyisocyanurate/ Polyurethane:			
Rigid Foam	--	--	9
	--	--	5
Foam-in-Place	--	--	6
Glass Fiber Reinforced			
Phenolic Rigid Foam	--	--	5
Plastic, Non-Woven Batt	Recovered and/or Postconsumer Plastics	--	100

<sup>1</sup> The recommended recovered materials content levels are based on the weight (not volume) of materials in the insulating core only.

#### USEPA's Recommended Recovered Materials Content Levels for Carpet<sup>1</sup>

Product	Material	Postconsumer Content	Total Recovered Materials Content (%)
Polyester Carpet Face Fiber	PET	25-100	25-100

EPA recommends that, based on the recovered materials content levels shown in the table above, procuring agencies establish minimum content standards for use in purchasing polyester carpet for light- and moderate-wear applications. This recommendation does not include polyester carpet for use in heavy-wear or severe-wear applications; however, procuring agencies are encouraged to evaluate the suitability of polyester carpet in these applications. These recommendations do not preclude a procuring agency from purchasing carpet made of other materials such as nylon, wool, or polypropylene.

#### USEPA's Recommended Recovered Materials Content Levels for Carpet Cushion <sup>1</sup>

Product	Material	Postconsumer Content (%)	Total Recovered Materials Content (%)
Bonded polyurethane	Old carpet cushion	15-50	15-50
Jute	Burlap	40	40
Synthetic fibers	Carpet fabrication scrap	--	100
Rubber	Tire rubber	60-90	60-90

EPA's recommendations do not preclude a procuring agency from purchasing another type of carpet cushion. They simply require that procuring agencies, when purchasing bonded polyurethane, jute, synthetic fiber, or rubber carpet cushions, purchase these items made with recovered materials when these items meet applicable specifications and performance requirement. Refer to Section C-4 in RMAN I for USEPA's recommendations for purchasing polyester [carpet containing recovered materials](#).

#### USEPA's Recommended Recovered Materials Content Levels for Reprocessed and Consolidated Latex Paints <sup>1</sup>

Product	Postconsumer Content (%)	Total Recovered Materials Content (%)
Reprocessed Latex Paint <ul style="list-style-type: none"> <li>White, Off-White, Pastel Colors</li> <li>Grey, Brown, Earthtones, and Other Dark Colors</li> </ul>	20 50-99	20 50-99
Consolidated Latex Paint	100	100

<sup>1</sup> USEPA's recommendations apply to reprocessed latex paints used for interior and exterior architectural applications such as wallboard, ceilings, and trim; gutter boards; and concrete, stucco, masonry, wood, and metal surfaces, and to consolidated latex paints used for covering graffiti, where color and consistency of performance are not primary concerns.

**EPA's Recommended Recovered Materials Content Levels for Shower and Restroom Dividers/Partitions Containing Recovered Plastic or Steel <sup>1</sup>**

<b>Material</b>	<b><u>Postconsumer</u> Content</b>	<b>Total <u>Recovered</u> Materials Content (%)</b>
Steel <sup>2</sup>	16 67	25-30 100
Plastic	20-100	20-100

<sup>1</sup> USEPA's recommendations do not preclude an agency from purchasing shower and restroom dividers/partitions manufactured from another material such as wood. They simply require that procuring agencies, when purchasing shower and restroom dividers/partitions made from plastic or steel, purchase these items made from recovered materials when they meet applicable specifications and performance requirements.

<sup>2</sup> The recommended recovered materials content levels for steel in this table reflect the fact that the designated items can be made from steel manufactured in either a Basic Oxygen Furnace (BOF) or an Electric Arc Furnace (EAF). Steel from the BOF process contains 25-30% total recovered materials, of which 16% is postconsumer steel. Steel from the EAF process contains a total of 100% recovered steel, of which 67% is postconsumer.

**Selected Transportation Products**

**USEPA's Recommended Recovered Materials Content Levels for Parking Stops Made from Concrete or Containing Recovered Plastic or Rubber <sup>1, 2</sup>**

<b>Material</b>	<b><u>Postconsumer</u> Content (%)</b>	<b>Total <u>Recovered</u> Materials Content (%)</b>
Plastic and/or Rubber <sup>3</sup>	100	--
Concrete Containing <a href="#">Coal Fly Ash</a>	--	20-40 <sup>4</sup>
Concrete Containing <a href="#">Ground Granulated Blast Furnace Slag (GGBF)</a>	--	25-70

<sup>1</sup> USEPA's recommendation does not preclude a procuring agency from purchasing parking stops manufactured from another material. It simply requires that a procuring agency, when purchasing concrete parking stops or parking stops made with plastic or rubber, purchase these items made with recovered materials when these items meet applicable specifications and performance requirements.

<sup>2</sup> Transportation products containing recovered materials must conform to the *Manual on Uniform Highway Traffic Control Devices* used by the Federal Highway Administration, as well as other applicable federal requirements and specifications.

<sup>3</sup> Parking stops made with recovered plastics may also include other recovered materials such as sawdust, wood, or fiberglass. The percentage of these materials contained in the product would also count toward the recovered materials content level of the parking stops.

<sup>4</sup> Generally, 20 to 30 percent, but could be up to 40 percent. Fifteen percent when used as a partial cement replacement as an admixture in concrete.

#### **EPA's Recommended Recovered Materials Content Levels for Traffic Cones<sup>1</sup>**

<b>Material</b>	<b>Postconsumer Materials (%):</b>	<b>Total <u>Recovered</u> Materials Content (%)<sup>2</sup></b>
Plastic ( <u>PVC</u> and <u>LDPE</u> )	--	50-100
<u>Crumb rubber</u>	--	50-100

<sup>1</sup> Transportation products containing recovered materials must conform to the *Manual on Uniform Traffic Devices* used by the Federal Highway Administration, as well as other applicable federal requirements and specifications.

<sup>2</sup> The recommended recovered materials content levels are based on the dry weight of the raw materials, exclusive of any additives such as adhesives, binders, or coloring agents.

#### **Selected Vehicular Products**

##### **Recommended Recovered Materials Content Ranges For Engine Coolant:**

USEPA recommends that procuring agencies whose vehicles are serviced by a motor pool or vehicle maintenance facility establish a program for engine coolant reclamation and reuse that consists of either reclaiming the spent engine coolants onsite for use in the agencies' vehicles or establishing a service contract for reclamation of the agencies' spent engine coolant for use in the agencies' vehicles.

USEPA also recommends that procuring agencies request reclaimed engine coolant when having their vehicles serviced at commercial service centers. Additionally, USEPA recommends that agencies purchase reclaimed engine coolant when making direct purchases of this item, such as when necessary to make up for losses due to leakage or spillage.

- USEPA does not recommend one type of engine coolant over another. USEPA recommends, however, that procuring agencies purchase engine coolant containing only one base chemical, typically ethylene glycol or propylene glycol, to prevent the commingling of incompatible types of engine coolant

##### **Recommended Recovered Materials Content Ranges for Re-refined Lubricating Oils:**

USEPA recommends that procuring agencies set their minimum re-refined oil content standard at the highest level of re-refined oil that they determine meets the statutory requirements of RCRA section 6002(c)(1), but no lower than 25 percent re-refined oil.

USEPA recommends that procuring agencies review their procurement practices and eliminate those that would inhibit or preclude procurement of lubricating oils containing re-refined oil. For example, procuring agencies should review the practices of inviting bids and issuing contracts to do the following:

- Supply a broad range of lubricating oil products on an "all or none" basis.
- Supply lubricating oils for an excessively long period of time.

- Deliver lubricating oils to geographic locations throughout the United States or to an excessively broad geographic area.
- Supply excessively large contract quantities.

### Selected Miscellaneous Products

#### EPA's Recommended Recovered Materials Content Levels for Awards and Plaques<sup>1</sup>

Material	Postconsumer Content (%)	Total <u>Recovered</u> Materials Content (%)
Glass	75-100	100
Wood	--	100
Paper	40-100	40-100
Plastic and Plastic/ Wood Composite	50-100	95-100

<sup>1</sup> USEPA's recommendations do not preclude a procuring agency from purchasing awards and plaques manufactured from other materials. They simply require that a procuring agency, when purchasing glass, wood, paper, or plastic awards or plaques, purchase these items containing recovered materials when the item meets applicable specifications and performance requirements.

#### USEPA's Recommended Recovered Materials Content Levels for Sorbents Used in Oil and Solvents Cleanups and for Use as Animal Bedding <sup>1</sup>

Material	Postconsumer Content (%)	Total <u>Recovered</u> Materials Content (%)
Paper	90-100	100
Textiles	95-100	95-100
Plastics	--	25-100
Wood <sup>2</sup>	--	100
Other Organics/Multi-Materials <sup>3</sup>	--	100

<sup>1</sup> USEPA's recommendations do not preclude a procuring agency from purchasing sorbents made from other materials. They simply require that a procuring agency, when purchasing sorbents made from paper, wood, textiles, plastic, or other organic materials, purchase them made with recovered materials when these items meet applicable specifications and performance requirements.

<sup>2</sup> "Wood" includes materials such as sawdust and lumber mill trimmings.

<sup>3</sup> Examples of other organics include, but are not limited to, peanut hulls and corn stover. An example of multimaterial sorbents would include, but not be limited to, a polymer and cellulose fiber combination.

## Appendix 6-2

### Federal Acquisition Clauses

(48 CFR 52.204-4, 52.223-1 through 52.223-5, 52.223-10, 52.223.13 through 52.223-16)

[Added July 2001; Revised October 2003; Revised July 2008, Revised January 2009, Revised April 2012;  
Revised July 2014; Revised October 2015]

#### **FAR 52.204-4 Printed or Copied Double-Sided on Post-Consumer Fiber Content Paper**

As prescribed in 4.303, insert the following clause:

PRINTED OR COPIED DOUBLE-SIDED ON POSTCONSUMER FIBER CONTENT PAPER (MAY 2011)

(a) *Definitions.* As used in this clause:

*Postconsumer fiber* means—(1) Paper, paperboard, and fibrous materials from retail stores, office buildings, homes, and so forth, after they have passed through their end usage as a consumer item, including: used corrugated boxes; old newspapers; old magazines; mixed waste paper; tabulating cards; and used cordage; or (2) All paper, paperboard, and fibrous materials that enter and are collected from municipal solid waste; but not (3) Fiber derived from printers' over-runs, converters' scrap, and over-issue publications.

(b) The Contractor is required to submit paper documents, such as offers, letters, or reports that are printed or copied double-sided on paper containing at least 30 percent postconsumer fiber, whenever practicable, when not using electronic commerce methods to submit information or data to the Government.

(End of clause)

- **FAR 52.223-1 Biobased Product Certification.**

As prescribed in 23.406(a), insert the following provision:

BIOBASED PRODUCT CERTIFICATION (MAY 2012)

As required by the Farm Security and Rural Investment Act of 2002 and the Energy Policy Act of 2005 (7 U.S.C. 8102(c)(3)), the offeror certifies, by signing this offer, that biobased products (within categories of products listed by the United States Department of Agriculture in 7 CFR part 3201, subpart B) to be used or delivered in the performance of the contract, other than biobased products that are not purchased by the offeror as a direct result of this contract, will comply with the applicable specifications or other contractual requirements.

(End of provision)

- **FAR 52.223-2 Affirmative Procurement of Biobased Products Under Service and Construction Contracts.**

As prescribed in 23.406(b), insert the following clause:

AFFIRMATIVE PROCUREMENT OF BIOBASED PRODUCTS UNDER SERVICE AND CONSTRUCTION CONTRACTS (MAY 2012)

- (a) In the performance of this contract, the contractor shall make maximum use of biobased products that are United States Department of Agriculture (USDA)-designated items unless--
- (1) The product cannot be acquired--
    - (i) Competitively within a time frame providing for compliance with the contract performance schedule;
    - (ii) Meeting contract performance requirements; or
    - (iii) At a reasonable price.
  - (2) The product is to be used in an application covered by a USDA categorical exemption (see 7 CFR 3201.3(e)). For example, all USDA-designated items are exempt from the preferred procurement requirement for the following:
    - (i) Spacecraft system and launch support equipment.
    - (ii) Military equipment, i.e., a product or system designed or procured for combat or combat-related missions.
- (b) Information about this requirement and these products is available at <http://www.usda.gov/biopreferred>.
- (c) In the performance of this contract, the Contractor shall--
- (1) Report to the environmental point of contact identified in paragraph (d) of this clause, with a copy to the Contracting Officer, on the product types and dollar value of any USDA-designated biobased products purchased by the Contractor during the previous Government fiscal year, between October 1 and September 30;
  - (2) Submit this report no later than--
    - (i) October 31 of each year during contract performance; and
    - (ii) At the end of contract performance; and
  - (3) Contact the environmental point of contract to obtain the preferred submittal format, if that format is not specified in this contract.
- (d) The environmental point of contact for this contract is: ----- [Contracting Officer shall insert full name, phone number, and email address. In addition, the Contracting Officer may include the agency Web site for reporting.]

(End of clause)

- **FAR 52.223-3 Hazardous Material Identification and Material Safety Data.**

As prescribed in 23.303, insert the following clause:

**HAZARDOUS MATERIAL IDENTIFICATION AND MATERIAL SAFETY DATA (JAN 1997)**

- (a) "Hazardous material," as used in this clause, includes any material defined as hazardous under the latest version of Federal Standard No. 313 (including revisions adopted during the term of the contract).
- (b) The offeror must list any hazardous material, as defined in paragraph (a) of this clause, to be delivered under this contract. The hazardous material shall be properly identified and include any applicable identification number, such as National Stock Number or Special Item Number. This information shall also be included on the Material Safety Data Sheet submitted under this contract.

Material  
(If none, insert "None")

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Identification No.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

- (c) This list must be updated during performance of the contract whenever the Contractor determines that any other material to be delivered under this contract is hazardous.
- (d) The apparently successful offeror agrees to submit, for each item as required prior to award, a Material Safety Data Sheet, meeting the requirements of 29 CFR 1910.1200(g) and the latest version of Federal Standard No. 313, for all hazardous material identified in paragraph (b) of this clause. Data shall be submitted in accordance with Federal Standard No. 313, whether or not the apparently successful offeror is the actual manufacturer of these items. Failure to submit the Material Safety Data Sheet prior to award may result in the apparently successful offeror being considered nonresponsible and ineligible for award.
- (e) If, after award, there is a change in the composition of the item(s) or a revision to Federal Standard No. 313, which renders incomplete or inaccurate the data submitted under paragraph (d) of this clause, the Contractor shall promptly notify the Contracting Officer and resubmit the data.
- (f) Neither the requirements of this clause nor any act or failure to act by the Government shall relieve the Contractor of any responsibility or liability for the safety of Government, Contractor, or subcontractor personnel or property.
- (g) Nothing contained in this clause shall relieve the Contractor from complying with applicable Federal, State, and local laws, codes, ordinances, and regulations (including the obtaining of licenses and permits) in connection with hazardous material.
- (h) The Government's rights in data furnished under this contract with respect to hazardous material are as follows:
  - (1) To use, duplicate and disclose any data to which this clause is applicable. The purposes of this right are to--
    - (i) Apprise personnel of the hazards to which they may be exposed in using, handling, packaging, transporting, or disposing of hazardous materials;
    - (ii) Obtain medical treatment for those affected by the material; and
    - (iii) Have others use, duplicate, and disclose the data for the Government for these purposes.
  - (2) To use, duplicate, and disclose data furnished under this clause, in accordance with subparagraph (h)(1) of this clause, in precedence over any other clause of this contract providing for rights in data.
  - (3) The Government is not precluded from using similar or identical data acquired from other sources.

**(End of clause)**

*Alternate I (July 1995).* If the contract is awarded by an agency other than the Department of Defense, add the following paragraph (i) to the basic clause:

- (i) Except as provided in paragraph (i)(2), the Contractor shall prepare and submit a sufficient number of Material Safety Data Sheets (MSDS's), meeting the requirements of 29 CFR 1910.1200(g) and the latest version of Federal Standard No. 313, for all hazardous materials identified in paragraph (b) of this clause.
  - (1) For items shipped to consignees, the Contractor shall include a copy of the MSDS's with the packing list or other suitable shipping document that accompanies each shipment. Alternatively, the Contractor is permitted to transmit MSDS's to consignees in advance of receipt of shipments by consignees, if authorized in writing by the Contracting Officer.
  - (2) For items shipped to consignees identified by mailing address as agency depots, distribution centers or customer supply centers, the Contractor shall provide one copy of the MSDS's in or on each shipping container. If affixed to the outside of each container, the MSDS's must be placed in a weather resistant envelope.

- **FAR 52.223-4 Recovered Material Certification.**

As prescribed in 23.406(a), insert the following provision:

RECOVERED MATERIAL CERTIFICATION (MAY 2008)

As required by the Resource Conservation and Recovery Act of 1976 (42 U.S.C. 6962(c)(3)(A)(i)), the offeror certifies, by signing this offer, that the percentage of recovered materials content for EPA-designated items to be delivered or used in the performance of the contract will be at least the amount required by the applicable contract specifications or other contractual requirements.

(End of provision)

- **FAR 52.223-5 Pollution Prevention and Right-to-Know Information.**

As prescribed in 23.1005, insert the following clause:

POLLUTION PREVENTION AND RIGHT-TO-KNOW INFORMATION (MAY 2011)

(a) Definitions. As used in this clause—

Toxic chemical means a chemical or chemical category listed in 40 CFR 372.65.

(b) Federal facilities are required to comply with the provisions of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) (42 U.S.C. 11001–11050), and the Pollution Prevention Act of 1990 (PPA) (42 U.S.C. 13101–13109).

(c) The Contractor shall provide all information needed by the Federal facility to comply with the following:

- (1) The emergency planning reporting requirements of section 302 of EPCRA.
- (2) The emergency notice requirements of section 304 of EPCRA.
- (3) The list of Material Safety Data Sheets, required by section 311 of EPCRA.
- (4) The emergency and hazardous chemical inventory forms of section 312 of EPCRA.
- (5) The toxic chemical release inventory of section 313 of EPCRA, which includes the reduction and recycling information required by section 6607 of PPA.
- (6) The toxic chemical and hazardous substance release and use reduction goals of section 2(e) of Executive Order 13423 and of Executive Order 13514.

(End of clause)

*Alternate I* (MAY 2011). As prescribed in 23.1005(b), add the following paragraph (c)(7) to the basic clause:

(c)(7) The environmental management system as described in section 3(b) of E.O. 13423 and 2(j) of E.O. 13514.

*Alternate II* (MAY 2011). As prescribed in 23.1005(c), add the following paragraph (c)(7) to the basic clause. If Alternate I is also prescribed, renumber paragraph (c)(7) as paragraph (c)(8).

(c)(7) The facility compliance audits as described in section 3(c) of E.O. 13423.

- **FAR 52.223-9. Estimate of Percentage of Recovered Material Content for EPA Designated Items**

As prescribed in 23.406(d), insert the following clause:

ESTIMATE OF PERCENTAGE OF RECOVERED MATERIAL CONTENT FOR EPA-DESIGNATED ITEMS (MAY 2008)

(b) The Contractor, on completion of this contract, shall:

(1) Estimate the percentage of the total recovered material content for EPA-designated item(s) delivered and/or used in contract performance, including, if applicable, the percentage of post-consumer material content; and

(2) Submit this estimate to \_\_\_\_\_

[Contracting Officer complete in accordance with agency procedures].

**(End of clause)**

*Alternate I* (MAY 2008). As prescribed in 23.406(d), redesignate paragraph (b) of the basic clause as paragraph (c) and add the following paragraph (b) to the basic clause:

(b) The Contractor shall execute the following certification required by the Resource Conservation and Recovery Act of 1976 (42 U.S.C. 6962(i)(2)(C)):

**CERTIFICATION**

I, \_\_\_\_\_ (name of certifier), am an officer or employee responsible for the performance of this contract and hereby certify that the percentage of recovered material content for EPA-designated items met the applicable contract specifications or other contractual requirements.

\_\_\_\_\_  
(Signature of the Officer or Employee)

\_\_\_\_\_  
(Typed Name of the Officer or Employee)

\_\_\_\_\_  
(Title)

\_\_\_\_\_  
(Name of Company, Firm, or Organization)

\_\_\_\_\_  
(Date)

**(End of Certification)**

**FAR 52.223-10 Waste Reduction Program.**

(a) Definitions.

- Recycling means the series of activities, including collection, separation, and processing, by which products or other materials are recovered from the solid waste stream for use in the form of raw materials in the manufacture of products other than fuel for producing heat or power by combustion.
- Waste prevention means any change in the design, manufacturing, purchase, or use of materials or products (including packaging) to reduce their amount or toxicity before they are discarded. Waste prevention also refers to the reuse of products or materials.
- Waste reduction means preventing or decreasing the amount of waste being generated through waste prevention, recycling, or purchasing recycled and environmentally preferable products.

- (b) Consistent with the requirements of Section 701 of Executive Order 13101, the Contractor shall establish a program to promote cost-effective waste reduction in all operations and facilities covered by this contract. The Contractor's programs shall comply with applicable Federal, State, and local requirements, specifically including Section 6002 of the Resource Conservation and Recovery Act (42 U.S.C. 6962, et seq.) and implementing regulations (40 CFR 247).

(End of clause)

**FAR 52.223-13 Acquisition of EPEAT® Registered Imaging Equipment (Jun 2014)**

*Definitions.* As used in this clause:

*Imaging equipment* means the following products:

- (1) *Copier*—A commercially available imaging product with a sole function of the production of hard copy duplicates from graphic hard-copy originals. The unit is capable of being powered from a wall outlet or from a data or network connection. This definition is intended to cover products that are marketed as copiers or upgradeable digital copiers (UDCs).
- (2) *Digital duplicator*—A commercially available imaging product that is sold in the market as a fully automated duplicator system through the method of stencil duplicating with digital reproduction functionality. The unit is capable of being powered from a wall outlet or from a data or network connection. This definition is intended to cover products that are marketed as digital duplicators.
- (3) *Facsimile machine (fax machine)*—A commercially available imaging product whose primary functions are scanning hard-copy originals for electronic transmission to remote units and receiving similar electronic transmissions to produce hard-copy output. Electronic transmission is primarily over a public telephone system but also may be via computer network or the Internet. The product also may be capable of producing hard copy duplicates. The unit is capable of being powered from a wall outlet or from a data or network connection. This definition is intended to cover products that are marketed as fax machines.
- (4) *Mailing machine*—A commercially available imaging product that serves to print postage onto mail pieces. The unit is capable of being powered from a wall outlet or from a data or network connection. This definition is intended to cover products that are marketed as mailing machines.
- (5) *Multifunction device (MFD)*—A commercially available imaging product, which is a physically integrated device or a combination of functionally integrated components, that performs two or more of the core functions of copying, printing, scanning, or faxing. The copy functionality as addressed in this definition is considered to be distinct from singlesheet convenience copying offered by fax machines. The unit is capable of being powered from a wall outlet or from a data or network connection. This definition is intended to cover products that are marketed as MFDs or multifunction products.
- (6) *Printer*—A commercially available imaging product that serves as a hardcopy output device and is capable of receiving information from single-user or networked computers, or other input devices (e.g., digital cameras). The unit is capable of being powered from a wall outlet or from a data or network connection. This definition is intended to cover products that are marketed as printers, including printers that can be upgraded into MFDs in the field.
- (7) *Scanner*—A commercially available imaging product that functions as an electro-optical device for converting information into electronic images that can be stored, edited, converted, or transmitted, primarily in a personal computing environment. The unit is capable of being powered from a wall outlet or from a data or network connection. This definition is intended to cover products that are marketed as scanners.

(b) Under this contract, the Contractor shall deliver, furnish for Government use, or furnish for Contractor use at a Federally controlled facility, only imaging equipment that, at the time of submission of proposals and at the time of award, was EPEAT→bronzeregistered or higher.

(c) For information about EPEAT see [www.epa.gov/epeat](http://www.epa.gov/epeat).

**(End of clause)**

*Alternate I* (Oct 2015). As prescribed in 23.705(b)(2), substitute the following paragraph (b) for paragraph (b) of the basic clause:

(b) Under this contract, the Contractor shall deliver, furnish for Government use, or furnish for contractor use at a Federally controlled facility, only imaging equipment that, at the time of submission of proposals and at the time of award, was EPEAT@ silver-registered or gold-registered.

**FAR 52.223-14 Acquisition of EPEAT Registered Televisions (Jun 2014)**

(a) *Definitions.* As used in this clause—

*Television or TV* means a commercially available electronic product designed primarily for the reception and display of audiovisual signals received from terrestrial, cable, satellite, Internet Protocol TV (IPTV), or other digital or analog sources. A TV consists of a tuner/receiver and a display encased in a single enclosure. The product usually relies upon a cathode-ray tube (CRT), liquid crystal display (LCD), plasma display, or other display technology. Televisions with computer capability (*e.g.*, computer input port) may be considered to be a TV as long as they are marketed and sold to consumers primarily as televisions.

(b) Under this contract, the Contractor shall deliver, furnish for Government use, or furnish for Contractor use at a Federally controlled facility, only televisions that, at the time of submission of proposals and at the time of award, were EPEAT→bronzeregistered or higher.

(c) For information about EPEAT→,see [www.epa.gov/epeat](http://www.epa.gov/epeat).

**(End of clause)**

*Alternate I* (Jun 2014). As prescribed in 23.705(c)(2), substitute the following paragraph (b) for paragraph (b) of the basic clause:

(b) Under this contract, the Contractor shall deliver, furnish for Government use, or furnish for Contractor use at a Federally controlled facility, only televisions that, at the time of submission of proposals and at the time of award, were EPEAT→silver-registered or gold-registered.

**FAR 52.223-15 Affirmative Procurement of EPA-designated Items in Service and Construction Contracts**

**ENERGY EFFICIENCY IN ENERGY-CONSUMING PRODUCTS (DEC 2007)**

(a) *Definition.* As used in this clause—

Energy-efficient product—(1) Means a product that—

- (i) Meets Department of Energy and Environmental Protection Agency criteria for use of the Energy Star trademark label; or
- (ii) Is in the upper 25 percent of efficiency for all similar products as designated by the Department of Energy's Federal Energy Management Program.

(2) The term “product” does not include any energy-consuming product or system designed or procured for combat or combat-related missions (42 U.S.C. 8259b).

(b) The Contractor shall ensure that energy-consuming products are energy efficient products (i.e., ENERGY STAR® products or FEMP-designated products) at the time of contract award, for products that are—

- (1) Delivered;
- (2) Acquired by the Contractor for use in performing services at a Federally-controlled facility;
- (3) Furnished by the Contractor for use by the Government; or
- (4) Specified in the design of a building or work, or incorporated during its construction, renovation, or maintenance.

(c) The requirements of paragraph (b) apply to the Contractor (including any subcontractor) unless—

- (1) The energy-consuming product is not listed in the ENERGY STAR® Program or FEMP; or
- (2) Otherwise approved in writing by the Contracting Officer.

(d) Information about these products is available for—

- (1) ENERGY STAR® at <http://www.energystar.gov/products>; and
- (2) FEMP at <http://www1.eere.energy.gov/femp/procurement/eeplrequirements.html>.

(End of Clause)

**FAR 52.223-16 Acquisition of EPEAT® Registered Personal Computer Products (Oct 2015)**

(a) *Definitions.* As used in this clause—

*Computer* means a device that performs logical operations and processes data. Computers are composed of, at a minimum:

- (1) A central processing unit (CPU) to perform operations;
- (2) User input devices such as a keyboard, mouse, digitizer, or game controller; and
- (3) A computer display screen to output information. Computers include both stationary and portable units, including desktop computers, integrated desktop computers, notebook computers, thin clients, and workstations. Although computers must be capable of using input devices and computer displays, as noted in (2) and (3) above, computer systems do not need to include these devices on shipment to meet this definition.

This definition does not include server computers, gaming consoles, mobile telephones, portable hand-held calculators, portable digital assistants (PDAs), MP3 players, or any other mobile computing device with displays less than 4 inches, measured diagonally.

*Computer display* means a display screen and its associated electronics encased in a single housing or within the computer housing (e.g., notebook or integrated desktop computer) that is capable of displaying output information from a computer via one or more inputs such as a VGA, DVI, USB, DisplayPort, and/or IEEE 1394–2008™, Standard for High Performance Serial Bus. Examples of computer display technologies are the cathode-ray tube (CRT) and liquid crystal display (LCD).

*Desktop computer* means a computer where the main unit is intended to be located in a permanent location, often on a desk or on the floor. Desktops are not designed for portability and utilize an external computer display, keyboard, and mouse. Desktops are designed for a broad range of home and office applications.

*Integrated desktop computer* means a desktop system in which the computer and computer display function as a single unit that receives its AC power through a single cable. Integrated desktop computers come in one of two possible forms:

- (1) A system where the computer display and computer are physically combined into a single unit; or
- (2) A system packaged as a single system where the computer display is separate but is connected to the main chassis by a DC power cord and both the computer and computer display are powered from a single power

supply. As a subset of desktop computers, integrated desktop computers are typically designed to provide similar functionality as desktop systems.

*Notebook computer* means a computer designed specifically for portability and to be operated for extended periods of time either with or without a direct connection to an AC power source. Notebooks must utilize an integrated computer display and be capable of operation off of an integrated battery or other portable power source. In addition, most notebooks use an external power supply and have an integrated keyboard and pointing device. Notebook computers are typically designed to provide similar functionality to desktops, including operation of software similar in functionality to that used in desktops. Docking stations are considered accessories for notebook computers, not notebook computers. Tablet PCs, which may use touch-sensitive screens along with, or instead of, other input devices, are considered notebook computers.

*Personal computer product* means a computer, computer display, desktop computer, integrated desktop computer, or notebook computer.

(b) Under this contract, the Contractor shall deliver, furnish for Government use, or furnish for Contractor use at a Federally controlled facility, only personal computer products that, (a) at the time of submission of proposals and at the time of award, were EPEAT→bronze-registered or higher.

(c) For information about EPEAT, see [www.epa.gov/PEAT](http://www.epa.gov/PEAT).

**(End of clause)**

*Alternate I* (Jun 2014). As prescribed in 23.705(d)(2), substitute the following paragraph (b) for paragraph (b) of the basic clause:

(b) Under this contract, the Contractor shall deliver, furnish for Government use, or furnish for Contractor use at a Federally controlled facility, only personal computer products that, at the time of submission of proposals and at the time of award, were EPEAT→silver registered or gold-registered.



## Appendix 6-2a

### DOE Specifications for Premium Efficient Motors (Federal Register: August 18, 2006 [Notices], Page 47791-47793) [Added October 2006]

Table 1.--Nominal Efficiencies for Induction Motors Rated 600 Volts or Less [Random wound]						
HP	Open drip-proof			Totally enclosed fan-cooled		
	6-pole	4-pole	2-pole	6-pole	4-pole	2-pole
1	82.5	85.5	*77.0	82.5	85.5	77.0
1.5	86.5	86.5	84.0	87.5	86.5	84.0
2	87.5	86.5	85.5	88.5	86.5	85.5
3	88.5	89.5	85.5	89.5	89.5	86.5
5	89.5	89.5	86.5	89.5	89.5	88.5
7.5	90.2	91.0	88.5	91.0	91.7	89.5
10	91.7	91.7	89.5	91.0	91.7	90.2
15	91.7	93.0	90.2	91.7	92.4	91.0
20	92.4	93.0	91.0	91.7	93.0	91.0
25	93.0	93.6	91.7	93.0	93.6	91.7
30	93.6	94.1	91.7	93.0	93.6	91.7
40	94.1	94.1	92.4	94.1	94.1	92.4
50	94.1	94.5	93.0	94.1	94.5	93.0
60	94.5	95.0	93.6	94.5	95.0	93.6
75	94.5	95.0	93.6	94.5	95.4	93.6
100	95.0	95.4	93.6	95.0	95.4	94.1
125	95.0	95.4	94.1	95.0	95.4	95.0
150	95.4	95.8	94.1	95.8	95.8	95.0
200	95.4	95.8	95.0	95.8	96.2	95.4
250	95.4	95.8	95.0	95.8	96.2	95.8
300	95.4	95.8	95.4	95.8	96.2	95.8
350	95.4	95.8	95.4	95.8	96.2	95.8
400	95.8	95.8	95.8	95.8	96.2	95.8
450	96.2	96.2	95.8	95.8	96.2	95.8
500	96.2	96.2	95.8	95.8	96.2	95.8

Table 2.--Nominal Efficiencies for Induction Motors Rated 5 kV or Less [Form wound]						
HP	Open drip-proof			Totally enclosed fan-cooled		
	6-pole	4-pole	2-pole	6-pole	4-pole	2-pole
250	95.0	95.0	94.5	95.0	95.0	95.0
300	95.0	95.0	94.5	95.0	95.0	95.0
350	95.0	95.0	94.5	95.0	95.0	95.0
400	95.0	95.0	94.5	95.0	95.0	95.0
450	95.0	95.0	94.5	95.0	95.0	95.0
500	95.0	95.0	94.5	95.0	95.0	95.0



## **Appendix 6-2b**

### **EPEAT Contract/Solicitation Clauses (FAR 52.223-10 and 52.223-16) [Added January 2008; Revised July 2011]**

#### **FAR 52.223-10 Waste Reduction Program.**

(b) Definitions.

- Recycling means the series of activities, including collection, separation, and processing, by which products or other materials are recovered from the solid waste stream for use in the form of raw materials in the manufacture of products other than fuel for producing heat or power by combustion.
- Waste prevention means any change in the design, manufacturing, purchase, or use of materials or products (including packaging) to reduce their amount or toxicity before they are discarded. Waste prevention also refers to the reuse of products or materials.
- Waste reduction means preventing or decreasing the amount of waste being generated through waste prevention, recycling, or purchasing recycled and environmentally preferable products.

- (b) Consistent with the requirements of Section 701 of Executive Order 13101, the Contractor shall establish a program to promote cost-effective waste reduction in all operations and facilities covered by this contract. The Contractor's programs shall comply with applicable Federal, State, and local requirements, specifically including Section 6002 of the Resource Conservation and Recovery Act (42 U.S.C. 6962, et seq.) and implementing regulations (40 CFR 247).

(End of clause)

#### **FAR 52.223-16 IEEE 1680 Standard for the Environmental Assessment of Personal Computer Products (December 2007)**

(a) Definitions:

Computer monitor means a video display unit used with a computer.

Desktop computer means a computer designed for use on a desk or table.

Notebook computer means a portable-style or laptop-style computer system.

Personal computer product means a notebook computer, a desktop computer, or a computer monitor, and any peripheral equipment that is integral to the operation of such items. For example, the desktop computer together with the keyboard, the mouse, and the power cord would be a personal computer product. Printers, copiers, and fax machines are not included in peripheral equipment, as used in this definition.

- (b) Under this contract, the Contractor shall deliver, furnish for Government use, or furnish for contractor use at a Government-owned facility, only personal computer products that at the time of submission of proposals were EPEAT Bronze registered or higher. Bronze is the first level discussed in clause 1.4 of the IEEE 1680 Standard for the Environmental Assessment of Personal Computer Products.

For information about the standard, see <http://www.epeat.net> (End of clause)

Alternate I (DEC 2007)

As prescribed in 23.705(b)(2), substitute the following paragraph (b) for paragraph (b) of the basic clause:

- (b) Under this contract, the Contractor shall deliver, furnish for Government use, or furnish for contractor use at a Government-owned facility, only personal computer products that at the time of submission of proposals were EPEAT Silver registered or higher. Silver is the second level discussed in clause 1.4 of the IEEE 1680 Standard for the Environmental Assessment of Personal Computer Products.

## Appendix 6-2c

### Products in the Biobased Preferred Procurement Program

(7 CFR 3201.10, 7 CFR 3201.11, 3201.12, 3201.13, 3201.14, 3201.15, 3201.16, 3201.17, 3201.18, 3201.19, 3201.20, 3201.21, 3201.22, 3201.23, 3201.24, 3201.25, 3201.26, 3201.27, 3201.28, 3201.29, 3201.30, 3201.31, 3201.32, 3201.35, 3201.36, 3201.40 through 3201.99)

**[Added January 2010, Revised January 2011; Revised April 2012, Revised July 2012; Revised October 2012]**

Product	Minimum Biobased Content	Implementation Date
2-cycle engine oil	34 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	14 May 2009
Adhesive and mastic remover	58 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	14 May 2009
Agricultural spray adjuvants	50 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	19 November 2013
Air fresheners and deodorizers	97 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	4 April 2013
Animal cleaning products	57 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	19 November 2013
Animal repellant	79 percent, which shall be based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	23 July 2012
Asphalt and tar removers	80 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	4 April 2013
Asphalt restorers	68 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	4 April 2013
Bath products	61 percent, which shall be based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	23 July 2012
Bathroom and spa cleaners	74 percent based carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	14 May 2009
Bedding, bed linens, and towels	12 percent based on the amount of qualifying biobased carbon in the finished product as a percent of the weight (mass) of the total organic carbon in	20 November 2007

Product	Minimum Biobased Content	Implementation Date
	the finished product. (NOTE: The 12 percent biobased content must be of a qualifying biobased feedstock. Cotton, wool, linen, and silk are not qualifying biobased feedstocks for the purpose of determining the biobased content of bedding, bed linens, and towels.)	
Bioremediation materials	86 percent, which shall be based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	23 July 2012
Blast media	94 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	3 April 2013
Candle and wax melts	88 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	4 April 2013
Carpet <sup>9</sup>	7 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	14 May 2009
Chain and cable lubricants	77 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	27 October 2010
Cleaner, general purpose	54 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	14 May 2009
Cleaner, glass	49 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product. (NOTE: If the finished glass cleaner is to be diluted before use, the biobased content of the cleaner is determined before dilution.)	14 May 2009
Composite panels <sup>3</sup>	<ul style="list-style-type: none"> <li>• 23 percent for plastic lumber composite panels</li> <li>• 37 percent for acoustical composite panels</li> <li>• 55 percent for interior panels</li> <li>• 89 percent for structural interior panels</li> <li>• 94 percent for structural wall panels</li> </ul> <p>The minimum biobased content requirement is based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.</p>	14 May 2009
Compost activators and accelerators	95 percent, which shall be based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	23 July 2012

<b>Product</b>	<b>Minimum Biobased Content</b>	<b>Implementation Date</b>
Concrete and asphalt cleaners	70 percent, which shall be based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	23 July 2012
Concrete and asphalt release fluids	87 percent, based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	14 May 2009
Containers, disposable <sup>7</sup>	72 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.  (NOTE: At the time a manufacturer offers a disposable container for Federal purchase under the BioPreferred Program, the preferred procurement product must be capable of meeting the current version of ASTM D6400 if disposed of in a non-marine environment, the current version of ASTM D7081 if disposed of in a marine environment, or other appropriate and applicable standard for biodegradability.)	
Corrosion preventatives	53 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	27 October 2010
Cutlery, Disposable	48 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	14 May 2009
Cuts, burns, and abrasions ointments	84 percent, which shall be based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	23 July 2012
Deicer	93 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	14 May 2009
Deodorants	73 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	19 November 2013
Dethatchers	87 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	19 November 2013

<b>Product</b>	<b>Minimum Biobased Content</b>	<b>Implementation Date</b>
Diesel fuel additives	90 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	16 March 2007
Dishwashing products	58 percent, which shall be based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	23 July 2012
Disposable dinnerware	72 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	18 October 2011
Dust suppressants	85 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product. (NOTE: if the finished product is to be diluted before use, the biobased content of the suppressant is determined before dilution.)	14 May 2009
Electronic components cleaner	91 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	4 April 2013
Erosion control materials	77 percent, which shall be based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	23 July 2012
Expanded polystyrene (EPS) foam recycling products	90 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	18 October 2011
Fertilizers <sup>8</sup>	71 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	14 May 2009
Films, non-durable <sup>6</sup>	85 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	14 May 2009
Films, semi-durable <sup>6</sup>	45 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	14 May 2009
Firearm lubricants	49 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	14 May 2009
Floor cleaners and protectors	77 percent, which shall be based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	23 July 2012

<b>Product</b>	<b>Minimum Biobased Content</b>	<b>Implementation Date</b>
Floor coverings (non-carpet)	91 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	4 April 2012
Floor strippers	78 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	
Food cleaners	53 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	27 October 2010
Foot care products	83 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	4 April 2012
Forming lubricants	68 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	27 October 2010
Fuel conditioners	64 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	19 November 2013
Furniture cleaners and protectors	71 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	4 April 2013
Gear lubricants <sup>10</sup>	58 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	27 October 2010
General purpose household cleaners	39 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	27 October 2010
Graffiti and grease removers	34 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product. If the finished product is to be diluted before use, the biobased content of the remover must be determined before dilution.	14 May 2009
Greases	<ul style="list-style-type: none"> <li>• 42 percent for food grade grease</li> <li>• 72 percent for multipurpose grease</li> <li>• 30 percent for rail track grease</li> <li>• 71 percent for truck grease</li> <li>• 75 percent for greases not elsewhere specified.</li> </ul> <p>The minimum biobased content for all greases is based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.</p>	14 May 2009

<b>Product</b>	<b>Minimum Biobased Content</b>	<b>Implementation Date</b>
Hair care products	The minimum biobased content for all hair care products shall be based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product. The applicable minimum biobased contents for the Federal preferred procurement products are: Shampoos--66 percent. Conditioners--78 percent.	23 July 2012
Hand cleaners	64 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	14 May 2009
Hand sanitizers (including hand cleaners and sanitizers)	73 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	14 May 2009
Heat transfer fluids	89 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	18 October 2011
Industrial cleaners	41 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	27 October 2010
Ink removers and cleaners	79 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	18 October 2011
Inks	The minimum biobased content for all inks shall be based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product. The applicable minimum biobased contents for the Federal preferred procurement products are: 66 percent for specialty inks 67 percent for inks (sheetfed--color) 49 percent for inks (sheetfed--black) 34 percent for inks (printer toner—less than 25 ppm) 20 percent for inks (printer toner—greater than or equal to 25 ppm) 32 percent for inks (news).	4 April 2013
Interior paints and coatings	The minimum biobased content for all interior paints and coatings products shall be based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product. The applicable minimum biobased contents for the Federal preferred procurement products are:	23 July 2012

<b>Product</b>	<b>Minimum Biobased Content</b>	<b>Implementation Date</b>
	<p>(1) Interior latex and waterborne alkyd paints and coatings--20 percent.</p> <p>(2) Interior oil-based and solventborne alkyd paints and coatings--67 percent.</p>	
Laundry products	46 percent for pretreatment/spot removers and 34 percent for general purpose laundry products. The minimum biobased content is based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	14 May 2009
Leather, vinyl, and rubber care products	55 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	19 November 2013
Lip care products	82 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	14 May 2009
Lotions and moisturizers	59 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	19 November 2013
Metalworking fluids	<ul style="list-style-type: none"> <li>• 66 percent for straight oils</li> <li>• 57 percent for general purpose soluble, semi-synthetic, and synthetic oils</li> <li>• 40 percent for high performance soluble, semi-synthetic, and synthetic oils<sup>4</sup>.</li> </ul> <p>The minimum biobased content is based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.</p>	14 May 2009
Mobile equipment hydraulic fluids <sup>1</sup>	44 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	16 March 2007
Mulch and compost materials <sup>11</sup>	95 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	18 October 2011
Multi-purpose cleaners	56 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	27 October 2010
Multi-purpose lubricants <sup>12</sup>	88 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	18 October 2011
Oven and Grill Cleaners	66 percent, which shall be based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	23 July 2012

<b>Product</b>	<b>Minimum Biobased Content</b>	<b>Implementation Date</b>
Packing and insulating materials	74 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	4 April 2013
Parts wash solutions	65 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	27 October 2010
Penetrating lubricants <sup>1</sup>	68 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	16 March 2007
Plastic insulating foam for residential and commercial construction <sup>3</sup>	7 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	14 May 2009
Pneumatic equipment lubricants	67 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	4 April 2013
Roof coatings <sup>2</sup>	20 percent and is based on the entire product	16 March 2007
Shaving products	92 percent based on the amount of qualifying biobased carbon in the □ product as a percent of the weight (mass) of the total organic carbon in the finished product.	19 November 2013
Slide way lubricants	74 percent, which shall be based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	23 July 2012
Sorbents <sup>8</sup>	89 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	14 May 2009
Specialty precision cleaners and solvents	56 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	19 November 2013
Spot Removers	7 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	14 May 2009
Stationary equipment hydraulic fluids <sup>1</sup>	44 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	14 May 2009
Sun care products	53 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	19 November 2013
Thermal shipping containers	The minimum biobased content for all thermal shipping container products shall be based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic	Deferred.

<b>Product</b>	<b>Minimum Biobased Content</b>	<b>Implementation Date</b>
	carbon in the finished product. The applicable minimum biobased contents for the Federal preferred procurement products are: (1) Durable thermal shipping containers--21 percent. (2) Non-durable thermal shipping containers--82 percent.	
Topical pain relief products	91 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	18 October 2011
Transformers, synthetic ester-based fluid-filled	66 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	<sup>5</sup>
Transformers, vegetable oil-based fluid-filled	95 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	14 May 2009
Turbine drip oils	87 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	18 October 2011
Wastewater systems coatings	47 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	19 November 2013
Water clarifying agents	92 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	19 November 2013
Water tank coatings	59 percent based on the entire product.	20 November 2007
Wood and concrete sealers	<ul style="list-style-type: none"> <li>• 79 percent for penetrating liquids</li> <li>• 11 percent for membrane concrete sealers.</li> </ul> <p>The minimum biobased content is based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.</p>	14 May 2009
Wood and concrete stains	39 percent based on the amount of qualifying biobased carbon in the product as a percent of the weight (mass) of the total organic carbon in the finished product.	4 April 2013

<sup>1</sup> Qualifying biobased products that fall under the “mobile equipment hydraulic fluids” item, the “penetrating lubricants” item, or the “stationary equipment hydraulic fluids” item may, in some cases, overlap with the EPA-designated recovered content product. See checklist item O4.1.6.US for details on the recycled content product requirements. USDA is requesting that manufacturers of these qualifying biobased products provide information on the BioPreferred Web site of qualifying biobased products about the intended uses of the product, information on whether or not the product contains any recovered material, in addition to biobased ingredients, and performance

standards against which the product has been tested. This information will assist Federal agencies in determining whether or not a qualifying biobased product overlaps with EPA-designated product and which product should be afforded the preference in purchasing.

<sup>2</sup> Qualifying biobased products that fall under the “roofing coatings” item, may, in some cases, overlap with the EPA-designated recovered content product. See checklist item O4.1.6.US for details on the recycled content product requirements. USDA is requesting that manufacturers of these qualifying biobased products provide information on the BioPreferred Web site of qualifying biobased products about the intended uses of the product, information on whether or not the product contains any recovered material, in addition to biobased ingredients, and performance standards against which the product has been tested. This information will assist Federal agencies in determining whether or not a qualifying biobased product overlaps with EPA-designated product and which product should be afforded the preference in purchasing.

<sup>3</sup> Qualifying biobased products that fall under the “plastic insulating foam for residential and commercial construction” item or the “composite panels” item may, in some cases, overlap with the EPA-designated recovered content product. See checklist item O4.1.6.US for details on the recycled content product requirements. USDA is requesting that manufacturers of these qualifying biobased products provide information on the BioPreferred Web site of qualifying biobased products about the intended uses of the product, information on whether or not the product contains any recovered material, in addition to biobased ingredients, and performance standards against which the product has been tested. This information will assist Federal agencies in determining whether or not a qualifying biobased product overlaps with EPA-designated product and which product should be afforded the preference in purchasing.

<sup>4</sup> Determination of the preference compliance date for metalworking fluids--high performance soluble, semi-synthetic, and synthetic oils is deferred until USDA identifies two or more manufacturers of biobased products within this subcategory. At that time, USDA will publish a document in the Federal Register announcing that Federal agencies have one year from the date of publication to give procurement preference to biobased metalworking fluids--high performance soluble, semi-synthetic, and synthetic oils.

<sup>5</sup> Determination of the compliance date for synthetic ester-based fluid-filled transformers is deferred until USDA identifies two or more manufacturers of synthetic ester-based fluid-filled transformers. At that time, USDA will publish a document in the Federal Register announcing that Federal agencies have one year from the date of publication to give procurement preference to biobased synthetic ester-based fluid-filled transformers.)

<sup>6</sup> Qualifying biobased products that fall under the “films” item, may, in some cases, overlap with the EPA-designated recovered content product. See checklist item O4.1.6.US for details on the recycled content product requirements. USDA is requesting that manufacturers of these qualifying biobased products provide information on the BioPreferred Web site of qualifying biobased products about the intended uses of the product, information on whether or not the product contains any recovered material, in addition to biobased ingredients, and performance standards against which the product has been tested. This information will assist Federal agencies in determining whether or not a qualifying biobased product overlaps with EPA-designated product and which product should be afforded the preference in purchasing.

<sup>7</sup> Qualifying biobased products that fall under the “disposable container” item, may, in some cases, overlap with the EPA-designated recovered content product. See checklist item O4.1.6.US for details on the recycled content product requirements. USDA is requesting that manufacturers of these qualifying biobased products provide information on the BioPreferred Web site of qualifying biobased products about the intended uses of the product, information on whether or not the product contains any recovered material, in addition to biobased ingredients, and performance standards against which the product has been tested. This information will assist Federal agencies in determining whether or not a qualifying biobased product overlaps with EPA-designated product and which product should be afforded the preference in purchasing.)

<sup>8</sup> Qualifying biobased products that fall under the “fertilizer” item, or the “sorbents” item may, in some cases, overlap with the EPA-designated recovered content product. See checklist item O4.1.6.US for details on the recycled content product requirements. USDA is requesting that manufacturers of these qualifying biobased products provide information on the BioPreferred Web site of qualifying biobased products about the intended uses of the product, information on whether or not the product contains any recovered material, in addition to biobased ingredients, and

performance standards against which the product has been tested. This information will assist Federal agencies in determining whether or not a qualifying biobased product overlaps with EPA-designated product and which product should be afforded the preference in purchasing.)

<sup>9</sup> Qualifying biobased products that fall under the “carpet” item may, in some cases, overlap with the EPA-designated recovered content product. See checklist item O4.1.6.US for details on the recycled content product requirements. USDA is requesting that manufacturers of these qualifying biobased products provide information on the BioPreferred Web site of qualifying biobased products about the intended uses of the product, information on whether or not the product contains any recovered material, in addition to biobased ingredients, and performance standards against which the product has been tested. This information will assist Federal agencies in determining whether or not a qualifying biobased product overlaps with EPA-designated product and which product should be afforded the preference in purchasing.

<sup>10</sup> Qualifying biobased products that fall under this item may, in some cases, overlap with the following EPA-designated recovered content product: Lubricating oils containing re-refined oil. USDA is requesting that manufacturers of these qualifying biobased products provide information for the BioPreferred Web site of qualifying biobased products about the intended uses of the product, information on whether or not the product contains any recovered material, in addition to biobased ingredients, and performance standards against which the product has been tested. This information will assist Federal agencies in determining whether or not a qualifying biobased product overlaps with EPA-designated re-refined lubricating oils and which product should be afforded the preference in purchasing.

<sup>11</sup> Qualifying products within this item may overlap with the EPA-designated recovered content product: Landscaping products—“compost” and “hydraulic mulch”. USDA is requesting that manufacturers of these qualifying biobased products provide information on the USDA Web site of qualifying biobased products about the intended uses of the product, information on whether or not the product contains any recovered material, in addition to biobased ingredients, and performance standards against which the product has been tested. This information will assist Federal agencies in determining whether or not a qualifying biobased product overlaps with EPA-designated landscaping products and which product should be afforded the preference in purchasing. Biobased mulch and compost materials within this designated item can compete with similar landscaping products with recycled content. Under the Resource Conservation and Recovery Act of 1976, section 6002, the U.S. Environmental Protection Agency designated landscaping products containing recovered materials as items for which Federal agencies must give preference in their purchasing programs. The designation can be found in the Comprehensive Procurement Guideline, 40 CFR 247.15.

<sup>12</sup> Qualifying products within this item may overlap with the EPA-designated recovered content product: Re-refined lubricating oils. USDA is requesting that manufacturers of these qualifying biobased products provide information on the BioPreferred Web site about the intended uses of the product, information on whether or not the product contains any recovered material, in addition to biobased ingredients, and performance standards against which the product has been tested. This information will assist Federal agencies in determining whether or not a qualifying biobased product overlaps with EPA-designated re-refined lubricating oils and which product should be afforded the preference in purchasing. Biobased multipurpose lubricant products within this designated item can compete with similar multipurpose lubricant products with recycled content. Under the Resource Conservation and Recovery Act of 1976, section 6002, the U.S. Environmental Protection Agency designated re-refined lubricating oils containing recovered materials as items for which Federal agencies must give preference in their purchasing programs. The designation can be found in the Comprehensive Procurement Guideline, 40 CFR 247.11.



## Appendix 6-3

### **Military Munitions as Solid Waste** **(Preamble to the Military Munitions Rule (MMR), 12 February 1997 Federal Register)** **[Added April 2003]**

(NOTE: If a military munition is classed as a waste military munition (WMM), that means it will either be a hazardous waste or a non-hazardous waste. Being classed as a WMM does not mean it is trash to be disposed of in the garbage. See the Hazardous Waste Management section of the U.S. TEAM Guide for guidance on waste classification and characterization.)

RCRA refers to the Resource Conservation and Recovery act that is the sources of standards for hazardous waste and non-hazardous waste classification and disposal.

#### **Interpretive guidance is provided for the following situations:**

- **When military munitions are NOT a WMM:**
  - Use as a product
  - Military Training Exercises
  - Tests and evaluations of munitions from operational ranges
  - Range clearance
  - RDT&E and military munitions
  - Unused military munitions
  - Repair, reuse, evaluation of malfunctions and misfires
  - Resource recovery and recycling (R3) of military munitions
  - Weapons testing
- **When military munitions ARE WMM:**
  - Munitions determined by an AMO to be a waste
  - Munitions abandoned with intent to dispose
  - Abandoned and subsequently recovered unused munitions
  - Munitions removed from storage for the purposes of treatment or disposal (The Magazine Door Rule)
  - Damaged, leaking, or deteriorated munitions
  - Off-Range treatment or disposal of debris, UXO, or used/fired military munitions
  - FUDS
  - Disassembly operations
  - Military munitions that land off-range
- *Military Munitions* - all ammunition products and components produced or used by or for the U.S. DoD or the U.S. Armed Services for national defense and security, including military munitions under the control of the DoD, the Coast Guard, the DOE, and National Guard personnel. The term military munitions includes: confined gaseous, liquid, and solid propellants, explosives, pyrotechnics, chemical and riot control agents, smokes and incendiaries used by DoD components, including bulk explosives and chemical warfare agents, chemical munitions, rockets, guided and ballistic missiles, bombs, warheads, mortar rounds, artillery ammunition, small arms ammunition, grenades, mines, torpedoes, depth charges, cluster munitions and dispensers, demolition charges, and devices and components thereof. Military munitions do not include wholly inert items, improvised explosive devices, and nuclear weapons, nuclear devices, and nuclear components thereof. However, the term does include non-nuclear components of nuclear devices, managed under DOE's nuclear weapons program after all required sanitization operations under the Atomic Energy Act of 1954, as amended, have been completed (40 CFR 260.10).

## **When Military Munitions Are NOT a WMM**

### **Use as a Product**

Under RCRA, the use of products for their intended purpose, even when the use of the product results in deposit on the land, does not necessarily constitute “discard,” is not waste management, and is not subject to regulation under RCRA. (FR, 12 February 1997, page 6628, paragraph G(1))

### **Military Training Exercises**

Munitions used in the training of military personnel and explosive ordnance disposal (EOD) personnel are not regulated under RCRA. USEPA views such training, which could include training military personnel in the destruction of unused propellant and other munitions, to constitute the normal use of a product, rather than waste disposal. For example, to ensure that military personnel can safely and efficiently destroy propellant during wartime, military training exercises involving artillery and mortar rounds typically include training in the safe burning of unused propellant. In USEPA's view, the training of military personnel in the wartime use of munitions is a legitimate use that lies outside the scope of RCRA. Such training exercises typically follow detailed protocols for training military personnel in the handling and burning of unused propellants. (FR, 12 February 1997, page 6628, paragraph G(1)(a))

### **Range Clearance**

EPA considers range management to be a necessary part of the safe use of munitions for their intended purpose; thus, the range clearance activity is an intrinsic part of training or testing. Furthermore, from an environmental perspective, it makes no difference whether ordnance explodes on impact or is subsequently detonated by an EOD specialist. Therefore, the MMR excludes range clearance exercises (i.e., the recovery, collection, and on-range treatment or destruction of unexploded ordnance) at active or inactive ranges from RCRA Subtitle C regulation. (FR, 12 February 1997, page 6628, paragraph G(1)(c))

### **Unused Military Munitions**

Unused military munitions that are being repaired, reused, recycled, reclaimed, disassembled, reconfigured, or otherwise subjected to materials recovery activities are not solid waste. Therefore these activities are not subject to RCRA, unless such activities involve use constituting disposal, or burning for energy recovery. (FR, 12 February 1997, page 6629, paragraph G(2))

Unused military munitions, in USEPA's view, are unused “products” comparable to unused commercial products stored by manufacturers or their customers. Under RCRA, unused products do not become “waste” until they become “discarded material.” USEPA believes that an unused product becomes “discarded” when intent to discard the material is demonstrated. FR, 12 February 1997, page 6626, paragraph F(2)

### **Weapons Testing**

Munitions used in weapons research, development, testing, and evaluation programs are not regulated under RCRA. Testing munitions, or using munitions to test a weapon system, to determine their performance capabilities, clearly falls within the definition of use of a material/product for its intended purposes. USEPA also considers the removal of a used or fired munition from a testing or training firing range for further testing and evaluation to be within the definition of use of a material for its intended purpose (FR, 12 February 1997, page 6628, paragraph G(1)(b)).

## **When Military Munitions Are WMM**

### **Munitions Determined by an Authorized Military Official (AMO) To Be a Waste**

An AMO may identify an unused military munition as a RCRA “solid waste.” For example, in 1984, the Department of the Army determined that M55 rockets are hazardous waste. DoD made this decision because the rockets' delivery system no longer existed, and because DoD decided, for operational reasons, that the rockets would not be used in military operations, and that they would not be sold or reclaimed. These rockets are now being regulated as hazardous waste under RCRA interim status or permit requirements. USEPA expects that the declaration would be in writing. As explained earlier, a decision under DoD's classification systems that a munition is “unserviceable,” or the transfer of a munition into a “demilitarization” account would not, by itself, constitute a decision that a munition is a solid waste. (FR, 12 February 1997, page 6627, paragraph F(4))

### **Munitions Abandoned With Intent to Dispose**

An unused munition becomes discarded, and, therefore, a solid waste for regulatory purposes when it is or has been abandoned by being disposed of (e.g., buried or landfilled), burned or incinerated, or otherwise treated prior to disposal. Thus, open burning/open detonation or incineration of unused munitions (except when done during an emergency response or during training in use of a product) is regulated under the RCRA Subtitle C standards for hazardous waste, including the 40 CFR 270 permit requirements (assuming the waste munitions meet the definition of “hazardous waste”). FR, 12 February 1997, page 6626, paragraph F(1))

### **Abandoned and Subsequently Recovered Unused Munitions**

Similarly, unused munitions that were buried or landfilled in the past are considered abandoned, and, therefore, are solid waste, and, if hazardous, they would become subject to applicable Subtitle C regulation when unearthed and further managed. USEPA emphasizes that this provision will not bring use of military munitions for their intended purposes--e.g., the firing of military rounds--within the regulatory scope of RCRA. The use of a product for its intended purpose (in this case a military munition), in USEPA's view, is not a waste management activity and does not constitute abandonment or disposal. (FR, 12 February 1997, page 6626, paragraph F(1))

### **Munitions Removed From Storage for the Purposes of Treatment or Disposal (The Magazine Door Rule)**

A military munition becomes a solid waste for regulatory purposes when it is removed from storage in a military magazine or other storage area for the purposes of disposal, burning, incineration, or other treatment prior to disposal. (FR, 12 February 1997, page 6626, paragraph F(2))

The term “military magazine or other storage area” refers to all types of military munitions storage units allowed under the DoD Explosives Safety Board (DDESB) standards (DoD 6055.9-STD), which are mandatory for use by all DoD components, including outdoor or open storage areas, sheds, bunkers, and earth-covered and aboveground magazines. (FR, 12 February 1997, page 6626, paragraph F(2))

Unused military munitions, in USEPA's view, are unused “products” comparable to unused commercial products stored by manufacturers or their customers. Under RCRA, unused products do not become “waste” until they become “discarded material.” USEPA believes that an unused product becomes “discarded” when intent to discard the material is demonstrated. FR, 12 February 1997, page 6626, paragraph F(2))

DoD's classification of a munition in one of the various DoD "demilitarization" accounts does not, in USEPA's view, constitute a decision to discard the material because, pursuant to DoD's practices, such a classification does not necessarily evidence intent to discard that munition. Ammunition classified as "Condition Code H" or as "unserviceable," or in a demilitarization account (such as the Army's Resource Recovery and Disposition Account) for example, may be either returned to service after further review, or in some cases after reprocessing; sold for non-military purposes or to nations that maintain weapons that utilize these munitions; or otherwise reused, reclaimed, or recycled. Even usable munitions scheduled for disposal may be called back into service, if needed, and thus may still also serve a deterrent purpose.

In USEPA's view, the appropriate point at which to consider most unused military munitions to be a solid waste is when the material is finally removed from storage for the purpose of disposal or treatment prior to disposal. In practical terms, this provision means that storage of unused munitions is, for the most part, not subject to RCRA regulation; however, once a munition is removed from a magazine for the purpose of disposal or treatment prior to disposal, it is a solid waste and is potentially regulated under Subtitle C of RCRA. FR, 12 February 1997, page 6626, paragraph F(2)

EPA emphasizes that this provision will trigger RCRA coverage only where a decision to treat or dispose of the munition has clearly been made (FR, 12 February 1997, page 6626, paragraph F(2)).

Disarmament conventions and Congressional directives to demilitarize a weapons system should not be interpreted as a decision to discard a munition. In many cases, the provisions in the treaties or conventions do not equate to a decision to discard a specific munition in that they allow, for example, for implementation schedules, retaliatory use, and very specific verification procedures that do not equate to the process established under RCRA (FR, 12 February 1997, page 6633, paragraph K).

#### *Damaged, Leaking, or Deteriorated Munitions*

EPA recognizes that under certain circumstances military munitions in storage may deteriorate to a point where they are no longer "products" in any meaningful sense and indeed may present a potential safety hazard or environmental threat. For example, if the stabilizers in a propellant have deteriorated to the point at which there is such a significant hazard of auto-ignition that the only options available to DoD are treatment or disposal, that propellant would be a solid waste. If, however, the propellant had not deteriorated to this point and could reasonably be reclaimed, it would not be a solid waste. Similarly, leaking chemical munitions that cannot be put into serviceable condition, and that cannot be reasonably recycled or used for other purposes would also be a solid waste. A leaking chemical munition that has been overpacked is so unlikely to ever be used, repaired, or recycled, that USEPA views such a munition as a solid waste unless DoD already has in place an established repair or recycling plan (FR, 12 February 1997, page 6627, paragraph F(3)).

A leaking chemical munition or agent container (e.g., a one ton chemical container), however, may be repaired and the material still considered to be a product, not a solid waste (FR, 12 February 1997, page 6627, paragraph F(3)).

#### *Off-Range Treatment or Disposal of Debris, UXO, or Used/Fired Military Munitions*

Any debris or unexploded ordnance (UXO) shipped off-range for treatment or disposal is a solid waste, and if a hazardous waste, it would potentially be subject to the RCRA Subtitle C requirements. However, it would not be a solid waste if shipped off-range for further evaluation, unless the evaluation is related to treatment and disposal (FR, 12 February 1997, page 6628, paragraph G(1)(c)).

Used or fired munitions are solid wastes when they are removed from their landing spot and then either (1) managed off-range--i.e., when transported off-range and stored, reclaimed, treated, or disposed of, or (2) disposed of (i.e., buried or landfilled) on-range. In both cases, once the used or fired munition is a solid waste, it is potentially subject to regulation as a hazardous waste (FR, 12 February 1997, page 6632, paragraph I).

#### FUDS

Former defense installations no longer under military control (i.e., Formerly Used Defense Sites or FUDS) sometimes contain unexploded ordnance or munitions fragments. Used or fired munitions removed from their landing spot and transported off-range would have to be handled under RCRA Subtitle C (if they are "hazardous"), except in emergency situations. Similarly, used or fired munitions resulting from military research or training exercises at locations other than ranges (e.g., in testing laboratories) would be considered solid waste when removed from the site of use and sent to treatment or disposal (FR, 12 February 1997, page 6632, paragraph I).

#### Disassembly Operations

Once the materials recovery activities are completed, any remaining residuals requiring disposal or treatment prior to disposal are solid wastes that, if hazardous, would be subject to the subtitle C regulations (FR, 12 February 1997, page 6629, paragraph G(2)).

#### Military Munitions That Land Off-Range

Munitions that land off range that are not promptly rendered safe (if necessary) and/or retrieved, are statutory solid wastes and potentially subject to RCRA corrective action or section 7003 authorities. This perspective is based on the view that a failure to render safe and retrieve a munition that lands off range would be evidence of intent to discard the munition, just as the failure to respond to a spill of a hazardous material could be evidence of intent to discard. "Rendering safe" might include disarming action to prevent an explosion as well as destruction of the ordnance. If remedial action were infeasible--for example, the off-range munition wastes could not be removed because the munition was deeply buried, located in inaccessible terrain or could not be located--the operator of the range would be required to maintain a record of the event, including the type of munition that was fired off range and its location (if known), for as long as any threat remains (FR, 12 February 1997, page 6632, paragraph I).



**Appendix 6-4**

Appendix deleted

**Appendix 6-5**

**Appendix deleted**

**Appendix 6-6**

Appendix moved to Chapter 14

**Appendix 6-7**

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**Appendix 6-8**

Appendix moved to Chapter 14



## SECTION 7

### PESTICIDE MANAGEMENT U.S. TEAM Guide, December 2018

#### A. Applicability

This section applies to facilities which use, store, or handle pesticides. Pesticides are regulated on the Federal level and the state level.

It must be noted that pesticides by nature are hazardous materials and are subject to hazardous materials management regulations. Please see Section 3, Hazardous Materials Management. In this document, the term pesticides include herbicides, fungicides, insecticides, and rodenticides.

Assessors are required to review state and local regulations and, if applicable, the appropriate Agency Supplement, to perform a comprehensive assessment. Additionally, the requirements in the sections titled Hazardous Materials Management, Hazardous Waste Management, and Wastewater Management need to be assessed when reviewing pesticides

Select portions of this section (i.e., Review of Federal Legislation, State and Local Regulations, Key Compliance Requirements, Key Terms and Definitions, Typical Records to Review, Typical Physical Features to Inspect, and the Checklist) have been reviewed by USEPA personnel from the Office of Enforcement and Compliance Assurance (OECA) and USEPA's Office of General Counsel. USEPA's comments and suggestions for changes have been incorporated in this version of the TEAM Guide. USEPA did not review all portions of this section. USEPA also did not review and comment on items pertaining to federal Executive Orders, DOT regulations, OSHA regulations or any other area outside of Title 40 of the Code of Federal Regulations. Portions which have been added or revised as a result of this review are identified as either being reviewed, revised or added in September 2000, for example [**Added September 2000**].

#### B. Federal Legislation

- *The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)*. This act, as last amended in December 1991, 7 U.S. Code (USC) 136-136y, deals with the sale, distribution, and use of pesticides. FIFRA provides the USEPA with the authority to oversee, among other things, the registration, distribution, sale and use of pesticides. The Act applies to all types of pesticides, including insecticides, herbicides, fungicides, rodenticides, and antimicrobials [**Revised November 2001**].
- *The Endangered Species Act (ESA)* of 1973. The purpose of this act, (16 USC 1531-1547, et al, last amended in October, 1988), is to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species, and to take such steps as may be appropriate to achieve the purposes of the treaties and conventions for protection of endangered species (16 USC 1531(b)). Under ESA, the policy of Congress is that all Federal departments and agencies must seek to conserve endangered species and threatened species and must use their authorities in furtherance of the purposes of this act. Further, Federal agencies must cooperate with state and local agencies to resolve water resource issues in concert with conservation of endangered species (16 USC 1531(c)).
- EO 12088, *Federal Compliance with Pollution Standards*. This EO, dated 13 October 1978, requires Federally owned and operated facilities to comply with applicable Federal, state, and local pollution control standards. It makes the head of each executive agency responsible for ensuring that the agencies, facilities, programs, and activities the Agency funds meet applicable Federal, state, and local environmental requirements for correcting situations that are not in compliance with such requirements. In addition, the EO requires that each agency ensure

that sufficient funds for environmental compliance are included in the agency budget. Sections 1-4, "Pollution Control Plan" was revoked by EO 13148 [**Revised October 2002**].

### C. State/Local Requirements

For information on regulations in specific states, see the State Supplements to TEAM Guide.

State pesticide regulatory programs are required to be at least as stringent as FIFRA. State and local programs typically contain regulations which are tailored to an industry or activity which is prevalent or particularly sensitive in a state. State and local pesticide regulations in many cases provide more stringent standards or specifically identify a requirement which may be qualitatively regulated under the Federal program. State and local pesticide programs generally include regulations which address the following topics:

1. restrictions or requirements for the sale, distribution, or use of selected pesticides
2. disposal requirements for excess pesticides and pesticide wastes such as pesticide containers
3. restrictions on the control of specific animal or insect species
4. specifications for bulk pesticide storage tanks, storage facilities
5. operational requirements for selected application methods
6. recordkeeping and applicator certification requirements.

The precise applicability of state pesticide requirements to Federal personnel is currently under discussion. A helpful guide to state requirements for pesticide storage is the USEPA document, USEPA 734-R- 92-012, September 1992, *USEPA State of the States Report: Pesticide Storage, Disposal and Transportation*.

### D. Key Compliance Requirements

- Pesticide Application - The DoD is an USEPA approved Federal Certifying Agency under FIFRA. Therefore the DoD has an USEPA approved training and pesticide application certification plan, *DoD Plan for the Certification of Applicators of Restricted-Use Pesticides*, 1985, that allows the DoD, in the same manner as states, to specify more stringent training, handling, recordkeeping and other requirements than found in Federal regulations. Under this plan, DoD personnel can be trained and certified under the DoD plan are not required to have state certification. The DoD Plan does not apply to the civil works functions of the Army. But contractors used for pest management must have current state certification for the categories of applications being performed. [**Revised October 2002**].
- Experimental Use Permit - Any person accumulating information necessary to register a pesticide or reregister a pesticide for a use not previously approved is required to obtain an experimental use permit (EUP). Pesticides under EUPs cannot be sold or distributed except in limited circumstances. The application process for an experimental use permit requires the submission of extensive data and the data required is based on the pesticide and pesticide use under consideration. Once a permit is granted, the permittee is required to supervise and evaluate the results of testing, submit reports, and maintain extensive documentation (40 CFR Part 172) [**Added October 2001**].
- Pesticide Storage, Mixing, and Preparation Facilities - Pesticide storage, mixing, and preparation activities must provide facilities and procedures to ensure safety of personnel. Facilities should have a ventilation system for all indoor pesticide mixing/preparation areas and an emergency deluge shower and eyewash station located to provide immediate access to all personnel performing mixing. Personal protective clothing and equipment needs to be provided and used by pest management personnel (29 CFR 1910.133).
- Pesticide Labeling - Every pesticide product is required to have label that clearly identifies contents, source, ingredients, and directions for use (40 CFR 156.10(a)) [**Added January 1999**].
- Worker Protection Standards - When applying pesticides in a greenhouse, nursery, farm, or a forest, workers are required to abide by entry restrictions and personal protection equipment (PPE) requirements. Agricultural

employers are required to notify workers of pesticide applications and the hazards associated with those applications and provide safety training. Notification is done orally and through the posting of signs. Agricultural employers are also required to provide decontamination supplies to workers for washing off pesticides and pesticide residues. Pesticide handlers have to meet requirements similar to agricultural employers (40 CFR Part 170) [Added April 2000].

#### E. Key Compliance Definitions

- *Accident* - an unexpected, undesirable event, caused by the use or presence of a pesticide, that adversely affects man or the environment (40 CFR 171.2) [Added October 2001].
- *Active Ingredient* - this term means (FIFRA sec. 2(a) and see also 40 CFR 152.3) [Added October 2001]:
  1. in the case of a pesticide other than a plant regulator, defoliant, desiccant, or nitrogen stabilizer, an ingredient which will prevent, destroy, repel, or mitigate any pest;
  2. in the case of a plant regulator, an ingredient which, through physiological action, will accelerate or retard the rate of growth or rate of maturation or otherwise alter the behavior of ornamental or crop plants or the product thereof;
  3. in the case of a defoliant, an ingredient which will cause the leaves or foliage to drop from a plant;
  4. in the case of a desiccant, an ingredient which will artificially accelerate the drying of plant tissue; and
  5. in the case of a nitrogen stabilizer, an ingredient which will prevent or hinder the process of nitrification, denitrification, ammonia volatilization, or decrease production through action affecting soil bacteria.
- *Acute Dermal LD50* - a statistically derived estimate of the concentration of a substance that would cause 50 percent mortality to the test population under specified conditions (40 CFR 152.3) [Reviewed September 2000].
- *Acute Inhalation LC50* - statistically derived estimate of the concentration of a substance that would cause 50 percent mortality to the test population under specified conditions (40 CFR 152.3) [Added October 2001].
- *Acute Oral LD50* - statistically derived estimate of the single oral dose of a substance that would cause 50 percent mortality to the test population under specified conditions (40 CFR 152.3) [Added October 2001].
- *Agricultural Commodity* - any plant, or part thereof, or animal, or animal product, produced by a person (including farmers, ranchers, vineyardists, plant propagators, Christmas tree growers, aquaculturists, floriculturists, orchardists, foresters, or other comparable persons) primarily for sale, consumption, propagation, or other use by man or animals (40 CFR 171.2) [Added October 2001].
- *Agricultural Emergency* - a sudden occurrence or set of circumstances which the agricultural employer could not have anticipated and over which the agricultural employer has no control, and which requires entry into a treated area during a restricted-entry interval, when no alternative practices would prevent or mitigate a substantial economic loss (40 CFR 170.112(d)) [Added October 2001].
- *Agricultural Employer* - any person who is an owner of, or is responsible for the management or condition of, an agricultural establishment, and who employs any worker or handler (40 CFR 170.305) [Added October 2001, Revised October 2016].
- *Agricultural Establishment* - any farm, forest operation, or nursery engaged in the outdoor or enclosed space production of agricultural plants. An establishment that is not primarily agricultural is an agricultural establishment if it produces agricultural plants for transplant or use (in part or their entirety) in another location instead of purchasing the agricultural plants (40 CFR 170.305) [Added October 2001, Revised October 2016].
- *Agricultural Pesticide* - any pesticide product labeled for use in or on a farm, forest, nursery, or greenhouse (40 CFR 165.3) [Added January 2009].

- *Agricultural Plant* - any plant, or part thereof, grown, maintained, or otherwise produced for commercial purposes, including growing, maintaining or otherwise producing plants for sale or trade, for research or experimental purposes, or for use in part or their entirety in another location. Agricultural plant includes, but is not limited to, grains, fruits and vegetables; wood fiber or timber products; flowering and foliage plants and trees; seedlings and transplants; and turf grass produced for sod. Agricultural plant does not include pasture or rangeland used for grazing (40 CFR 170.305) [**Added October 2001, Revised October 2016**].
- *Application Exclusion Zone* - the area surrounding the application equipment that must be free of all persons other than appropriately trained and equipped handlers during pesticide applications (40 CFR 170.305) [**Added October 2016**].
- *Biological Control Agent* - any living organism applied to or introduced into the environment that is intended to function as a pesticide against another organism declared to be a pest by the USEPA or authorized regulatory agency (40 CFR 152.3) [**Added October 2001**].
- *Calibration of Equipment* - measurement of dispersal or output of application equipment and adjustment of such equipment to control the rate of dispersal, and droplet or particle size of a pesticide dispersed by the equipment (40 CFR 171.2) [**Added October 2001**].
- *Capacity* -, as applied to containers, the rated capacity of the container (40 CFR 165.3) [**Added January 2009**].
- *Categories of Commercial Applicators* - in relation to the certification of pesticide applicators, these include the following (40 CFR 171.3) [**Added October 2001**]:
  1. *Agricultural pest control--Plant*. This category includes commercial applicators using or supervising the use of restricted use pesticides in production of agricultural crops, including without limiting the foregoing, tobacco, peanuts, cotton, feed grains, soybeans and forage; vegetables; small fruits; tree fruits and nuts; as well as on grasslands and non-crop agricultural lands.
  2. *Agricultural pest control -- Animal*. This category includes commercial applicators using or supervising the use of restricted use pesticides on animals, including without limiting the foregoing, beef cattle, dairy cattle, swine, sheep, horses, goats, poultry, and livestock, and to places on or in which animals are confined. Doctors of Veterinary Medicine engaged in the business of applying pesticides for hire, publicly holding themselves out as pesticide applicators, or engaged in large-scale use of pesticides are included in this category.
  3. *Forest pest control*. This category includes commercial applicators using or supervising the use of restricted use pesticides in forests, forest nurseries, and forest seed producing areas.
  4. *Ornamental and turf pest control*. This category includes commercial applicators using or supervising the use of restricted use pesticides to control pests in the maintenance and production of ornamental trees, shrubs, flowers, and turf.
  5. *Seed treatment*. This category includes commercial applicators using or supervising the use of restricted use pesticides on seeds.
  6. *Aquatic pest control*. This category includes commercial applicators using or supervising the use of any restricted use pesticide purposefully applied to standing or running water, excluding applicators engaged in public health related activities included in category 8 below.
  7. *Right-of-way pest control*. This category includes commercial applicators using or supervising the use of restricted use pesticides in the maintenance of public roads, electric powerlines, pipelines, railway rights-of-way or other similar areas.
  8. *Industrial, institutional, structural and health related pest control*. This category includes commercial applicators using or supervising the use of restricted use pesticides in, on, or around food handling establishments, human dwellings, institutions, such as schools and hospitals, industrial establishments, including warehouses and grain elevators, and any other structures and adjacent areas, public or private; and for the protection of stored, processed, or manufactured products.
  9. *Public health pest control*. This category includes state, federal or other governmental employees using or supervising the use of restricted use pesticides in public health programs for the management and control of pests having medical and public health importance.

10. *Regulatory pest control*. This category includes state, federal or other governmental employees who use or supervise the use of restricted use pesticides in the control of regulated pests.
  11. *Demonstration and research pest control*. This category includes:
    - a. individuals who demonstrate to the public the proper use and techniques of application of restricted use pesticides or supervise such demonstration, and
    - b. persons conducting field research with pesticides, and in doing so, use or supervise the use of restricted use pesticides. Included in the first group are such persons as extension specialists and county agents, commercial representatives demonstrating pesticide products, and those individuals demonstrating methods used in public programs. The second group includes: state, federal, commercial and other persons conducting field research on or utilizing restricted use pesticides.
- *Certified Applicator* - any individual who is certified by the USEPA or the state to use or supervise the use of any restricted-use pesticide covered by that individual's certification (7 CFR 110.2).
  - *Chemigation* - the application of pesticides through irrigation systems (40 CFR 170.305) **[Added October 2016]**.
  - *Closed System* - an engineering control used to protect handlers from pesticide exposure hazards when mixing and loading pesticides (40 CFR 170.305) **[Added October 2016]**.
  - *Commercial Applicator* - a certified applicator, other than a private applicator, who uses or supervises the use of any pesticide, for any purpose, on any property, or performs other pest control related activities (40 CFR 171.2) **[Reviewed September 2000]**.
  - *Commercial Pesticide Handler Employer* - any person, other than an agricultural employer, who employs any handler to perform handler activities on an agricultural establishment. A labor contractor who does not provide pesticide application services or supervise the performance of handler activities, but merely employs laborers who perform handler activities at the direction of an agricultural or handler employer, is not a commercial pesticide handler employer (40 CFR 170.305) **[Added October 2016]**.
  - *Commercial Pesticide Handling Establishment* - any enterprise, other than an agricultural establishment, that provides pesticide handler or crop advising services to agricultural establishments (40 CFR 170.305) **[Added October 2016]**.
  - *Competent* - properly qualified to perform functions associated with pesticide application, the degree of capability required being directly related to the nature of the activity and the associated responsibility (40 CFR 171.2) **[Added October 2001]**.
  - *Common Exposure Route* - a likely way (oral, dermal, respiratory) by which a pesticide may reach and/or enter an organism (40 CFR 171.2) **[Added October 2001]**.
  - *Crisis Exemption* - this is utilized in an emergency condition when the time from discovery of the emergency to the time when the pesticide use needed is insufficient to allow for the authorization of a specific quarantine exemption or public health exemption (40 CFR 166.2) **[Reviewed September 2000]**.
  - *Crop Advisor* - any person who is assessing pest numbers, damage, pesticide distribution, or the status or requirements of agricultural plants (40 CFR 170.305) **[Added October 2016]**.
  - *Designated Representative* - any persons designated in writing by a worker or handler to exercise a right of access on behalf of the worker or handler to request and obtain a copy of the pesticide application and hazard information required by 30 CFR 170.309(h) in accordance with 40 CFR 170.311(b) (40 CFR 170.305) **[Added October 2016]**.
  - *Device* - any instrument or contrivance (other than a firearm) which is intended for trapping, destroying, repelling, or mitigating any pest or any other form of plant or animal life (other than man and other than bacteria, virus, or other microorganism on or in living man or other living animals); but not including equipment used for the

application of pesticides when sold separately therefrom (FIFRA sec. 2(h), and see also 40 CFR 167.3 and 40 CFR 169.1) **[Added October 2001]**.

- *Dietary LC50* – a statistically derived estimate of the concentration of a test substance in the diet that would cause 50 percent mortality to the test population under specified conditions (40 CFR 152.161) **[Added October 2001]**.
- *Dilutable* - that the pesticide product's labeling allows or requires the pesticide product to be mixed with a liquid diluent prior to application or use (40 CFR 165.3) **[Added January 2009]**.
- *Distribute(-d)(-tion) or Sell (Sold) (Sale)* - the acts of distributing, selling, offering for sale, holding for sale, shipping, holding for shipment, delivering for shipment, or receiving and (having so received) delivering or offering to deliver, or releasing for shipment to any person in any state (40 CFR 152.3) **[Added October 2001]**.
- *Dry Pesticide* - any pesticide that is in solid form and that has not been combined with liquids; this includes formulations such as dusts, wettable powders, dry flowables, water-soluble powders, granules, and dry baits (40 CFR 165.3) **[Added January 2009]**.
- *Early Entry* - entry by a worker into a treated area on the agricultural establishment after a pesticide application is complete, but before any restricted-entry interval for the pesticide has expired (40 CFR 170.305) **[Added October 2016]**.
- *Emergency Condition* - an urgent, non-routine situation that requires the use of a pesticide(s) and shall be deemed to exist when (40 CFR 166.3) **[Added October 2001]**:
  1. No effective pesticides are available under the Act that have labeled uses registered for control of the pest under the conditions of the emergency; and
  2. No economically or environmentally feasible alternative practices which provide adequate control are available;
  3. The situation:
    - a. Involves the introduction or dissemination of a pest new to or not theretofore known to be widely prevalent or distributed within or throughout the United States and its territories; or
    - b. Will present significant risks to human health; or
    - c. Will present significant risks to threatened or endangered species, beneficial organisms, or the environment; or
    - d. Will cause significant economic loss due to:
      - i. An outbreak or an expected outbreak of a pest; or
      - ii. A change in plant growth or development caused by unusual environmental conditions where such change can be rectified by the use of a pesticide(s).
- *Employ* - to obtain, directly or through a labor contractor, the services of a person in exchange for a salary or wages, including piece-rate wages, without regard to who may pay or who may receive the salary or wages. It includes obtaining the services of a self employed person, an independent contractor, or a person compensated by a third party, except that it does not include an agricultural employer obtaining the services of a handler through a commercial pesticide handler employer or a commercial pesticide handling establishment (40 CFR 170.305) **[Added October 2016]**.
- *Enclosed Cab* - a cab with a nonporous barrier that totally surrounds dermal contact with pesticides that are being applied outside of the cab (40 CFR 170.305) **[Added October 2016]**.
- *Enclosed Space Production* - production of an agricultural plant indoors or in a structure or space that is covered in whole or in part by any nonporous covering and that is large enough to permit a person to enter (40 CFR 170.305) **[Added October 2016]**.

- *Excepted Agricultural Applications for Handler Standards* - 40 CFR 170.202 through 170.260 does not apply when any pesticide is applied on an agricultural establishment in the following circumstances (40 CFR 170.203) **[Added April 2000]**:
  1. for mosquito abatement, Mediterranean fruit fly eradication, or similar wide-area public pest control programs sponsored by governmental entities
  2. on livestock or other animals, or in or about animal premises
  3. on plants grown for other than commercial or research purposes, which may include plants in habitations, home fruit and vegetable gardens, and home greenhouses
  4. on plants that are in ornamental gardens, parks, and public or private lawns and grounds that are intended only for aesthetic purposes or climatic modification
  5. in a manner not directly related to the production of agricultural plants, including, but not limited to, structural pest control, control of vegetation along rights-of-way and in other noncrop areas, and pasture and rangeland use
  6. for control of vertebrate pests
  7. as attractants or repellents in traps
  8. on the harvested portions of agricultural plants or on harvested timber; and
  9. for research uses of unregistered pesticides.
- *Excepted Agricultural Applications for Worker Standards* - 40 CFR 170.102 through 170.160 does not apply when any pesticide is applied on an agricultural establishment in the following circumstances (40 CFR 170.103) **[Added April 2000]**:
  1. for mosquito abatement, Mediterranean fruit fly eradication, or similar wide-area public pest control programs sponsored by governmental entities
  2. on livestock or other animals, or in or about animal premises
  3. on plants grown for other than commercial or research purposes, which may include plants in habitations, home fruit and vegetable gardens, and home greenhouses
  4. on plants that are in ornamental gardens, parks, and public or private lawns and grounds that are intended only for aesthetic purposes or climatic modification
  5. by injection directly into agricultural plants, except this does not include “hack and squirt,” “frill and spray,” “chemigation, soil-incorporation, or soil-injection
  6. in a manner not directly related to the production of agricultural plants, including, but not limited to, structural pest control, control of vegetation along rights-of-way and in other noncrop areas, and pasture and rangeland use
  7. for control of vertebrate pests
  8. as attractants or repellents in traps
  9. on the harvested portions of agricultural plants or on harvested timber; and
  10. for research uses of unregistered pesticides.
- *Exclusive Use Study* - a study that meets each of the following requirements (provided that, a study is an exclusive use study only during the 10-year period following the date of the first registration) (40 CFR 152.83) **[Added October 2001]**:
  1. The study pertains to a new active ingredient (new chemical) or new combination of active ingredients (new combination) first registered after September 30, 1978;
  2. The study was submitted in support of, or as a condition of approval of, the application resulting in the first registration of a product containing such new chemical or new combination (first registration), or an application to amend such registration to add a new use; and
  3. The study was not submitted to satisfy a data requirement imposed under FIFRA section 3(c)(2)(B).
- *Existing Containment Structure* – one whose installation began on or before 16 November 2006 (40 CFR 165.83(b)) **[Added October 2006]**.

- *Experimental Animals* - individual animals or groups of animals, regardless of species, intended for use and used solely for research purposes and does not include animals intended to be used for any food purposes (40 CFR 172.1) **[Added October 2001]**.
- *Experimental Use Permit Review* - review of an application for a permit pursuant to section 5 of FIFRA to apply a limited quantity of a pesticide in order to accumulate information necessary to register the pesticide. The application may be for a new chemical or for a new use of an old chemical. The fee applies to such experimental uses of a single unregistered active ingredient (no limit on the number of other active ingredients, in a tank mix, already registered for the crops involved) and no more than three crops. This fee does not apply to experimental use permits required for small-scale field testing of microbial pest control agents (40 CFR 152.403) **[Added October 2001]**.
- *Farm* - any operation, other than a nursery or forest, engaged in the outdoor production of agricultural plants (40 CFR 170.3) **[Added October 2001]**.
- *Forest* - any operation engaged in the outdoor production of any agricultural plant to produce wood fiber or timber products (40 CFR 170.3) **[Added October 2001]**.
- *Fumigant* - any pesticide product that is a vapor or gas, or forms a vapor or gas upon application, and whose pesticidal action is achieved through the gaseous or vapor state (40 CFR 170.305) **[Added October 2016]**.
- *Greenhouse* - any operation engaged in the production of agricultural plants inside any structure or space that is enclosed with nonporous covering and that is of sufficient size to permit worker entry. This term includes, but is not limited to, polyhouses, mushroom houses, rhubarb houses, and similar structures. It does not include such structures as malls, atriums, conservatories, arboretums, or office buildings where agricultural plants are present primarily for aesthetic or climatic modification (40 CFR 170.3) **[Added October 2001]**.
- *Hand Labor* - any agricultural activity performed by hand or with hand tools that causes a worker to have substantial contact with plants, plant parts, or soil and other surfaces that may contain pesticide residues, except that hand labor does not include operating, moving, or repairing irrigation or watering equipment or performing crop advisor tasks (40 CFR 170.305) **[Added October 2016]**.
- *Handler* - any person, including a self-employed person, who is employed by an agricultural employer or commercial pesticide handler employer and performs any of the following activities (40 CFR 170.305) **[Added October 2016]**:
  1. Mixing, loading, or applying pesticides.
  2. Disposing of pesticides.
  3. Handling opened containers of pesticides, emptying, triple-rinsing, or cleaning pesticide containers according to pesticide product labeling instructions, or disposing of pesticide containers that have not been cleaned. The term does not include any person who is only handling unopened pesticide containers or pesticide containers that have been emptied or cleaned according to pesticide product labeling instructions.
  4. Acting as a flagger.
  5. Cleaning, adjusting, handling, or repairing the parts of mixing, loading, or application equipment that may contain pesticide residues.
  6. Assisting with the application of pesticides.
  7. Entering an enclosed space after the application of a pesticide and before the inhalation exposure level listed in the labeling has been reached or one of the ventilation criteria established by 40 CFR 170.405(b)(3) or the labeling has been met to operate ventilation equipment, monitor air levels, or adjust or remove coverings used in fumigation.
  8. Entering a treated area outdoors after application of any soil fumigant during the labeling-specified entry restricted period to adjust or remove coverings used in fumigation.
  9. Performing tasks as a crop advisor during any pesticide application or restricted-entry interval, or before the inhalation exposure level listed in the pesticide product labeling has been reached or one of the ventilation criteria established by 40 CFR 170.405(b)(3) or the pesticide product labeling has been met.

- *Handler Employer* - any person who is self-employed as a handler or who employs any handler (40 CFR 170.305) **[Added October 2016]**.
- *Hazard* - a probability that a given pesticide will have an adverse effect on man or the environment in a given situation, the relative likelihood of danger or ill effect being dependent on a number of interrelated factors present at any given time (40 CFR 171.2) **[Added October 2001]**.
- *Host* - any plant or animal on or in which another lives for nourishment, development, or protection (40 CFR 171.2) **[Added October 2001]**.
- *Immediate Family* - limited to the spouse, parents, stepparents, foster parents, father-in-law, mother-in-law, children, stepchildren, foster children, sons-in-law, daughters-in-law, grandparents, grandchildren, brothers, sisters, brothers-in-law, sisters-in-law, aunts, uncles, nieces, nephews, and first cousins. "First cousin" means the child of a parent's sibling, i.e., the child of an aunt or uncle (40 CFR 170.305) **[Added October 2016]**.
- *Institutional Use* - any application of a pesticide in or around any property or facility that functions to provide a service to the general public or to public or private organizations, including but not limited to (40 CFR 152.3) **[Added October 2001]**:
  1. Hospitals and nursing homes.
  2. Schools other than preschools and day care facilities.
  3. Museums and libraries.
  4. Sports facilities.
  5. Office buildings.
- *Label* - the written, printed, or graphic matter on, or attached to, the pesticide or device or any of its containers or wrappers (FIFRA sec. 2(p)(1)) **[Added October 2001]**.
- *Labor Contractor* - a person, other than a commercial pesticide handler employer, who employs workers or handlers to perform tasks on an agricultural establishment for an agricultural employer or a commercial pesticide handler employer (40 CFR 170.305) **[Added October 2016]**.
- *Make Available for Use* - to distribute, sell, ship, deliver for shipment, or receive and (having so received) deliver, to any person. However, the term excludes transactions solely between persons who are pesticide producers, registrants, wholesalers, or retail sellers, acting only in those capacities (40 CFR 171.2) **[Added October 2001]**.
- *Management Practice (MP)* - practices that, although not mandated by law, are encouraged to promote safe operating procedures.
- *New Containment Structure* – a structure whose installation began after 16 November 2006. Installation is considered to have begun if (40 CFR 165.83(a)) **[Added October 2006]**:
  1. the owner or operator has obtained all Federal, State, and local approvals or permits necessary to begin physical construction of the containment structure; and
  2. either a continuous on-site physical construction or installation program has started OR contractual obligations have been entered into where the contract cannot be canceled or modified without substantial loss, and must be for the physical construction or installation of the containment structure within a specific and reasonable time frame.
- *Nonrefillable Container* - a container that is not a refillable container and that is designed and constructed for one-time use and is not intended to be filled again with a pesticide for sale or distribution. Reconditioned containers are considered to be nonrefillable containers (40 CFR 165.3) **[Added January 2009]**.

- *Nursery* - any operation engaged in the outdoor production of any agricultural plant to produce cut flowers and ferns or plants that will be used in their entirety in another location. Such plants include, but are not limited to, flowering and foliage plants or trees; tree seedlings; live Christmas trees; vegetable, fruit, and ornamental transplants; and turfgrass produced for sod (40 CFR 170.3) [**Added October 2001**].
- *Ornamental* - trees, shrubs, and other plantings in and around habitations generally, but not necessarily located in urban and suburban areas, including residences, parks, streets, retail outlets, industrial and institutional buildings (40 CFR 171.2) [**Added October 2001**].
- *Outdoor Production* - production of an agricultural plant in an outside area that is not enclosed or covered in any way that would obstruct the natural air flow (40 CFR 170.305) [**Added October 2016**].
- *Outdoor Use* - any pesticide application that occurs outside enclosed manmade structures or the consequences of which extend beyond enclosed manmade structures, including, but not limited to, pulp and paper mill water treatments and industrial cooling water treatments (40 CFR 152.161) [**Added October 2001**].
- *Owner* - any person who has a present possessory interest (e.g., fee, leasehold, rental, or other) in an agricultural establishment. A person who has both leased such agricultural establishment to another person and granted that same person the right and full authority to manage and govern the use of such agricultural establishment is not an owner for purposes of 40 CFR 170 (40 CFR 170.305) [**Added October 2016**].
- *Package or Packaging*- the immediate container or wrapping, including any attached closure(s), in which the pesticide is contained for distribution, sale, consumption, use, or storage. The term does not include any shipping or bulk container used for transporting or delivering the pesticide unless it is the only such package (40 CFR 152.3 and 40 CFR 157.21) [**Added October 2001**].
- *Personal Protective Equipment (PPE)* - devices and apparel that are worn to protect the body from contact with pesticides or pesticide residues, including, but not limited to, coveralls, chemical-resistant suits, chemical-resistant gloves, chemical-resistant footwear, respirators, chemical-resistant aprons, chemical-resistant headgear, and protective eyewear (40 CFR 170.305) [**Added October 2016**].
- *Pesticide* - any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest; any substance or mixture of substances intended for use as a plant regulator, defoliant, or desiccant; and any nitrogen stabilizer, except that the term “pesticide” shall not include any article that is a “new animal drug” within the meaning of section 201(w) of the Federal Food, Drug, and Cosmetic Act (21 USC 321(w)), that has been determined by the Secretary of Health and Human Services not to be a new animal drug by a regulation establishing conditions of use for the article, or that is an animal feed within the meaning of section 201(x) of such Act (21 USC 321(x)) bearing or containing a new animal drug. The term “pesticide” does not include liquid chemical sterilant products (including any sterilant or subordinate disinfectant claims on such products) for use on a critical or semi-critical device, as defined in section 201 of the Federal Food, Drug, and Cosmetic Act (21 USC 321). For purposes of the preceding sentence, the term “critical device” includes any device which is introduced directly into the human body, either into or in contact with the bloodstream or normally sterile areas of the body and the term “semi-critical device” includes any device which contacts intact mucous membranes but which does not ordinarily penetrate the blood barrier or otherwise enter normally sterile areas of the body (FIFRA sec. 2(u), and see also 40 CFR 152.3, 40 CFR 152.8, and 40 CFR 152.10) [**Added October 2001**].
- *Pesticide Compatible As Applied to Containment* - that the containment construction materials are able to withstand anticipated exposure to stored or transferred substances without losing the capability to provide the required containment of the same or other substances within the containment area (40 CFR 165.3) [**Added January 2009**].
- *Pesticide Product* - a pesticide in the particular form (including composition, packaging, and labeling) in which the pesticide is, or is intended to be, distributed or sold. This includes any physical apparatus used to deliver or apply the pesticide if distributed or sold with the pesticide (40 CFR 152.3) [**Reviewed September 2000**].

- *Private Applicator* - a certified applicator who uses or supervises the use of any restricted-use pesticide for purposes of producing any agricultural commodity (7 CFR 100.2).
- *Public Health Exemption* - this may be authorized in an emergency condition to control a pest that will cause a significant risk to human health (40 CFR 166.2) **[Reviewed September 2000]**.
- *Quarantine Exemption* - this may be authorized in an emergency condition to control the introduction or spread of any pest new to or not theretofore known to be widely prevalent or distributed within and throughout the United States and its territories (40 CFR 166.2) **[Reviewed September 2000]**.
- *Residential Use* - use of a pesticide directly (40 CFR 152.3) **[Added October 2001]**:
  1. On humans or pets,
  2. In, on, or around any structure, vehicle, article, surface, or area associated with the household, including but not limited to areas such as non-agricultural outbuildings, non-commercial greenhouses, pleasure boats and recreational vehicles, or
  3. In any preschool or day care facility.
- *Residential Use* - use of a pesticide or device (40 CFR 157.21) **[Added October 2001]**:
  1. Directly on humans or pets;
  2. In, on, or around any structure, vehicle, article, surface or area associated with the household, including but not limited to areas such as non-agricultural outbuildings, non-commercial greenhouses, pleasure boats and recreational vehicles; or
  3. In or around any preschool or day care facility.
- *Restricted-Entry Interval* - the time after the end of a pesticide application during which entry to the treated area is restricted (40 CFR 156.203) **[Added October 2001]**.
- *Restricted-entry Interval* – the time after the end of a pesticide application during which entry into the treated area is restricted (40 CFR 170.305) **[Added October 2016]**.
- *Restricted-Use Pesticides* - pesticides designated for restricted use under the provisions of Section 3(d)(1)(c) of FIFRA (40 CFR 171.2) **[Reviewed September 2000]**.
- *Rinsate* - the liquid resulting from the rinsing of the interior of any equipment or container that has come in direct contact with any pesticide (40 CFR 165.3) **[Added January 2009]**.
- *Specific Exemption* - this exemption may be authorized in an emergency condition to avert (40 CFR 166.2) **[Reviewed September 2000]**:
  1. a significant economic loss
  2. a significant risk to endangered species, threatened species, beneficial organisms, or the environment.
- *Stationary Pesticide Container* - a refillable container that is fixed at a single facility or establishment, or, if not fixed, remains at the facility or establishment for at least 30 consecutive days, and that holds pesticide during the entire time (40 CFR 165.81(a)) **[Added October 2006]**.
- *Suspension Concentrate* - a stable suspension of solid particulate active ingredients in a liquid intended for dilution with water before use (40 CFR 165.3) **[Added January 2009]**.
- *Toxicity Category* - required warnings and precautionary statements are based on the toxicity category of the pesticide. The category is assigned on the basis of the highest hazard shown in the table listed in 40 CFR 156.10 (40 CFR 156.10(h)) **[Reviewed September 2000]**.

- *Treated Area* - any area to which a pesticide is being directed or has been directed (40 CFR 170.305) [**Added October 2016**].
- *Uncertified Person* - any person who is not holding a currently valid certification document indicating that he is certified under section 4 of FIFRA in the category of the restricted use pesticide made available for use (40 CFR 171.2) [**Added October 2001**].
- *Under the Direct Supervision Of* - the act or process whereby the application of a pesticide is made by a competent person acting under the instructions and control of a certified applicator who is responsible for the actions of that person and who is available if and when needed, even though such certified applicator is not physically present at the time and place the pesticide is applied (40 CFR 171.2) [**Added October 2001**].
- *Use* - as in “to use a pesticide” means any of the following (40 CFR 170.305) [**Added October 2016**]:
  1. Pre-application activities, including, but not limited to:
    - a. Arranging for the application of the pesticide.
    - b. Mixing and loading the pesticide.
    - c. Making necessary preparations for the application of the pesticide, including responsibilities related to worker notification, training of workers or handlers, providing decontamination supplies, providing pesticide safety information and pesticide application and hazard information, use and care of personal protective equipment, providing emergency assistance, and heat stress management.
  2. Application of the pesticide.
  3. Post-application activities intended to reduce the risks of illness and injury resulting from handlers’ and workers’ occupational exposures to pesticide residues during and after the restricted-entry interval, including responsibilities related to worker notification, training of workers or early-entry workers, providing decontamination supplies, providing pesticide safety information and pesticide application and hazard information, use and care of PPE, providing emergency assistance, and heat stress management.
  4. Other pesticide-related activities, including, but not limited to, transporting or storing pesticides that have been opened, cleaning equipment, and disposing of excess pesticides, spray mix, equipment wash waters, pesticide containers, and other pesticide-containing materials.
- *Washwater* - the liquid resulting from the rinsing of the exterior of any equipment or containers that have or may have come in direct contact with any pesticide or system maintenance compound, such as oil or antifreeze (40 CFR 165.3) [**Added January 2009**].
- *Worker* - any person, including a self-employed person, who is employed and performs activities directly relating to the production of agricultural plants on an agricultural establishment (40 CFR 170.305) [**Added October 2016**].
- *Worker Housing Area* - any place or area of land on or near an agricultural establishment where housing or space for housing is provided for workers or handlers by an agricultural employer, owner, labor contractor, or any other person responsible for the recruitment or employment of agricultural workers (40 CFR 170.305) [**Added October 2016**].

## F. Records To Review

- Records of pesticides purchased (purchase orders, inventory)
- Pesticide application records
- Description of the pest control program
- Certification status of pesticide applicators
- Pesticide disposal manifests
- Contract files
- Any emergency exemption granted to the Federal agency by the USEPA
- Recent ventilation rating for pesticide fume hood and pesticide mixing/storage areas

## G. Physical Features To Inspect

- Personnel protection equipment
- Pesticide application equipment
- Pesticide storage areas, including storage containers

## H. Guidance for Pesticide Management Checklist Users

	<b>REFER TO CHECKLIST ITEMS:</b>
All Facilities	PM.1.1.US. through PM.1.8.US.
Missing, Risk Management, and Positive Checklist Items	PM.2.1.US through PM.2.3.US
Pesticide Applicators	PM.5.1.US. and PM.5.2.US
Pesticide Application	
General	PM.10.1.US. and PM.10.2.US.
Agricultural Pesticides	PM.20.1.US. through PM.20.43.US
Documentation	PM.40.1.US
Storage, Mixing, Handling	PM.45.1.US. through PM.45.9.US.
Disposal	PM.55.1.US.

Appendix 7-1, *Restricted-Use Pesticides*.

Appendix 7-1a, *Exempted Pesticides*.

Appendix 7-2, *General Standards for All Categories of Certified Commercial Applicators*

Appendix 7-3, *Specific Standards for Competency for Each Category of Certified Commercial Applicators*

Appendix 7-4, *Exceptions for Entry by Workers During Restricted Entry Intervals*

Appendix 7-5, *Entry Restrictions During Enclosed Space Production Pesticide Applications and Exemptions*

Appendix 7-6, *Exceptions to PPE Requirements Specified on Pesticide Product Labeling*



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<b>PM.1</b>  <b>ALL FACILITIES</b>  <b>PM.1.1.US.</b> The current status of any ongoing or unresolved consent orders, compliance agreements, notices of violation (NOVs), interagency agreements, or equivalent state enforcement actions is required to be examined (a finding under this checklist item will have the enforcement action/ identifying information as the citation).  <b>PM.1.2.US.</b> No person can distribute or sell any pesticide product that is not registered under FIFRA (40 CFR 152.15, 152.30, and 152.25) [ <b>Revised October 2001; Citation Revised July 2018</b> ].	<p>Determine if noncompliance issues have been resolved by reviewing a copy of the previous report, consent orders, compliance agreements, NOVs, interagency agreements, or equivalent state enforcement actions.</p> <p>Verify that no person distributes or sells any pesticide product that is not registered under FIFRA.</p> <p>(NOTE: A pesticide is any substance (or mixture of substances) intended for a pesticidal purpose, i.e., use for the purpose of preventing, destroying, repelling, or mitigating any pest or use as a plant regulator, defoliant, or desiccant. A substance is considered to be intended for a pesticidal purpose, and thus to be a pesticide requiring registration, if:</p> <ul style="list-style-type: none"> <li>– the person who distributes or sells the substance claims, states, or implies (by labeling or otherwise) one of the following:               <ul style="list-style-type: none"> <li>– that the substance (either by itself or in combination with any other substance) can or should be used as a pesticide</li> <li>– that the substance consists of or contains an active ingredient and that it can be used to manufacture a pesticide</li> </ul> </li> <li>– the substance consists of or contains one or more active ingredients and has no significant commercially valuable use as distributed or sold other than:               <ul style="list-style-type: none"> <li>– use for pesticidal purpose (by itself or in combination with any other substance)</li> <li>– use for manufacture of a pesticide</li> </ul> </li> <li>– the person who distributes or sells the substance has actual or constructive knowledge that the substance will be used, or is intended to be used, for a pesticidal purpose.)</li> </ul> <p>(NOTE: See Appendix 7-1a for exempted pesticides.)</p> <p>(NOTE: An unregistered pesticide, or a pesticide whose registration has been canceled or suspended, may be distributed or sold, or otherwise transferred as follows:</p>

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<p><b>PM.1.3.US.</b> Federal and state agencies are required to use pesticides in accordance with their labels unless an emergency exemption has been granted by the USEPA or a crisis exemption by the appropriate authority (40 CFR 166.1, 166.2, 166.20, 166.28, 166.32, 166.45, and 166.50)</p>	<ul style="list-style-type: none"> <li>– an unregistered pesticide may be transferred between registered establishments operated by the same producer when labeled in accordance with 40 CFR 156</li> <li>– an unregistered pesticide may be transferred between registered establishments not operated by the same producer if: <ul style="list-style-type: none"> <li>– the transfer is solely for the purpose of further formulation, packaging, or labeling into a product that is registered</li> <li>– each active ingredient in the pesticide, at the time of transfer, is present as a result of incorporation into the pesticide of either a registered product or a pesticide that is produced by the registrant of the final product</li> <li>– the product as transferred is labeled in accordance with 40 CFR 156</li> </ul> </li> <li>– an unregistered pesticide may be distributed or sold in accordance with the terms of an experimental use permit issued under FIFRA sec. 5, if the product is labeled in accordance with 40 CFR 172.6</li> <li>– an unregistered pesticide may be distributed or sold in accordance with the provisions pertaining to use of a pesticide for which an experimental use permit is not required, provided the product is labeled in accordance with 40 CFR 156</li> <li>– an unregistered pesticide may be transferred within the United States solely for export if it meets the following conditions: <ul style="list-style-type: none"> <li>– the product is prepared and packaged according to the specifications of the foreign purchaser</li> <li>– the product is labeled in accordance with 40 CFR 156</li> </ul> </li> <li>– an unregistered pesticide may be distributed or sold in accordance with the terms of an emergency exemption under FIFRA sec. 18, if the product is labeled in accordance with 40 CFR 156</li> <li>– an unregistered, suspended, or canceled pesticide may be transferred solely for disposal in accordance with FIFRA sec. 19, or an applicable order from the USEPA or authorized regulatory agency, if labeled in accordance with 40 CFR 156</li> <li>– a canceled or suspended pesticide may be distributed or sold to the extent and in the manner specified in an order issued by the USEPA or authorized regulatory agency concerning existing stocks of the pesticide.)</li> </ul> <p>Verify that pesticides are used in accordance with label instructions unless one or more of the following emergency conditions exist:</p> <ul style="list-style-type: none"> <li>– specific exemptions may be authorized to avoid conditions of: <ul style="list-style-type: none"> <li>– significant economic loss</li> <li>– significant risk to threatened or endangered species</li> <li>– significant risk to beneficial organisms</li> <li>– significant risk to the environment</li> </ul> </li> <li>– quarantine exemptions may be authorized to control the introduction or spread of any pest new to or unknown to be widespread throughout the United States and its territories</li> </ul>

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<p>[Revised May 1997; Revised October 2001].</p>	<ul style="list-style-type: none"> <li>– public health exemptions may be authorized to control a pest that imposes significant risk to human health</li> <li>– crisis exemptions may be utilized when the time constraint between discovery and implementation of pesticide use will not allow a specific, quarantine, or public health exemption to be issued.</li> </ul> <p>Verify that applications for exemptions are submitted to the regional administrator in writing and include:</p> <ul style="list-style-type: none"> <li>– identity of contact persons</li> <li>– a description of the pesticide</li> <li>– the proposed use</li> <li>– any alternative means of control and why those means are not feasible</li> <li>– effectiveness of proposed use</li> <li>– discussion of residues for food uses</li> <li>– discussion of risk information</li> <li>– coordination with other affected state or Federal agencies</li> <li>– notification of registrant or basic manufacturer</li> <li>– description of proposed enforcement program</li> <li>– repeated uses.</li> </ul> <p>Verify that exemptions are issued for a specific length of time, as follows:</p> <ul style="list-style-type: none"> <li>– no more than 1 yr for specific and public health exemptions</li> <li>– for no longer than 3 yr for a quarantine permit, but it may be renewed</li> <li>– no longer than 15 days (unless an application for another type of exemption has been submitted) for a crisis exemption.</li> </ul> <p>Verify that any unexpected adverse effects from the use of a pesticide under exemption conditions are reported to the USEPA.</p> <p>Verify that a report summarizing the use of a pesticide under an exemption was submitted within 6 mo after the expiration of the exemption to the agency (3 mo for a crisis exemption).</p> <p>Verify that interim reports are filed annually for quarantine exemptions.</p> <p>Verify that records are maintained for a minimum of 2 yr following the date of expiration of the exemption.</p> <p>Verify that any adverse effects resulting from the use of a pesticide under a crisis exemption are immediately reported to the Agency.</p>
<p><b>PM.1.4.US.</b> Every pesticide product is required to be labeled with specific</p>	<p>Verify that every pesticide product has a label that clearly shows the following:</p> <ul style="list-style-type: none"> <li>– the name, brand, or trademark under which the product is sold</li> </ul>

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<p>information (40 CFR 156.10(a)) [Added January 1999; Reviewed September 2000].</p> <p><b>PM.1.5.US.</b> An experimental use permit is required in certain situations (40 CFR 172.2 and 172.3) [Added October 2001].</p>	<ul style="list-style-type: none"> <li>– the name and address of the producer, registrant, or person for whom it was produced</li> <li>– the net contents</li> <li>– the product registration number</li> <li>– the producing establishment number</li> <li>– an ingredient statement</li> <li>– warning or precautionary statements</li> <li>– the directions for use.</li> </ul> <p>Verify that all words, statements, graphic representations, designs, or other information are clearly legible to a person with normal vision and are placed with such conspicuousness and expressed in terms such that it is likely to be read and understood by the ordinary individual under customary conditions of purchase and use.</p> <p>Verify that any person accumulating information necessary to register a pesticide not registered with USEPA or register a pesticide for a use not previously approved in the registration of the pesticide has an experimental use permit.</p> <p>Verify that pesticides under experimental use permits are not sold or distributed other than through participants and, if sold or distributed through participants, are used only at an application site of a cooperator and in accordance with the terms and conditions of the experimental use permit.</p> <p>(NOTE: It may be presumed that EUPs are not required when:</p> <ul style="list-style-type: none"> <li>– the experimental use of the pesticide is limited to: <ul style="list-style-type: none"> <li>– laboratory or greenhouse tests</li> <li>– limited replicated field trials to confirm such tests</li> <li>– other tests whose purpose is only to assess the pesticide's potential efficacy, toxicity, or other properties</li> </ul> </li> <li>– the producer, applicator, or any other person conducting the test does not expect to receive any benefit in pest control from the pesticide's use.)</li> </ul> <p>(NOTE: The following types of experimental tests are presumed not to need an EUP:</p> <ul style="list-style-type: none"> <li>– a small-scale test involving use of a particular pesticide conducted on a cumulative total of no more than 10 acres of land per pest, except that: <ul style="list-style-type: none"> <li>– when testing for more than one target pest occurs at the same time and in the same locality, the 10 acre limitation encompasses all of the target pests</li> <li>– any food or feed crops involved in, or affected by, such tests (including, but not limited to, crops subsequently grown on such land which may reasonably be expected to contain residues of the tested pesticides) are destroyed or consumed only by experimental animals unless an appropriate tolerance or exemption from a tolerance has been established under the FFDCA for residues of the pesticide</li> </ul> </li> </ul>

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<p><b>PM.1.6.US.</b> Applications for experimental use permits are required to meet specific parameters (40 CFR 172.4 and 172.9) [Added October 2001].</p>	<ul style="list-style-type: none"> <li>– a small-scale test involving the use of a particular pesticide conducted on a cumulative total of no more than 1 surface acre of water per pest, except that: <ul style="list-style-type: none"> <li>– when the testing for more than one target pest occurs at the same time and in the same locality, the 1 acre limitation encompasses all of the target pests</li> <li>– waters which are involved in or affected by such tests are not used for irrigation purposes, drinking water supplies, or body contact recreational activities</li> <li>– testing is not conducted in any waters which contain or affect fish, shellfish, plants, or animals taken for recreational or commercial purposes and used for food or feed, unless an appropriate tolerance or exemption from a tolerance has been established under the FFDCA for residues of the pesticide</li> </ul> </li> <li>– animal treatment tests involving the use of a particular pesticide are conducted only on experimental animals which are not used for food or feed, unless an appropriate tolerance or an exemption from a tolerance has been established for animal products and byproducts under the FFDCA for residues of the pesticide.)</li> </ul> <p>(NOTE: The examples of experimental tests that are presumed not to need a EUP are not all-inclusive and do not preclude testing in larger areas or larger numbers of units. Persons intending to conduct tests who are uncertain whether the testing may be conducted without a permit may submit a request for determination to the Registration Division (7505C), Office of Pesticide Programs, Environmental Protection Agency, Ariel Rios Bldg, 1200 Pennsylvania Ave, NW. Washington, DC 20460, Telephone: (703-305-5447). )</p> <p>(NOTE: No EUP is required for a substance or mixture of substances being put through tests for the sole purpose of gathering data required for approval of such substance or mixture under the FFDCA as:</p> <ul style="list-style-type: none"> <li>– a “new drug”</li> <li>– a “new animal drug”</li> <li>– an “animal feed” containing a “new animal drug”.)</li> </ul> <p>Verify that, an application or request for amendment to an existing EUP is submitted in triplicate to the Registration Division, Office of Pesticide Programs, Environmental Protection Agency, Washington, DC 20460, as far as possible in advance of the intended date of shipment or use.</p> <p>Verify that the application includes:</p> <ul style="list-style-type: none"> <li>– the name and address of the applicant</li> <li>– the registration number of the product, if registered</li> <li>– the purpose or objectives of the proposed testing; a description in detail of the proposed testing program including test parameters; a designation of the pest organism(s) involved; the amount of pesticide product proposed for use; the crops, fauna, flora, sites, modes, dosage rates, and situation of application on</li> </ul>

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	<p>or in which the pesticide is to be used; the states in which the proposed program will be conducted; the number of acres, number of structural sites, or number of animals by state to be treated or included in the area of experimental use; the proposed dates or period(s) during which the testing program is to be conducted; and the manner in which supervision of the program will be accomplished</p> <ul style="list-style-type: none"> <li>– the name, street address, telephone number, and qualifications of all participants in the program (whether or not in the employ of the applicant)</li> <li>– the name and street address of all cooperators, if available at the time an application is submitted, or as soon thereafter as available</li> <li>– a description and the specific results of any appropriate prior testing of the product conducted by the applicant to determine toxicity and effects in or on target organisms at the site of application; and to determine phytotoxicity and other forms of toxicity or effects on nontarget plants, animals, and insects at or near the site of application; and to determine adverse effects on the environment</li> <li>– the proposed method of storage and disposition of any unused experimental use pesticide and its containers</li> <li>– such other additional pertinent information as the USEPA or authorized regulatory agency may require.</li> </ul> <p>(NOTE: Testing intended to support a registration must be conducted in accordance with the Good Laboratory Practice Standards (40 CFR Part 160).)</p> <p>Verify that, if the experimental use pesticide is to be used in such a manner that any residue can reasonably be expected to result in or on food or feed, the applicant does one of the following:</p> <ul style="list-style-type: none"> <li>– submits evidence that a tolerance or exemption from the requirement of a tolerance has been established for residues of the pesticide in or on such food or feed under section 408 of the FFDCA, or a regulation promulgated under section 409 of the FFDCA</li> <li>– submits a petition proposing establishment of a tolerance or an exemption from the requirement of a tolerance under section 408, or a regulation under section 409, of the FFDCA</li> <li>– certifies that the food or feed derived from the experimental program will be destroyed or fed only to experimental animals for testing purposes, or otherwise disposed of in a manner which will not endanger man or the environment.</li> </ul> <p>Verify that, for unregistered pesticide products, the following is included:</p> <ul style="list-style-type: none"> <li>– a complete confidential statement of composition for the formulation to be tested giving the name and percentage by weight of each ingredient, active and inert</li> <li>– chemical and physical properties of each active ingredient of the formulation to be tested, including, but not limited to, the manufacturing or laboratory</li> </ul>

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<b>PM.1.7.US.</b> EUP programs are subject to surveillance and reporting requirements (40 CFR 172.8) [Added October 2001].	<p>processes and analytical methods suitable for determining the active ingredients in the formulation</p> <ul style="list-style-type: none"> <li>– appropriate date, if available, on the rate of decline of residues on the treated crop or environmental site or other information for determination regarding entry of persons into treated areas</li> <li>– results of toxicity tests and other data relevant to the product's potential for causing injury to the users or other persons who may be exposed, including any available epidemiological information as to man.</li> </ul> <p>Verify that a EUP is amended to add or change participants.</p> <p>Verify that applications for renewal are submitted before the current permit expires.</p> <p>Verify that the permittee supervises the test program and evaluates the results of testing at each site of application.</p> <p>Verify that the permittee immediately reports to the USEPA or authorized regulatory agency, or to any person designated by USEPA or authorized regulatory agency, any adverse effects from use of, or exposure to, the pesticide.</p> <p>Verify that a final report is submitted to the Registration Division within 180 days after the expiration of the permit, unless a request for extension of time is approved, and the report includes:</p> <ul style="list-style-type: none"> <li>– all data gathered during the testing program; field notes need not be submitted but must be maintained and submitted upon request</li> <li>– a description of the disposition of any pesticide containers and any unused pesticides including amounts disposed of and the method and site of disposition</li> <li>– the method of disposition of affected food and/or feed.</li> </ul> <p>(NOTE: The data gathered during the testing program may be submitted as part of an application for registration submitted within 180 days after the expiration of the permit, provided that the final report includes a statement that such application has been made, and the date of such application.)</p> <p>(NOTE: Testing intended to support a registration must be conducted in accordance with the Good Laboratory Practice Standards (40 CFR Part 160).)</p> <p>Verify that, in the case of any meat-producing animals or birds that receive a direct treatment or application of any experimental use pesticide, the name and location of the packing plant where the animals will be processed is sent to the U.S. Department of Agriculture, Animal and Plant Health Inspection Service, Washington, D.C. 20250, at least 10 days before the animals are to be shipped for slaughter.</p>

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<p><b>PM.1.8.US.</b> Any person who plans to conduct small-scale testing of a type of microbial pesticide must submit a Notification to USEPA and obtain prior approval (40 CFR 172.45 through 172.48) [Added October 2001].</p>	<p>(NOTE: This requirement may be waived, on request, by the USDA. These provisions do not exempt treated food-producing animals and their products from compliance with other applicable inspection requirements.)</p> <p>Verify that individuals who plan to conduct small-scale testing of a type of microbial pesticide submit a Notification to USEPA and obtain prior approval for either of the following tests:</p> <ul style="list-style-type: none"> <li>– small-scale tests that involve an intentional environmental introduction of that microbial pesticide</li> <li>– small-scale tests performed in a facility without adequate containment and inactivation controls.</li> </ul> <p>(NOTE: Instead of a Notification, individuals may submit an application for an experimental use permit (EUP) to USEPA for approval.)</p> <p>(NOTE: This requirement applies to either of the following microbial pesticides:</p> <ul style="list-style-type: none"> <li>– microbial pesticides whose pesticidal properties have been imparted or enhanced by the introduction of genetic material that has been deliberately modified</li> <li>– nonindigenous microbial pesticides that have not been acted upon by the USDA (i.e., either by issuing or denying a permit or determining that a permit is unnecessary; or a permit is not pending with the USDA).</li> </ul> <p>(NOTE: Microbial pesticides resulting from deletions or rearrangements within a single genome that are brought about by the introduction of genetic material that has been deliberately modified are exempt from the notification requirement.)</p> <p>(NOTE: Testing conducted in a facility with adequate containment and inactivation controls, as provided in 40 CFR 172.45(e), does not require a notification (40 CFR 172.45(d)(2).)</p> <p>(NOTE: Testing intended to support a registration must be conducted in accordance with the Good Laboratory Practice Standards (40 CFR Part 160).)</p> <p>Verify that the selection and use of containment and inactivation controls for a particular microbial pesticide takes the following into account:</p> <ul style="list-style-type: none"> <li>– factors relevant to the microbial pesticide's ability to survive in the environment</li> <li>– potential routes of release in air, solids, and liquids; in or on waste materials and equipment; in or on people (including maintenance and custodial personnel); and in or on other organisms such as insects and rodents</li> <li>– procedures for transfer of materials between facilities</li> <li>– plans for routine or emergency clean-up and test termination.</li> </ul>

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	<p>(NOTE: USEPA will presume that compliance with the containment provisions of the National Institutes of Health (NIH) "Guidelines for Research Involving Recombinant DNA Molecules" (51 FR 16958, May 7, 1986) constitutes selection and use of adequate containment and inactivation controls.)</p> <p>Verify that the selection of containment and inactivation controls is approved by an authorized official of the organization that is conducting the test prior to commencement of the test.</p> <p>Verify that records are developed and maintained describing the selection and use of the containment and inactivation controls, including contingency plans for emergency clean-up and test termination that will be used during the test.</p> <p>Verify that these records are available for inspection at the test facility.</p> <p>Verify that, records are submitted to USEPA at USEPA's request and within the time frame specified in USEPA's request.</p> <p>Verify that a notification is submitted for approval at least 90 days prior to the initiation of the proposed test.</p> <p>(NOTE: See 40 CFR 172.46 and 172.48 for details on the format and content of the Notification.)</p>



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<p><b>PM.2</b></p> <p><b>MISSING, RISK MANAGEMENT, AND POSITIVE CHECKLIST ITEMS</b></p> <p><b>PM.2.1.US.</b> Facilities are required to comply with all applicable Federal regulatory requirements not contained in this check list (a finding under this checklist item will have the citation of the applied regulation as a basis of finding).</p> <p><b>PM.2.2.US.</b> Risk management techniques should be promoted in environmental efforts (MP) [Added April 2002].</p> <p><b>PM.2.3.US.</b> Facilities should go above and beyond statutory and regulatory compliance (MP) [Added April 2002].</p>	<p>Determine if any new regulations have been issued since the finalization of TEAM.</p> <p>Determine if the facility has activities or facilities which are Federally regulated, but not addressed in this checklist.</p> <p>Verify that the facility is in compliance with all applicable and newly issued regulations.</p> <p>Determine if risk management techniques are promoted in environmental efforts.</p> <p>Determine if the facility has gone above and beyond simply complying with environmental requirements.</p>



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<b>PM.5</b>  <b>PESTICIDE APPLICATORS</b>  <b>PM.5.1.US.</b> Commercial or Private applicators of restricted-use pesticides must be certified to apply restricted-use pesticides (40 CFR 171.103 and 171.105) [Revised October 2001; Citation Revised July 2018].	<p>Determine if personnel apply restricted-use pesticides (see Appendix 7-1).</p> <p>Verify that commercial applicators of restricted-use pesticides have passed a written exam, and, as appropriate, performance testing.</p> <p>Verify that they are certified for both general use and each category (see definitions) or subcategory, if any, in which they are working.</p> <p>(NOTE: See Appendix 7-2 and Appendix 7-3 of this document for the general standards and category specific standards.)</p> <p>(NOTE: These commercial applicator standards do not apply to the following persons:</p> <ul style="list-style-type: none"> <li>– persons conducting laboratory type research involving restricted use pesticides</li> <li>– Doctors of Medicine and Doctors of Veterinary Medicine applying pesticides as drugs or medication during the course of their normal practice.)</li> </ul> <p>Verify that private applicators of restricted use pesticides are certified.</p> <p>Verify that a private applicator shows that he possesses a practical knowledge of the pest problems and pest control practices associated with his agricultural operations; proper storage, use, handling and disposal of the pesticides and containers; and his related legal responsibility.</p> <p>Verify that the practical knowledge includes the ability to:</p> <ul style="list-style-type: none"> <li>– recognize common pests to be controlled and damage caused by them</li> <li>– read and understand the label and labeling information--including the common name of pesticides he applied; pest(s) to be controlled, timing and methods of application; safety precautions; any pre-harvest or re-entry restrictions; and any specific disposal procedures</li> <li>– apply pesticides in accordance with label instructions and warnings, including the ability to prepare the proper concentration of pesticide to be used under particular circumstances taking into account such factors as area to be covered, speed at which application equipment will be driven, and the quantity dispersed in a given period of operation</li> <li>– recognize local environmental situations that must be considered during application to avoid contamination</li> <li>– recognize poisoning symptoms and procedures to follow in case of a pesticide accident.</li> </ul>

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<p><b>PM.5.2.US.</b> Supervision of noncertified applicators is required to be executed according to specific parameters (40 CFR 171.201) [Added October 2001; Citation Revised July 2018].</p>	<p>(NOTE: DoD personnel may be DoD certified or state certified. Contractor personnel are required to be state certified.)</p> <p>Verify that, when necessary, noncertified applicators are supervised by certified private or commercial applicators.</p> <p>(NOTE: The availability of the certified applicator is directly related to the hazard of the situation. In many situations, where the certified applicator is not required to be physically present, “direct supervision” shall include verifiable instruction to the competent person, as follows:</p> <ul style="list-style-type: none"> <li>– detailed guidance for applying the pesticide properly</li> <li>– provisions for contacting the certified applicator in the event he is needed.</li> </ul> <p>In other situations, and as required by the label, the actual physical presence of a certified applicator may be required when application is made by a noncertified applicator.)</p> <p>Verify that certified applicators whose activities indicate a supervisory role demonstrate a practical knowledge of federal and state supervisory requirements, including labeling, regarding the application of restricted use pesticides by noncertified applicators.</p>

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<b>PESTICIDE APPLICATION</b>  <b>PM.10 General</b>  <b>PM.10.1.US.</b> The use of pesticides must not jeopardize the existence of threatened or endangered species (50 CFR 402.01).  <b>PM.10.2.US.</b> Checklist item moved [Revised February 1995; Moved January 2005].	<p>Determine what measures are taken to ensure that threatened or endangered species are not impacted.</p> <p>Verify that applications are made according to label instructions regarding the protection of endangered species.</p> <p>(NOTE: Refer to the checklist items on endangered species in Natural Resources Management.)</p> <p>(NOTE: This checklist item was moved to PM.40.1.US in order to be consistent.)</p>



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<b>PESTICIDE APPLICATION</b>  <b>PM.20</b> <b>Agricultural Pesticides</b>  <b>PM.20.1.US.</b> Checklist item deleted [ <b>Deleted April 2000</b> ].  <b>PM.20.2.US.</b> Checklist item deleted [ <b>Deleted April 2000</b> ].  <b>PM.20.3.US.</b> Checklist item deleted [ <b>Added April 2000; Reviewed September 2000; Revised January 2016; Deleted October 2016</b> ].  <b>PM.20.4.US.</b> Checklist item deleted [ <b>Added April 2000; Reviewed September 2000; Revised January 2016; Deleted October 2016</b> ].  <b>PM.20.5.US.</b> Checklist item deleted [ <b>Added April 2000; Reviewed September 2000; Revised January 2016; Deleted October 2016</b> ].  <b>PM.20.6.US.</b> Checklist item deleted [ <b>Added April 2000; Reviewed September 2000; Revised January 2016; Deleted October 2016</b> ].  <b>PM.20.7.US.</b> Checklist item deleted [ <b>Added April 2000; Reviewed September 2000; Revised January 2016; Deleted October 2016</b> ].  <b>PM.20.8.US.</b> Checklist item deleted [ <b>Added April 2000; Reviewed September 2000; Revised October 2004</b> ].	<p>This checklist item was deleted in order to facilitate the expansion of this topic.</p> <p>This checklist item was deleted in order to facilitate the expansion of this topic.</p> <p>(NOTE: This checklist item about applying pesticides on a farm or in a forest expires on 2 January 2017 and is replaced by revised regulations issued under 40 CFR 170.301 through 170.317.)</p> <p>(NOTE: This checklist item about applying pesticides in a nursery expires on 2 January 2017 and is replaced by revised regulations issued under 40 CFR 170.301 through 170.317.)</p> <p>(NOTE: This checklist item about applying pesticides in a greenhouse expires on 2 January 2017 and is replaced by revised regulations issued under 40 CFR 170.301 through 170.317.)</p> <p>(NOTE: This checklist item about entry into treated areas expires on 2 January 2017 and is replaced by revised regulations issued under 40 CFR 170.301 through 170.317.)</p> <p>(NOTE: This checklist item about entering treated areas during a restricted entry interval expires on 2 January 2017 and will be replaced by revised regulations issued under 40 CFR 170.301 through 170.317.)</p> <p>(NOTE: This checklist item about entering treated areas during a restricted entry interval expires on 2 January 2017 and will be replaced by revised regulations issued under 40 CFR 170.301 through 170.317.)</p>

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<b>Revised January 2016;</b> <b>Deleted October 2016].</b>	
<b>PM.20.9.US.</b> Checklist item deleted [ <b>Added April 2000; Reviewed September 2000; Revised January 2016; Deleted October 2016].</b>	(NOTE: This checklist item about entering treated areas during a restricted entry interval expires on 2 January 2017 and will be replaced by revised regulations issued under 40 CFR 170.301 through 170.317.)
<b>PM.20.10.US.</b> Checklist item deleted [ <b>Added April 2000; Reviewed September 2000; Revised January 2016; Deleted October 2016].</b>	(NOTE: This checklist item about entering treated areas during a restricted entry interval expires on 2 January 2017 and will be replaced by revised regulations issued under 40 CFR 170.301 through 170.317.)
<b>PM.20.11.US.</b> Checklist item deleted [ <b>Added April 2000; Reviewed September 2000; Revised January 2016; Deleted October 2016].</b>	(NOTE: This checklist item about providing a decontamination site expires on 2 January 2017 and will be replaced by revised regulations issued under 40 CFR 170.301 through 170.317.)
<b>PM.20.12.US.</b> Checklist item deleted [ <b>Added April 2000; Reviewed September 2000; Revised January 2016; Deleted October 2016].</b>	(NOTE: This checklist item contaminated PPE expires on 2 January 2017 and is replaced by revised regulations issued under 40 CFR 170.301 through 170.317.)
<b>PM.20.13.US.</b> Checklist item deleted [ <b>Added April 2000; Reviewed September 2000; Revised January 2016; Deleted October 2016].</b>	(NOTE: This checklist item about agricultural emergencies expires on 2 January 2017 and is replaced by revised regulations issued under 40 CFR 170.301 through 170.317.)
<b>PM.20.14.US.</b> Checklist item deleted [ <b>Added April 2000; Reviewed September 2000; Revised January 2016; Deleted October 2016].</b>	(NOTE: This checklist item about notifying greenhouse workers expires on 2 January 2017 and is replaced by revised regulations issued under 40 CFR 170.301 through 170.317.
<b>PM.20.15.US.</b> Checklist item deleted [ <b>Added April 2000; Reviewed September 2000; Revised January 2016; Deleted October 2016].</b>	(NOTE: This checklist item about notifying workers on farms, in forest, or in nurseries expires on 2 January 2017 and is replaced by revised regulations issued under 40 CFR 170.301 through 170.317.)
<b>PM.20.16.US.</b> Checklist item deleted [ <b>Added April 2000; Reviewed September 2000;</b>	(NOTE: This checklist item about required information display expires on 2 January 2017 and is replaced by revised regulations issued under 40 CFR 170.301 through 170.317.)

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<b>Revised January 2016;</b> <b>Deleted October 2016].</b>  <b>PM.20.17.US.</b> Checklist item deleted [ <b>Added April 2000;</b> <b>Reviewed September 2000;</b> <b>Revised January 2016;</b> <b>Deleted October 2016].</b>  <b>PM.20.18.US.</b> Checklist item deleted [ <b>Added April 2000;</b> <b>Reviewed September 2000;</b> <b>Revised January 2016;</b> <b>Deleted October 2016].</b>  <b>PM.20.19.US.</b> Checklist item deleted [ <b>Added April 2000;</b> <b>Reviewed September 2000;</b> <b>Citation Revised July 2007;</b> <b>Revised January 2016;</b> <b>Deleted October 2016].</b>  <b>PM.20.20.US.</b> Checklist item deleted [ <b>Added April 2000;</b> <b>Reviewed September 2000;</b> <b>Revised January 2016;</b> <b>Deleted October 2016].</b>  <b>PM.20.21.US.</b> Checklist item deleted [ <b>Added April 2000;</b> <b>Reviewed September 2000;</b> <b>Revised January 2016;</b> <b>Deleted October 2016].</b>  <b>PM.20.22.US.</b> Checklist item deleted [ <b>Added April 2000;</b> <b>Reviewed September 2000;</b> <b>Revised January 2016;</b> <b>Deleted October 2016].</b>  <b>PM.20.23.US.</b> Checklist item deleted [ <b>Added April 2000;</b> <b>Reviewed September 2000;</b> <b>Revised January 2016;</b> <b>Deleted October 2016].</b>	   (NOTE: This checklist item about information provision expires on 2 January 2017 and is replaced by revised regulations issued under 40 CFR 170.301 through 170.317.)   (NOTE: This checklist item about safety training expires on 2 January 2017 and is replaced by revised regulations issued under 40 CFR 170.301 through 170.317.   (NOTE: This checklist item about the contents of safety training expires on 2 January 2017 and will be replaced by revised regulations issued under 40 CFR 170.301 through 170.317.   (NOTE: This checklist item about posting safety information expires on 2 January 2017 and will be replaced by revised regulations issued under 40 CFR 170.301 through 170.317.)   (NOTE: This checklist item about decontamination supplies expires on 2 January 2017 and is replaced by revised regulations issued under 40 CFR 170.301 through 170.317.)   (NOTE: This checklist item about providing assistance to injured workers expires on 2 January 2017 and is replaced by revised regulations issued under 40 CFR 170.301 through 170.317.)   (NOTE: This checklist item about precautions by handlers expires on 2 January 2017 and is replaced by revised regulations issued under 40 CFR 170.301 through 170.317.)

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<b>PM.20.24.US.</b> Checklist item deleted [Added April 2000; Reviewed September 2000; Revised January 2016; Deleted October 2016].	(NOTE: This checklist item handlers being provided information expires on 2 January 2017 and will be replaced by revised regulations issued under 40 CFR 170.301 through 170.317.)
<b>PM.20.25.US.</b> Checklist item deleted [Added April 2000; Reviewed September 2000; Revised January 2016; Deleted October 2016].	(NOTE: This checklist item about handlers providing information to agricultural employees expires on 2 January 2017 and is replaced by revised regulations issued under 40 CFR 170.301 through 170.317.)
<b>PM.20.26.US.</b> Checklist item deleted [Added April 2000; Reviewed September 2000; Deleted October 2016].	(NOTE: This checklist item about safety training expires on 2 January 2017 and is replaced by revised regulations issued under 40 CFR 170.301 through 170.317.)
<b>PM.20.27.US.</b> Checklist item deleted [Added April 2000; Reviewed September 2000; Revised January 2016; Deleted October 2016].	(NOTE: This checklist item about ensuring the label has been read expires on 2 January 2017 and is replaced by revised regulations issued under 40 CFR 170.301 through 170.317.)
<b>PM.20.28.US.</b> Checklist item deleted [Added April 2000; Reviewed September 2000; Revised January 2016; Deleted October 2016].	(NOTE: This checklist item about instruction in equipment operation expires on 2 January 2017 and is replaced by revised regulations issued under 40 CFR 170.301 through 170.317.)
<b>PM.20.29.US.</b> Checklist item deleted [Added April 2000; Reviewed September 2000; Revised January 2016; Deleted October 2016].	(NOTE: This checklist item about information displays expires on 2 January 2017 and is replaced by revised regulations issued under 40 CFR 170.301 through 170.317.)
<b>PM.20.30.US.</b> Checklist item deleted [Added April 2000; Reviewed September 2000; Revised October 2004; Revised January 2016; Deleted October 2016].	(NOTE: This checklist item about clothing and PPE expires on 2 January 2017 and is replaced by revised regulations issued under 40 CFR 170.301 through 170.317.)
<b>PM.20.31.US.</b> Checklist item deleted [Added April 2000; Reviewed September 2000;	(NOTE: This checklist item about decontamination supplies expires on 2 January 2017 and is replaced by revised regulations issued under 40 CFR 170.301 through 170.317.)

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<p><b>Revised January 2016; Deleted October 2016].</b></p> <p><b>PM.20.32.US.</b> Checklist item deleted [Added April 2000; Reviewed September 2000; Revised January 2016; Deleted October 2016].</p> <p><b>PM.20.33.US.</b> Agricultural employers must fulfill specific duties (40 CFR 170.2(a). 170.303, 170.309, 170.601(a)(1)(i), and 170.601(a)(1)(ii)) [Added October 2016].</p>	<p>(NOTE: This checklist item about providing emergency assistance expires on 2 January 2017 and is replaced by revised regulations issued under 40 CFR 170.301 through 170.317.)</p> <p>(NOTE: This checklist item applies beginning 2 January 2017 to any pesticide product that bears the statement “Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170” when the product is used in the production of agricultural plants on an agricultural establishment.)</p> <p>(NOTE: This checklist does not apply when any pesticide product that bears the statement “Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170” when the product is used on an agricultural establishment in any of the following circumstances:</p> <ul style="list-style-type: none"> <li>– as part of government-sponsored public pest control programs over which the owner, agricultural employer and handler employer have no control, such as mosquito abatement and Mediterranean fruit fly eradication programs</li> <li>– on plants other than agricultural plants, which may include plants in home fruit and vegetable gardens and home greenhouses, and permanent plantings for ornamental purposes, such as plants that are in ornamental gardens, parks, public or private landscaping, lawns or other grounds that are intended only for aesthetic purposes or climatic modification</li> <li>– for control of vertebrate pests, unless directly related to the production of an agricultural plant</li> <li>– as attractants or repellents in traps</li> <li>– on the harvested portions of agricultural plants or on harvested timber</li> <li>– for research uses of unregistered pesticides</li> <li>– on pasture and rangeland where the forage will not be harvested for hay</li> <li>– in a manner not directly related to the production of agricultural plants, including, but not limited to structural pest control and control of vegetation in non-crop areas.)</li> </ul> <p>Verify that agricultural employers ensure that any pesticide is used in a manner consistent with the pesticide product labeling, including the requirements of 40 CFR 170, when applied on the agricultural establishment.</p> <p>Verify that agricultural employers ensure that each worker and handler subject to 40 CFR 170 receives the protections required 40 CFR 170.</p> <p>Verify that agricultural employers ensure that any handler and any early entry worker is at least 18 yr old.</p>

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	<p>(NOTE: At any agricultural establishment where the majority of the establishment is owned by one or more members of the same immediate family, the requirement to ensure any handler or any early entry worker is at least 18 yr old does not apply to themselves or members of their immediate family when they are performing handling activities or tasks related to the production of agricultural plants on their own agricultural establishment.)</p> <p>Verify that agricultural employers provide to each person, including labor contractors, who supervises any workers or handlers information and directions sufficient to ensure that each worker and handler receives the protections required by 40 CFR 170.</p> <p>Verify that the information and directions specify the tasks for which the supervisor is responsible.</p> <p>Verify that agricultural employers require each person, including labor contractors, who supervises any workers or handlers to provide sufficient information and directions to each worker and handler to ensure that they can comply with the provisions of 40 CFR 170.</p> <p>Verify that agricultural employers promptly provides the following emergency assistance if there is reason to believe that a worker or handler has experienced a potential pesticide exposure during his or her employment on the agricultural establishment or shows symptoms similar to those associated with acute exposure to pesticides during or within 72 h after his or her employment on the agricultural establishment, and needs emergency medical treatment:</p> <ul style="list-style-type: none"> <li>– transportation from the agricultural establishment, including any worker housing area on the establishment, to an operating medical care facility capable of providing emergency medical treatment to a person exposed to pesticides</li> <li>– all of the following information to the treating medical personnel: <ul style="list-style-type: none"> <li>– copies of the applicable safety data sheet(s) (SDSs) and the product name(s), EPA registration number(s) and active ingredient(s) for each pesticide product to which the person may have been exposed</li> <li>– the circumstances of application or use of the pesticide on the agricultural establishment</li> <li>– the circumstances that could have resulted in exposure to the pesticide.</li> </ul> </li> </ul> <p>(NOTE: The requirement to provide emergency assistance as detailed in this checklist item does not apply at any agricultural establishment where the majority of the establishment is owned by one or more members of the same immediate family, and the worker or handler is the owner or members of their immediate family when they are performing handling activities or tasks related to the production of agricultural plants on their own agricultural establishment.)</p> <p>Verify that agricultural employers ensure that workers or other persons employed by the agricultural establishment do not clean, repair, or adjust pesticide application</p>

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	<p>equipment, unless trained as a handler under 40 CFR 170.501 [see checklist item PM.20.42.US].</p> <p>Verify that, before allowing any person not directly employed by the agricultural establishment to clean, repair, or adjust equipment that has been used to mix, load, transfer, or apply pesticides, the agricultural employer provides all of the following information to the person:</p> <ul style="list-style-type: none"> <li>– pesticide application equipment may be contaminated with pesticides</li> <li>– the potentially harmful effects of exposure to pesticides</li> <li>– procedures for handling pesticide application equipment and for limiting exposure to pesticide residues</li> <li>– personal hygiene practices and decontamination procedures for preventing pesticide exposures and removing pesticide residues.</li> </ul> <p>(NOTE: The requirement to ensure personnel cleaning, repairing, or adjusting equipment are trained as handlers as detailed in this checklist item does not apply at any agricultural establishment where the majority of the establishment is owned by one or more members of the same immediate family, and the worker or handler is the owner or members of their immediate family when they are performing handling activities or tasks related to the production of agricultural plants on their own agricultural establishment.)</p> <p>Verify that agricultural employers display, maintain, and provide access to pesticide safety information and pesticide application and hazard information in accordance with 40 CFR 170.311 [see checklist item PM.20.34.US] if workers or handlers are on the establishment and within the last 30 days a pesticide product has been used or a restricted-entry interval for a pesticide has been in effect on the establishment.</p> <p>Verify that agricultural employers ensure that before a handler uses any equipment for mixing, loading, transferring, or applying pesticides, the handler is instructed in the safe operation of the equipment.</p> <p>Verify that agricultural employers ensure that before each day of use, equipment used for mixing, loading, transferring, or applying pesticides is inspected for leaks, clogging, and worn or damaged parts, and any damaged equipment is repaired or replaced.</p> <p>(NOTE: The requirements for displaying safety information, equipment operation instruction, and equipment inspection as detailed in this checklist item do not apply at any agricultural establishment where the majority of the establishment is owned by one or more members of the same immediate family, and the worker or handler is the owner or members of their immediate family when they are performing handling activities or tasks related to the production of agricultural plants on their own agricultural establishment.)</p>

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<p><b>PM.20.34.US.</b> Specific signs, warnings, and information must be displayed in relation to the application of agricultural pesticides (40 CFR 170.2(a), 170.303, 170.311, and 170.601(a)(1)(iii)) <b>[Added October 2016].</b></p>	<p>Verify that agricultural employers ensure that whenever handlers employed by a commercial pesticide handling establishment are on an agricultural establishment, the handler employer is provided information about, or is aware of, the specific location and description of any treated areas on the agricultural establishment where a restricted-entry interval is in effect that the handler may be in (or may walk within 1/4 mile of), and any restrictions on entering those areas.</p> <p>Verify that agricultural employers ensure that workers do not enter any area on the agricultural establishment where a pesticide has been applied until the applicable pesticide application and hazard information for each pesticide product applied to that area is displayed in accordance with 40 CFR 170.311(b) [see checklist item PM.20.34.US], and until after the restricted-entry interval has expired and all treated area warning signs have been removed or covered, except for entry permitted by 40 CFR 170.603 [see Appendix 7-4].</p> <p>Verify that agricultural employers provide any records or other information required by 40 CFR 170 for inspection and copying upon request by an employee of EPA or any duly authorized representative of a Federal, State or Tribal government agency responsible for pesticide enforcement.</p> <p>(NOTE: If a pesticide product's labeling-specific directions for use or other labeling requirements are inconsistent with requirements of this checklist item, users must comply with the pesticide product labeling, except as provided for in 40 CFR 170.601 (e.g., owners of agricultural establishments and their immediate families), 170.603 (entry exceptions for workers) and 170.607 (exceptions for label-required PPE).)</p> <p>(NOTE: This checklist item applies beginning 2 January 2017 to any pesticide product that bears the statement "Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170" when the product is used in the production of agricultural plants on an agricultural establishment.)</p> <p>(NOTE: This checklist does not apply when any pesticide product that bears the statement "Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170" when the product is used on an agricultural establishment in any of the following circumstances:</p> <ul style="list-style-type: none"> <li>– as part of government-sponsored public pest control programs over which the owner, agricultural employer and handler employer have no control, such as mosquito abatement and Mediterranean fruit fly eradication programs</li> <li>– on plants other than agricultural plants, which may include plants in home fruit and vegetable gardens and home greenhouses, and permanent plantings for ornamental purposes, such as plants that are in ornamental gardens, parks, public or private landscaping, lawns or other grounds that are intended only for aesthetic purposes or climatic modification</li> </ul>

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	<ul style="list-style-type: none"> <li>– for control of vertebrate pests, unless directly related to the production of an agricultural plant</li> <li>– as attractants or repellents in traps</li> <li>– on the harvested portions of agricultural plants or on harvested timber</li> <li>– for research uses of unregistered pesticides</li> <li>– on pasture and rangeland where the forage will not be harvested for hay</li> <li>– in a manner not directly related to the production of agricultural plants, including, but not limited to structural pest control and control of vegetation in non-crop areas.)</li> </ul> <p>(NOTE: This checklist item does not apply at any agricultural establishment where the majority of the establishment is owned by one or more members of the same immediate family, and the worker or handler is the owner or members of their immediate family when they are performing handling activities or tasks related to the production of agricultural plants on their own agricultural establishment.)</p> <p>Verify that pesticide safety information and pesticide application and hazard information are displayed if workers or handlers are on the establishment and within the last 30 days a pesticide product has been used or a restricted-entry interval for a pesticide has been in effect on the establishment.</p> <p>Verify that the pesticide safety information is conveyed in a manner that workers and handlers can understand.</p> <p>Verify that, prior to 1 January 2018, the safety information includes all of the following points:</p> <ul style="list-style-type: none"> <li>– help keep pesticides from entering your body. Avoid getting on your skin or into your body any pesticides that may be on plants and soil, in irrigation water, or drifting from nearby applications</li> <li>– wash before eating, drinking, using chewing gum or tobacco, or using the toilet</li> <li>– wear work clothing that protects the body from pesticide residues (long-sleeved shirts, long pants, shoes and socks, and a hat or scarf)</li> <li>– wash or shower with soap and water, shampoo hair, and put on clean clothes after work</li> <li>– wash work clothes separately from other clothes before wearing them again</li> <li>– wash immediately in the nearest clean water if pesticides are spilled or sprayed on the body; as soon as possible, shower, shampoo, and change into clean clothes</li> <li>– follow directions about keeping out of treated or restricted areas</li> <li>– the name, address, and telephone number of a nearby operating medical care facility capable of providing emergency medical treatment which is clearly identified as emergency medical contact information on the display</li> <li>– there are Federal rules to protect workers and handlers, including a requirement for safety training.</li> </ul> <p>Verify that, after 1 January 2018 the pesticide safety information includes all of</p>

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	<p>the following points:</p> <ul style="list-style-type: none"> <li>– avoid getting on the skin or into the body any pesticides that may be on or in plants, soil, irrigation water, tractors, and other equipment, on used PPE, or drifting from nearby applications</li> <li>– wash before eating, drinking, using chewing gum or tobacco, or using the toilet</li> <li>– wear work clothing that protects the body from pesticide residues (long-sleeved shirts, long pants, shoes and socks, and a hat or scarf)</li> <li>– wash or shower with soap and water, shampoo hair, and put on clean clothes after work</li> <li>– wash work clothes separately from other clothes before wearing them again</li> <li>– if pesticides are spilled or sprayed on the body use decontamination supplies to wash immediately, or rinse off in the nearest clean water, including springs, streams, lakes or other sources if more readily available than decontamination supplies, and as soon as possible, wash or shower with soap and water, shampoo hair, and change into clean clothes</li> <li>– follow directions about keeping out of treated areas and application exclusion zones.</li> <li>– instructions to employees to seek medical attention as soon as possible if they believe they have been poisoned, injured or made ill by pesticides</li> <li>– the name, address, and telephone number of a nearby operating medical care facility capable of providing emergency medical treatment; clearly identified as emergency medical contact information on the display</li> <li>– the name, address and telephone number of the State or Tribal pesticide regulatory agency.</li> </ul> <p>Verify that the agricultural employer updates the pesticide safety information display within 24 h of notice of any changes to the required information.</p> <p>Verify that the pesticide safety information and pesticide application and hazard information is displayed at a location on the agricultural establishment where workers and handlers are likely to pass by or congregate and where it can be readily seen and read.</p> <p>Verify that the pesticide safety information is displayed anywhere that decontamination supplies must be provided on the agricultural establishment, but only when the decontamination supplies are located at permanent sites or being provided at locations and in quantities to meet the requirements for 11 or more workers or handlers.</p> <p>Verify that, when pesticide safety information and pesticide application and hazard information is required to be displayed, workers and handlers are allowed access to the pesticide safety information at all times during normal work hours.</p> <p>Verify that the pesticide safety information and pesticide application and hazard information remains legible at all times when the information is required to be displayed.</p>

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<p><b>PM.20.35.US.</b> Commercial pesticide handler employers must fulfill specific duties (40 CFR 170.2(a). 170.303, and 170.313) [Added October 2016].</p>	<p>Verify that the pesticide application and hazard information includes all of the following information for each pesticide product applied:</p> <ul style="list-style-type: none"> <li>– a copy of the safety data sheet</li> <li>– the name, EPA registration number, and active ingredient(s) of the pesticide product</li> <li>– the crop or site treated and the location and description of the treated area</li> <li>– the date(s) and times the application started and ended</li> <li>– the duration of the applicable labeling-specified restricted-entry interval for that application.</li> </ul> <p>Verify that the pesticide application and hazard information for each pesticide product applied is displayed no later than 24 h after the end of the application of the pesticide and is displayed continuously from the beginning of the display period until at least 30 days after the end of the last applicable restricted-entry interval, or until workers or handlers are no longer on the establishment, whichever is earlier.</p> <p>Verify that, whenever pesticide safety information and pesticide application and hazard information is required to be displayed, the agricultural employer retains the displayed pesticide application and hazard information on the agricultural establishment for 2 yr after the date of expiration of the restricted-entry interval applicable to the pesticide application conducted.</p> <p>(NOTE: This checklist item applies beginning 2 January 2017 to any pesticide product that bears the statement “Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170” when the product is used in the production of agricultural plants on an agricultural establishment.)</p> <p>(NOTE: This checklist does not apply when any pesticide product that bears the statement “Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170” when the product is used on an agricultural establishment in any of the following circumstances:</p> <ul style="list-style-type: none"> <li>– as part of government-sponsored public pest control programs over which the owner, agricultural employer and handler employer have no control, such as mosquito abatement and Mediterranean fruit fly eradication programs</li> <li>– on plants other than agricultural plants, which may include plants in home fruit and vegetable gardens and home greenhouses, and permanent plantings for ornamental purposes, such as plants that are in ornamental gardens, parks, public or private landscaping, lawns or other grounds that are intended only for aesthetic purposes or climatic modification</li> <li>– for control of vertebrate pests, unless directly related to the production of an agricultural plant</li> <li>– as attractants or repellents in traps</li> <li>– on the harvested portions of agricultural plants or on harvested timber</li> <li>– for research uses of unregistered pesticides</li> </ul>

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	<ul style="list-style-type: none"> <li>– on pasture and rangeland where the forage will not be harvested for hay</li> <li>– in a manner not directly related to the production of agricultural plants, including, but not limited to structural pest control and control of vegetation in non-crop areas.)</li> </ul> <p>Verify that commercial pesticide handler employers ensure that any pesticide is used in a manner consistent with the pesticide product labeling, including the requirements of 40 CFR 170, when applied on an agricultural establishment by a handler employed by the commercial pesticide handling establishment.</p> <p>Verify that commercial pesticide handler employers ensure each handler employed by the commercial pesticide handling establishment and subject to 40 CFR 170 receives the protections required by 40 CFR 170.</p> <p>Verify that commercial pesticide handler employers ensure that any handler employed by the commercial pesticide handling establishment is at least 18 years old.</p> <p>Verify that commercial pesticide handler employers provide to each person, including labor contractors, who supervises any handlers employed by the commercial pesticide handling establishment, information and directions sufficient to ensure that each handler receives the protections required by 40 CFR 170 and that the information and directions specify the tasks for which the supervisor is responsible.</p> <p>Verify that commercial pesticide handler employers require each person, including labor contractors, who supervises any handlers employed by the commercial pesticide handling establishment, to provide sufficient information and directions to each handler to ensure that the handler can comply with the provisions of 40 CFR 170.</p> <p>Verify that commercial pesticide handler employers ensure that before any handler employed by the commercial pesticide handling establishment uses any equipment for mixing, loading, transferring, or applying pesticides, the handler is instructed in the safe operation of the equipment.</p> <p>Verify that commercial pesticide handler employers ensure that, before each day of use, equipment used by their employees for mixing, loading, transferring, or applying pesticides is inspected for leaks, obstructions, and worn or damaged parts, and any damaged equipment is repaired or is replaced.</p> <p>Verify that commercial pesticide handler employers ensure that whenever a handler who is employed by a commercial pesticide handling establishment will be on an agricultural establishment, the handler is provided information about, or is aware of, the specific location and description of any treated areas where a restricted-entry interval is in effect, and the restrictions on entering those areas.</p>

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	<p>Verify that commercial pesticide handler employers provide the agricultural employer all of the following information before the application of any pesticide on an agricultural establishment:</p> <ul style="list-style-type: none"> <li>– specific location(s) and description of the area(s) to be treated</li> <li>– the date(s) and start and estimated end times of application</li> <li>– product name, EPA registration number, and active ingredient(s)</li> <li>– the labeling-specified restricted entry interval applicable for the application</li> <li>– whether posting, oral notification or both are required</li> <li>– any restrictions or use directions on the pesticide product labeling that must be followed for protection of workers, handlers, or other persons during or after application.</li> </ul> <p>(NOTE: If there are any changes to the provided location, the restricted entry interval, posting/oral information requirements, or required restrictions or if the start time for the application will be earlier than originally forecasted or scheduled, the agricultural employer must be provided updated information prior to the application. If there are any changes to any other information provided, the commercial pesticide handler employer must provide updated information to the agricultural employer within 2 h after completing the application. Changes to the estimated application end time of less than one hour need not be reported to the agricultural employer.)</p> <p>Verify that commercial pesticide handler employers do the all of the following promptly after learning of a possible poisoning or injury to a handler who has experienced a potential pesticide exposure during his or her employment by the commercial pesticide handling establishment or shows symptoms similar to those associated with acute exposure to pesticides during or within 72 hours after his or her employment by the commercial pesticide handling establishment, and needs emergency medical treatment:</p> <ul style="list-style-type: none"> <li>– make available to that person transportation from the commercial pesticide handling establishment, or any agricultural establishment on which that handler may be working on behalf of the commercial pesticide handling establishment, to an operating medical care facility capable of providing emergency medical treatment to a person exposed to pesticides</li> <li>– provide all of the following information to the treating medical personnel: <ul style="list-style-type: none"> <li>– copies of the applicable safety data sheet(s) and the product name(s), EPA registration number(s) and active ingredient(s) for each pesticide product to which the person may have been exposed</li> <li>– the circumstances of application or use of the pesticide</li> <li>– the circumstances that could have resulted in exposure to the pesticide.</li> </ul> </li> </ul> <p>Verify that commercial pesticide handler employers ensure that persons directly employed by the commercial pesticide handling establishment do not clean, repair, or adjust pesticide application equipment, unless trained as a handler.</p>

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<p><b>PM.20.36.US.</b> Workers performing any task in a pesticide treated area on an agricultural establishment where pesticides have been used within the last 30 days or a restricted entry interval has been in effect must be trained (40 CFR 170.2(a), 170.303, 170.401, 170.403, 170.601(a)(1)(iv), and 170.601(a)(1)(v)) <b>[Added October 2016].</b></p>	<p>Verify that, before allowing any person not directly employed by the commercial pesticide handling establishment to clean, repair, or adjust equipment that has been used to mix, load, transfer, or apply pesticides, the commercial pesticide handler employer provides all of the following information:</p> <ul style="list-style-type: none"> <li>– notice that the pesticide application equipment may be contaminated with pesticides</li> <li>– the potentially harmful effects of exposure to pesticides</li> <li>– procedures for handling pesticide application equipment and for limiting exposure to pesticide residues</li> <li>– personal hygiene practices and decontamination procedures for preventing pesticide exposures and removing pesticide residues.</li> </ul> <p>Verify that commercial pesticide handler employers provide any records or other information required by 40 CFR 170 for inspection and copying upon request by an employee of EPA or any duly authorized representative of a Federal, State or Tribal government agency responsible for pesticide enforcement.</p> <p>(NOTE: This checklist item applies beginning 2 January 2017 to any pesticide product that bears the statement “Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170” when the product is used in the production of agricultural plants on an agricultural establishment.)</p> <p>(NOTE: This checklist does not apply when any pesticide product that bears the statement “Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170” when the product is used on an agricultural establishment in any of the following circumstances:</p> <ul style="list-style-type: none"> <li>– as part of government-sponsored public pest control programs over which the owner, agricultural employer and handler employer have no control, such as mosquito abatement and Mediterranean fruit fly eradication programs</li> <li>– on plants other than agricultural plants, which may include plants in home fruit and vegetable gardens and home greenhouses, and permanent plantings for ornamental purposes, such as plants that are in ornamental gardens, parks, public or private landscaping, lawns or other grounds that are intended only for aesthetic purposes or climatic modification</li> <li>– for control of vertebrate pests, unless directly related to the production of an agricultural plant</li> <li>– as attractants or repellents in traps</li> <li>– on the harvested portions of agricultural plants or on harvested timber</li> <li>– for research uses of unregistered pesticides</li> <li>– on pasture and rangeland where the forage will not be harvested for hay</li> <li>– in a manner not directly related to the production of agricultural plants, including, but not limited to structural pest control and control of vegetation in non-crop areas.)</li> </ul>

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	<p>(NOTE: This checklist item does not apply at any agricultural establishment where the majority of the establishment is owned by one or more members of the same immediate family, and the worker or handler is the owner or members of their immediate family when they are performing handling activities or tasks related to the production of agricultural plants on their own agricultural establishment.)</p> <p>Verify that workers performing any task in a pesticide treated area on an agricultural establishment where pesticides have been used within the last 30 days or a restricted entry interval has been in effect are training within the last 12 mo.</p> <p>(NOTE: The following workers need not be trained in the last 12 mo:</p> <ul style="list-style-type: none"> <li>– a worker who is currently certified as an applicator of restricted use pesticides</li> <li>– a worker who has satisfied the handler training requirements in 40 CFR 170.501 [see checklist item PM.20.42.US]</li> <li>– a worker who is certified or licensed as a crop advisor by a program acknowledged as appropriate in writing by EPA or the State or Tribal agency responsible for pesticide enforcement, provided that such certification or licensing requires pesticide safety training that includes all the topics in 40 CFR 170.501(c)(2) or 40 CFR 170.501(c)(3) as applicable depending on the date of training [see checklist item PM.20.42.US].</li> </ul> <p>Verify that pesticide safety training is presented to workers either orally from written materials or audio-visually, at a location that is reasonably free from distraction and conducive to training.</p> <p>Verify that all training materials are EPA-approved.</p> <p>Verify that the training is presented in a manner that the workers can understand, such as through a translator.</p> <p>Verify that the training is conducted by a person who meets the worker trainer requirements (further down in this checklist item) and who is present during the entire training program and responds to workers' questions.</p> <p>Verify that the training includes, at a minimum, all of the following topics:</p> <ul style="list-style-type: none"> <li>– where and in what form pesticides may be encountered during work activities</li> <li>– hazards of pesticides resulting from toxicity and exposure, including acute and chronic effects, delayed effects, and sensitization</li> <li>– routes through which pesticides can enter the body</li> <li>– signs and symptoms of common types of pesticide poisoning</li> <li>– emergency first aid for pesticide injuries or poisonings</li> <li>– how to obtain emergency medical care</li> <li>– routine and emergency decontamination procedures, including emergency eye flushing techniques</li> <li>– hazards from chemigation and drift</li> <li>– hazards from pesticide residues on clothing</li> </ul>

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<p><b>PM.20.37.US.</b> Entry restrictions associated with</p>	<ul style="list-style-type: none"> <li>– warnings about taking pesticides or pesticide containers home</li> <li>– requirements of 40 CFR 170, Subpart E designed to reduce the risks of illness or injury resulting from workers’ occupational exposure to pesticides, including application and entry restrictions, the design of the warning sign, posting of warning signs, oral warnings, the availability of specific information about applications, and the protection against retaliatory acts.</li> </ul> <p>(NOTE: EPA intends to make available to the public training materials that may be used to conduct training conforming to these requirements no earlier than 1 January 2018. Once that training is provided, there will be additional required information to include in the training.)</p> <p>Verify that the person who conducts the training meets one of the following criteria:</p> <ul style="list-style-type: none"> <li>– be designated as a trainer of certified applicators, handlers or workers by EPA or the State or Tribal agency responsible for pesticide enforcement</li> <li>– have completed an EPA-approved pesticide safety train-the-trainer program for trainers of workers</li> <li>– be currently certified as an applicator of restricted use pesticides.</li> </ul> <p>Verify that, for each worker required to be trained, the agricultural employer maintains on the agricultural establishment, for 2 yr from the date of the training, a record documenting each worker’s training including all of the following:</p> <ul style="list-style-type: none"> <li>– the trained worker’s printed name and signature</li> <li>– the date of the training</li> <li>– information identifying which EPA-approved training materials were used</li> <li>– the trainer’s name and documentation showing that the trainer met the requirements for trainers at the time of training</li> <li>– the agricultural employer’s name.</li> </ul> <p>(NOTE: An agricultural employer who provides, directly or indirectly, required training must provide to the worker upon request a copy of the record of the training that contains the same information.)</p> <p>Verify that, before any worker performs any activity in a treated area on an agricultural establishment where within the last 30 days a pesticide product has been used, or a restricted-entry interval for a pesticide has been in effect, the agricultural employer ensures that the worker has been informed of, in a manner the worker can understand, all of the following establishment-specific information:</p> <ul style="list-style-type: none"> <li>– the location of pesticide safety information</li> <li>– the location of pesticide application and hazard information</li> <li>– the location of decontamination supplies.</li> </ul> <p>(NOTE: This checklist item applies beginning 2 January 2017 to any pesticide product that bears the statement “Use this product only in accordance with its</p>

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pesticide applications must be followed (40 CFR 170.2(a). 170.303, 170.405, and 170.407) [Added October 2016].	<p>labeling and with the Worker Protection Standard, 40 CFR part 170” when the product is used in the production of agricultural plants on an agricultural establishment.)</p> <p>(NOTE: This checklist does not apply when any pesticide product that bears the statement “Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170” when the product is used on an agricultural establishment in any of the following circumstances:</p> <ul style="list-style-type: none"> <li>– as part of government-sponsored public pest control programs over which the owner, agricultural employer and handler employer have no control, such as mosquito abatement and Mediterranean fruit fly eradication programs</li> <li>– on plants other than agricultural plants, which may include plants in home fruit and vegetable gardens and home greenhouses, and permanent plantings for ornamental purposes, such as plants that are in ornamental gardens, parks, public or private landscaping, lawns or other grounds that are intended only for aesthetic purposes or climatic modification</li> <li>– for control of vertebrate pests, unless directly related to the production of an agricultural plant</li> <li>– as attractants or repellents in traps</li> <li>– on the harvested portions of agricultural plants or on harvested timber</li> <li>– for research uses of unregistered pesticides</li> <li>– on pasture and rangeland where the forage will not be harvested for hay</li> <li>– in a manner not directly related to the production of agricultural plants, including, but not limited to structural pest control and control of vegetation in non-crop areas.)</li> </ul> <p>Verify that, for outdoor production pesticide applications the application exclusion zone is defined as follows:</p> <ul style="list-style-type: none"> <li>– the application exclusion zone is the area that extends 100 ft horizontally from the application equipment in all directions during application when the pesticide is applied by any of the following methods: <ul style="list-style-type: none"> <li>– aerially</li> <li>– air blast application</li> <li>– as a spray using a spray quality (droplet spectrum) of smaller than medium (volume median diameter of less than 294 microns)</li> <li>– as a fumigant, smoke, mist, or fog</li> </ul> </li> <li>– the application exclusion zone is the area that extends 25 ft horizontally from the application equipment in all directions during application when the pesticide is applied not as listed in the 4 options above and is sprayed from a height of greater than 12 in from the planting medium using a spray quality (droplet spectrum) of medium or larger (volume median diameter of 294 microns or greater).</li> </ul> <p>(NOTE: There is no application exclusion zone when the pesticide is applied in a manner other than those covered above.)</p>

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	<p>Verify that, during any outdoor production pesticide application, the agricultural employer does not allow or direct any worker or other person, other than an appropriately trained and equipped handler involved in the application, to enter or to remain in the treated area or an application exclusion zone that is within the boundaries of the establishment until the application is complete.</p> <p>(NOTE: After the outdoor application is complete, the area subject to the labeling-specified restricted-entry interval and the post-application entry restrictions specified in this checklist item is the treated area.)</p> <p>Verify that, during any enclosed space production pesticide application described in column A of Appendix 7-5 the agricultural employer does not allow or direct any worker or other person, other than an appropriately trained and equipped handler involved in the application, to enter or to remain in the area specified in column B of Appendix 7-5 during the application and until the time specified in column C of Appendix 7-5 has expired.</p> <p>Verify that, when column C of Appendix 7-5 specifies that ventilation criteria must be met, ventilation continues until the air concentration is measured to be equal to or less than the inhalation exposure level required by the labeling.</p> <p>(NOTE: If no inhalation exposure level is listed on the labeling, ventilation must continue until after one of the following conditions is met:</p> <ul style="list-style-type: none"> <li>– 10 air exchanges are completed</li> <li>– 2 h of ventilation using fans or other mechanical ventilating systems</li> <li>– 4 h of ventilation using vents, windows, or other passive ventilation</li> <li>– 11 h with no ventilation followed by 1 h of mechanical ventilation</li> <li>– 11 h with no ventilation followed by 2 h of passive ventilation</li> <li>– 24 h with no ventilation.)</li> </ul> <p>Verify that, after the application of any pesticide to an area of outdoor production, the agricultural employer does not allow or direct any worker to enter or to remain in the treated area before the restricted-entry interval specified on the pesticide product labeling has expired and all treated area warning signs have been removed or covered, except for early-entry activities permitted by 40 CFR 170.603 (see Appendix 7-4)</p> <p>Verify that, after the application of any pesticide to an area of enclosed space production, the agricultural employer does not allow or direct any worker to enter or to remain in the areas specified in column D of Appendix 7-5 before the restricted entry interval specified on the pesticide product labeling has expired and all treated area warning signs have been removed or covered, except for early entry activities permitted by 40 CFR 170.603 (see Appendix 7-4)</p> <p>(NOTE: When two or more pesticides are applied to a treated area at the same time, the applicable restricted-entry interval is the longest of all applicable restricted-entry intervals.)</p>

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<p><b>PM.20.38.US.</b> Oral and posted notification of worker entry is required (40 CFR 170.2(a), 170.303, 170.409, and 170.601(a)(1)(vi)) [Added October 2016].</p>	<p>(NOTE: This checklist item applies beginning 2 January 2017 to any pesticide product that bears the statement “Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170” when the product is used in the production of agricultural plants on an agricultural establishment.)</p> <p>(NOTE: This checklist does not apply when any pesticide product that bears the statement “Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170” when the product is used on an agricultural establishment in any of the following circumstances:</p> <ul style="list-style-type: none"> <li>– as part of government-sponsored public pest control programs over which the owner, agricultural employer and handler employer have no control, such as mosquito abatement and Mediterranean fruit fly eradication programs</li> <li>– on plants other than agricultural plants, which may include plants in home fruit and vegetable gardens and home greenhouses, and permanent plantings for ornamental purposes, such as plants that are in ornamental gardens, parks, public or private landscaping, lawns or other grounds that are intended only for aesthetic purposes or climatic modification</li> <li>– for control of vertebrate pests, unless directly related to the production of an agricultural plant</li> <li>– as attractants or repellents in traps</li> <li>– on the harvested portions of agricultural plants or on harvested timber</li> <li>– for research uses of unregistered pesticides</li> <li>– on pasture and rangeland where the forage will not be harvested for hay</li> <li>– in a manner not directly related to the production of agricultural plants, including, but not limited to structural pest control and control of vegetation in non-crop areas.)</li> </ul> <p>(NOTE: This checklist item does not apply at any agricultural establishment where the majority of the establishment is owned by one or more members of the same immediate family, and the worker or handler is the owner or members of their immediate family when they are performing handling activities or tasks related to the production of agricultural plants on their own agricultural establishment.)</p> <p>Verify that, if the pesticide product labeling has a statement requiring the posting of treated areas the agricultural employer posts meeting the size and content requirements detailed in the text of 40 CFR 170.409(b)(2) and 170.409(b)(3).</p> <p>Verify that, if the pesticide product label requires both posting of the treated area and oral notification, both are done.</p> <p>Verify that, if a pesticide with product labeling that requires a restricted-entry interval greater than 48 h is applied to an outdoor production area, the agricultural employer notifies workers of the application by posting required warning signs.</p>

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	<p>Verify that, if a pesticide with product labeling that requires a restricted-entry interval equal to or less than 48 h is applied to an outdoor production area, the agricultural employer notifies workers of the application either by posting required warning signs or by providing workers with an oral warning.</p> <p>Verify that, if a pesticide with product labeling that requires a restricted-entry interval greater than 4 h is applied to an enclosed space production area, the agricultural employer notifies workers of the application by posting required warning signs.</p> <p>Verify that, if a pesticide with product labeling that requires a restricted-entry interval equal to or less than 4 h is applied to an enclosed space production area, the agricultural employer notifies workers of the application either by posting required warning signs or by providing workers with an oral warning.</p> <p>(NOTE: Notification does not need to be given to a worker if the agricultural employer can ensure that one of the following is met:</p> <ul style="list-style-type: none"> <li>– from the start of the application in an enclosed space production area until the end of any restricted-entry interval, the worker will not enter any part of the entire enclosed structure or space</li> <li>– from the start of the application to an outdoor production area until the end of any restricted-entry interval, the worker will not enter, work in, remain in, or pass on foot through the treated area or any area within 1/4 mile of the treated area on the agricultural establishment</li> <li>– the worker was involved in the application of the pesticide as a handler, and is aware of all required information.</li> </ul> <p>(NOTE: In relationship to posting of required warnings, when several contiguous areas are to be treated with pesticides on a rotating or sequential basis, the entire area may be posted. Worker entry is prohibited for the entire area while the signs are posted, except for entry permitted by 40 CFR 170.603 (see Appendix 7-4).).</p> <p>Verify that warning signs are posted prior to but no earlier than 24 h before the scheduled application of the pesticide.</p> <p>Verify that warning signs remain posted throughout the application and any restricted-entry interval.</p> <p>Verify that warning signs are removed or covered within 3 days after the end of the application or any restricted-entry interval, whichever is later, except that signs may remain posted after the restricted-entry interval has expired as long as all of the following conditions are met:</p> <ul style="list-style-type: none"> <li>– the agricultural employer instructs any workers on the establishment that may come within 1/4 mile of the treated area not to enter that treated area while the signs are posted</li> </ul>

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<p><b>PM.20.39.US.</b> Agricultural employers must protect workers entering treated areas during a restricted-entry interval (40 CFR 170.2(a), 170.303, 170.601(a)(1)(xii), and 170.605) <b>[Added October 2016].</b></p>	<ul style="list-style-type: none"> <li>– the agricultural employer ensures that workers do not enter the treated area while the signs remain posted, other than entry permitted by 40 CFR 170.603 (see Appendix 7-4).</li> </ul> <p>Verify that warning signs remain visible and legible during the time they are required to be posted.</p> <p>Verify that agricultural employers provide oral warnings to workers in a manner that the workers can understand.</p> <p>Verify that, if a worker will be on the establishment when an application begins, the warning is given before the application begins.</p> <p>Verify that if a worker arrives on the establishment while an application is taking place or a restricted-entry interval for a pesticide application is in effect, the warning is given at the beginning of the worker's work period.</p> <p>Verify that the warning includes all of the following:</p> <ul style="list-style-type: none"> <li>– the location(s) and description of any treated area(s) subject to the entry restrictions during and after application</li> <li>– the dates and times during which entry is restricted in any treated area(s) subject to the entry restrictions during and after application</li> <li>– instructions not to enter the treated area or an application exclusion zone during application, and that entry to the treated area is not allowed until the restricted-entry interval has expired and all treated area warning signs have been removed or covered, except for entry permitted by 40 CFR 170.603 (see Appendix 7-4).</li> </ul> <p>(NOTE: This checklist item applies beginning 2 January 2017 to any pesticide product that bears the statement “Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170” when the product is used in the production of agricultural plants on an agricultural establishment.)</p> <p>(NOTE: This checklist does not apply when any pesticide product that bears the statement “Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170” when the product is used on an agricultural establishment in any of the following circumstances:</p> <ul style="list-style-type: none"> <li>– as part of government-sponsored public pest control programs over which the owner, agricultural employer and handler employer have no control, such as mosquito abatement and Mediterranean fruit fly eradication programs</li> <li>– on plants other than agricultural plants, which may include plants in home fruit and vegetable gardens and home greenhouses, and permanent plantings for ornamental purposes, such as plants that are in ornamental gardens, parks, public or private landscaping, lawns or other grounds that are intended only for aesthetic purposes or climatic modification</li> </ul>

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	<ul style="list-style-type: none"> <li>– for control of vertebrate pests, unless directly related to the production of an agricultural plant</li> <li>– as attractants or repellents in traps</li> <li>– on the harvested portions of agricultural plants or on harvested timber</li> <li>– for research uses of unregistered pesticides</li> <li>– on pasture and rangeland where the forage will not be harvested for hay</li> <li>– in a manner not directly related to the production of agricultural plants, including, but not limited to structural pest control and control of vegetation in non-crop areas.)</li> </ul> <p>Verify that, if an agricultural employer directs a worker to perform activities in a treated area where a restricted-entry interval is in effect, all of the following requirements are met:</p> <ul style="list-style-type: none"> <li>– the agricultural employer ensures that the worker is at least 18 years old</li> <li>– prior to early entry, the agricultural employer provide to each early-entry worker the following information orally in a manner that the worker can understand: <ul style="list-style-type: none"> <li>– location of early-entry area where work activities are to be performed</li> <li>– pesticide(s) applied</li> <li>– dates and times that the restricted-entry interval begins and ends</li> <li>– which exception in 40 CFR 170.603 is the basis for the early entry, and a description of tasks that may be performed under the exception</li> <li>– whether contact with treated surfaces is permitted under the exception</li> <li>– amount of time the worker is allowed to remain in the treated area</li> <li>– personal protective equipment required by the pesticide product labeling for early entry</li> <li>– location of the pesticide safety information required by 40 CFR 170.311(a) [see checklist item PM.20.34.US] and the location of the decontamination supplies required by 40 CFR 70.605(h) [see checklist item PM.20.39.US]</li> </ul> </li> <li>– prior to early entry, the agricultural employer ensures that each worker either has read the applicable pesticide product labeling or has been informed, in a manner that the worker can understand, of all labeling requirements and statements related to human hazards or precautions, first aid, and user safety.</li> </ul> <p>Verify that the agricultural employer ensures that each worker who enters a treated area during a restricted-entry interval is provided the PPE specified in the pesticide product labeling for early entry.</p> <p>Verify that the agricultural employer ensures that the worker uses the PPE as intended according to manufacturer's instructions and follows any other applicable requirements on the pesticide product labeling.</p> <p>(NOTE: PPE must conform to the standards in 40 CFR 170.507(b)(1) through (9) [see checklist item PM.20.43.US]. The agricultural employer must maintain the</p>

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<p><b>PM.20.40.US.</b> Certain decontamination supplies must be available for agricultural workers (40 CFR 170.2(a), 170.303, 170.411, 170.601(a)(1)(vii)) <b>[Added October 2016].</b></p>	<p>personal protective equipment in accordance with 40 CFR 170.507(c) and (d) [see checklist item PM.20.43.US].)</p> <p>Verify that the agricultural employer ensures that no worker is allowed or directed to wear PPE without implementing measures sufficient to prevent heat-related illness and that each worker is instructed in the prevention, recognition, and first aid treatment of heat-related illness.</p> <p>Verify that the agricultural employer instructs each worker on the proper use and removal of the personal protective equipment, and as appropriate, on its cleaning, maintenance and disposal.</p> <p>Verify that the agricultural employer does not allow or direct any worker to wear home or to take home employer-provided PPE contaminated with pesticides.</p> <p>Verify that, during any early-entry activity, the agricultural employer provides decontamination supplies in accordance with 40 CFR 170.509 [see checklist item PM.20.41.US], except the decontamination supplies are outside any area being treated with pesticides or subject to a restricted-entry interval, unless the decontamination supplies would otherwise not be reasonably accessible to workers performing early-entry tasks.</p> <p>Verify that, if the pesticide product labeling of the product applied requires protective eyewear, the agricultural employer provides at least one pint of water per worker in portable containers for eye flushing that is immediately available to each worker who is performing early-entry activities.</p> <p>Verify that, at the end of any early-entry activities the agricultural employer provides, at the site where the workers remove PPE, soap, single-use towels and at least 3 gal of water per worker so that the workers may wash thoroughly.</p> <p>(NOTE: This checklist item applies beginning 2 January 2017 to any pesticide product that bears the statement “Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170” when the product is used in the production of agricultural plants on an agricultural establishment.)</p> <p>(NOTE: This checklist does not apply when any pesticide product that bears the statement “Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170” when the product is used on an agricultural establishment in any of the following circumstances:</p> <ul style="list-style-type: none"> <li>– as part of government-sponsored public pest control programs over which the owner, agricultural employer and handler employer have no control, such as mosquito abatement and Mediterranean fruit fly eradication programs</li> <li>– on plants other than agricultural plants, which may include plants in home fruit and vegetable gardens and home greenhouses, and permanent plantings for ornamental purposes, such as plants that are in ornamental gardens, parks,</li> </ul>

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	<p>public or private landscaping, lawns or other grounds that are intended only for aesthetic purposes or climatic modification</p> <ul style="list-style-type: none"> <li>– for control of vertebrate pests, unless directly related to the production of an agricultural plant</li> <li>– as attractants or repellents in traps</li> <li>– on the harvested portions of agricultural plants or on harvested timber</li> <li>– for research uses of unregistered pesticides</li> <li>– on pasture and rangeland where the forage will not be harvested for hay</li> <li>– in a manner not directly related to the production of agricultural plants, including, but not limited to structural pest control and control of vegetation in non-crop areas.)</li> </ul> <p>(NOTE: This checklist item does not apply at any agricultural establishment where the majority of the establishment is owned by one or more members of the same immediate family, and the worker or handler is the owner or members of their immediate family when they are performing handling activities or tasks related to the production of agricultural plants on their own agricultural establishment.)</p> <p>Verify that the agricultural employer provides decontamination supplies for routine washing and emergency decontamination for any worker on an agricultural establishment who is performing an activity in an area where a pesticide was applied and who contacts anything that has been treated with the pesticide, including, but not limited to, soil, water, and plants.</p> <p>Verify that the decontamination supplies provided include at least 1 gal of water per worker at the beginning of each worker’s work period for routine washing and emergency decontamination, soap, and single-use towels.</p> <p>Verify that the water is of a quality and temperature that will not cause illness or injury when it contacts the skin or eyes or if it is swallowed.</p> <p>(NOTE: If a water source is used for mixing pesticides, it must not be used for decontamination, unless equipped with properly functioning valves or other mechanisms that prevent contamination of the water with pesticides, such as anti-backflow siphons, one-way or check valves, or an air gap sufficient to prevent contamination.)</p> <p>Verify that soap and single-use towels are provided for drying in quantities sufficient to meet the workers’ reasonable needs.</p> <p>(NOTE: Hand sanitizing gels and liquids or wet towelettes do not meet the requirement for soap. Wet towelettes do not meet the requirement for single-use towels.)</p> <p>Verify that decontamination supplies are provided from the time workers first enter the treated area until at least 30 days after the restricted-entry interval expires for any pesticide with a restricted entry interval greater 4 h.</p>

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<p><b>PM.20.41.US.</b> Pesticide handlers must be provided with certain decontamination and eye flushing equipment (40 CFR 170.2(a), 170.303, 170.509, and 170.601(a)(1)(vii)) <b>[Added October 2016].</b></p>	<p>(NOTE: If the only pesticides applied in the treated area are products with restricted-entry intervals of four hours or less, the decontamination supplies must be provided from the time workers first enter the treated area until at least seven days after the restricted-entry interval expires.)</p> <p>Verify that the decontamination supplies are located together outside any treated area or area subject to a restricted-entry interval, and are be reasonably accessible to the workers.</p> <p>Verify that the decontamination supplies are not more than 1/4 mile from where workers are working, except that where workers are working more than 1/4 mile from the nearest place of vehicular access or more than 1/4 mile from any non-treated area, the decontamination supplies may be at the nearest place of vehicular access outside any treated area or area subject to a restricted-entry interval.</p> <p>(NOTE: This checklist item applies beginning 2 January 2017 to any pesticide product that bears the statement “Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170” when the product is used in the production of agricultural plants on an agricultural establishment.)</p> <p>(NOTE: This checklist does not apply when any pesticide product that bears the statement “Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170” when the product is used on an agricultural establishment in any of the following circumstances:</p> <ul style="list-style-type: none"> <li>– as part of government-sponsored public pest control programs over which the owner, agricultural employer and handler employer have no control, such as mosquito abatement and Mediterranean fruit fly eradication programs</li> <li>– on plants other than agricultural plants, which may include plants in home fruit and vegetable gardens and home greenhouses, and permanent plantings for ornamental purposes, such as plants that are in ornamental gardens, parks, public or private landscaping, lawns or other grounds that are intended only for aesthetic purposes or climatic modification</li> <li>– for control of vertebrate pests, unless directly related to the production of an agricultural plant</li> <li>– as attractants or repellents in traps</li> <li>– on the harvested portions of agricultural plants or on harvested timber</li> <li>– for research uses of unregistered pesticides</li> <li>– on pasture and rangeland where the forage will not be harvested for hay</li> <li>– in a manner not directly related to the production of agricultural plants, including, but not limited to structural pest control and control of vegetation in non-crop areas.)</li> </ul> <p>(NOTE: This checklist item does not apply at any agricultural establishment where the majority of the establishment is owned by one or more members of the same immediate family, and the worker or handler is the owner or members of their</p>

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	<p>immediate family when they are performing handling activities or tasks related to the production of agricultural plants on their own agricultural establishment.)</p> <p>Verify that the handler employer provides decontamination and eye flushing supplies for any handler that is performing any handler activity or removing PPE at the place for changing.</p> <p>Verify that the decontamination supplies include:</p> <ul style="list-style-type: none"> <li>– at least 3 gal of water per handler at the beginning of each handler’s work period for routine washing and potential emergency decontamination</li> <li>– soap</li> <li>– single-use towels</li> <li>– clean clothing for use in an emergency.</li> </ul> <p>Verify that the water made available to handlers for routine washing, emergency decontamination or eye flushing is of a quality and temperature that will not cause illness or injury when it contacts the skin or eyes or if it is swallowed.</p> <p>(NOTE: If a water source is used for mixing pesticides, it must not be used for decontamination or eye flushing supplies, unless equipped with properly functioning valves or other mechanisms that prevent contamination of the water with pesticides, such as anti-backflow siphons, one-way or check valves, or an air gap sufficient to prevent contamination.)</p> <p>Verify that the handler employer provides soap and single-use towels for drying in quantities sufficient to meet the handlers’ needs.</p> <p>(NOTE: Hand sanitizing gels and liquids or wet towelettes do not meet the requirement for soap. Wet towelettes do not meet the requirement for single-use towels.)</p> <p>Verify that the handler employer provides one clean change of clothing, such as coveralls, for use in an emergency.</p> <p>Verify that the decontamination supplies are located together outside any treated area or area subject to a restricted-entry interval, and are reasonably accessible to each handler during the handler activity.</p> <p>(NOTE: The decontamination supplies must not be more than 1/4 mile from the handler, except that where the handler activity is more than 1/4 mile from the nearest place of vehicular access or more than 1/4 mile from any non-treated area, the decontamination supplies may be at the nearest place of vehicular access outside any treated area or area subject to a restricted-entry interval.)</p> <p>Verify that decontamination supplies are provided at any mixing site.</p>

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<p><b>PM.20.42.US.</b> Pesticide handlers must be trained according to specific requirements (40 CFR 170.2(a), 170.303, 170.501, 170.503, 170.601(a)(1)(viii), and 170.601(a)(1)(ix)) [Added October 2016].</p>	<p>(NOTE: Decontamination supplies for a pilot who is applying pesticides aurally must be in the aircraft or at the aircraft loading site.)</p> <p>(NOTE: The decontamination supplies must be outside any treated area or area subject to a restricted-entry interval, unless the soap, single-use towels, water and clean change of clothing are protected from pesticide contamination in closed containers.)</p> <p>Verify that, whenever a handler is mixing or loading a pesticide product whose labeling requires protective eyewear for handlers, or is mixing or loading any pesticide using a closed system operating under pressure, the handler employer provides at each mixing/loading site immediately available to the handler, at least one system that is capable of delivering gently running water at a rate of least 0.4 gpm for at least 15 min, or at least 6 gal of water in containers suitable for providing a gentle eye-flush for about 15 min.</p> <p>Verify that, whenever a handler is applying a pesticide product whose labeling requires protective eyewear for handlers, the handler employer provides at least one pint of water per handler in portable containers that are immediately available to each handler.</p> <p>(NOTE: This checklist item applies beginning 2 January 2017 to any pesticide product that bears the statement “Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170” when the product is used in the production of agricultural plants on an agricultural establishment.)</p> <p>(NOTE: This checklist does not apply when any pesticide product that bears the statement “Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170” when the product is used on an agricultural establishment in any of the following circumstances:</p> <ul style="list-style-type: none"> <li>– as part of government-sponsored public pest control programs over which the owner, agricultural employer and handler employer have no control, such as mosquito abatement and Mediterranean fruit fly eradication programs</li> <li>– on plants other than agricultural plants, which may include plants in home fruit and vegetable gardens and home greenhouses, and permanent plantings for ornamental purposes, such as plants that are in ornamental gardens, parks, public or private landscaping, lawns or other grounds that are intended only for aesthetic purposes or climatic modification</li> <li>– for control of vertebrate pests, unless directly related to the production of an agricultural plant</li> <li>– as attractants or repellents in traps</li> <li>– on the harvested portions of agricultural plants or on harvested timber</li> <li>– for research uses of unregistered pesticides</li> <li>– on pasture and rangeland where the forage will not be harvested for hay</li> </ul>

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	<p>–in a manner not directly related to the production of agricultural plants, including, but not limited to structural pest control and control of vegetation in non-crop areas.)</p> <p>(NOTE: This checklist item does not apply at any agricultural establishment where the majority of the establishment is owned by one or more members of the same immediate family, and the worker or handler is the owner or members of their immediate family when they are performing handling activities or tasks related to the production of agricultural plants on their own agricultural establishment.)</p> <p>Verify that the pesticides handler has been trained in accordance with this checklist item within the last 12 mo.</p> <p>(NOTE: The following handlers need not be trained under this checklist item:</p> <ul style="list-style-type: none"> <li>– handler who is currently certified as an applicator of restricted use pesticides</li> <li>– a handler who is certified or licensed as a crop advisor by a program acknowledged as appropriate in writing by EPA or the State or Tribal agency responsible for pesticide enforcement, provided that a requirement for such certification or licensing is pesticide safety training that includes all the required topics.</li> </ul> <p>Verify that pesticide safety training is presented to handlers either orally from written materials or audio-visually, at a location that is reasonably free from distraction and conducive to training.</p> <p>Verify that all training materials are EPA-approved and the training is presented in a manner that the handlers can understand, such as through a translator.</p> <p>Verify that the training is conducted by a person who is present during the entire training program and responds to handlers’ questions.</p> <p>Verify that the person who conducts the training has one of the following qualifications:</p> <ul style="list-style-type: none"> <li>– be designated as a trainer of certified applicators or pesticide handlers by EPA or the State or Tribal agency responsible for pesticide enforcement</li> <li>– have completed an EPA-approved pesticide safety train-the-trainer program for trainers of handlers</li> <li>– be currently certified as an applicator of restricted use pesticides.</li> </ul> <p>Verify that the pesticide safety training materials include, at a minimum, all of the following topics:</p> <ul style="list-style-type: none"> <li>– format and meaning of information contained on pesticide labels and in labeling, including safety information such as precautionary statements about human health hazards</li> </ul>

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	<ul style="list-style-type: none"> <li>– hazards of pesticides resulting from toxicity and exposure, including acute and chronic effects, delayed effects, and sensitization</li> <li>– routes by which pesticides can enter the body</li> <li>– signs and symptoms of common types of pesticide poisoning</li> <li>– emergency first aid for pesticide injuries or poisonings</li> <li>– how to obtain emergency medical care</li> <li>– routine and emergency decontamination procedures</li> <li>– need for and appropriate use of PPE</li> <li>– prevention, recognition, and first aid treatment of heat-related illness</li> <li>– safety requirements for handling, transporting, storing, and disposing of pesticides, including general procedures for spill cleanup</li> <li>– environmental concerns such as drift, runoff, and wildlife hazards</li> <li>– warnings about taking pesticides or pesticide containers home</li> <li>– requirements of this subpart that must be followed by handler employers for the protection of handlers and other persons, including the prohibition against applying pesticides in a manner that will cause contact with workers or other persons, the requirement to use PPE, the provisions for training and decontamination, and the protection against retaliatory acts.</li> </ul> <p>(NOTE: EPA intends to make available to the public training materials that may be used to conduct training conforming to these requirements no earlier than 1 January 2018. Once that training is provided, there will be additional required information to include in the training.)</p> <p>Verify that handler employers maintain records of training for handlers employed by their establishment for two years after the date of the training.</p> <p>Verify that the records are maintained on the establishment and include all of the following information:</p> <ul style="list-style-type: none"> <li>– the trained handler’s printed name and signature</li> <li>– the date of the training</li> <li>– information identifying which EPA-approved training materials were used</li> <li>– the trainer’s name and documentation showing that the trainer met the requirements of 40 CFR 170.501(c)(4) at the time of training</li> <li>– the handler employer’s name.</li> </ul> <p>(NOTE: The handler employer, upon request by a handler trained on the establishment, must provide to the handler a copy of the record of the training that contains the required information.)</p> <p>Verify that the handler employer ensures that before any handler performs any handler activity involving a pesticide product, the handler either has read the portions of the labeling applicable to the safe use of the pesticide or has been informed in a manner the handler can understand of all labeling requirements and use directions applicable to the safe use of the pesticide.</p>

<p style="text-align: center;"><b>COMPLIANCE CATEGORY</b>  <b>PESTICIDES MANAGEMENT</b>  <b>U.S. TEAM Guide</b></p>	
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<p><b>PM.20.43.US.</b> Certain actions and/or equipment are required to prevent contact and/or exposure to agricultural pesticides (40 CFR 170.2(a), 170.303, 170.505, and 170.507, 170.601(a)(1)(x), and 170.601(a)(1)(xi)) <b>[Added October 2016].</b></p>	<p>Verify that the handler employer ensures that the handler has access to the applicable product labeling at all times during handler activities.</p> <p>Verify that the handler employer ensures that the handler is aware of requirements for any entry restrictions, application exclusion zones and restricted-entry intervals that may apply based on the handler's activity.</p> <p>Verify that, before any handler performs any handler activity on an agricultural establishment where within the last 30 days a pesticide product has been used, or a restricted-entry interval for such pesticide has been in effect, the handler employer ensures that the handler has been informed, in a manner the handler can understand, all of the following establishment-specific information:</p> <ul style="list-style-type: none"> <li>– the location of pesticide safety information</li> <li>– the location of pesticide application and hazard information</li> <li>– the location of decontamination supplies.</li> </ul> <p>(NOTE: This checklist item applies beginning 2 January 2017 to any pesticide product that bears the statement “Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170” when the product is used in the production of agricultural plants on an agricultural establishment.)</p> <p>(NOTE: This checklist does not apply when any pesticide product that bears the statement “Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170” when the product is used on an agricultural establishment in any of the following circumstances:</p> <ul style="list-style-type: none"> <li>– as part of government-sponsored public pest control programs over which the owner, agricultural employer and handler employer have no control, such as mosquito abatement and Mediterranean fruit fly eradication programs</li> <li>– on plants other than agricultural plants, which may include plants in home fruit and vegetable gardens and home greenhouses, and permanent plantings for ornamental purposes, such as plants that are in ornamental gardens, parks, public or private landscaping, lawns or other grounds that are intended only for aesthetic purposes or climatic modification</li> <li>– for control of vertebrate pests, unless directly related to the production of an agricultural plant</li> <li>– as attractants or repellents in traps</li> <li>– on the harvested portions of agricultural plants or on harvested timber</li> <li>– for research uses of unregistered pesticides</li> <li>– on pasture and rangeland where the forage will not be harvested for hay</li> <li>– in a manner not directly related to the production of agricultural plants, including, but not limited to structural pest control and control of vegetation in non-crop areas.)</li> </ul>

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	<p>Verify that the handler employer and the handler ensure that no pesticide is applied so as to contact, directly or through drift, any worker or other person, other than an appropriately trained and equipped handler involved in the application.</p> <p>Verify that, after 1 January 2018, the handler performing the application immediately suspends a pesticide application if any worker or other person, other than an appropriately trained and equipped handler involved in the application, is in the application exclusion zone.</p> <p>Verify that the handler employer ensures that any handler who is performing any handler activity with a pesticide product that has the skull-and crossbones symbol on the front panel of the pesticide product label is monitored visually or by voice communication at least every 2 h.</p> <p>(NOTE: The requirement for monitoring does not apply at any agricultural establishment where the majority of the establishment is owned by one or more members of the same immediate family, and the worker or handler is the owner or members of their immediate family when they are performing handling activities or tasks related to the production of agricultural plants on their own agricultural establishment.)</p> <p>Verify that, for fumigant applications in enclosed spaces, the handler employer ensures all of the following:</p> <ul style="list-style-type: none"> <li>– any handler in an enclosed space production area during a fumigant application maintains continuous visual or voice contact with another handler stationed immediately outside of the enclosed space</li> <li>– the handler stationed outside the enclosed space has immediate access to and uses the PPE required by the fumigant labeling for applicators in the event that entry becomes necessary for rescue.</li> </ul> <p>(NOTE: The requirements related to fumigant applications in enclosed spaces do not apply at any agricultural establishment where the majority of the establishment is owned by one or more members of the same immediate family, and the worker or handler is the owner or members of their immediate family when they are performing handling activities or tasks related to the production of agricultural plants on their own agricultural establishment.)</p> <p>Verify that any person who performs handler activities involving a pesticide product uses the clothing and PPE specified on the pesticide product labeling for use of the product except as provided in 40 CFR 170.607 (see Appendix 7-6)</p> <p>Verify that the handler employer provides to the handler the PPE required by the pesticide product labeling and ensures that the PPE is clean and in proper operating condition.</p>

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	<p>(NOTE: For the purposes of this checklist item, long-sleeved shirts, short sleeved shirts, long pants, short pants, shoes, and socks are not considered PPE, although such work clothing must be worn if required by the pesticide product labeling.)</p> <p>Verify that, if the pesticide product labeling requires that “chemical-resistant” PPE be worn, it is made of material that allows no measurable movement of the pesticide being used through the material during use.</p> <p>Verify that, if the pesticide product labeling requires that “waterproof” PPE be worn, it is made of material that allows no measurable movement of water or aqueous solutions through the material during use.</p> <p>Verify that, if the pesticide product labeling requires that a “chemical-resistant suit” be worn, it is a loose-fitting, one or two-piece chemical-resistant garment that covers, at a minimum, the entire body except head, hands, and feet.</p> <p>Verify that, if the pesticide product labeling requires that “coveralls” be worn, they are loose-fitting, one- or two-piece garments that cover, at a minimum, the entire body except head, hands, and feet.</p> <p>Verify that gloves are the type specified on the pesticide product labeling.</p> <p>(NOTE: Gloves made of leather, cotton, or other absorbent materials may not be worn while performing handler activities unless gloves made of these materials are listed as acceptable for such use on the pesticide product labeling.)</p> <p>(NOTE: Separable glove liners may be worn beneath chemical-resistant gloves, unless the pesticide product labeling specifically prohibits their use. Separable glove liners are defined as separate glove-like hand coverings, made of lightweight material, with or without fingers. Work gloves made from lightweight cotton or poly-type material are considered to be glove liners if worn beneath chemical-resistant gloves. Separable glove liners may not extend outside the chemical-resistant gloves under which they are worn. Chemical resistant gloves with non-separable absorbent lining materials are prohibited.)</p> <p>Verify that, if used, separable glove liners are discarded immediately after a total of no more than 10 h of use or within 24 h of when first put on, whichever comes first.</p> <p>Verify that the liners are replaced immediately if directly contacted by pesticide and used glove liners are not reused.</p> <p>Verify that contaminated liners are disposed of in accordance with any Federal, State, or local regulations.</p> <p>Verify that, if the pesticide product labeling requires that “chemical-resistant Footwear” be worn, one of the following types of footwear is worn:</p> <p>– chemical-resistant shoes</p>

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	<ul style="list-style-type: none"> <li>– chemical-resistant boots</li> <li>– chemical-resistant shoe coverings worn over shoes or boots.</li> </ul> <p>Verify that, if the pesticide product labeling requires that “protective eyewear” be worn, one of the following types of eyewear is worn:</p> <ul style="list-style-type: none"> <li>– goggles</li> <li>– face shield</li> <li>– safety glasses with front, brow, and temple protection</li> <li>– full-face respirator.</li> </ul> <p>Verify that, if the pesticide product labeling requires that a “chemical-resistant Apron” be worn, a chemical-resistant apron that covers the front of the body from mid-chest to the knees is worn.</p> <p>Verify that, if the pesticide product labeling requires that “chemical-resistant Headgear” be worn, it is either a chemical-resistant hood or a chemical resistant hat with a wide brim.</p> <p>Verify that the respirator specified by the pesticide product labeling is used and whenever a respirator is required by the pesticide product labeling, the handler employer ensures that the following requirements are met before the handler performs any handler activity where the respirator is required to be worn. T</p> <ul style="list-style-type: none"> <li>– handler employers provide handlers with fit testing using the respirator specified on the pesticide product labeling in a manner that conforms to the provisions of 29 CFR 1910.134</li> <li>– handler employers provide handlers with training in the use of the respirator specified on the pesticide product labeling in a manner that conforms to the provisions of 29 CFR 1910.134(k)(1)(i) through(vi)</li> <li>– handler employers provide handlers with a medical evaluation by a physician or other licensed health care professional that conforms to the provisions of 29 CFR 1910.134 to ensure the handler’s physical ability to safely wear the respirator specified on the pesticide product labeling.</li> </ul> <p>Verify that the handler employer maintains for 2 yr, on the establishment, records documenting the completion of the requirements related to use of respirators.</p> <p>Verify that the handler employer ensures that PPE is used correctly for its intended purpose and is used according to the manufacturer’s instructions.</p> <p>Verify that the handler employer ensures that, before each day of use, all PPE is inspected for leaks, holes, tears, or worn places, and any damaged equipment is repaired or discarded.</p> <p>Verify that the handler employer ensures that all PPE is cleaned according to the manufacturer’s instructions or pesticide product labeling instructions before each</p>

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	<p>day of reuse, or, in the absence of any such instructions, washed thoroughly in detergent and hot water.</p> <p>Verify that, if any PPE protective equipment cannot or will not be cleaned properly, the handler employer ensures the contaminated PPE is made unusable as apparel or is made unavailable for further use by employees or third parties.</p> <p>Verify that overalls or other absorbent materials that have been drenched or heavily contaminated with a pesticide that has the signal word “DANGER” or “WARNING” on the label are not reused.</p> <p>Verify that handler employers ensures that any person who handles contaminated PPE wears the gloves specified on the pesticide product labeling for mixing and loading the product(s) comprising the contaminant(s) on the equipment.</p> <p>Verify that, if two or more pesticides are included in the contaminants, the gloves worn meet the requirements for mixing and loading all of the pesticide products.</p> <p>Verify that the handler employer ensures that contaminated PPE is kept separate from noncontaminated PPE, other clothing or laundry and washed separately from any other clothing or laundry.</p> <p>Verify that the handler employer ensures that all washed PPE is dried thoroughly before being stored or reused.</p> <p>Verify that the handler employer ensures that all clean personal PPE is stored separately from personal clothing and apart from pesticide-contaminated areas.</p> <p>Verify that the handler employer ensures that when filtering face piece respirators are used, they are replaced when one of the following conditions is met:</p> <ul style="list-style-type: none"> <li>– when breathing resistance becomes excessive</li> <li>– when the filter element has physical damage or tears</li> <li>– according to manufacturer’s recommendations or pesticide product labeling, whichever is more frequent</li> <li>– in the absence of any other instructions or indications of service life, at the end of eight hours of cumulative use.</li> </ul> <p>Verify that the handler employer ensures that when gas- or vapor-removing respirators are used, the gas- or vapor removing canisters or cartridges are replaced before further respirator use when one of the following conditions is met:</p> <ul style="list-style-type: none"> <li>– at the first indication of odor, taste, or irritation</li> <li>– when the maximum use time is reached as determined by a change schedule conforming to the provisions of 29 CFR 1910.134(d)(3)(iii)(B)(2)</li> <li>– when breathing resistance becomes excessive</li> </ul>

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	<ul style="list-style-type: none"> <li>– when required according to manufacturer’s recommendations or pesticide product labeling instructions, whichever is more frequent</li> <li>– in the absence of any other instructions or indications of service life, at the end of eight hours of cumulative use.</li> </ul> <p>Verify that the handler employer informs any person who cleans or launders PPE of all the following:</p> <ul style="list-style-type: none"> <li>– that such equipment may be contaminated with pesticides and there are potentially harmful effects from exposure to pesticides</li> <li>– the correct way(s) to clean PPE and how to protect themselves when handling such equipment</li> <li>– proper decontamination procedures that should be followed after handling contaminated PPE.</li> </ul> <p>Verify that the handler employer ensures that handlers have a place(s) away from pesticide storage and pesticide use areas where they may do all of the following:</p> <ul style="list-style-type: none"> <li>– store personal clothing not worn during handling activities</li> <li>– put on PPE at the start of any exposure period</li> <li>– remove PPE at the end of any exposure period.</li> </ul> <p>Verify that the handler employer does not allow or direct any handler to wear home or to take home employer provided PPE contaminated with pesticides.</p> <p>Verify that, where a pesticide’s labeling requires the use of PPE for a handler activity, the handler employer takes appropriate measures to prevent heat-related illness.</p> <p>(NOTE: The requirements correct use of PPE, cleaning of PPE, and prevention of heat-related illnesses do not apply at any agricultural establishment where the majority of the establishment is owned by one or more members of the same immediate family, and the worker or handler is the owner or members of their immediate family when they are performing handling activities or tasks related to the production of agricultural plants on their own agricultural establishment.)</p>



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<b>PESTICIDE APPLICATION</b>  <b>PM.40</b> <b>Documentation</b>  <b>PM.40.1.US.</b> Certified applicators of restricted-use pesticides are required to keep application records (7 CFR 110.3) <b>[Revised February 1995; Moved January 2005].</b>	<p>(NOTE: This was previously PM.10.2.US.)</p> <p>Verify that the certified applicators keep records with the following information:</p> <ul style="list-style-type: none"> <li>– the brand or product name, and the USEPA registration number of the restricted-use pesticide that was applied</li> <li>– the total amount of the restricted-use pesticide that was applied</li> <li>– the location of the application, the size of the area treated, and the crop, commodity, stored product, or site to which a restricted-use pesticide was applied</li> <li>– the month, day, and year of the application</li> <li>– the name and certification number of the certified applicator who applied or supervised the application.</li> </ul> <p>Verify that the following information is kept for applications of restricted-use pesticides made on the same day in a total areas of less than one-tenth of an acre:</p> <ul style="list-style-type: none"> <li>– brand or product name and USEPA registration number</li> <li>– total amount applied</li> <li>– location, designated as "spot application," followed by a concise description of location and treatment</li> <li>– the amount, day, and year of application.</li> </ul> <p>Verify that the information is recorded within 14 days of the application.</p> <p>Verify that these application records are retained for 2 yr.</p> <p>Verify that commercial applicators provide a copy of the records within 30 days.</p> <p>(NOTE: State and local standards may differ for this requirement. DOD policy requires pesticides applicators to keep application records for all pesticide applications, both restricted-use and unclassified pesticides)</p>



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<p><b>PM.45</b></p> <p><b>STORAGE, MIXING, HANDLING</b></p> <p><b>PM.45.1.US.</b> Checklist item deleted [<b>Deleted May 1996</b>].</p> <p><b>PM.45.2.US.</b> Pesticide storage, mixing and preparation facilities must provide structures and procedures to ensure safety of personnel (29 CFR 1910.133 and 1910.134) [<b>Revised December 1997; Revised October 2012</b>].</p> <p><b>PM.45.3.US.</b> Containment for pesticide containers and pesticide dispensing areas must meet specific requirements by 17 August 2009 (40 CFR 165.80 and 165.81) [<b>Added October 2006, Revised January 2009</b>].</p>	<p>(NOTE: This checklist item has been removed due to the deletion of 40 CFR 165 by the USEPA effective 18 August 1995.)</p> <p>Determine if a ventilation system is specifically provided for all indoor pesticide mixing/preparation areas.</p> <p>Verify that personal protective clothing and equipment is provided and used by pest management personnel. The following equipment depends upon magnitude and type of operations:</p> <ul style="list-style-type: none"> <li>– respirators</li> <li>– masks</li> <li>– gloves</li> <li>– safety shoes</li> <li>– coveralls</li> <li>– specialized personal protective equipment for fumigation.</li> </ul> <p>Verify that operations include health and safety procedures emphasizing good work habits, reduction or elimination of hazards, and use of personal protective equipment.</p> <p>(NOTE: If the pesticides being stored are flammable liquids, the pesticide storage area is also required to meet the storage requirements in 29 CFR 1910.106. In addition to meeting pesticide-specific storage area requirements, all general storage requirements for hazardous materials must also be met. See Section 3, <i>Hazardous Materials Management</i>.)</p> <p>(NOTE: This checklist item applies if you are an owner or operator of one of the following businesses and if you also have a stationary pesticide container or a pesticide dispensing (including container refilling) area:</p> <ul style="list-style-type: none"> <li>– refilling establishments who repackaging agricultural pesticides</li> <li>– and whose principal business is retail sale (i.e., more than 50% of total annual revenue comes from retail operations)</li> <li>– custom blenders of agricultural pesticides.</li> <li>– businesses which apply an agricultural pesticide for compensation (other than trading of personal services between agricultural producers).</li> </ul> <p>This checklist item applies to stationary pesticide containers designed to hold undivided quantities of agricultural pesticides equal to or greater than 500 gal (1890 L) of liquid pesticide or equal to or greater than 4000 lb (1,818 kg) of dry pesticide.)</p> <p>Verify that stationary pesticide containers have a secondary containment unit unless any of the following conditions exists:</p>

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<p><b>PM.45.4.US.</b> Containment for pesticide dispensing areas must meet specific requirements by 17 August 2009 (40 CFR 165.80, 165.81(b) and 165.82) [<b>Added October 2006, Revised January 2009</b>]</p>	<ul style="list-style-type: none"> <li>– the container is empty, that is, all pesticide that can be removed by methods such as draining, pumping or aspirating has been removed (whether or not the container has been rinsed or washed)</li> <li>– the container holds only pesticide rinsates or wash waters, and is labeled accordingly</li> <li>– the container holds only pesticides which would be gaseous when released at atmospheric temperature and pressure</li> <li>– the container is dedicated to non-pesticide use, and is labeled accordingly.</li> </ul> <p>(NOTE: This checklist item applies if you are an owner or operator of one of the following businesses and if you also have a stationary pesticide container (see definitions) or a pesticide dispensing (including container refilling) area:</p> <ul style="list-style-type: none"> <li>– refilling establishments who repackage agricultural pesticides and whose principal business is retail sale (i.e., more than 50% of total annual revenue comes from retail operations)</li> <li>– custom blenders of agricultural pesticides.</li> <li>– businesses which apply an agricultural pesticide for compensation (other than trading of personal services between agricultural producers).</li> </ul> <p>This checklist item applies to stationary pesticide containers designed to hold undivided quantities of agricultural pesticides equal to or greater than 500 gal (1890 L) of liquid pesticide or equal to or greater than 4000 lb (1,818 kg) of dry pesticide.)</p> <p>Verify that a pesticide dispensing area has a containment pad if any of the following activities occur:</p> <ul style="list-style-type: none"> <li>– refillable containers of agricultural pesticide are emptied, cleaned or rinsed</li> <li>– agricultural pesticides are dispensed from a stationary pesticide container designed to hold undivided quantities of agricultural pesticides equal to or greater than 500 gal (1890 L) of liquid pesticide or equal to or greater than 4000 lb (1818 kg) of dry pesticide for any purpose, including refilling or emptying for cleaning when pesticide is dispensed from the container into any vessel, including, but not limited to: <ul style="list-style-type: none"> <li>– refillable containers</li> <li>– service containers</li> <li>– transport vehicles</li> <li>– application equipment</li> </ul> </li> <li>– agricultural pesticides are dispensed from a transport vehicle for purposes of filling a refillable container</li> <li>– agricultural pesticides are dispensed from any other container for the purpose of refilling a refillable container for sale or distribution.</li> </ul> <p>(NOTE: Containment requirements do not apply if the agricultural pesticide is dispensed from a container for use, application or purposes other than refilling for sale or distribution.)</p>

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<p><b>PM.45.5.US.</b> New containment structures must meet certain parameters (40 CFR 165.80, 165.81(b), and 165.85) [Added October 2006, Revised January 2009].</p>	<p>(NOTE: A pesticide dispensing area is exempt from these requirements if any of the following conditions exist:</p> <ul style="list-style-type: none"> <li>– the only pesticides in the dispensing area would be gaseous when released at atmospheric temperature and pressure</li> <li>– the only pesticide containers refilled or emptied within the dispensing area are stationary pesticide containers which are already protected by a compliant secondary containment unit</li> <li>– the pesticide dispensing area is used solely for dispensing pesticide from a rail car which does not remain at a facility long enough to meet the definition of a stationary pesticide container; that is, 30 days.)</li> </ul> <p>(NOTE: This checklist item applies if to owners or operators of one of the following businesses if they also have a stationary pesticide container (see definitions) or a pesticide dispensing (including container refilling) area:</p> <ul style="list-style-type: none"> <li>– refilling establishments who repackaging agricultural pesticides and whose principal business is retail sale (i.e., more than 50% of total annual revenue comes from retail operations)</li> <li>– custom blenders of agricultural pesticides.</li> <li>– businesses which apply an agricultural pesticide for compensation (other than trading of personal services between agricultural producers).</li> </ul> <p>This checklist item applies to stationary pesticide containers designed to hold undivided quantities of agricultural pesticides equal to or greater than 500 gal (1890 L) of liquid pesticide or equal to or greater than 4000 lb (1,818 kg) of dry pesticide.)</p> <p>Verify that new containment structures consist of the following construction materials:</p> <ul style="list-style-type: none"> <li>– steel, reinforced concrete or other rigid material capable of withstanding the full hydrostatic head, load and impact of any pesticides, precipitation, other substances, equipment and appurtenances placed within the structure, and: <ul style="list-style-type: none"> <li>– the structure liquid-tight with cracks,</li> <li>– seams and joints are appropriately sealed</li> <li>– materials compatible with the pesticides stored.</li> </ul> </li> </ul> <p>(NOTE: In this case, compatible means able to withstand anticipated exposure to stored or transferred substances and still provide containment of those same or other substances within the containment area.)</p> <p>Verify that the new containment structure is not constructed of natural earthen material, unfired clay, or asphalt.</p> <p>Verify that new containment structures meet the following design requirements:</p> <ul style="list-style-type: none"> <li>– appurtenances and pesticide containers are protected against damage from operating personnel and moving equipment by providing supports to prevent</li> </ul>

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	<p>sagging, flexible connections, the use of guard rails, barriers, and protective cages (NOTE: The list is not exhaustive)</p> <ul style="list-style-type: none"> <li>– appurtenances, discharge outlets or gravity drains are not configured through the base or wall of the containment structure, except for direct interconnections between adjacent compliant containment structures</li> <li>– appurtenances must be configured in such a way that spills or leaks are easy to see</li> <li>– there is sufficient freeboard to contain precipitation and prevent water and other liquids from seeping into or flowing onto it from adjacent land or structures.</li> </ul> <p>(NOTE: Multiple stationary pesticide containers may be protected within a single secondary containment unit.)</p> <p>Verify that the following capacity requirements are met for new stationary pesticide containment units for stationary containers of liquid pesticides and new containment pads in pesticide dispensing areas:</p> <ul style="list-style-type: none"> <li>– new secondary containment units for stationary containers of liquid pesticides, if protected from precipitation, have a capacity of at least 100 percent of the volume of the largest stationary pesticide container plus the volume displaced by other containers and appurtenances within the unit</li> <li>– new secondary containment units for stationary containers of liquid pesticides, if exposed to or unprotected from precipitation, have a capacity of at least 110 percent of the volume of the largest stationary pesticide container plus the volume displaced by other containers and appurtenances within the unit</li> <li>– new containment pads in pesticide dispensing areas which have a pesticide container or pesticide-holding equipment with a volume of 750 gal or greater have a holding capacity of at least 750 gal</li> <li>– new containment pads in pesticide dispensing areas which do not have a pesticide container or pesticide-holding equipment with a volume of at least 750 gal have a holding capacity of at least 100 percent of the volume of the largest pesticide container or pesticide-holding equipment used on the pad.</li> </ul> <p>Verify that, for new secondary containment units for stationary containers of liquid pesticides, the facility either anchors or elevates each stationary container of liquid pesticides protected by a new secondary containment unit to prevent flotation in the event that the secondary containment unit fills with liquid.</p> <p>Verify that each new containment pad in a pesticide dispensing area meeting the following:</p> <ul style="list-style-type: none"> <li>– is designed and constructed to intercept leaks and spills of pesticides which may occur in the pesticide dispensing area</li> </ul>

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<p><b>PM.45.6.US.</b> Existing containment structures must meet certain parameters (40 CFR 165.80 and 165.87) [Added October 2006].</p>	<ul style="list-style-type: none"> <li>– has enough surface area to extend completely beneath any container on it, with the exception of transport vehicles dispensing pesticide for sale or distribution to a stationary pesticide container</li> <li>– allows, in conjunction with its sump, for removal and recovery of spilled, leaked, or discharged material and rainfall, such as by a manually activated pump</li> <li>– does not have automatically-activated pumps which lack automatic overflow cutoff switches for the receiving container</li> <li>– has its surface sloped toward an area where liquids can be collected for removal, such as a liquid-tight sump or a depression, in the case of a single-pour concrete pad.</li> </ul> <p>Verify that, for transport vehicles dispensing pesticide for sale or distribution to a stationary pesticide container, the surface area of the containment pad accommodates at least the portion of the vehicle where the delivery hose or device couples to the vehicle.</p> <p>(NOTE: This does not apply to transport vehicles that are used for prolonged storage or repeated on-site dispensing of pesticides.)</p> <p>Verify that new secondary containment units for stationary containers of dry pesticides meet the following parameters:</p> <ul style="list-style-type: none"> <li>– the stationary containers of dry pesticides within the containment unit are protected from wind and precipitation</li> <li>– stationary containers of dry pesticides are placed on pallets or a raised concrete platform to prevent the accumulation of water in or under the pesticide</li> <li>– the storage area for stationary containers of dry pesticides includes a floor that extends completely beneath the pallets or raised concrete platforms on which the stationary containers of dry pesticides is stored</li> <li>– the storage area for stationary containers of dry pesticides is enclosed by a curb a minimum of 6 in high that extends at least 2 ft beyond the perimeter of the container.</li> </ul> <p>(NOTE: This checklist item applies if to owners or operators of one of the following businesses if they also have a stationary pesticide container or a pesticide dispensing (including container refilling) area:</p> <ul style="list-style-type: none"> <li>– refilling establishments who repackaging agricultural pesticides and whose principal business is retail sale (i.e., more than 50% of total annual revenue comes from retail operations).</li> <li>– custom blenders of agricultural pesticides.</li> <li>– businesses which apply an agricultural pesticide for compensation (other than trading of personal services between agricultural producers).</li> </ul> <p>This checklist item applies to stationary pesticide containers designed to hold undivided quantities of agricultural pesticides equal to or greater than 500 gal (1890 L) of liquid pesticide or equal to or greater than 4000 lb (1,818 kg) of dry pesticide.)</p>

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	<p>Verify that, for existing containment structures the following material specifications are used:</p> <ul style="list-style-type: none"> <li>– the containment structure is constructed of steel, reinforced concrete or other rigid material capable of withstanding the full hydrostatic head, load and impact of any pesticides, precipitation, other substances, equipment and appurtenances placed within the structure</li> <li>– the structure is liquid-tight with cracks, seams and joints appropriately sealed</li> <li>– the containment structure is made of materials compatible with the pesticides stored and compatible means able to withstand anticipated exposure to stored or transferred materials and still provide secondary containment of those same or other materials within the containment area.</li> </ul> <p>Verify that existing containment structures are not constructed of natural earthen material, unfired clay, or asphalt.</p> <p>Verify that existing containment structures meet the following design requirements:</p> <ul style="list-style-type: none"> <li>– appurtenances and pesticide containers are protected against damage from operating personnel and moving equipment</li> <li>– means of protection include, but are not limited to, supports to prevent sagging, flexible connections, the use of guard rails, barriers, and protective cages</li> <li>– all appurtenances, discharge outlets and gravity drains are sealed through the base or wall of the containment structure, except for direct interconnections between adjacent containment structures which meet the compliance requirements</li> <li>– it is constructed with sufficient freeboard to contain precipitation and prevent water and other liquids from seeping into or flowing onto it from adjacent land or structures.</li> </ul> <p>(NOTE: Multiple stationary pesticide containers may be protected within a single secondary containment unit.)</p> <p>Verify that existing stationary liquid pesticide containment and existing containment pads in pesticide dispensing areas meet the following capacity requirements:</p> <ul style="list-style-type: none"> <li>– existing secondary containment units for stationary liquid pesticide containers has a capacity of at least 100 percent of the volume of the largest stationary pesticide container plus the volume displaced by other containers and appurtenances within the unit</li> <li>– existing containment pads in pesticide dispensing areas which have a pesticide container or pesticide-holding equipment with a volume of 750 gal or greater have a holding capacity of at least 750 gal</li> <li>– existing containment pads in pesticide dispensing areas which do not have a pesticide container or pesticide-holding equipment with a volume of at least</li> </ul>

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<p><b>PM.45.7.US.</b> The operation and maintenance of all new and existing pesticide containment structures must meet specific parameters (40 CFR 165.80, 165.81(b), and</p>	<p>750 gal have a holding capacity of at least 100 percent of the volume of the largest pesticide container or pesticide-holding equipment used on the pad.</p> <p>Verify that, for existing stationary liquid pesticide containment, the design either anchors or elevates each existing stationary liquid pesticide container protected by a secondary containment unit to prevent flotation in the event that the secondary containment unit fills with liquid.</p> <p>Verify that existing containment pads in pesticide dispensing areas meet the following design requirements:</p> <ul style="list-style-type: none"> <li>– be designed and constructed to intercept leaks and spills of pesticides which may occur in the pesticide dispensing area</li> <li>– have enough surface area to extend completely beneath any container on it, with the exception of transport vehicles dispensing pesticide for sale or distribution to a stationary pesticide container.</li> <li>– allow, in conjunction with its sump, for removal and recovery of spilled, leaked, or discharged material and rainfall, such as by a manually activated pump</li> <li>– automatically-activated pumps which lack automatic overflow cutoff switches for the receiving container are not allowed.</li> </ul> <p>Verify that, for transport vehicles dispensing pesticide for sale or distribution to a stationary pesticide container, the surface area of the containment pad accommodates at least the portion of the vehicle where the delivery hose or device couples to the vehicle.</p> <p>(NOTE: This exception does not apply to transport vehicles that are used for prolonged storage or repeated on-site dispensing of pesticides.)</p> <p>Verify that existing stationary dry pesticide containment meet the following design requirements:</p> <ul style="list-style-type: none"> <li>– the stationary dry pesticide containers within the containment unit are protected from wind and precipitation</li> <li>– stationary dry pesticide containers are placed on pallets or a raised concrete platform to prevent the accumulation of water in or under the pesticide</li> <li>– the stationary dry pesticide container storage area is enclosed by a minimum of a 6-in high curb that extends at least 2 ft beyond the perimeter of the container.</li> </ul> <p>(NOTE: This checklist item applies if to owners or operators of one of the following businesses if they also have a stationary pesticide container (see definitions) or a pesticide dispensing (including container refilling) area:</p> <ul style="list-style-type: none"> <li>* refilling establishments who repackaging agricultural pesticides and whose principal business is retail sale (i.e., more than 50% of total annual revenue comes from retail operations).</li> </ul>

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165.90) [Added October 2006, Revised January 2009].	<p>* custom blenders of agricultural pesticides.</p> <p>* businesses which apply an agricultural pesticide for compensation (other than trading of personal services between agricultural producers).</p> <p>This checklist item applies to stationary pesticide containers designed to hold undivided quantities of agricultural pesticides equal to or greater than 500 gal (1890 L) of liquid pesticide or equal to or greater than 4000 lb (1,818 kg) of dry pesticide.)</p> <p>Verify that new and existing pesticide containment structures are managed in a manner that prevents pesticides or materials containing pesticides from escaping from the containment structure (including, but not limited to, pesticide residues washed off the containment structure by rainfall or cleaning liquids used within the structure).</p> <p>Verify that pesticide spills and leaks on or in any containment structure are collected and recovered in a manner that ensures protection of human health and the environment (including surface water and groundwater) and maximum practicable recovery of the pesticide spilled or leaked.</p> <p>Verify that cleanup occurs no later than the end of the day on which pesticides have been spilled or leaked except in circumstances where a reasonable delay would significantly reduce the likelihood or severity of adverse effects to human health or the environment.</p> <p>Verify that all materials resulting from spills and leaks and any materials containing pesticide residue are managed according to label instructions and applicable Federal, State and local laws and regulations.</p> <p>Verify that the transfers of pesticides between containers, or between containers and transport vehicles, are attended at all times.</p> <p>Verify that each lockable valve on a stationary pesticide container, if it is required by 40 CFR 165.45(f), is closed and locked, or that the facility is locked, whenever the facility is unattended.</p> <p>Verify that each stationary pesticide container and its appurtenances and each containment structure is inspected at least monthly during periods when pesticides are being stored or dispensed on the containment structure.</p> <p>Verify that the inspection looks for visible signs of wetting, discoloration, blistering, bulging, corrosion, cracks or other signs of damage or leakage.</p> <p>Verify that repair is initiated to any areas showing visible signs of damage and seal any cracks and gaps in the containment structure or appurtenances with material compatible with the pesticide being stored or dispensed no later than the end of the day on which damage is noticed.</p>	

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<p><b>PM.45.8.US.</b> In situations where both a containment pad and a secondary containment unit are needed, certain requirements must be met (40 CFR 165.80 and 165.92) [Added October 2006].</p>	<p>Verify that repairs are completed within a time frame that is reasonable, taking into account factors such as the weather, and the availability of cleanup materials, trained staff, and equipment.</p> <p>Verify that no additional pesticides are stored on a containment structure if the structure fails to meet the regulatory requirements until suitable repairs have been made.</p> <p>(NOTE: This checklist item applies if to owners or operators of one of the following businesses if they also have a stationary pesticide container or a pesticide dispensing (including container refilling) area:</p> <ul style="list-style-type: none"> <li>* refilling establishments who repackage agricultural pesticides and whose principal business is retail sale (i.e., more that 50% of total annual revenue comes from retail operations).</li> <li>* custom blenders of agricultural pesticides.</li> <li>* businesses which apply an agricultural pesticide for compensation (other than trading of personal services between agricultural producers).</li> </ul> <p>This checklist item applies to stationary pesticide containers designed to hold undivided quantities of agricultural pesticides equal to or greater than 500 gal (1890 L) of liquid pesticide or equal to or greater than 4000 lb (1,818 kg) of dry pesticide.)</p> <p>Verify that, if both a containment pad and a secondary containment unit are used as an integrated system, the requirements in 40 CFR 165.85, 165.87, and 165.90 are met.</p>
<p><b>PM.45.9.US.</b> Records must be kept for each containment structure and for each stationary pesticide container (40 CFR 165.80, 165.81(b), and 165.95) [Added October 2006, Revised January 2009].</p>	<p>(NOTE: This checklist item applies if to owners or operators of one of the following businesses if they also have a stationary pesticide container (see definitions) or a pesticide dispensing (including container refilling) area:</p> <ul style="list-style-type: none"> <li>– refilling establishments who repackage agricultural pesticides</li> <li>– and whose principal business is retail sale (i.e., more than 50% of total annual revenue comes from retail operations)</li> <li>– custom blenders of agricultural pesticides.</li> <li>– businesses which apply an agricultural pesticide for compensation (other than trading of personal services between agricultural producers).</li> </ul> <p>This checklist item applies to stationary pesticide containers designed to hold undivided quantities of agricultural pesticides equal to or greater than 500 gal (1890 L) of liquid pesticide or equal to or greater than 4000 lb (1,818 kg) of dry pesticide.)</p> <p>Verify that records of inspection and maintenance for each containment structure and for each stationary pesticide container and its appurtenances are kept for 3 yr and include the following information:</p> <ul style="list-style-type: none"> <li>– name of the person conducting the inspection or maintenance</li> <li>– date the inspection or maintenance was conducted</li> <li>– conditions noted</li> <li>– specific maintenance performed.</li> </ul>

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	<p>Verify that records for any non-stationary pesticide container designed to hold undivided quantities of agricultural pesticides equal to or greater than 500 gal (1890 L) of liquid pesticide or equal to or greater than 4,000 lb (1818 kg) of dry pesticide that holds pesticide but is not protected by a secondary containment unit meeting these regulations are kept for 3 yr.</p> <p>Verify that records on non-stationary pesticide containers include the time period that the container remains at the same location.</p> <p>Verify that records of the construction date of the containment structure are kept for as long as the pesticide containment structure is in use, and for 3 yr afterwards.</p> <p>Verify that records are available for inspection and copying upon request by an employee of EPA or any entity designated by EPA, such as a State, another political subdivision or a Tribe.</p>

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<b>PM.55</b>  <b>DISPOSAL</b>  <b>PM.55.1.US.</b> Checklist item deleted <b>[Deleted May 1996]</b> .	(NOTE: This checklist item has been removed due to the deletion of 40 CFR 165 by the USEPA effective 18 August 1995. Please refer to hazardous waste regulations for disposal issues.)



## Appendix 7-1

### Restricted-Use Pesticides (40 CFR 152.175)

The following uses of pesticide products containing the active ingredients specified below have been classified for restricted use and are limited to use by or under the direct supervision of a certified applicator.

Active Ingredient	Formulation	Use Pattern	Classification	Criteria Influencing Restriction
Acrolein	As sole active ingredient. No mixtures registered.	All uses.	Restricted.	Inhalation hazard to humans residue effects on avian species and aquatic organisms
Aldicarb	As sole active ingredient. No mixtures registered.	Ornamental uses (indoor and outdoor).	do	Other hazards-accident history.
		Agricultural crop uses.	Under further evaluation.	
Aluminum phosphide	As sole active ingredient. No mixtures registered.	do	do	Inhalation hazard to humans.
Azinphos methyl	All liquids with a concentration greater than 13.5%.	do	do	do
	All other formulations.	do	Under further evaluation.	
Carbofuran	All concrete suspensions and wettable powders 40% and greater.	do	do	Acute inhalation toxicity.
	All granular formulations.	Rice.	Under evaluation.	
	All granular and Fertilizer formulations.	All uses except rice.	do	
Chloropicrin	All formulations greater than 2%.	All uses	Restricted.	Acute inhalation toxicity
	All formulations.	Rodent control	Restricted.	Hazard to non-target organisms.
	All formulations 2% and less.	Outdoor uses (other than rodent control).	Unclassified.	
Clonitralid	All wettable powders 70% and greater.	All uses	do	Acute inhalation toxicity.
	All granulars and wettable powders.	Molluscide uses.	do	Effects on aquatic organisms.
	Pressurized sprays	Hospital antiseptics.	Unclassified.	

Active Ingredient	Formulation	Use Pattern	Classification	Criteria Influencing Restriction
	0.55% and less.			
Dicrotophos	All liquid formulations 8% and greater.	All uses.	Restricted.	Acute dermal toxicity; residue effects on avian species (except for tree injections).
Disulfoton	All emulsifiable concentrates 65% and greater, all emulsifiable concentrates and concentrate solutions 21% and greater with fensulfothion 43% and greater, all emulsifiable concentrates 32% and greater in combination with 32% fensulfothion and greater.	do	Restricted.	do  Acute inhalation toxicity.
	Nonaqueous solution 95% and greater.	Commercial seed treatment.	Restricted.	Acute dermal toxicity.
	Granular formulations 10% and greater.	Indoor uses (greenhouse).	do	Acute inhalation toxicity.
Ethoprop	Emulsifiable concentrates 40% and greater.	do	do	Acute dermal toxicity.
	All granular and Fertilizer formulations.	do	Under evaluation.	
Ethyl parathion	All granular and dust formulations greater than 2% fertilizer formulations, wettable powders, emulsifiable concentrates, concentrated suspensions, concentrated solutions.	do	Restricted.	Inhalation hazard to humans. Acute dermal toxicity. Residue effects or mammalian, aquatic, avian species. Inhalation hazard to humans.
	Smoke fumigants.	do	do	Other hazards-accident history.
	Dust and granular formulations 2% and below.	do	do	

Active Ingredient	Formulation	Use Pattern	Classification	Criteria Influencing Restriction
Fenamiphos	Emulsifiable concentrates 35% and greater.	do	do	Acute dermal toxicity.
Fonofos	Emulsifiable concentrates 44% and greater.	All uses.	do	Acute dermal toxicity.
	Emulsifiable concentrates 12.6% and less with pebulate 50.3% and less.	Tobacco.	Unclassified.	
Methamidophos	Liquid formulations 40% and greater.	All uses.	Restricted.	Acute dermal toxicity; residue effects on avian species.
	Dust formulations 2.5% and greater.	All uses.	Restricted.	Residual effects on avian species.
Methidathion	All formulations.	All uses except stock safflower and sunflower.	Restricted.	Residue effects on avian species.
	All formulations.	Nursery stock, safflower, and sun flower.	Unclassified.	Residue effects on avian species.
Methomyl	As sole active ingredient in 1% to 2.5 baits (except 1% fly bait).	Nondomestic outdoor agricultural crops, ornamental and turf. All other registered uses.	Restricted.	Residue effects on mammalian species.
	All concentrated solution formulations.	do	do	Other hazards-accident history.
	90% wettable powder formulations (not in water soluble bags).	do	do	do
	90% wettable powder formulation in water soluble bags.	do	Unclassified.	
	All granular formulations.	do	do	
	25% wettable powder formulations.	do	do	
	In 1.24% to 2.5% dusts as sole active ingredient and in	do	do	

Active Ingredient	Formulation	Use Pattern	Classification	Criteria Influencing Restriction
	mixtures with fungicides and chlorinated hydrocarbon, inorganic phosphate and biological insecticides.			
Methylbromide	All formulations in containers greater than 1.5 lb.	All uses.	Restricted.	Other hazards-accident history.
	Containers with not more than 1.5 lb of methyl bromide with 0.25% to chloropicrin as an indicator.	Single applications (nondomestic use) for soil treatment in closed systems.	Unclassified.	
	Containers with not more than 1.5 lb having no indicator.	All uses.	Restricted.	do
Methyl parathion	All dust and granular formulations less than 5%.	do	do	Other hazards-accident history. All foliar applications restricted based on residue effects on mammalian and avian species.
	Microencapsulated. All dust and granular formulations 5% and greater and all wettable powders and liquids.	do	do	Residue effects on avian species. Hazard to bees. Acute dermal toxicity. Residue effects on mammalian and avian species.
Nicotine (alkaloid)	Liquid and dry formulations 14% and greater.	Indoor (greenhouse)	Restricted.	Acute inhalation toxicity.
	All formulations.	Applications to cranberries	Restricted.	Effects on aquatic organisms.
	Liquid and dry formulations 1.5% and less.	All uses (domestic and nondomestic).	Unclassified.	
Paraquat (dichloride) and paraquat bis(methylsulfate)	All formulations and concentrations except those listed.	All uses.	Restricted.	Other hazards. Use and accident history, human toxicological data.
	Pressurized spray Formulations containing 0.44%	Spot weed and grass control.	do	

Active Ingredient	Formulation	Use Pattern	Classification	Criteria Influencing Restriction
	Paraquat bis(methyl sulfate) and 15% petroleum distillates as active ingredients.			
	Liquid fertilizers Containing concentrations of 0.025% paraquat dichloride and 0.03% atrazine; 0.03% paraquat dichloride and 0.37% atrazine, 0.04% paraquat dichloride and 0.49% atrazine.	All uses.	Unclassified.	
Phorate	Liquid formulations 65% and greater.	do	Restricted.	Acute dermal toxicity. Residue effects on avian species (applies to foliar applications only). Residue effects on mammalian species (applies to foliar application only).
	All granular formulations.	Rice.	Restricted.	Effects on aquatic organisms.
Phosphamidon	Liquid formulations 75% and greater.	do	do	Acute dermal toxicity Residue effects on mammalian species. Residue effects on avian species.
	Dust formulations 1.5% and greater.	do	do	Residue effects on mammalian species.
Picloram	All formulations and concentrations except tordon 101R.	do	do	Hazard to non-target organisms (specifically nontarget plants both\ crop and noncrop).
	Tordon 101 R forestry herbicide containing 5.4% picloram and 20.9% 2, 4-D.	Control of unwanted trees by cut surface treatment.	Unclassified.	
Sodium cyanide <sup>3</sup>	All capsules and ball formulations.	All uses.	Restricted.	Inhalation hazard to humans.
Sodium <u>fluoroacetate</u>	All solutions and dry baits.	do	do	Acute oral toxicity. Hazard to nontarget organisms. Use and accident history.
Strychnine	All dry baits pellets	do	do	Acute oral toxicity.

Active Ingredient	Formulation	Use Pattern	Classification	Criteria Influencing Restriction
	and powder formulations greater than 0.5%.			Hazard to nontarget avian species. Use and accident history.
	All dry baits pellets and powder formulations.	All uses calling for burrow builders.	do	Hazard to nontarget organisms.
	All dry baits, and pellets, and powder formulations 0.5% and below.	All uses except sub soil.	do	do
	do	All subsoil uses.	Unclassified.	do
Sulfotepp	Sprays and smoke generators.	All uses.	Restricted.	Inhalation hazard to humans.
Zinc phosphide	All formulations 2% and less.	All domestic uses and nondomestic uses in and around buildings.	Unclassified.	
	All dry formulations 60% and greater.	All uses.	Restricted.	Acute inhalation toxicity.
	All bait formulations	Nondomestic outdoor uses (other than around buildings).	Restricted.	Hazard to nontarget organisms.
	All dry formulation 10% and greater.	Domestic uses.	Restricted.	Acute oral toxicity.

\*do means same as above (previous column).

<sup>2</sup> Percentages given are the total of dioxathion plus related compounds.

<sup>3</sup> NOTE: M-44 sodium cyanide capsules may only be used by certified applicators who have also taken the required additional training.

## **Appendix 7-1a**

### **Exempted Pesticides (40 CFR 152.20 and 152.25) [Added October 2001]**

These pesticides are exempted from 40 CFR 152.

1. The following pesticides are exempt because it has been determined that they are adequately regulated by another federal agency:

- all biological control agents are exempt from FIFRA requirements except the following:
  - eucaryotic microorganisms, including protozoa, algae and fungi
  - procaryotic microorganisms, including bacteria
  - viruses
- a pesticide product that is offered solely for human use and also is a new drug within the meaning of FFDCA sec. 201(p) or is an article that has been determined by the Secretary of Health and Human Services not to be a new drug by a regulation establishing conditions of use for the article. Such products are subject to regulation in accordance with the FFDCA and implementing regulations.)

2. The pesticides or classes of pesticides listed here have been determined to be of a character not requiring regulation under FIFRA, and are therefore exempt from all provisions of FIFRA when intended for use, and used, only in the manner specified.

- a) Treated articles or substances. An article or substance treated with, or containing, a pesticide to protect the article or substance itself (for example, paint treated with a pesticide to protect the paint coating, or wood products treated to protect the wood against insect or fungus infestation), if the pesticide is registered for such use.
- b) Pheromones and pheromone traps. Pheromones and identical or substantially similar compounds labeled for use only in pheromone traps (or labeled for use in a manner which the USEPA or authorized regulatory agency determines poses no greater risk of adverse effects on the environment than use in pheromone traps), and pheromone traps in which those compounds are the sole active ingredient(s).
  - For the purposes of this paragraph, a pheromone is a compound produced by an arthropod which, alone or in combination with other such compounds, modifies the behavior of other individuals of the same species.
  - For the purposes of this paragraph, a synthetically produced compound is identical to a pheromone only when their molecular structures are identical, or when the only differences between the molecular structures are between the stereochemical isomer ratios of the two compounds, except that a synthetic compound found to have toxicological properties significantly different from a pheromone is not identical.
  - When a compound possesses many characteristics of a pheromone but does not meet the criteria in paragraph (a)(2) of this section, it may, after review by the Agency, be deemed a substantially similar compound.
  - For the purposes of this paragraph, a pheromone trap is a device containing a pheromone or an identical or substantially similar compound used for the sole purpose of attracting, and trapping or killing, target arthropods. Pheromone traps are intended to achieve pest control by removal of target organisms from their natural environment and do not result in increased levels of pheromones or identical or substantially similar compounds over a significant fraction of the treated area.
- c) Preservatives for biological specimens.
  - Embalming fluids.
  - Products used to preserve animal or animal organ specimens, in mortuaries, laboratories, hospitals, museums and institutions of learning.
  - Products used to preserve the integrity of milk, urine, blood, or other body fluids for laboratory analysis.

- d) Vitamin hormone products. Vitamin hormone horticultural products consisting of mixtures of plant hormones, plant nutrients, inoculants, or soil amendments, which meet the following criteria:
  - The product, in the undiluted package concentration at which it is distributed or sold, meets the criteria of 40 CFR 156.10(h)(1) of this chapter for Toxicity Category III or IV; and
  - The product is not intended for use on food crop sites, and is labeled accordingly.
- e) Foods. Products consisting of foods and containing no active ingredients, which are used to attract pests.
- f) Natural cedar blocks, chips, shavings, balls, chests, drawer liners, paneling, and needles (except cedar oil, or formulated products which contain cedar oil, other cedar extracts, or ground cedar wood as part of a mixture) that meet all of the following criteria:
  - The product consists totally of cedarwood or natural cedar.
  - The product is not treated, combined, or impregnated with any additional substance(s).
  - The product bears claims or directions for use solely to repel arthropods other than ticks or to retard mildew, and no additional claims are made in sale or distribution. The labeling must be limited to specific arthropods, or must exclude ticks if any general term such as "arthropods," "insects," "bugs," or any other broad inclusive term, is used. The exemption does not apply to natural cedar products claimed to repel ticks.
- g) Products containing the following active ingredients are exempt from the requirements of FIFRA, alone or in combination with other substances listed in this paragraph, provided that all of the criteria of this section are met.
  - Castor oil (U.S.P. or equivalent)
  - Cedar oil
  - Cinnamon and cinnamon oil
  - Citric acid
  - Citronella and citronella oil
  - Cloves and clove oil
  - Corn gluten meal
  - Corn oil
  - Cottonseed oil
  - Dried blood
  - Eugenol
  - Garlic and garlic oil
  - Geraniol
  - Geranium oil
  - Lauryl sulfate
  - Lemongrass oil
  - Linseed oil
  - Malic acid
  - Mint and mint oil
  - Peppermint and peppermint oil
  - 2-Phenethyl propionate (2-phenylethyl propionate)
  - Potassium sorbate
  - Putrescent whole egg solids
  - Rosemary and rosemary oil
  - Sesame (includes ground sesame plant) and sesame oil
  - Sodium chloride (common salt)
  - Sodium lauryl sulfate
  - Soybean oil
  - Thyme and thyme oil
  - White pepper
  - Zinc metal strips (consisting solely of zinc metal and impurities)

(NOTE: A pesticide product exempt under paragraph (g) may only include inert ingredients listed in the most current List 4A. This list is updated periodically and is published in the Federal Register. The most current list may be obtained by writing to Registration Support Branch (4A Inerts List) Registration Division (7505C),

Office of Pesticide Programs, Environmental Protection Agency, 401 M St., SW., Washington DC 20460. All of the following conditions must be met for products to be exempted under this section:

- Each product containing the substance must bear a label identifying the name and percentage (by weight) of each active ingredient and the name of each inert ingredient.
- The product must not bear claims either to control or mitigate microorganisms that pose a threat to human health, including but not limited to disease transmitting bacteria or viruses, or claims to control insects or rodents carrying specific diseases, including, but not limited to ticks that carry Lyme disease.
- The product must not include any false and misleading labeling statements, including those listed in 40 CFR 156.10(a)(5)(i) through (viii).)



## **Appendix 7-2**

### **General Standards for All Categories of Certified Commercial Applicators (40 CFR 171.4(b)) [Added October 2001]**

All commercial applicators shall demonstrate practical knowledge of the principles and practices of pest control and safe use of pesticides. Testing shall be based on examples of problems and situations appropriate to the particular category or subcategory of the applicator's certification and the following areas of competency:

#### **Label and Labeling Comprehension:**

1. The general format and terminology of pesticide labels and labeling;
2. The understanding of instructions, warnings, terms, symbols, and other information commonly appearing on pesticide labels;
3. Classification of the product, general or restricted; and
4. Necessity for use consistent with the label.

#### **Safety. Factors including:**

1. Pesticide toxicity and hazard to man and common exposure routes;
2. Common types and causes of pesticide accidents;
3. Precautions necessary to guard against injury to applicators and other individuals in or near treated areas;
4. Need for and use of protective clothing and equipment;
5. Symptoms of pesticide poisoning;
6. First aid and other procedures to be followed in case of a pesticide accident; and
7. Proper identification, storage, transport, handling, mixing procedures, and disposal methods for pesticides and used pesticide containers, including precautions to be taken to prevent children from having access to pesticides and pesticide containers.

**Environment.** The potential environmental consequences of the use and misuse of pesticides as may be influenced by such factors as:

1. Weather and other climatic conditions;
2. Types of terrain, soil, or other substrate;
3. Presence of fish, wildlife, and other non-target organisms; and
4. Drainage patterns.

#### **Pests. Factors such as:**

1. Common features of pest organisms and characteristics of damage needed for pest recognition;
2. Recognition of relevant pests; and
3. Pest development and biology as it may be relevant to problem identification and control.

#### **Pesticides. Factors such as:**

1. Types of pesticides;
2. Types of formulations;
3. Compatibility, synergism, persistence, and animal and plant toxicity of the formulations;
4. Hazards and residues associated with use;
5. Factors which influence effectiveness or lead to such problems as resistance to pesticides; and
6. Dilution procedures.

#### **Equipment. Factors including:**

1. Types of equipment and advantages and limitations of each type; and
2. Uses, maintenance, and calibration.

#### **Application techniques. Factors including:**

1. Methods of procedure used to apply various formulations of pesticides, solutions, and gases, together with a knowledge of which technique of application to use in a given situation;
2. Relationship of discharge and placement of pesticides to proper use, unnecessary use, and misuse; and
3. Prevention of drift and pesticide loss into the environment.

Laws and regulations.

1. Applicable state laws and regulations; and
2. Applicable federal laws and regulations.

### **Appendix 7-3**

#### **Specific Standards for Competency for Each Category of Certified Commercial Applicators (40 CFR 171.4(c)) [Added October 2001]**

Commercial applicators in each category shall be particularly qualified with respect to the practical knowledge standards elaborated below:

- **Agricultural pest control--Plant.** Applicators must demonstrate practical knowledge of crops grown and the specific pests of those crops on which they may be using restricted use pesticides. The importance of such competency is amplified by the extensive areas involved, the quantities of pesticides needed, and the ultimate use of many commodities as food and feed. Practical knowledge is required concerning soil and water problems, pre-harvest intervals, re-entry intervals, phytotoxicity, and potential for environmental contamination, non-target injury and community problems resulting from the use of restricted use pesticides in agricultural areas.
- **Agricultural pest control--Animal.** Applicators applying pesticides directly to animals must demonstrate practical knowledge of such animals and their associated pests. A practical knowledge is also required concerning specific pesticide toxicity and residue potential, since host animals will frequently be used for food. Further, the applicator must know the relative hazards associated with such factors as formulation, application techniques, age of animals, stress, and extent of treatment.
- **Forest pest control.** Applicators shall demonstrate practical knowledge of types of forests, forest nurseries, and seed production in their state and the pests involved. They should possess practical knowledge of the cyclic occurrence of certain pests and specific population dynamics as a basis for programming pesticide applications. A practical knowledge is required of the relative biotic agents and their vulnerability to the pesticides to be applied. Because forest stands may be large and frequently include natural aquatic habitats and harbor wildlife, the consequences of pesticide use may be difficult to assess. The applicator must therefore demonstrate practical knowledge of control methods which will minimize the possibility of secondary problems such as unintended effects on wildlife. Proper use of specialized equipment must be demonstrated, especially as it may relate to meteorological factors and adjacent land use.
- **Ornamental and turf pest control.** Applicators shall demonstrate practical knowledge of pesticide problems associated with the production and maintenance of ornamental trees, shrubs, plantings, and turf, including cognizance of potential phytotoxicity due to a wide variety of plant material, drift, and persistence beyond the intended period of pest control. Because of the frequent proximity of human habitations to application activities, applicators in this category must demonstrate practical knowledge of application methods which will minimize or prevent hazards to humans, pets, and other domestic animals.
- **Seed-treatment.** Applicators shall demonstrate practical knowledge of types of seeds that require chemical protection against pests and factors such as seed coloration, carriers, and surface active agents which influence pesticide binding and may affect germination. They must demonstrate practical knowledge of hazards associated with handling, sorting and mixing, and misuse of treated seed such as introduction of treated seed into food and feed channels, as well as proper disposal of unused treated seeds.
- **Aquatic pest control.** Applicators shall demonstrate practical knowledge of the secondary effects which can be caused by improper application rates, incorrect formulations, and faulty application of restricted use pesticides used in this category. They shall demonstrate practical knowledge of various water use situations and the potential of downstream effects. Further, they must have practical knowledge concerning potential pesticide effects on plants, fish, birds, beneficial insects and other organisms which

may be present in aquatic environments. These applicators shall demonstrate practical knowledge of the principles of limited area application.

- Right-of-way pest control. Applicators shall demonstrate practical knowledge of a wide variety of environments, since rights-of-way can traverse many different terrains, including waterways. They shall demonstrate practical knowledge of problems on runoff, drift, and excessive foliage destruction and ability to recognize target organisms. They shall also demonstrate practical knowledge of the nature of herbicides and the need for containment of these pesticides within the right-of-way area, and the impact of their application activities in the adjacent areas and communities.
- Industrial, institutional, structural and health related pest control. Applicators must demonstrate a practical knowledge of a wide variety of pests, including their life cycles, types of formulations appropriate for their control, and methods of application that avoid contamination of food, damage and contamination of habitat, and exposure of people and pets. Since human exposure, including babies, children, pregnant women, and elderly people, is frequently a potential problem, applicators must demonstrate practical knowledge of the specific factors which may lead to a hazardous condition, including continuous exposure in the various situations encountered in this category. Because health related pest control may involve outdoor applications, applicators must also demonstrate practical knowledge of environmental conditions, particularly related to this activity.
- Public health pest control. Applicators shall demonstrate practical knowledge of vector-disease transmission as it relates to and influences application programs. A wide variety of pests is involved, and it is essential that they be known and recognized, and appropriate life cycles and habitats be understood as a basis for control strategy. These applicators shall have practical knowledge of a great variety of environments ranging from streams to those conditions found in buildings. They should also have practical knowledge of the importance and employment of such non-chemical control methods as sanitation, waste disposal, and drainage.
- Regulatory pest control. Applicators shall demonstrate practical knowledge of regulated pests, applicable laws relating to quarantine and other regulation of pests, and the potential impact on the environment of restricted use pesticides used in suppression and eradication programs. They shall demonstrate knowledge of factors influencing introduction, spread, and population dynamics of relevant pests. Their knowledge shall extend beyond that required by their immediate duties, since their services are frequently required in other areas of the country where emergency measures are invoked to control regulated pests and where individual judgments must be made in new situations.
- Demonstration and research pest control. Persons demonstrating the safe and effective use of pesticides to other applicators and the public will be expected to meet comprehensive standards reflecting a broad spectrum of pesticide uses. Many different pest problems situations will be encountered in the course of activities associated with demonstration, and practical knowledge of problems, pests, and population levels occurring in each demonstration situation is required. Further, they should demonstrate an understanding of a pesticide-organism interactions and the importance of integrating pesticide use with other control methods. In general, it would be expected that applicators doing demonstration pest control work possess a practical knowledge of all of the standards detailed in 40 CFR 171.4(b). In addition, they shall meet the specific standards required for 40 CFR 171.4(c)(1) through (7) as may be applicable to their particular activity.

(NOTE: Persons conducting field research or method improvement work with restricted use pesticides should be expected to know the general standards. In addition, they shall be expected to know the specific standards required for the categories applicable to their particular activity, or alternatively, to meet the more inclusive requirements listed under “Demonstration.”)

## Appendix 7-4

### Exceptions For Entry By Workers During Restricted Entry Intervals (40 CFR 170.603) [Revised October 2016]

An agricultural employer may direct workers to enter treated areas where a restricted-entry interval is in effect to perform certain activities as provided in this section, provided that the agricultural employer ensures all of the applicable conditions of this Appendix and 40 CFR 170.605 [see checklist item PM.20.39.US] are met.

**Exception for activities with no contact.** A worker may enter a treated area during a restricted-entry interval if the agricultural employer ensures that all of the following conditions are met:

- (1) The worker will have no contact with anything that has been treated with the pesticide to which the restricted-entry interval applies, including, but not limited to, soil, water, air, or surfaces of plants. This exception does not allow workers to perform any activities that involve contact with treated surfaces even if workers are wearing personal protective equipment.
- (2) No such entry is allowed until any inhalation exposure level listed in the pesticide product labeling has been reached or any ventilation criteria required by 40 CFR 170.405(b)(3) or the pesticide product labeling have been met.

**Exception for short-term activities.** A worker may enter a treated area during a restricted-entry interval for short-term activities, if the agricultural employer ensures that all of the following requirements are met:

- (1) No hand labor activity is performed.
- (2) The time in treated areas where a restricted-entry interval is in effect does not exceed one hour in any 24-h period for any worker.
- (3) No such entry is allowed during the first 4 hours after the application ends.
- (4) No such entry is allowed until any inhalation exposure level listed in the pesticide product labeling has been reached or any ventilation criteria required by 40 CFR 170.405(b)(3) or the pesticide product labeling have been met.

**Exception for an agricultural emergency.**

- (1) An agricultural emergency means a sudden occurrence or set of circumstances that the agricultural employer could not have anticipated and over which the agricultural employer has no control, that requires entry into a treated area during a restricted-entry interval, and when no alternative practices would prevent or mitigate a substantial economic loss. A substantial economic loss means a loss in profitability greater than that which would be expected based on the experience and fluctuations of crop yields in previous years. Only losses caused by the agricultural emergency specific to the affected site and geographic area are considered. Losses resulting from mismanagement cannot be included when determining whether a loss is substantial.
- (2) A worker may enter a treated area where a restricted-entry interval is in effect in an agricultural emergency to perform tasks necessary to mitigate the effects of the agricultural emergency, including hand labor tasks, if the agricultural employer ensures that all the following criteria are met:
  - (i) The State department of agriculture, or the State or Tribal agency responsible for pesticide enforcement declares an agricultural emergency that applies to the treated area, or agricultural employer has determined that the circumstances within the treated area are the same as circumstances the State department of agriculture, or the State or Tribal agency responsible for pesticide enforcement has previously determined would constitute an agricultural emergency.
  - (ii) The agricultural employer determines that the agricultural establishment is subject to the circumstances that result in an agricultural emergency meeting the criteria of paragraph (1).
  - (iii) If the labeling of any pesticide product applied to the treated area requires workers to be notified of the location of treated areas by both posting and oral notification, then the agricultural employer must ensure that no individual worker spends more than four hours out of any 24-hour period in treated areas where such a restricted-entry interval is in effect.
  - (iv) No such entry is allowed during the first 4 hours after the application ends.

- (v) No such entry is allowed until any inhalation exposure level listed in the pesticide product labeling has been reached or any ventilation criteria required by 40 CFR 170.405(b)(3) or the pesticide product labeling have been met.

**Exceptions for limited contact and irrigation activities.** A worker may enter a treated area during a restricted-entry interval for limited contact or irrigation activities, if the agricultural employer ensures that all of the following requirements are met:

- (1) No hand labor activity is performed.
- (2) No worker is allowed in the treated area for more than 8 h in a 24-h period.
- (3) No such entry is allowed during the first 4 hours after the application ends.
- (4) No such entry is allowed until any inhalation exposure level listed in the pesticide product labeling has been reached or any ventilation criteria required by 40 CFR 170.405(b)(3) or the pesticide product labeling have been met.
- (5) The task is one that, if not performed before the restricted-entry interval expires, would cause substantial economic loss, and there are no alternative tasks that would prevent substantial loss.
- (6) With the exception of irrigation tasks, the need for the task could not have been foreseen.
- (7) The worker has no contact with pesticide-treated surfaces other than minimal contact with feet, lower legs, hands, and forearms.
- (8) The labeling of the pesticide product that was applied does not require that workers be notified of the location of treated areas by both posting and oral notification.

## Appendix 7-5

### Entry Restrictions During Enclosed Space Production Pesticide Applications and Exemptions (40 CFR 170.405(b)(4)) [Added October 2016]

(NOTE: After the time specified in column C has expired, the area subject to the labeling-specified restricted-entry interval and the post-application entry restrictions is the area specified in column D.).

<b>A. When pesticide is applied:</b>	<b>B. Workers and other persons, other than appropriately trained and equipped handlers, are prohibited in:</b>	<b>C. Until</b>	<b>D. After the expiration of time specified in Column C, the area subject to the restricted-entry interval is:</b>
1. As a fumigant	Entire enclosed space plus any adjacent structure or area that cannot be sealed off from the treated area.	The ventilation criteria of 40 CFR 170.405(b)(3) are met	No post-application entry restrictions required by 40 CFR 107.403 after criteria in Column C are met.
2. As a..... a. Smoke, or b. Mist, or c. Fog, or d. As a spray using a spray quality (drop spectrum) of smaller than medium (volume median diameter of less than 294 microns)	Entire enclosed space	The ventilation criteria of 40 CFR 170.405(b)(3) are met	Entire enclosed space
3. Not as in (1) or (2) and for which a respiratory protection device is required for application by the pesticide product labeling.	Entire enclosed space	The ventilation criteria of 40 CFR 170.405(b)(3) are met	Treated area
4. Not as in (1), (2), or (3) and ..... a. From a height of > 12 in from the planting medium, or b. As a spray using a spray quality (drop spectrum) of	Treated area plus 25 ft. in all directions of the treated area but not outside the enclosed space	Application is complete	Treated area

<b>A, When pesticide is applied:</b>	<b>B. Workers and other persons, other than appropriately trained and equipped handlers, are prohibited in:</b>	<b>C. Until</b>	<b>D. After the expiration of time specified in Column C, the area subject to the restricted-entry interval is:</b>
smaller than medium (volume median diameter of less than 294 microns)			
5. Otherwise	Treated area	Application is complete	Treated area

## Appendix 7-6

### Exceptions to PPE Requirements Specified on Pesticide Product Labeling (40 CFR 170.607) [Added October 2016]

#### Body Protection.

- (1) A chemical-resistant suit may be substituted for coveralls. If a chemical-resistant suit is substituted for coveralls, any labeling requirement for an additional layer of clothing beneath the coveralls is waived.
- (2) A chemical-resistant suit may be substituted for coveralls and a chemical-resistant apron.

#### Boots.

If chemical-resistant footwear with sufficient durability and a tread appropriate for wear in rough terrain is not obtainable, then leather boots may be worn in such terrain.

#### Gloves.

If chemical-resistant gloves with sufficient durability and suppleness are not obtainable, then during activities with plants with sharp thorns, leather gloves may be worn over chemical-resistant glove liners. However, once leather gloves are worn for this use, thereafter they must be worn only with chemical-resistant liners and they must not be worn for any other use.

#### Closed Systems.

When pesticides are being mixed or loaded using a closed system that meets all of the requirements in paragraph (1), and the handler employer meets the requirements of paragraph (2), the following exceptions to labeling-specified PPE are permitted:

- Handlers using a closed system to mix or load pesticides with a signal word of "DANGER" or "WARNING" may substitute a long-sleeved shirt, long pants, shoes and socks, chemical-resistant apron, protective eyewear, and any protective gloves specified on the labeling for handlers for the labeling-specified PPE.
  - Handlers using a closed system to mix or load pesticides other than those specified above may substitute protective eyewear, long-sleeved shirt, long pants, and shoes and socks for the labeling-specified personal protective equipment.
- (1) The exceptions of above apply only in the following situations:
    - (i) Where the closed system removes the pesticide from its original container and transfers the pesticide product through connecting hoses, pipes and couplings that are sufficiently tight to prevent exposure of handlers to the pesticide product, except for the negligible escape associated with normal operation of the system.
    - (ii) When loading intact, sealed, water soluble packaging into a mixing tank or system. If the integrity of a water soluble packaging is compromised (for example, if the packaging is dissolved, broken, punctured, torn, or in any way allows its contents to escape), it is no longer a closed system and the labeling-specified PPE must be worn.
  - (2) The exceptions above apply only where the handler employer has satisfied the requirements of 40 CFR 170.313 [see checklist item PM.20.35.US] and all of the following conditions:
    - (i) Each closed system must have written operating instructions that are clearly legible and include: Operating procedures for use, including the safe removal of a probe; maintenance, cleaning and repair; known restrictions or limitations relating to the system, such as incompatible pesticides, sizes (or types) of containers or closures that cannot be handled by the system; any limits on the ability to measure a pesticide; and special procedures or limitations regarding partially-filled containers.
    - (ii) The written operating instructions for the closed system must be available at the mixing or loading site and must be made available to any handlers who use the system.
    - (iii) Any handler operating the closed system must be trained in its use and operate the closed system in accordance with its written operating instructions.
    - (iv) The closed system must be cleaned and maintained as specified in the written operating instructions and as needed to make sure the system functions properly.

- (v) All personal protective equipment specified in the pesticide product labeling is immediately available to the handler for use in an emergency.
- (vi) Protective eyewear must be worn when using closed systems operating under pressure.

#### **Enclosed Cabs.**

- (1) If a handler applies a pesticide from inside a vehicle's enclosed cab, and if the conditions listed in paragraph (2) are met, exceptions to the PPE requirements specified on the product labeling for applicators are permitted as provided in paragraph (3).
- (2) All of the personal protective equipment required by the pesticide product labeling for applicators must be immediately available and stored in a sealed container to prevent contamination. Handlers must wear the applicator personal protective equipment required by the pesticide product labeling if they exit the cab within a treated area during application or when a restricted-entry interval is in effect. Once personal protective equipment is worn in a treated area, it must be removed before reentering the cab to prevent contamination of the cab.
- (3) Handlers may substitute a long-sleeved shirt, long pants, shoes and socks for the labeling-specified personal protective equipment for skin and eye protection. If a filtering face piece respirator (NIOSH approval number prefix TC-84A) or dust/mist filtering respirator is required by the pesticide product labeling for applicators, then that respirator need not be worn inside the enclosed cab if the enclosed cab has a properly functioning air ventilation system which is used and maintained in accordance with the manufacture's written operating instructions. If any other type of respirator is required by the pesticide labeling for applicators, then that respirator must be worn.

#### **Aerial Applications**

- (1) Use of gloves. The wearing of chemical-resistant gloves when entering or leaving an aircraft used to apply pesticides is optional, unless such gloves are required on the pesticide product labeling. If gloves are brought into the cockpit of an aircraft that has been used to apply pesticides, the gloves shall be kept in an enclosed container to prevent contamination of the inside of the cockpit.
- (2) Open cockpit. Handlers applying pesticides from an open cockpit aircraft must use the personal protective equipment specified in the pesticide product labeling for use during application, except that chemical resistant footwear need not be worn. A helmet may be substituted for chemical-resistant headgear. A helmet with a face shield lowered to cover the face may be substituted for protective eyewear.
- (3) Enclosed cockpit. Persons occupying an enclosed cockpit may substitute a long-sleeved shirt, long pants, shoes, and socks for labeling-specified personal protective equipment.

#### **Crop Advisors.**

- (1) Provided the conditions of paragraphs (2) through (4) are met, crop advisors and their employees entering treated areas to perform crop advising tasks while a restricted-entry interval is in effect may substitute either of the following sets of personal protective equipment for the personal protective equipment specified on the pesticide labeling for handler activities:
  - (i) The PPE specified on the pesticide product labeling for early entry.
  - (ii) Coveralls, shoes plus socks and chemical-resistant gloves made of any waterproof material, and eye protection if the pesticide product labeling applied requires protective eyewear for handlers.
- (2) The application has been complete for at least four hours.
- (3) No such entry is allowed until any inhalation exposure level listed in the pesticide product labeling has been reached or any ventilation criteria required by 40 CFR 170.405(b)(3) or the pesticide product labeling have been met.
- (4) The crop advisor or crop advisor employee who enters a treated area during a restricted-entry interval only performs crop advising tasks while in the treated area.

## SECTION 8

### PETROLEUM, OIL, AND LUBRICANT (POL) MANAGEMENT U.S. TEAM Guide, December 2018

#### A. Applicability

This section applies to facilities that store, transport, dispose of, or utilize petroleum based fuels, oils, or lubricants (POL). The section presents review action items that respond to regulations, procedures, and organizational mechanisms designed to prevent or limit the accidental release of POL materials to surface water, groundwater, or soils. Specifically, this section addresses spill prevention plans, POL transfer operations, POL storage in containers other than tanks, and used oil. For checklist items pertaining to POL storage tanks, see Section 10, Storage Tank Management.

Assessors are required to review state and local regulations and, if applicable, the appropriate Agency Supplement, to perform a comprehensive assessment.

Select portions of this section (i.e., Review of Federal Legislation, State and Local Regulations, Key Compliance Requirements, Key Terms and Definitions, Typical Records to Review, Typical Physical Features to Inspect, and the Checklist) have been reviewed by USEPA personnel from the Office of Enforcement and Compliance Assurance (OECA) and USEPA's Office of General Counsel. USEPA's comments and suggestions for changes have been incorporated in this version of the TEAM Guide. USEPA did not review all portions of this section. USEPA also did not review and comment on items pertaining to federal Executive Orders, DOT regulations, OSHA regulations or any other area outside of Title 40 of the Code of Federal Regulations. Portions that have been added or revised as a result of this review are identified as either being reviewed, revised, or added in March 2000, for example [**Added March 2000**].

#### B. Federal Legislation

- *The Water Quality Improvement Act* of 1974. This law was the primary Federal law governing the discharge of oil into navigable waters. This regulation prohibits the discharge of harmful quantities of oil into navigable waters. 40 Code of Federal Regulations (CFR) 110, *Protection of Environment - Discharge of Oil*, defines harmful quantities as those discharges which will cause a sheen or discoloration of the surface of the water or a sludge or emulsion to be deposited beneath the surface of the water.
- *The Oil Pollution Act* of 1990. This law, Public Law (PL) 301-308 (33 U.S. Code (USC) 2701- 2761, et al), as amended, requires the prevention of oil pollution into navigable waters by tank vessels. This includes the preparation of a response plan, construction of oil carriers with double hulls, and inspection of spill response equipment. Additionally, this act applies to the storage of flammable/combustible liquids.
- EO 12088, *Federal Compliance with Pollution Standards*. This EO, dated 13 October 1978, requires Federally owned and operated facilities to comply with applicable Federal, state, and local pollution control standards. It makes the head of each executive agency responsible for ensuring that the agencies, facilities, programs, and activities the Agency funds meet applicable Federal, state, and local environmental requirements for correcting situations that are not in compliance with such requirements. In addition, the EO requires that each agency ensure that sufficient funds for environmental compliance are included in the agency budget. Sections 1-4, "Pollution Control Plan" was revoked by EO 13148 [**Revised October 2002**].
- Executive Order (EO) 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*. This EO, dated 24 January 2007, requires Federal agencies to lead by example in advancing the nation's energy security and environmental performance by achieving goals outlined in the EO. This EO revokes the following prior EOs [**Added January 2007**]:

1. Executive Order 13101, *Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition* dated 14 September 1998;
2. Executive Order 13123, *Greening the Government Through Efficient Energy Management* dated 3 June 1999;
3. Executive Order 13134, *Developing and Promoting Biobased Products and Bioenergy* dated 12 August 1999, as amended;
4. Executive Order 13148, *Greening the Government through Leadership in Environmental Management* dated 21 April 2000; and
5. Executive Order 13149, *Greening the Government Through Federal Fleet and Transportation Efficiency* dated 21 April 2000.

### C. State/Local Regulations

- For information on regulations in specific states, see the State Supplements to TEAM Guide.
- Many states and some major metropolitan and regional planning agencies have developed legislation and implemented regulations that closely parallel the Federal regulations. Some, however, may differ in important ways, and the evaluator should obtain copies of the state or local requirements for the Oil and Hazardous Substances Pollution Contingency (OHSPC) and the Spill Prevention, Control, and Countermeasures (SPCC) plans, where appropriate, and review them for those differences before conducting the evaluations. In particular, the evaluator should check for differences in the definitions of reportable quantities and the specific procedures for reporting spills that may exist in state/local regulations.

### D. Key Compliance Requirements

- The SPCC Plan – 40 CFR 112 establishes requirements for the preparation and implementation of Spill Prevention, Control, and Countermeasure (SPCC) Plans. SPCC Plans are designed to complement existing laws, regulations, rules, standards, policies, and procedures pertaining to safety standards, fire prevention, and pollution prevention rules. The purpose of an SPCC Plan is to form a comprehensive Federal/State spill prevention program that minimizes the potential for discharges. The SPCC Plan must address all relevant spill prevention, control, and countermeasures necessary at the specific facility. Compliance with 40 CFR 112 does not in any way relieve the owner or operator of an onshore or an offshore facility from compliance with other Federal, State, or local laws.

The requirements for an SPCC PLAN apply to any owner or operator of a non-transportation-related onshore or offshore facility engaged in drilling, producing, gathering, storing, processing, refining, transferring, distributing, using, or consuming oil and oil products, which due to its location, could reasonably be expected to discharge oil in quantities that may be harmful, into or upon the navigable waters of the United States or adjoining shorelines, or into or upon the waters of the contiguous zone, or in connection with activities under the Outer Continental Shelf Lands Act or the Deepwater Port Act of 1974, or that may affect natural resources belonging to, appertaining to, or under the exclusive management authority of the United States (including resources under the Magnuson Fishery Conservation and Management Act) that has oil in:

1. any aboveground container;
  2. any completely buried tank (see definitions)
  3. any container that is used for standby storage, for seasonal storage, or for temporary storage, or not otherwise “permanently closed” (see definitions)
  4. any “bunkered tank” or “partially buried tank” (see definitions), or any container in a vault, each of which is considered an aboveground storage container for purposes of 40 CFR 112.) (40 CFR 112.1) **[Revised July 2002].**
- Response Plans - Nontransportation related onshore facilities that, because of location, could reasonably be expected to cause substantial harm to the environment by discharging oil into or on the navigable waters or adjoining shoreline are required to develop response plans. A facility could, because of its location, reasonably be expected to cause substantial harm if it meets any of the following criteria:

1. the facility transfers oil over water to or from vessels and has a total oil storage capacity greater than or equal to 42,000 gal
  2. the facility's total oil storage capacity is greater than or equal to 1 million gal and one of the following is true:
    - a. the facility does not have secondary containment for each aboveground area sufficiently large to contain the capacity of the largest aboveground storage tank (AST) within each storage area plus sufficient freeboard to allow for precipitation
    - b. the facility is located at a distance such that discharge from the facility could cause injury to fish and wildlife and sensitive environment
    - c. the facility is located at a distance such that a discharge from the facility would shut down a public drinking water intake
    - d. the facility has had a reportable oil spill in an amount greater than or equal to 10,000 gal within the last 5 yr.
- **Transportation Spill Plans** - Response plans are required when transporting any liquid petroleum oil in a packaging having a capacity of 3,500 gal or more or any liquid petroleum or non-petroleum oil in a quantity greater than 42,000 gallons per packaging. This requirement does not apply to (49 CFR 130) **[Added October 2000]**:
    1. any mixture or solution in which oil is in a concentration by weight of less than 10 percent transportation of oil by aircraft or vessel
    2. any petroleum oil carried in a fuel tank for the purpose of supplying fuel for propulsion of the transport vehicle to which it is attached
    3. oil transport exclusively within the confines of a non-transportation-related or terminal facility in a vehicle not intended for use in interstate or intrastate commerce (see 40 CFR 112).
  - **Discharges/Spills** - A discharge of oil into navigable waters of the United States, or adjoining shorelines, or into areas that may affect natural resources belonging to or under the exclusive management authority of the United States must be reported to the National Response Center (NRC). Dispersants or emulsifiers cannot be added to oils that are discharged (40 CFR 110.2 through 110.10).
  - **Discharge Prevention/Cleanup** - Appropriate containment and/or diversionary structures and cleanup equipment are to be readily available to prevent discharged petroleum products from reaching navigable water courses. Alternatively, when prevention systems or equivalents are not practicable, a strong oil spill contingency plan and/or a written commitment of manpower, equipment, and materials required to expeditiously control and remove any harmful quantity of oil discharged are needed (40 CFR 112.7(c)) **[Revised January 1999]**.
  - **Piping Systems** - Buried piping at transfer operations, pumping activities and in-plant processing is required to have a protective wrapping or coating and to be cathodically protected if soil conditions warrant (40 CFR 112.7(e)(3)(i) and 112.7(e)(3)(iv)).
  - **Onshore Oil Pipelines** - Facilities with onshore oil pipelines that, because of location, could reasonably be expected to cause substantial harm to the environment by discharging oil into navigable waters are required to prepare a response plan. Copies of the response plan are required to be submitted to the USEPA Research and Special Programs Administration (RSPA) for approval. Copies of the response plan are required to be kept at the operators headquarters, pump stations, and other places where response activities might be conducted. Training is required for the implementation of the response plan. The response plan is required to be reviewed every 3 yr from the date of submission and modified to address new or different operating conditions or information (49 CFR 194).
  - **Service Stations** - The storage of liquids in containers at service stations, specifically Class I liquids, has to be done in containers that are secure and prevents the excess release of vapors (29 CFR 1910.106(g)).
  - **Transfer Terminals** - Terminals transferring oil or hazardous materials to vessels with a capacity of more than 250 bbl [approx. 30,747 L] are required to have an operations manual. If the reception facility at the terminal or port that loads a daily average of more than 1000 metric tons (1100 short tons) of oil, it has to be able to receives

waste such as oily bilge water, sludges, oily ballast, and cargo residue (33 CFR 154.100 through 154.300 and 158.220 through 158.230).

- **Loading and Unloading Racks** - Onshore tank car and tank truck loading/unloading racks are required to have containment and some method to prevent vehicles from leaving before the transfer lines have been disconnected. Personnel at these sites are required to survey drains and outlets of vehicles prior to their departure to ensure that there is no leakage (40 CFR 112.7(e)(4)).
- **Used Oil** - Although used oil has not been declared a hazardous waste at the Federal level, it does need to be stored, handled, and documented according to specific requirements depending on whether the facility is a used oil generator, a used oil collection center and aggregation point, a used oil transporter, a used oil burner, or a used oil marketer (40 CFR 279).
- **Petroleum Conservation** – Under EO 13423 agencies are required to reduce petroleum consumption in fleet vehicles by 2% annually through 2015 [**Added January 2007**].

#### **E. Key Compliance Definitions**

- **Adjacent** - means bordering, contiguous, or neighboring [see definition of *Neighboring*] a water identified in paragraphs (1) through (5) of the definition for “Waters of the United States,” including waters separated by constructed dikes or barriers, natural river berms, beach dunes, and the like. For purposes of adjacency, an open water such as a pond or lake includes any wetlands within or abutting its ordinary high water mark. Adjacency is not limited to waters located laterally to a water identified in paragraphs (1) through (5) of the definition for “Waters of the United States.” Adjacent waters also include all waters that connect segments of a water identified in paragraphs (1) through (5) or are located at the head of a water identified in paragraphs (1) through (5) of the definition for “Waters of the United States,” and are bordering, contiguous, or neighboring such water. Waters being used for established normal farming, ranching, and silviculture activities (33 U.S.C. 1344(f)) are not adjacent (40 CFR 110.1 and 112.2) [**Added July 2015**].
- **Adverse Weather** - the weather conditions that the operator will consider when identifying response systems and equipment to be deployed in accordance with a response plan. Factors to consider include ice conditions, temperature ranges, weather-related visibility, significant wave height as specified in 33 CFR 154, Appendix C, Table 1, and currents within the areas in which those systems or equipment are intended to function (49 CFR 194.5) [**Added April 2005**].
- **Adverse Weather** - the weather conditions that will be considered when identifying response systems and equipment in a response plan for the applicable operating environment. Factors to consider include, but are not limited to, significant wave height as specified in 33 CFR 154.1045, 154.1047, 154.1225, or 154.1325, as appropriate; ice conditions, temperatures, weather-related visibility, and currents within the COTP zone in which the systems or equipment are intended to function (33 CFR 1020) [**Added October 2010**].
- **Alteration** - any work on a container involving cutting, burning, welding, or heating operations that changes the physical dimensions or configuration of the container (40 CFR 112.2) [**Added July 2002**].
- **Animal Fat** - a non-petroleum oil, fat, or grease of animal, fish, or marine mammal origin (40 CFR 112.2) [**Added July 2000; Revised July 2002**].
- **Animal Fat** - a non-petroleum oil, fat, or grease derived from animals, and not specifically identified elsewhere in 33 CFR 154 (33 CFR 1020) [**Added October 2010**].
- **Animal Fat** - a non-petroleum oil, fat, or grease derived from animals, not specifically identified elsewhere in 49 CFR 130 (49 CFR 130.5) [**Added October 2000**].

- *Automotive Service Station* - that portion of property where flammable liquids used as motor fuels are stored and dispensed from fixed equipment into the fuel tanks of motor vehicles and shall include any facilities available for the sale and service of tires, batteries, and accessories, and for minor automotive maintenance work. Major automotive repairs, painting, and body and fender work are excluded (29 CFR 1910.106(a)(3)) **[Revised April 2012]**.
- *Average Most Probable Discharge* - a discharge of the lesser of 50 barrels or 1 percent of the volume of the worst case discharge (33 CFR 1020) **[Added October 2010]**.
- *Barge* - any nonself-propelled vessel (46 CFR 90.10-3).
- *Barrel* - 42 United States gal (159 L) at 60° F (15.6° C) (49 CFR 194.5) **[Added April 2005]**.
- *Breakout Tank* - a tank used to (49 CFR 194.5) **[Added April 2005]**:
  1. Relieve surges in an oil pipeline system or
  2. Receive and store oil transported by a pipeline for reinjection and continued transportation by pipeline.
- *Bulk Plant* – that portion of a property where flammable liquids are received by tank vessel, pipelines, tank car, or tank vehicle, and are stored or blended in bulk for the purpose of distributing such liquids by tank vessel, pipeline, tank car, tank vehicle, or container (29 CFR 1910.106(a)(7)) **[Added April 2012]**.
- *Bulk Storage Container* - any container used to store oil. These containers are used for purposes including, but not limited to, the storage of oil prior to use, while being used, or prior to further distribution in commerce. Oil-filled electrical, operating, or manufacturing equipment is not a bulk storage container (40 CFR 112.2) **[Added July 2002]**.
- *Bunkered Tank* - a container constructed or placed in the ground by cutting the earth and re-covering the container in a manner that breaks the surrounding natural grade, or that lies above grade, and is covered with earth, sand, gravel, asphalt, or other material. A bunkered tank is considered an aboveground storage container for purposes of 40 CFR 112 (40 CFR 112.2) **[Added July 2002]**.
- *Captain of the Port (COTP) Zone* - a zone specified in 33 CFR 3 and, where applicable, the seaward extension of that zone to the outer boundary of the exclusive economic zone (EEZ).
- *Cargo* - on tank vessels this means combustible liquid, flammable liquid, or liquefied flammable gas unless otherwise stated (46 CFR 30.10-5).
- *Cargo Areas* - on tank vessels, that part of a vessel which includes the cargo tanks and other tanks into which cargo or cargo vapors are intentionally introduced; holds containing these tanks; all intervening spaces within, between, below, or outboard of these tanks or holds; and the deck areas over the length and beam of the vessel above these tanks, holds, or spaces (46 CFR 30.10-5a).
- *Cargo Control Stations* - on tank vessels, means a location that is manned during cargo transfer operations for the purpose of directing or controlling the loading or unloading of cargo (46 CFR 30.10-5b).
- *Category A Machinery Space* - for a tank vessel this means any space and trunks and ducts to such a space that contains (46 CFR 30.10-6a):
  1. internal combustion machinery used for main propulsion
  2. internal combustion machinery used for purposes other than main propulsion where the total aggregate power is at least 500 brake horsepower
  3. internal combustion machinery that uses a fuel that has a flashpoint of less than 43.3 °C (110 °F)
  4. one or more oil fired boilers or oil fuel units.

- *Certificated* - for tank vessels this applies to a vessel covered by a certificate of inspection issued by the Coast Guard; when applied to personnel employed on tank vessels, the term refers to a certificate of ability issued by the Coast Guard (46 CFR 30.10-7).
- *Coastal Zone* - all United States waters subject to the tide, United States waters of the Great Lakes and Lake Champlain, specified ports and harbors on inland rivers, waters of the contiguous zone, other waters of the high seas subject to the National Contingency Plan, and the land surface or land substrate, ground waters, and ambient air proximal to those waters. (The term “coastal zone” delineates an area of federal responsibility for response action. Precise boundaries are determined by agreements between the EPA and the U.S. Coast Guard (USCG), and are identified in Federal Regional Contingency Plans and Area Contingency Plans) (49 CFR 194.5) [**Added April 2005**].
- *Coastwise* - this includes all tank vessels and vessels normally navigating the waters of any ocean or the Gulf of Mexico at 20 nautical miles [approx. 37 km] or less offshore (46 CFR 30.10-9 and 90.10-11).
- *Cofferdam* - a void or empty space separating two or more compartments for the purpose of isolation or to prevent the contents of one compartment from entering another compartment in the event of the failure of the walls of one to retain their tightness (46 CFR 30.10-13).
- *Combustible Liquid* - for tank vessels this means any liquid having a flashpoint above 80 F and include (46 CFR 30.10-15):
  1. Grade D, which is any combustible liquid with a flashpoint below 150 F and above 80 F
  2. Grade E, which is any combustible liquid with a flashpoint of 150 F or above.
- *Completely Buried Tank* - any container completely below grade and covered with earth, sand, gravel, asphalt, or other material. Containers in vaults, bunkered tanks, or partially buried tanks are considered aboveground storage containers for purposes of 40 CFR 112 (40 CFR 112.2) [**Added July 2002**].
- *Complex* - a facility possessing a combination of transportation-related and non-transportation-related components that is subject to the jurisdiction of more than one Federal agency under section 311(j) of the CWA (40 CFR 112.2) [**Added July 2002**].
- *Complex* - a facility possessing a combination of marine-transportation related and non-transportation-related components that is subject to the jurisdiction of more than one Federal agency under section 311(j) of the Clean Water Act (33 CFR 1020) [**Added October 2010**].
- *Container* - any portable device in which materials is stored, transported, treated, disposed of, or otherwise handled (40 CFR 279.1) [**Reviewed March 2000**].
- *Contiguous Zone* - the zone established by the United States under Article 24 of the Convention of the Territorial Sea and Contiguous Zone, that is contiguous to the territorial sea and that extends 9 mi seaward from the outer limit of the territorial area (40 CFR 112.2) [**Added July 2002**].
- *Contiguous Zone* - the entire zone established or to be established by the United States under article 24 of the Convention on the Territorial Sea and Contiguous Zone (CWA, Section 311).
- *Continuous Discharge* - a discharge occurring without interruption throughout the operating hours of the facility, except for infrequent shutdowns for maintenance, process changes, or other similar activities (40 CFR 123.3).
- *Contract or Other Approved Means* - (40 CFR 112.2) [**Added July 2002**]:

1. A written contractual agreement with an oil spill removal organization that identifies and ensures the availability of the necessary personnel and equipment within appropriate response times; and/or
  2. A written certification by the owner or operator that the necessary personnel and equipment resources, owned or operated by the facility owner or operator, are available to respond to a discharge within appropriate response times; and/or
  3. Active membership in a local or regional oil spill removal organization that has identified and ensures adequate access through such membership to necessary personnel and equipment to respond to a discharge within appropriate response times in the specified geographic area; and/or
  4. Any other specific arrangement approved by the Regional Administrator upon request of the owner or operator.
- *Contract or Other Approved Means* – This includes (49 CFR 194.5) [**Added April 2005**]:
    1. A written contract or other legally binding agreement between the operator and a response contractor or other spill response organization identifying and ensuring the availability of the specified personnel and equipment within stipulated response times for a specified geographic area;
    2. Certification that specified equipment is owned or operated by the pipeline operator, and operator personnel and equipment are available within stipulated response times for a specified geographic area; or
    3. Active membership in a local or regional oil spill removal organization that has identified specified personnel and equipment to be available within stipulated response times for a specified geographic area.
  - *Contract or Other Means* (49 CFR 130.5) [**Added October 2000**]:
    1. a written contract with a response contractor identifying and ensuring the availability of the necessary personnel or equipment within the shortest practicable time;
    2. a written certification by the owner or operator that the necessary personnel or equipment can and will be made available by the owner or operator within the shortest practicable time; or
    3. documentation of membership in an oil spill response organization that ensures the owner's or operator's access to the necessary personnel or equipment within the shortest practicable time.
  - *Control Space* - an enclosed space in which is located a ship's radio, main navigating equipment, or emergency source of power, or in which is located centralized fire recording or fire control equipment, but not including firefighting apparatus that must be located in the cargo area or individual pieces of firefighting equipment (46 CFR 30.10-19a).
  - *Daily Discharge* - the discharge of a pollutant measured during a calendar day or any 24-h period that reasonably represents the calendar day for purposes of sampling (40 CFR 122.2).
  - *Direct Discharge* - the discharge of a pollutant (40 CFR 122.2).
  - *Discharge* – this term includes, but is not limited to, any spilling, leaking, pumping, pouring, emitting, emptying, or dumping of oil, but excludes discharges in compliance with a permit under section 402 of the CWA; discharges resulting from circumstances identified, reviewed, and made a part of the public record with respect to a permit issued or modified under section 402 of the CWA, and subject to a condition in such permit; or continuous or anticipated intermittent discharges from a point source, identified in a permit or permit application under section 402 of the CWA, that are caused by events occurring within the scope of relevant operating or treatment systems. For purposes of 40 CFR 112, the term discharge shall not include any discharge of oil that is authorized by a permit issued under section 13 of the River and Harbor Act of 1899 (33 U.S.C. 407) (40 CFR 112.2) [**Added July 2002**].
  - *Discharge* - when used in relation to Section 311 of the act, includes, but is not limited to, any spilling, leaking, pumping, pouring, emitting, emptying, or dumping, but excludes (CWA, Section 311):
    1. discharges in compliance with a permit
    2. discharges resulting from circumstances identified and reviewed and made a part of the public record with respect to an issued permit and subject to a condition in the permit

3. continuous or anticipated intermittent discharges from a point source, identified in a permit application that are caused by events occurring within the scope of relevant operating or treatment systems.

- *Discharge* - any release, however caused, from a ship and includes any escape, disposal, spilling, leaking, pumping, emitting, or emptying (33 CFR 151.05).
- *Do-It-Yourself (DIY) Used Oil Collection Center* - any site or facility that accepts, aggregates, and stores used oil collected only from household DIYs (40 CFR 279.1) **[Reviewed March 2000]**.
- *Drums, Barrels, or Other Packages* - this is interpreted to mean portable tanks having a maximum capacity of 110 gal and Department of Transportation (DOT) specification cylinders having a water capacity of not more than 1000 lb which are actually loaded and discharged from vessels with their content intact (46 CFR 30.01-20(a) and 90.05-30).
- *Environmentally Sensitive Area* - an area of environmental importance which is in or adjacent to navigable waters (49 CFR 194.5)
- *Exclusive Economic Zone (EEZ)* - the zone contiguous to the territorial sea of the United States extending to a distance up to 200 nautical miles from the baseline from which the breadth of the territorial sea is measured (33 CFR 1020) **[Added October 2010]**.
- *Facility* - any mobile or fixed, onshore or offshore building, property, parcel, lease, structure, installation, equipment, pipe, or pipeline (other than a vessel or a public vessel) used in oil well drilling operations, oil production, oil refining, oil storage, oil gathering, oil processing, oil transfer, oil distribution, and oil waste treatment, or in which oil is used, as described in Appendix A to 40 CFR 112. The boundaries of a facility depend on several site-specific factors, including but not limited to, the ownership or operation of buildings, structures, and equipment on the same site and types of activity at the site. Contiguous or non-contiguous buildings, properties, parcels, leases, structures, installations, pipes, or pipelines under the ownership or operation of the same person may be considered separate facilities. Only this definition governs whether a facility is subject to 40 CFR 112 (40 CFR 112.2) **[Added July 2002; Revised January 2009]**.
- *Facility That Could Reasonably Be Expected to Cause Significant And Substantial Harm* - any MTR facility (including piping and any structures that are used for the transfer of oil between a vessel and a facility) classified as a "significant and substantial harm" facility under 33 CFR 154.1015(c) and 33 CFR 154.1216 (33 CFR 1020) **[Added October 2010]**.
- *Facility That Could Reasonably Be Expected to Cause Substantial Harm* - any MTR facility classified as a "substantial harm" facility under 33 CFR 154.1015(b) and 33 CFR 154.1216 (33 CFR 1020) **[Added October 2010]**.
- *Farm* - a facility on a tract of land devoted to the production of crops or raising of animals, including fish, which produced and sold, or normally would have produced and sold, \$1,000 or more of agricultural products during a year (40 CFR 112.2) **[Added January 2007]**.
- *Fish and Wildlife and Sensitive Environments* - means areas that may be identified by their legal designation or by evaluations of Area Committees (for planning) or members of the Federal On-Scene Coordinator's spill response structure (during responses). These areas may include wetlands, National and State parks, critical habitats for endangered or threatened species, wilderness and natural resource areas, marine sanctuaries and estuarine reserves, conservation areas, preserves, wildlife areas, wildlife refuges, wild and scenic rivers, recreational areas, national forests, Federal and State lands that are research national areas, heritage program areas, land trust areas, and historical and archaeological sites and parks. These areas may also include unique habitats such as aquaculture sites and agricultural surface water intakes, bird nesting areas, critical biological resource areas, designated migratory routes, and designated seasonal habitats (40 CFR 112.2) **[Revised July 2002]**.

- *Fish and Wildlife and Sensitive Environment* - areas that may be identified by either their legal designation or by Area Committees in the applicable Area Contingency Plan (ACP) (for planning) or by members of the Federal On-Scene Coordinator's spill response structure (during responses). These areas may include: Wetlands, national and state parks, critical habitats for endangered or threatened species, wilderness and natural resource areas, marine sanctuaries and estuarine reserves, conservation areas, preserves, wildlife areas, wildlife refuges, wild and scenic rivers, areas of economic importance, recreational areas, national forests, Federal and state lands that are research areas, heritage program areas, land trust areas, and historical and archaeological sites and parks. These areas may also include unique habitats such as: aquaculture sites and agricultural surface water intakes, bird nesting areas, critical biological resource areas, designated migratory routes, and designated seasonal habitats (33 CFR 1020) [**Added October 2010**].
- *Flame Arrester* - any device or assembly of a cellular, tubular, pressure, or other type used for preventing the passage of flames into an enclosed space (46 CFR 30.10-23).
- *Flammable Liquid* - any liquid having a flashpoint at or below 199.4 °F (93 °C). Flammable liquids are divided into four categories as follows (29 CFR 1910.106(a)(19)) [**Revised April 2012**]:
  1. Category 1 shall include liquids having flashpoints below 73.4 °F (23 °C) and having a boiling point at or below 95 °F (35 °C).
  2. Category 2 shall include liquids having flashpoints below 73.4 °F (23 °C) and having a boiling point above 95 °F (35 °C).
  3. Category 3 shall include liquids having flashpoints at or above 73.4 °F (23 °C) and at or below 140 °F (60 °C). When a Category 3 liquid with a flashpoint at or above 100 °F (37.8 °C) is heated for use to within 30 °F (16.7 °C) of its flashpoint, it shall be handled in accordance with the requirements for a Category 3 liquid with a flashpoint below 100 °F (37.8 °C).
  4. Category 4 shall include liquids having flashpoints above 140 °F (60 °C) and at or below 199.4 °F (93 °C). When a Category 4 flammable liquid is heated for use to within 30 °F (16.7 °C) of its flashpoint, it shall be handled in accordance with the requirements for a Category 3 liquid with a flashpoint at or above 100 °F (37.8 °C).
  5. When liquid with a flashpoint greater than 199.4 °F (93 °C) is heated for use to within 30 °F (16.7 °C) of its flashpoint, it shall be handled in accordance with the requirements for a Category 4 flammable liquid.
- *Great Lakes* - Lakes Superior, Michigan, Huron, Erie, and Ontario, their connecting and tributary waters, the Saint Lawrence River as far as Saint Regis, and adjacent port areas (33 CFR 1020) [**Added October 2010**].
- *High Tide Line* - the line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm. This definition is effective 6 February 2020 (33 CFR 328.3(c)(7); 40 CFR 110.1 and 112.2) [**Added July 2015; Revised April 2018**].
- *High Volume Area* - an area which an oil pipeline having a nominal outside diameter of 20 inches (508 millimeters) or more crosses a major river or other navigable waters, which, because of the velocity of the river flow and vessel traffic on the river, would require a more rapid response in case of a worst case discharge or substantial threat of such a discharge. Appendix B to 49 CFR 194 contains a list of some of the high volume areas in the United States (49 CFR 194.5) [**Added April 2005**].
- *Higher Volume Port Area* - the following ports (33 CFR 1020) [**Added October 2010**]:
  1. Boston, MA.

2. New York, NY.
  3. Delaware Bay and River to Philadelphia, PA.
  4. St. Croix, VI.
  5. Pascagoula, MS.
  6. Mississippi River from Southwest Pass, LA. to Baton Rouge, LA.
  7. Louisiana Offshore Oil Port (LOOP), LA.
  8. Lake Charles, LA.
  9. Sabine-Neches River, TX.
  10. Galveston Bay and Houston Ship Channel, TX.
  11. Corpus Christi, TX.
  12. Los Angeles/Long Beach harbor, CA.
  13. San Francisco Bay, San Pablo Bay, Carquinez Strait, and Suisun Bay to Antioch, CA.
  14. Straits of Juan De Fuca from Port Angeles, WA, to and including Puget Sound, WA.
  15. Prince William Sound, AK.
- *Household Do-It-Yourselfer Used Oil* - oil that is derived from households, such as used oil generated by individuals who generate used oil through the maintenance of their personal vehicles (40 CFR 279.1) [**Reviewed March 2000**].
  - *Household "Do-It-Yourselfer" Used Oil Generator* - an individual who generates household "do-it-yourselfer" used oil (40 CFR 279.1) [**Added March 2000**].
  - *Industrial Vessel* - every vessel that, by reason of its special outfit, purpose, and design for function, engages in certain industrial ventures. Included in this classification are such vessels as drill rigs, missile range ships, dredges, cable layers, derrick barges, pipe lay barges, and construction and wrecking barges.
  - *Injury* - a measurable adverse change, either long- or short-term, in the chemical or physical quality or the viability of a natural resource resulting either directly or indirectly from exposure to a discharge, or exposure to a product of reactions resulting from a discharge (40 CFR 112.2) [**Added July 2002**].
  - *Inland Area* - the area shoreward of the boundary lines defined in 46 CFR 7, except in the Gulf of Mexico. In the Gulf of Mexico, it means the area shoreward of the lines of demarcation (COLREG lines) defined in 33 CFR 80.740 through 80.850. The inland area does not include the Great Lakes (33 CFR 1020) [**Added October 2010**].
  - *Inland Area* - the area shoreward of the boundary lines defined in 46 CFR 7, except that in the Gulf of Mexico, it means the area shoreward of the lines of demarcation (COLREG lines) defined in 33 CFR 80.740-80.850. The inland area does not include the Great Lakes (49 CFR 194.5) [**Added April 2005**].
  - *Inland Oil Barge* - a tank barge carrying oil in bulk as cargo certificated by the Coast Guard under 46 CFR chapter I, subchapter D for river or canal service or lakes, bays, and sounds service (33 CFR 155.200).
  - *Inland Zone* - the environment inland of the coastal zone excluding the Great Lakes, Lake Champlain, and specified ports and harbors on inland rivers. (The term inland zone delineates an area of federal responsibilities for response actions. Precise boundaries are determined by agreements between the EPA and the USCG and are identified in Federal Regional Contingency Plans) (49 CFR 194.5) [**Added April 2005**].
  - *Keel Laying Date* - the date upon which progressive construction identifiable with a specific vessel begins, including construction of the first module or prefabricated section of the hull that is identifiable with that vessel (46 CFR 30.10-37).
  - *Lightweight* - the displacement of a vessel in metric tons without cargo, oil fuel, lubricating oil, ballast water, fresh water, feedwater in tanks, consumable stores, and persons and their effects (46 CFR 30.10-38).

- *Line Section* - a continuous run of pipe that is contained between adjacent pressure pump stations, between a pressure pump station and a terminal or breakout tank, between a pressure pump station and a block valve, or between adjacent block valves (49 CFR 194.5) **[Added April 2005]**.
- *Liquid* - a material that has a vertical flow of over two inches (50 mm) within a three-minute period, or a material having one gram or more liquid separation, when determined in accordance with the procedures specified in ASTM D 4359-84, "Standard Test Method for Determining Whether a Material is a Liquid or a Solid," 1990 edition, which is incorporated by reference (49 CFR 130.5) **[Added October 2000]**.
- *Loading/Unloading Rack* - a fixed structure (such as a platform, gangway) necessary for loading or unloading a tank truck or tank car, which is located at a facility subject to the requirements of 40 CFR 112. A loading/unloading rack includes a loading or unloading arm, and may include any combination of the following: piping assemblages, valves, pumps, shut-off devices, overfill sensors, or personnel safety devices (40 CFR 112.2) **[Added January 2009]**.
- *Machinery Space* - any space that contains machinery and related equipment including Category A machinery spaces, propelling machinery, boilers, oil fuel units, steam and internal combustion engines, generators and centralized electrical machinery, oil filling stations, refrigeration stabilizing, ventilation, and air conditioning machinery, and similar spaces and trunks to such spaces (46 CFR 30.10-42).
- *Major River* - a river that, because of its velocity and vessel traffic, would require a more rapid response in case of a worst case discharge. For a list of rivers see "Rolling Rivers, An Encyclopedia of America's Rivers," Richard A. Bartlett, Editor, McGraw-Hill Book Company, 1984 (49 CFR 194.5) **[Added April 2005]**.
- *Management Practice (MP)* - practices that, although not mandated by law, are encouraged to promote safe operating procedures.
- *Marine Service Station* - that portion of a property where flammable liquids used as fuels are stored and dispensed from fixed equipment on shore, piers, wharves, or floating docks, into the fuel tanks of self-propelled craft, and shall include all facilities used in connection therewith (29 CFR 1910.106(a)(22)) **[Revised April 2012]**.
- *Marine Transportation-Related Facility (MTR facility)* - any onshore facility or segment of a complex regulated under section 311(j) of the Federal Water Pollution Control Act (FWPCA) by two or more Federal agencies, including piping and any structure used or intended to be used to transfer oil to or from a vessel, subject to regulation under 33 CFR 154 and any deepwater port subject to regulation under 33 CFR 150. For a facility or segment of a complex regulated by two or more Federal agencies under section 311(j) of the FWPCA, the MTR portion of the complex extends from the facility oil transfer system's connection with the vessel to the first valve inside the secondary containment surrounding tanks in the non-transportation-related portion of the facility or, in the absence of secondary containment, to the valve or manifold adjacent to the tanks comprising the non-transportation-related portion of the facility, unless another location has otherwise been agreed to by the COTP and the appropriate Federal official (33 CFR 1020) **[Added October 2010]**.
- *MARPOL 73/78* - the *International Convention for the Prevention of Pollution from Ships*, 1973 as amended by the Protocol of 1978 (33 CFR 151.05).
- *Maximum Extent Practicable* - within the limitations used to determine oil spill planning resources and response times for on-water recovery, shoreline protection, and cleanup for worst-case discharges from onshore non-transportation-related facilities in adverse weather. It includes the planned capability to respond to a worst case discharge in adverse weather, as contained in a response plan that meets the requirements in 40 CFR 112.20 or in a specific plan approved by the Regional Administrator (40 CFR 112.2) **[Added July 2002]**.
- *Maximum Extent Practicable* - the planned capability to respond to a worst case discharge in adverse weather, as contained in a response plan that meets the criteria in this subpart or in a specific plan approved by the cognizant COTP (33 CFR 1020) **[Added October 2010]**.

- *Maximum Extent Practicable* - the limits of available technology and the practical and technical limits on an owner or operator of an onshore facility in planning the response resources required to provide the on-water recovery capability and the shoreline protection and cleanup capability to conduct response activities for a worst-case discharge of oil in adverse weather (49 CFR 130.5) **[Added October 2000]**.
- *Maximum Extent Practicable* - the limits of available technology and the practical and technical limits on a pipeline operator in planning the response resources required to provide the on-water recovery capability and the shoreline protection and cleanup capability to conduct response activities for a worst case discharge from a pipeline in adverse weather (49 CFR 194.5) **[Added April 2005]**.
- *Maximum Most Probable Discharge* - a discharge of the lesser of 1,200 bbls or 10 percent of the volume of a worst case discharge (33 CFR 1020) **[Added October 2010]**.
- *Mobile Refueler* - a bulk storage container onboard a vehicle or towed, that is designed or used solely to store and transport fuel for transfer into or from an aircraft, motor vehicle, locomotive, vessel, ground service equipment, or other oil storage container (40 CFR 112.2) **[Added January 2007]**.
- *Motive Power Container* - any onboard bulk storage container used primarily to power the movement of a motor vehicle, or ancillary onboard oil-filled operational equipment. An onboard bulk storage container which is used to store or transfer oil for further distribution is not a motive power container. The definition of motive power container does not include oil drilling or workover equipment, including rigs (40 CFR 112.2) **[Added January 2007]**.
- *Navigable Waters* - waters of the United States, including the territorial seas. This definition is effective 6 February 2020 (40 CFR 110.1 and 112.2) **[Added July 2002, Revised January 2008; Revised July 2015; Revised April 2018]**.
- *Nearshore Area* - the area extending seaward 12 miles from the boundary lines defined in 46 CFR 7, except in the Gulf of Mexico. In the Gulf of Mexico, it means the area extending seaward 12 mi from the line of demarcation (COLREG lines) defined in 33 CFR 80.740-80.850. (33 CFR 1020) **[Added October 2010]**.
- *Neighboring* - this term means (40 CFR 110.1 and 112.2) **[Added July 2015]**:
  1. all waters located within 100 ft of the ordinary high water mark of a water identified in paragraphs (1) through (5) of the definition for "Waters of the United States." The entire water is neighboring if a portion is located within 100 ft of the ordinary high water mark;
  2. All waters located within the 100-year floodplain of a water identified in paragraphs (1) through (5) of the definition for "Waters of the United States," and not more than 1,500 ft from the ordinary high water mark of such water. The entire water is neighboring if a portion is located within 1,500 feet of the ordinary high water mark and within the 100-year floodplain;
  3. All waters located within 1,500 ft of the high tide line of a water identified in paragraphs (1) or (3) of the definition for "Waters of the United States," and all waters within 1,500 ft of the ordinary high water mark of the Great Lakes. The entire water is neighboring if a portion is located within 1,500 ft of the high tide line or within 1,500 ft of the ordinary high water mark of the Great Lakes.
- *Non-persistent or Group I Oil* - a petroleum-based oil that, at the time of shipment, consists of hydrocarbon fractions: (33 CFR 1020) **[Added October 2010]**.
  1. At least 50 percent of which by volume, distill at a temperature of 340 °C (645 °F); and
  2. At least 95 percent of which by volume, distill at a temperature of 370 °C (700 °F).
- *Non-petroleum Oil* - oil of any kind that is not petroleum-based, including but not limited to: Fats, oils, and greases of animal, fish, or marine mammal origin; and vegetable oils, including oils from seeds, nuts, fruits, and kernels (40 CFR 112.2) **[Added July 2002]**.

- *Non-petroleum Oil* - any animal fat, vegetable oil or other non-petroleum oil (49 CFR 130.5) [**Added October 2000**].
- *Ocean* - the offshore area and nearshore area as defined in this 33 CFR 154 (33 CFR 1020) [**Added October 2010**].
- *Offshore Area* - the area beyond 12 nautical miles measured from the boundary lines defined in 46 CFR 7 extending seaward to 50 nautical miles, except in the Gulf of Mexico. In the Gulf of Mexico, it is the area beyond 12 nautical miles of the line of demarcation (COLREG lines) defined in 33 CFR 80.740-80.850 extending seaward to 50 nautical miles (33 CFR 1020) [**Added October 2010**].
- *Offshore Facility* - any facility of any kind (other than a vessel or public vessel) located in, on, or under any of the navigable waters of the United States, and any facility of any kind that is subject to the jurisdiction of the United States and is located in, on, under any other waters (40 CFR 112.2) [**Added July 2002**].
- *Offshore Facility* - any facility of any kind located in, on, or under any of the navigable waters of the United States, and any facility or any kind that is subject to the jurisdiction of the United States and is located in, on, or under any other waters, other than a vessel or a public vessel (CWA, Section 311 and 33 CFR 153.103).
- *Offshore Oil Barge* - a tank barge carrying oil in bulk as cargo, including dual-mode integrated tug- barges, certificated by the Coast Guard under 46 CFR chapter I, Subchapter D, for navigation in waters outside the boundary lines, as defined in 46 CFR 7, in any ocean or the Gulf of Mexico; any tank barge in Great Lakes service; or any foreign flag tank barge (33 CFR 155.200).
- *Off-Specification Oil* - used oil burned for energy recovery and any fuel produced from used oil that exceeds the following allowable limits (40 CFR 279) [**Reviewed March 2000**]:

Arsenic	5 ppm maximum
Cadmium	2 ppm maximum
Chromium	10 ppm maximum
Lead	100 ppm maximum
Flash point	100 °F minimum
Total halogens	4000 ppm maximum

- *Oil* - oil of any kind or in any form, including, but not limited to: fats, oils, or greases of animal, fish, or marine mammal origin; vegetable oils, including oils from seeds, nuts, fruits, or kernels; and, other oils and greases, including petroleum, fuel oil, sludge, synthetic oils, mineral oils, oil refuse, or oil mixed with wastes other than dredged spoil (40 CFR 112.2) [**Added July 2002**].
- *Oil* - oil of any kind or in any form, including, but not limited to, petroleum, fuel oil, sludge, oil refuse, oil mixed with wastes other than dredge spoil (33 CFR 1020) [**Added October 2010**].
- *Oil* - when used in relation to Section 311 of the act, means oil of any kind or in any form, including, but not limited to, petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged spoil (CWA, Section 311 and 33 CFR 153.103).
- *Oil* - petroleum in any form including crude oil, fuel oil, sludge, oil refuse, and refined products (33 CFR 151.05).

- *Oil* - oil of any kind or in any form, including, but not limited to, petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged spoil. Note: This definition does not include hazardous substances (see 40 CFR 116) (49 CFR 130.5) **[Added October 2000]**.
- *Oil* - oil of any kind or in any form, including, but not limited to, petroleum, fuel oil, vegetable oil, animal oil, sludge, oil refuse, oil mixed with wastes other than dredged spoil (49 CFR 194.5) **[Added April 2005]**.
- *Oil-filled Operational Equipment* - equipment that includes an oil storage container (or multiple containers) in which the oil is present solely to support the function of the apparatus or the device. Oil-filled operational equipment is not considered a bulk storage container, and does not include oil-filled manufacturing equipment (flow-through process). Examples of oil-filled operational equipment include, but are not limited to, hydraulic systems, lubricating systems (e.g., those for pumps, compressors and other rotating equipment, including pumpjack lubrication systems), gear boxes, machining coolant systems, heat transfer systems, transformers, circuit breakers, electrical switches, and other systems containing oil solely to enable the operation of the device (40 CFR 112.2) **[Added January 2007]**.
- *Oil Fuel* - oil used as a fuel for machinery in the vessel in which it is carried (46 CFR 30.10-48).
- *Oil Fuel Unit* - the equipment used for the preparation of oil fuel for delivery to an oil fired boiler, the equipment used for the preparation of heated oil fuel for delivery to an internal combustion engine, and any oil fuel pressure pumps, filler, and heater that deal with oil at a pressure of more than 1.8 kg/cm<sup>2</sup> (25 psig) (46 CFR 30.10-48a).
- *Oil Spill Removal Organization* - an entity that provides oil spill response resources, and includes any for-profit or not-for-profit contractor, cooperative, or in-house response resources that have been established in a geographic area to provide required response resources (40 CFR 112.2) **[Added July 2002]**.
- *Oil Spill Removal Organization (OSRO)* - an entity that provides response resources (33 CFR 1020) **[Added October 2010]**.
- *Oil Spill Removal Organization* - an entity that provides response resources (49 CFR 194.5) **[Added April 2005]**.
- *Oil Tanker* - a self-propelled vessel carrying oil in bulk as cargo, including integrated tug-barges designed for push-mode operation (33 CFR 155.200).
- *On-Deck Spill* - a discharge of oil on the deck of a vessel during loading, unloading, transfer, or other shipboard operations. An on-deck spill could result from a leaking fitting, an overfill, a bad connection, or similar operational mishap. This is different from spills occurring as a result of a collision or grounding where the hull is punctured and a tank is ruptured, resulting in an uncontrolled discharge of oil into the marine environment (33 CFR 155.200).
- *On-Scene Coordinator (OSC)* - the definition in the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR 300) (33 CFR 1020) **[Added October 2010]**.
- *On-Scene Coordinator (OSC)* - the federal official designated by the Administrator of the EPA or by the Commandant of the USCG to coordinate and direct federal response under subpart D of the National Contingency Plan (40 CFR 300) (49 CFR 194.5) **[Added April 2005]**.
- *Onshore Facility* - any facility of any kind located in, on, or under any land within the United States, other than submerged lands (40 CFR 112.2) **[Added July 2002]**.
- *Onshore Facility* - any facility (including but not limited to, motor vehicles and rolling stock) of any kind located in, on, or under any land within the United States, other than submerged land (CWA, Sect. 311 and 33 CFR 153.103).

- *Onshore Oil Pipeline Facilities* - new and existing pipe, rights of way and any equipment, facility, or building used in the transportation of oil located in, on, or under, any land within the United States other than submerged land (49 CFR 194.5).
- *Operating Area* - Rivers and Canals, Inland, Nearshore, Great Lakes, or Offshore geographic location(s) in which a facility is handling, storing, or transporting oil (33 CFR 1020) **[Added October 2010]**.
- *Operating Environment* - Rivers and Canals, Inland, Great Lakes, or Ocean. These terms are used to define the conditions in which response equipment is designed to function (33 CFR 1020) **[Added October 2010]**.
- *Operating In Compliance With The Plan* - operating in compliance with the provisions of this subpart including, ensuring the availability of the response resources by contract or other approved means, and conducting the necessary training and drills (33 CFR 1020) **[Added October 2010]**.
- *Operator* - in relationship to onshore oil pipeline facilities, a person who owns or operates onshore oil pipeline facilities (49 CFR 194.5).
- *Ordinary High Water Mark* - that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas (40 CFR 110.1 and 112.2) **[Added July 2015]**.
- *Other Non-Petroleum Oil* - a non-petroleum oil of any kind that is not generally an animal fat or vegetable oil (33 CFR 1020) **[Added October 2010]**.
- *Other Non-petroleum Oil* - a non-petroleum oil of any kind that is not an animal fat or vegetable oil (49 CFR 130.5) **[Added October 2000]**.
- *Owner or Operator* - any person owning or operating an onshore facility or an offshore facility, and in the case of any abandoned offshore facility, the person who owned or operated or maintained the facility immediately prior to such abandonment (40 CFR 112.2) **[Added July 2002]**.
- *Packaging* - a receptacle and any other components or materials necessary for the receptacle to perform its containment function in conformance with the packaging requirements of this part. A compartmented tank is a single packaging (49 CFR 130.5) **[Added October 2000]**.
- *Partially Buried Tank* - a storage container that is partially inserted or constructed in the ground, but not entirely below grade, and not completely covered with earth, sand, gravel, asphalt, or other material. A partially buried tank is considered an aboveground storage container for purposes of 40 CFR 112 (40 CFR 112.2) **[Added July 2002]**.
- *Permanently Closed* - any container or facility for which (40 CFR 112.2) **[Added July 2002]**:
  1. All liquid and sludge has been removed from each container and connecting line; and
  2. All connecting lines and piping have been disconnected from the container and blanked off, all valves (except for ventilation valves) have been closed and locked, and conspicuous signs have been posted on each container stating that it is a permanently closed container and noting the date of closure.
- *Persistent Oil* - a petroleum-based oil that does not meet the distillation criteria for a non-persistent oil. For the purposes of 33 CFR 154, Subpart F, persistent oils are further classified based on specific gravity as follows (33 CFR 1020) **[Added October 2010]**:
  1. Group II--specific gravity of less than .85.
  2. Group III--specific gravity equal to or greater than .85 and less than .95.

3. Group IV--specific gravity equal to or greater than .95 and less than or equal to 1.0.

4. Group V--specific gravity greater than 1.0.

- *Person* - includes an individual, firm, corporation, association, or partnership (40 CFR 112.2) [**Added July 2002**].
- *Person* - an individual, firm, corporation, partnership, association, State, municipality, commission, or political subdivision of a State, or any interstate body, as well as a department, agency, or instrumentality of the executive, legislative or judicial branch of the Federal Government (49 CFR 130.5) [**Added October 2000**].
- *Petroleum Oil* - petroleum in any form, including but not limited to crude oil, fuel oil, mineral oil, sludge, oil refuse, and refined products (40 CFR 112.2) [**Revised July 2002**].
- *Petroleum Oil* - any oil extracted or derived from geological hydrocarbon deposits, including fractions thereof (49 CFR 130.5) [**Added October 2000**].
- *Petroleum Refining Facility* - an establishment primarily engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, and lubricants, through fractionation, straight distillation of crude oil, redistillation of unfinished petroleum derivatives, cracking or other processes (i.e., facilities classified as SIC 2911) (40 CFR 279.1) [**Added March 2000**].
- *Pipeline* - all parts of an onshore pipeline facility through which oil moves, including, but not limited to, line pipe, valves, and other appurtenances connected to the line pipe, pumping units, fabricated assemblies associated with pumping units, metering and delivery stations and fabricated assemblies therein, and breakout tanks (49 CFR 194.5).
- *Point Source* - any discernible confined and discrete conveyance including, but not limited, to a pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural stormwater (40 CFR 122.2 and 40 CFR 401.11(d)).
- *Pressure Vacuum Relief Valve* - any device or assembly of a mechanical, liquid, weight, or other type used for the automatic regulation of pressure or vacuum in enclosed spaces (46 CFR 30.10-55).
- *Processing* - means chemical or physical operations designed to produce from used oil, or to make used oil more amenable for production of fuel oils, lubricants, or other used oil-derived product. Processing includes, but is not limited to blending used oil with virgin petroleum products, blending used oils to meet the fuel specification, filtration, simple distillation, chemical or physical separation, and re-refining (40 CFR 279.1) [**Reviewed March 2000**].
- *Produced Water Container* - a storage container at an oil production facility used to store the produced water after initial oil/water separation, and prior to reinjection, beneficial reuse, discharge, or transfer for disposal (40 CFR 112.2) [**Added January 2009**].
- *Production Facility* - all structures (including but not limited to wells, platforms, or storage facilities), piping (including but not limited to flowlines or intra-facility gathering lines), or equipment (including but not limited to workover equipment, separation equipment, or auxiliary non-transportation-related equipment) used in the production, extraction, recovery, lifting, stabilization, separation or treating of oil (including condensate), or associated storage or measurement, and is located in an oil or gas field, at a facility. This definition governs whether such structures, piping, or equipment are subject to a specific section of 40 CFR 112 (40 CFR 112.2) [**Added July 2002; Revised January 2009**].
- *Public Vessel* - a vessel owned or bare boat chartered and operated by the United States, or by a state or political subdivision thereof, or by a foreign nation, except when such vessel is engaged in commerce (33 CFR 153.103).

- *Qualified Individual* - an English-speaking representative of an operator, located in the United States, available on a 24-h basis, with full authority to: activate and contract with required oil spill removal organizations; activate personnel and equipment maintained by the operator; act as liaison with the On-Scene Coordinator (OSC); and obligate any funds required to carry out all required or directed oil response activities (49 CFR 194.5).
- *Qualified Individual* - an individual familiar with the response plan, trained in his or her responsibilities in implementing the plan, and authorized, on behalf of the owner or operator, to initiate all response activities identified in the plan, to enter into response-related contracts and obligate funds for such contracts, and to act as a liaison with the on-scene coordinator and other responsible officials. The qualified individual must be available at all times the owner or operator is engaged in transportation subject to part 130 (alone or in conjunction with an equally qualified alternate), must be fluent in English, and must have in his or her possession documentation of the required authority (49 CFR 130.5) **[Added October 2000]**.
- *Qualified Individual and Alternate Qualified Individual* - a person located in the United States who meets the requirements of 33 CFR 154.1026 (33 CFR 1020) **[Added October 2010]**.
- *Re-Refining Distillation Bottoms* - the heavy fractions produced by vacuum distillation of filtered and dehydrated used oil. The composition of still bottoms varies with column operation and feedback (40 CFR 279.1) **[Reviewed March 2000]**.
- *Regional Administrator* - the Regional Administrator of the Environmental Protection Agency, in and for the Region in which the facility is located (40 CFR 112.2) **[Added July 2002]**.
- *Repair* - any work necessary to maintain or restore a container to a condition suitable for safe operation, other than that necessary for ordinary, day-to-day maintenance to maintain the functional integrity of the container and that does not weaken the container (40 CFR 112.2) **[Added July 2002]**.
- *Reportable Release* – under 49 CFR 195.50, this is each failure in a pipeline system subject to this part in which there is a release of the hazardous liquid or carbon dioxide transported resulting in any of the following (49 CFR 195.50) **[Added April 2005]**:
  1. Explosion or fire not intentionally set by the operator.
  2. Release of 5 gal (19 L) or more of hazardous liquid or carbon dioxide, except that no report is required for a release of less than 5 barrels (0.8 m<sup>3</sup>) resulting from a pipeline maintenance activity if the release is:
    - a. Not otherwise reportable under this section;
    - b. Not one that resulted in pollution of any stream, river, lake, reservoir, or other similar body of water that violated applicable water quality standards, caused a discoloration of the surface of the water or adjoining shoreline, or deposited a sludge or emulsion beneath the surface of the water or upon adjoining shorelines;
    - c. Confined to company property or pipeline right-of-way; and
    - d. Cleaned up promptly;
  3. Death of any person;
  4. Personal injury necessitating hospitalization;
  5. Estimated property damage, including cost of clean-up and recovery, value of lost product, and damage to the property of the operator or others, or both, exceeding \$50,000.
- *Response Activities* - the containment and removal of oil from the land, water, and shorelines, the temporary storage and disposal of recovered oil, or the taking of other actions as necessary to minimize or mitigate damage to the public health or welfare or the environment (33 CFR 1020) **[Added October 2010]**.
- *Response Activities* - the containment and removal of oil from the water and shorelines, the temporary storage and disposal of recovered oil, or the taking of other actions as necessary to minimize or mitigate damage to the environment (49 CFR 194.5).

- *Response Area* - the inland zone or coastal zone, as defined in the National Contingency Plan, in which response activity is occurring (49 CFR 194.5).
- *Response Plan* - the operator's core plan and the response zone appendices for responding, to the maximum extent practicable, to a worst case discharge of oil, or the substantial threat of such a discharge (49 CFR 194.5).
- *Response Resources* - the personnel, equipment, supplies, and other capability necessary to perform the response activities identified in a response plan (33 CFR 1020) [**Added October 2010**].
- *Response Resources* - the personnel, equipment, supplies, and other resources necessary to conduct response activities (49 CFR 194.5) [**Added April 2005**].
- *Response Zone* - a geographic area, either along a length of pipeline or including multiple pipelines, containing one or more adjacent line sections, for which the operator must plan for the deployment of, and provide, spill response capabilities (49 CFR 194.5).
- *Rivers and Canals* - a body of water confined within the inland area, including the Intracoastal Waterways and other waterways artificially created for navigation, that has a project depth of 12 feet or less (33 CFR 1020) [**Added October 2010**].
- *Service Space* - spaces that are used for galleys, pantries containing cooking appliances, lockers, storerooms, paint and lamp rooms, and similar spaces that contain highly combustible materials, laundries, garbage and trash disposal and stowage rooms, workshops other than those forming part of the machinery spaces and similar spaces and trunks to such spaces (46 CFR 30.10-62a).
- *Sheen* - an iridescent appearance on the surface of the water (40 CFR 110.1).
- *Ship* - a vessel of any type whatsoever, operating in the marine environment (33 CFR 151.05).
- *Ship's Stores* - materials that are on board a vessel for the upkeep, maintenance, safety, operation, or navigation of the vessel, or for the safety or comfort of the vessel's passengers or crew.
- *Significant Nexus* - this definition is effective 6 February 2020. That a water, including wetlands, either alone or in combination with other similarly situated waters in the region, significantly affects the chemical, physical, or biological integrity of a water identified in paragraphs (1) through (3) of the definition for "Waters of the United States." The term "in the region" means the watershed that drains to the nearest water identified in paragraphs (1) through (3) of the definition for "Waters of the United States." For an effect to be significant, it must be more than speculative or insubstantial. Waters are similarly situated when they function alike and are sufficiently close to function together in affecting downstream waters. For purposes of determining whether or not a water has a significant nexus, the water's effect on downstream (1) through (3) waters shall be assessed by evaluating the aquatic functions identified in paragraphs (1) through (9) of this definition below. A water has a significant nexus when any single function or combination of functions performed by the water, alone or together with similarly situated waters in the region, contributes significantly to the chemical, physical, or biological integrity of the nearest water identified in paragraphs (1) through (3) of the definition for "Waters of the United States." Functions relevant to the significant nexus evaluation are the following (33 CFR 328.3(c)(5)) [**Added July 2015; Revised April 2018**]:
  1. Sediment trapping,
  2. Nutrient recycling,
  3. Pollutant trapping, transformation, filtering, and transport,
  4. Retention and attenuation of flood waters,
  5. Runoff storage,
  6. Contribution of flow,
  7. Export of organic matter,
  8. Export of food resources, and

9. Provision of life cycle dependent aquatic habitat (such as foraging, feeding, nesting, breeding, spawning, or use as a nursery area) for species located in a water identified in paragraphs (1) through (3) of the definition for “Waters of the United States.”

- *Sludge* - an aggregate of oil or oil and other matter of any kind in any form other than dredged spoil, having a combined specific gravity equivalent to or greater than water (40 CFR 110.1).
- *Specific Gravity* - the ratio of the mass of a given volume of liquid at 15 °C (60 °F) to the mass of an equal volume of pure water at the same temperature (33 CFR 1020) [**Added October 2010**].
- *Specified Minimum Yield Strength* - the minimum yield strength, expressed in pounds per square inch, prescribed by the specification under which the material is purchased from the manufacturer (49 CFR 194.5) [**Added April 2005**].
- *Spill Event* - a discharge of oil into or upon the navigable waters of the United States or adjoining shorelines in harmful quantities (40 CFR 112.3) [**Added July 2002**].
- *Spill Management Team* - the personnel identified to staff the organizational structure identified in a response plan to manage response plan implementation (33 CFR 1020) [**Added October 2010**].
- *Spill Prevention, Control, and Countermeasure Plan; SPCC Plan, or Plan* - the document required by 40 CFR 112.3 that details the equipment, workforce, procedures, and steps to prevent, control, and provide adequate countermeasures to a discharge (40 CFR 112.2) [**Added July 2002**].
- *Storage Capacity of a Container* - the shell capacity of the container (40 CFR 112.2) [**Added July 2002**].
- *Stress Level* - the level of tangential or hoop stress, usually expressed as a percentage of specified minimum yield strength (49 CFR 194.5) [**Added April 2005**].
- *Substantial Threat of a Discharge* - any incident or condition involving a facility that may create a risk of discharge of oil. Such incidents include, but are not limited to storage tank or piping failures, above ground or underground leaks, fires, explosions, flooding, spills contained within the facility, or other similar occurrences (33 CFR 1020) [**Added October 2010**].
- *Tank Barge* - any tank vessel not equipped with means of self-propulsion (46 CFR 30.10-65).
- *Tankship* - any tank vessel propelled by power or sail (46 CFR 30.10-67).
- *Tank Vessel* - any vessel especially constructed or converted to carry liquid bulk cargo in tanks (46 CFR 30.10-69).
- *Tier* - the combination of required response resources and the times within which the resources must arrive on scene. [Note: Tiers are applied in three categories:
  1. Higher Volume Port Areas,
  2. Great Lakes, and
  3. All other operating environments, including rivers and canals, inland, nearshore, and offshore areas.(NOTE: Appendix C, Table 4 of 33 CFR 154, provides specific guidance on calculating response resources. Sections 33 CFR 154.1045(f) and 154.1135, set forth the required times within which the response resources must arrive on-scene.) (33 CFR 1020) [**Added October 2010**].
- *Transportation-related and Non-transportation-related* - as applied to an onshore or offshore facility, are defined in the Memorandum of Understanding between the Secretary of Transportation and the Administrator of the

Environmental Protection Agency, dated November 24, 1971, (Appendix A of 40 CFR 112) (40 CFR 112.2) **[Added July 2002]**.

- *Transports or Transportation* - any movement of oil by highway or rail, and any loading, unloading, or storage incidental thereto (49 CFR 130.5) **[Added October 2000]**.
- *Tributary and Tributaries* - a water that contributes flow, either directly or through another water (including an impoundment identified in paragraph (4) of the definition for “Waters of the United States”), to a water identified in paragraphs ((1) through (3) of the definition for “Waters of the United States” that is characterized by the presence of the physical indicators of a bed and banks and an ordinary high water mark. These physical indicators demonstrate there is volume, frequency, and duration of flow sufficient to create a bed and banks and an ordinary high water mark, and thus to qualify as a tributary. A tributary can be a natural, man-altered, or man-made water and includes waters such as rivers, streams, canals, and ditches not excluded in the definition of “Waters of the United States.” A water that otherwise qualifies as a tributary under this definition does not lose its status as a tributary if, for any length, there are one or more constructed breaks (such as bridges, culverts, pipes, or dams), or one or more natural breaks (such as wetlands along the run of a stream, debris piles, boulder fields, or a stream that flows underground) so long as a bed and banks and an ordinary high water mark can be identified upstream of the break. A water that otherwise qualifies as a tributary under this definition does not lose its status as a tributary if it contributes flow through a water of the United States that does not meet the definition of tributary or through a non-jurisdictional water to a water identified in paragraphs (1) through (3) of the definition for “Waters of the United States” (40 CFR 110.1 and 112.2) **[Added July 2015]**.
- *United States* - the States, the District of Columbia, the Commonwealth of Puerto Rico, the Commonwealth of the Northern Mariana Islands, Guam, American Samoa, the U.S. Virgin Islands, and the Pacific Island Governments (40 CFR 112.2) **[Added July 2002]**.
- *Used Oil* - any oil that has been refined from crude oil or any synthetic oil that has been used and as a result of such use is contaminated by physical or chemical impurities (40 CFR 279.1) **[Reviewed March 2000]**.
- *Used Oil Aggregation Point* - any site or facility that accepts, aggregates, and/or stores used oil collected only from other used oil generation sites owned or operated by the owner or operator of the aggregation point, from which used oil is transported to the aggregation point in shipments of no more than 55 gal. Used oil aggregation points may also accept used oil from household DIYs (40 CFR 279.1) **[Reviewed March 2000]**.
- *Used Oil Burner* - a facility where used oil not meeting the specification requirements is burned for energy recovery (40 CFR 279.1) **[Reviewed March 2000]**.
- *Used Oil Collection Center* - any site or facility that is registered/licensed/ permitted/recognized by a state/county/municipal government to manage used oil and accepts/aggregates and stores used oil collected from used oil generators who bring used oil to the collection centers in shipments of no more than 55 gal. Used oil collection centers may accept used oil from household DIYs (40 CFR 279.1) **[Reviewed March 2000]**.
- *Used Oil Fuel Marketer* - any person who conducts either of the following activities (40 CFR 279.1) **[Reviewed March 2000]**:
  1. directs a shipment of off-specification used oil from their facility to a used oil burner,
  2. first claims that used oil that is to be burned for energy recovery meets used oil fuel specifications.
- *Used Oil Generator* - any person, by site, whose act or process produces used oil or whose act first causes used oil to become subject to regulation (40 CFR 279.1) **[Reviewed March 2000]**.
- *Used Oil Processor/Re-Refiner* - a facility that processes used oil (40 CFR 279.1) **[Reviewed March 2000]**.

- *Used Oil Transfer Facility* - any transportation-related facility, including loading docks, parking areas, storage areas, and other areas where shipments of used oil are held for more than 24 h during the normal course of transportation and not longer than 35 days (40 CFR 279.2) **[Reviewed March 2000]**.
- *Used Oil Transporter* - any person who transports used oil, any person who collects used oil from more than one generator and transports the collected oil, and owners and operators of used oil transfer facilities. Used oil transporters may consolidate or aggregate loads of used oil for purposes of transportation, but, with the following exception, may not process used oil. Transporters may conduct incidental processing operations that occur in the normal course of used oil transportation (e.g., settling and water separation), but that are not designed to produce or make more amenable for production of used oil derived products or used oil fuel (40 CFR 279.1) **[Reviewed March 2000]**.
- *Vegetable Oil* - a non-petroleum oil or fat of vegetable origin, including but not limited to oils and fats derived from plant seeds, nuts, fruits, and kernels (40 CFR 112.2) **[Added July 2002]**.
- *Vegetable Oil* - a non-petroleum oil or fat derived from plant seeds, nuts, kernels or fruits, and not specifically identified elsewhere in 33 CFR 154 (33 CFR 1020) **[Added October 2010]**.
- *Vegetable Oil* - a non-petroleum oil or fat derived from plant seeds, nuts, kernels or fruits, not specifically identified elsewhere in 49 CFR 130 (49 CFR 130.5) **[Added October 2000]**.
- *Vessel* - every description of watercraft or other artificial contrivance used, or capable of being used, as a means of transportation on water, other than a public vessel (40 CFR 112.2) **[Added July 2002]**.
- *Vessel* - every description of watercraft or other artificial contrivance used, or capable of being used, as a means of transportation on water other than a public vessel (CWA, Section 311).
- *Vessel Carrying Oil As Secondary Cargo* - a vessel carrying oil pursuant to a permit issued under 46 CFR 30.01-1, 46 CFR 70.05-30, or 46 CFR 90.05-35 or pursuant to an International Oil Pollution Prevention (IOPP) or Noxious Liquid Substance (NLS) certificate; or any uninspected vessel that carries oil as bulk cargo (33 CFR 155.200).
- *Waters of the United States* – this definition is effective 6 February 2020. This phrase includes the following (40 CFR 110.1 and 112.2) **[Added July 2015; Revised April 2018]**:
  1. All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
  2. All interstate waters, including interstate wetlands [see definition of *Wetlands*];
  3. The territorial seas;
  4. All impoundments of waters otherwise identified as waters of the United States under 40 CFR 110.1;
  5. All tributaries, [see definition of *Tributary*], of waters identified in paragraphs (1) through (3);
  6. All waters adjacent [see definition of *Adjacent*] to a water identified in paragraphs (1) through (5) of this definition, including wetlands, ponds, lakes, oxbows, impoundments, and similar waters;
  7. All waters in paragraphs (a) through (e) of this paragraph (7) where they are determined, on a case-specific basis, to have a significant nexus to a water identified in paragraphs (1) through (3) of this definition. The waters identified in each of paragraphs (a) through (e) of this paragraph (7) are similarly situated and shall be combined, for purposes of a significant nexus analysis, in the watershed that drains to the nearest water identified in paragraphs (1) through (3) of this definition. Waters identified in this paragraph (7) shall not be combined with waters identified in paragraph (6) when performing a significant nexus analysis. If waters identified in this paragraph are also an adjacent water under paragraph (6), they are an adjacent water and no case-specific significant nexus analysis is required.
    - a. *Prairie potholes*. Prairie potholes are a complex of glacially formed wetlands, usually occurring in depressions that lack permanent natural outlets, located in the upper Midwest.
    - b. *Carolina bays and Delmarva bays*. Carolina bays and Delmarva bays are ponded, depressional wetlands that occur along the Atlantic coastal plain.

- c. *Pocosins*. Pocosins are evergreen shrub and tree dominated wetlands found predominantly along the Central Atlantic coastal plain.
  - d. *Western vernal pools*. Western vernal pools are seasonal wetlands located in parts of California and associated with topographic depression, soils with poor drainage, mild, wet winters and hot, dry summers.
  - e. *Texas coastal prairie wetlands*. Texas coastal prairie wetlands are freshwater wetlands that occur as a mosaic of depressions, ridges, intermound flats, and mima mound wetlands located along the Texas Gulf Coast.
8. All waters located within the 100-year floodplain of a water identified in paragraphs (1) through (3) of this definition and all waters located within 4,000 feet of the high tide line or ordinary high water mark [see definition of *High Tide Line* and *Ordinary High Water Mark*] of a water identified in paragraphs ((1) through (5) of this definition where they are determined on a case-specific basis to have a significant nexus to a water identified in paragraphs ((1) through (3) of this definition. For waters determined to have a significant nexus, the entire water is a water of the United States if a portion is located within the 100-year floodplain of a water identified in paragraphs (1) through (3) of this definition or within 4,000 feet of the high tide line or ordinary high water mark. Waters identified in this paragraph (8) shall not be combined with waters identified in paragraph (6) of this definition when performing a significant nexus analysis. If waters identified in this paragraph (8) are also an adjacent water under paragraph (6), they are an adjacent water and no case-specific significant nexus analysis is required.

The following are not “waters of the United States” even where they otherwise meet the terms of paragraphs (4) through (8) above in this definition.

1. Waste treatment systems (other than cooling ponds meeting the criteria of this paragraph)
  2. Prior converted cropland. Notwithstanding the determination of an area’s status as prior converted cropland by any other Federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.
  3. The following ditches:
    - a. Ditches with ephemeral flow that are not a relocated tributary or excavated in a tributary.
    - b. Ditches with intermittent flow that are not a relocated tributary, excavated in a tributary, or drain wetlands
    - c. Ditches that do not flow, either directly or through another water, into a water identified in paragraphs (1) through (3) of the above definition of waters which are “waters of the United States”.
  4. The following features:
    - a. Artificially irrigated areas that would revert to dry land should application of water to that area cease;
    - b. Artificial, constructed lakes and ponds created in dry land such as farm and stock watering ponds, irrigation ponds, settling basins, fields flooded for rice growing, log cleaning ponds, or cooling ponds;
    - c. Artificial reflecting pools or swimming pools created in dry land;
    - d. Small ornamental waters created in dry land;
    - e. Water-filled depressions created in dry land incidental to mining or construction activity, including pits excavated for obtaining fill, sand, or gravel that fill with water;
    - f. Erosional features, including gullies, rills, and other ephemeral features that do not meet the definition of tributary, non-wetland swales, and lawfully constructed grassed waterways; and
    - g. Puddles.
  5. Groundwater, including groundwater drained through subsurface drainage systems.
  6. Stormwater control features constructed to convey, treat, or store stormwater that are created in dry land.
  7. Wastewater recycling structures constructed in dry land; detention and retention basins built for wastewater recycling; groundwater recharge basins; percolation ponds built for wastewater recycling; and water distributary structures built for wastewater recycling.
- *Wetlands* - those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas (40 CFR 110.1 and 112.2) [**Added July 2002, Revised July 2015**].

- *Worst Case Discharge* - in the case of an onshore facility and deepwater port, the largest foreseeable discharge in adverse weather conditions meeting the requirements of 33 CFR 154.1029 (33 CFR 1020) **[Added October 2010]**.
- *Worst Case Discharge* - the largest foreseeable discharge of oil, including a discharge from fire or explosion, in adverse weather conditions. This volume will be determined by each pipeline operator for each response zone and is calculated according to 49 CFR 194.105 (49 CFR 194.5) **[Revised April 2005]**.
- *Worst Case Discharge* - for the MTR segment of a facility, not less than (33 CFR 154.1029) **[Added October 2010]**:
  1. Where applicable, the loss of the entire capacity of all in-line and breakout tank(s) needed for the continuous operation of the pipelines used for the purposes of handling or transporting oil, in bulk, to or from a vessel regardless of the presence of secondary containment; plus
  2. The discharge from all piping carrying oil between the marine transfer manifold and the non-transportation-related portion of the facility. The discharge from each pipe is calculated as follows:
    - a. The maximum time to discover the release from the pipe in hours, plus the maximum time to shut down flow from the pipe in hours (based on historic discharge data or the best estimate in the absence of historic discharge data for the facility) multiplied by the maximum flow rate expressed in barrels per hour (based on the maximum relief valve setting or maximum system pressure when relief valves are not provided) plus the total line drainage volume expressed in barrels for the pipe between the marine manifold and the non-transportation-related portion of the facility.

For a mobile facility it means the loss of the entire contents of the container in which the oil is stored or transported.
- *Worst Case Discharge for an Onshore Non-transportation-related Facility* - the largest foreseeable discharge in adverse weather conditions as determined using the worksheets in Appendix D to 40 CFR 112 (40 CFR 112.2) **[Added July 2002]**.
- *Worst-case Discharge* – “the largest foreseeable discharge in adverse weather conditions,” as defined at 33 U.S.C. 1321(a)(24). The largest foreseeable discharge from a motor vehicle or rail car is the capacity of the cargo container. The term “maximum potential discharge,” used in 49 CFR 130.31(a), is synonymous with “worst-case discharge.” (49 CFR 130.5) **[Added October 2000]**.
- *Worst Case Discharge For Onshore Oil Pipelines* - the worst case discharge is the largest volume, in barrels (cubic meters), of the following (49 CFR 194.105(b)) **[Added July 2005]**:
  1. The pipeline's maximum release time in hours, plus the maximum shutdown response time in hours (based on historic discharge data or in the absence of such historic data, the operator's best estimate), multiplied by the maximum flow rate expressed in barrels per hour (based on the maximum daily capacity of the pipeline), plus the largest line drainage volume after shutdown of the line section(s) in the response zone expressed in barrels (cubic meters); or
  2. The largest foreseeable discharge for the line section(s) within a response zone, expressed in barrels (cubic meters), based on the maximum historic discharge, if one exists, adjusted for any subsequent corrective or preventive action taken; or
  3. If the response zone contains one or more breakout tanks, the capacity of the single largest tank or battery of tanks within a single secondary containment system, adjusted for the capacity or size of the secondary containment system, expressed in barrels (cubic meters).

## F. Records To Review

- Records of all spills, leaks, and associated site assessment/cleanup activities (for 3 yr)
- Official correspondence with state implementing agency

- Spill Prevention and Response Plan
- Facility response plan required by OPA
- Records of spill response training programs
- Records of all spills, leaks, and associated site assessment/cleanup activities (for 3 yr)
- Ships Log
- Engine room Log
- Oil Record Book
- Certificate of Inspection
- Classification Society Certificates
- Licenses, documents, and endorsements for crew members
- Vessel Response Plan
- Oil transfer procedures
- Training and Drill exercises
- Cathodic protection system routine maintenance logs

#### **G. Physical Features To Inspect**

- Refueling facilities, including:
  - Above and belowground storage tanks and dikes
  - Venting
  - Fill pipe
  - Gauges
  - Cathodic protection test stations
- Washrack areas
- Vehicle maintenance areas
- Oil separators
- Sites where oil is stored in containers other than tanks
- Fire training pits
- Grease racks
- Oil transfer locations (including lighting, communications, emergency shutdowns, and hose assemblies)
- Oil waste retention facilities
- Bilge areas

## H. Guidance for POL Management Checklist Users

(NOTE: Select portions of this section (i.e., Review of Federal Legislation, State and Local Regulations, Key Compliance Requirements, Key Terms and Definitions, Typical Records to Review, Typical Physical Features to Inspect, and the Checklist) have been reviewed by USEPA personnel from the Office of Enforcement and Compliance Assurance (OECA) and USEPA's Office of General Counsel. USEPA's comments and suggestions for changes have been incorporated in this version of the TEAM Guide. USEPA did not review all portions of this section. USEPA also did not review and comment on items pertaining to federal Executive Orders, DOT regulations, OSHA regulations or any other area outside of Title 40 of the Code of Federal Regulations. Portions which have been added or revised as a result of this review are identified as either being reviewed, revised, or added in March 2000, for example [Added March 2000].)

	<b>REFER TO CHECKLIST ITEMS:</b>
All Facilities	PO.1.1.US.
Missing, Risk Management, and Positive Checklist Items	PO.2.1.US. through PO.2.3.US.
Spill Plans	PO.5.1.US. through PO.5.11.US.
Response Plans	PO.10.1.US. through PO.10.4.US.
Transportation Spill Plans	PO.12.1 and PO.12.2
Marine Spill Plans	PO.13.1.US through PO.13.8.US
Discharges/Spills	PO.15.1.US. and PO.15.2.US.
POL Storage	
General	PO.20.1.US. through PO.20.6.US.
On Vessels/Ships	PO.25.1.US. through PO.25.7.US.
Tank Vessels	PO.30.1.US. through PO.30.6.US.
Cargo and Miscellaneous Vessels	PO.35.1.US. and PO.35.2.US.
Pipelines	PO.40.1.US. through PO.40.11.US.
Service Stations	PO.45.1.US. through PO.45.7.US.
Transfer Terminals	PO.50.1.US. through PO.50.6.US.
POL Loading and Unloading	PO.55.1.US. through PO.55.6.US.
Used Oil	PO.60.1.US. and PO.60.2.US.
Used Oil Generators	PO.65.1.US. through PO.65.13.US.
Used Oil Collection Centers and Aggregation Points	PO.70.1.US. through PO.70.3.US.
Used Oil Transportation	PO.75.1.US. through PO.75.9.US.
Used Oil Burners	PO.80.1.US. through PO.80.12.US.
Used Oil Marketing	PO.85.1.US. through PO.85.9.US.

Used Oil Processors/Re-refiners	PO.87.1.US. through PO.87.16.US.
Dust Suppression With Used Oil	PO.90.1.US.

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Appendix 8-1, *Compliance Dates for Facilities Requiring a Response Plan*

Appendix 8-2, *Classes of Vessels*

Appendix 8-3, *Used Oil Classifications*

Appendix 8-4, *Response Plan Requirements Specific to MTR Facility Type*

<b>COMPLIANCE CATEGORY:</b> <b>POL MANAGEMENT</b> <b>U.S. TEAM Guide</b>	
<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b> <b>December 2018</b>
<b>PO.1</b>  <b>ALL FACILITIES</b>  <b>PO.1.1.US.</b> The current status of any ongoing or unresolved consent orders, compliance agreements, notice of violations (NOVs), inter agency agreements, or equivalent state enforcement actions is required to be examined (a finding under this checklist item will have the enforcement action/identifying information as the citation).	Determine if noncompliance issues have been resolved by reviewing a copy of the previous report, consent orders, compliance agreements, NOVs, interagency agreement, or equivalent state enforcement actions.



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<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b> <b>December 2018</b>
<p><b>PO.2</b></p> <p><b>MISSING, RISK MANAGEMENT AND POSITIVE CHECKLIST ITEMS</b></p> <p><b>PO.2.1.US.</b> Facilities are required to comply with all applicable Federal regulatory requirements not contained in this checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of finding).</p> <p><b>PO.2.2.US.</b> Risk management techniques should be promoted in environmental efforts (MP) [Added April 2002].</p> <p><b>PO.2.3.US.</b> Facilities should go above and beyond statutory and regulatory compliance (MP) [Added April 2002].</p>	<p>Determine if any new regulations have been issued since the finalization of TEAM.</p> <p>Determine if the facility has activities or facilities that are regulated, but not addressed in this checklist.</p> <p>Verify that the facility is in compliance with all applicable and newly issued regulations.</p> <p>Determine if risk management techniques are promoted in environmental efforts.</p> <p>Determine if the facility has gone above and beyond simply complying with environmental requirements.</p>



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<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b> <b>December 2018</b>
<p><b>PO.5</b></p> <p><b>SPILL PLANS</b></p> <p><b>PO.5.1.US.</b> Certain non-transportation-related onshore or offshore facilities that store, transport, or dispense petroleum products are required to prepare an SPCC Plan (40 CFR 112.1(b), 112.1(d), 112.1(f), 112.3(a)(1), 112.3(a)(3), 112.3(f), and 112.4) [Revised May 1997; Revised July 2002; Revised January 2003; Revised April 2003; Revised October 2004; Revised January 2006; Revised January 2007; Revised July 2007; Revised January 2009; Revised January 2010; Revised January 2011; Revised January 2012].</p>	<p>(NOTE: These requirements apply to any owner or operator of a non-transportation-related onshore or offshore facility engaged in drilling, producing, gathering, storing, processing, refining, transferring, distributing, using, or consuming oil and oil products, which due to its location, could reasonably be expected to discharge oil in quantities that may be harmful, into or upon the navigable waters of the United States or adjoining shorelines, or into or upon the waters of the contiguous zone, or in connection with activities under the Outer Continental Shelf Lands Act or the Deepwater Port Act of 1974, or that may affect natural resources belonging to, appertaining to, or under the exclusive management authority of the United States (including resources under the <i>Magnuson Fishery Conservation and Management Act</i>) that has oil in:</p> <ul style="list-style-type: none"> <li>– any aboveground container</li> <li>– any completely buried tank (see definitions)</li> <li>– any container that is used for standby storage, for seasonal storage, or for temporary storage, or not otherwise “permanently closed” (see definitions)</li> <li>– any “bunkered tank” or “partially buried tank” (see definitions), or any container in a vault, each of which is considered an aboveground storage container for purposes of 40 CFR 112.)</li> </ul> <p>Verify that the owner or operator of an onshore or offshore facility prepares in writing and implements a SPCC Plan.</p> <p>Verify that, if the facility, mobile or portable facility, was in operation on or before 16 Aug 2002 the SPCCP is maintained, but amended if necessary to ensure compliance, and implemented no later than 10 November 2011.</p> <p>Verify that, if the facility and/or mobile or portable facility became operational after 16 Aug 2002 but before 10 Nov 2011, and the facility could reasonably be expected to have a discharge, a SPCCP is prepared and implemented on or before 10 Nov 2011.</p> <p>Verify that, if the facility and/or mobile or portable facility (excluding oil production facilities), becomes operational after 10 Nov 2011, and could reasonably be expected to have a discharge, a SPCCP is prepared and implemented before operations are begun.</p> <p>(NOTE: Facilities are not required to prepare a new SPCCP each time they move a mobile or portable facility to a new site, instead the SPCCP may be general. When moving the mobile or portable facility, it must be located and installed using the discharge prevention practices outlined in the SPCCP for the facility. The Plan is applicable only while the mobile or portable facility is in a fixed (non-transportation) operating mode.)</p>

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<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS:</b> <b>December 2018</b>
	<p>Verify that, if an onshore or offshore facility (excluding oil production facilities) becomes operational after 10 November 2010, and the facility could reasonably be expected to have a discharge, an SPCC Plan is prepared and implemented a Plan before operations begin</p> <p>Verify that, if an oil production facility becomes operational after 10 November 2010, and could reasonably be expected to have a discharge an SPCC Plan is prepared and implemented within 6 mo after the facility begins operations.</p> <p>Verify that, if the facility is a farm in operation on or before 16 August 2002, the Plan is maintained and amended in compliance with 40 CFR 112 and implemented on or before 10 May 2013.</p> <p>Verify that, if the facility is a farm which became operational between 16 August 2002 and 10 May 2013, and could reasonably be expected to have a discharge, the facility has prepared and implemented a Plan on or before 10 May 2013.</p> <p>Verify that, if the facility is a farm which becomes operational after 10 May 2013, and could reasonably be expected to have a discharge, the facility prepares and implements a Plan before beginning operations.</p> <p>(NOTE: The Regional Administrator may authorize an extension of time for the preparation and full implementation of an SPCC Plan, or any amendment thereto, beyond the time permitted for the preparation, implementation, or amendment of an SPCC Plan when he finds that the owner or operator of a facility cannot fully comply with the SPCC Plan requirements as a result of either nonavailability of qualified personnel, or delays in construction or equipment delivery beyond the control and without the fault of such owner or operator or his agents or employees.)</p> <p>Verify that, the owner or operator of an onshore or offshore mobile facility, such as an onshore drilling or workover rig, barge mounted offshore drilling or workover rig, or portable fueling facility, prepares, implements, and maintains a SPCC Plan.</p> <p>Verify that, the owner or operator of an onshore or offshore mobile facility amends and implements the SPCC Plan if necessary to ensure compliance with 40 CFR 112 on or before 1 July 2009.</p> <p>Verify that, if the onshore or offshore mobile facility becomes operational after 1 July 2009, and could reasonably be expected to have a discharge, a SPCC Plan is prepared and implemented before beginning operations.</p> <p>(NOTE: This provision does not require the preparation of a new SPCC Plan each time the facility is moved to a new site. The SPCC Plan may be a general SPCC Plan.)</p> <p>Verify that, when the mobile or portable facility is moved, it is located and installed using the discharge prevention practices outlined in the SPCC Plan for the facility.</p>

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	<p>(NOTE: The SPCC Plan is applicable only while the facility is in a fixed [non-transportation] operating mode.)</p> <p>Verify that an onshore or offshore mobile facility, such as an onshore drilling or workover rig, barge mounted offshore drilling or workover rig, or portable fueling facility subject to 40 CFR 112 is not operated unless the SPCC Plan has been implemented.</p> <p>(NOTE: The Regional Administrator may require that the owner or operator of any facility subject to the jurisdiction of USEPA under section 311(j) of the CWA prepare and implement an SPCC Plan, or any applicable part, to carry out the purposes of the CWA.)</p> <p>(NOTE: See the following website for guidance from USEPA on SPCC plans: <a href="http://www.epa.gov/oilspill/prevent.htm">http://www.epa.gov/oilspill/prevent.htm</a>.)</p> <p>(NOTE: 40 CFR 112 does not apply to:</p> <ul style="list-style-type: none"> <li>– any facility which, although otherwise subject to the jurisdiction of USEPA, meets both of the following requirements <ul style="list-style-type: none"> <li>– the completely buried storage capacity of the facility is 42,000 U.S. gal or less of oil [NOTE: See the extensive NOTE after this NOTE about exemptions for clarification on the parameters of “completely buried storage capacity”]</li> <li>– the aggregate aboveground storage capacity of the facility is 1,320 U.S. gallons or less of oil [NOTE: Only containers with a capacity of 55 U.S. gal or greater are counted. The aggregate aboveground storage capacity of a facility excludes the capacity (see definitions): <ul style="list-style-type: none"> <li>– of a container that is “permanently closed”</li> <li>– of a “motive power container”</li> <li>– of hot-mix asphalt or any hot-mix asphalt container</li> <li>– of a container for heating oil used solely at a single-family residence</li> <li>– of pesticide application equipment and related mix containers</li> <li>– of a produced water container (see definitions) and any associated piping or appurtenances downstream of the container, that meets the requirements for oil production facility bulk storage containers at 40 CFR at 112.9(c)(6)(i)</li> </ul> </li> </ul> </li> <li>– the owner or operator of any facility, equipment, or operation that is not subject to the jurisdiction of the USEPA under section 311(j)(1)(C) of the CWA, as follows: <ul style="list-style-type: none"> <li>– any onshore or offshore facility that, due to its location, could not reasonably be expected to have a discharge as determined based solely upon consideration of the geographical and location aspects of the facility (such as proximity to navigable waters or adjoining shorelines, land contour, drainage, etc.) and must exclude consideration of manmade features such as dikes, equipment, or other structures, which may serve to restrain, hinder, contain, or otherwise prevent a discharge</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– any equipment, or operation of a vessel or transportation-related onshore or offshore facility that is subject to the authority and control of the U.S. Department of Transportation, as defined in the Memorandum of Understanding between the Secretary of Transportation and the Administrator of USEPA, dated 24 November 1971</li> <li>– any equipment, or operation of a vessel or onshore or offshore facility that is subject to the authority and control of the U.S. Department of Transportation or the U.S. Department of the Interior, as defined in the Memorandum of Understanding between the Secretary of Transportation, the Secretary of the Interior, and the Administrator of USEPA, dated 8 November 1993.</li> <li>– any offshore oil drilling, production, or workover facility that is subject to the notices and regulations of the Minerals Management Service, as specified in the Memorandum of Understanding between the Secretary of Transportation, the Secretary of the Interior, and the Administrator of USEPA, dated 8 November 1993</li> <li>– any completely buried storage tank and connected underground piping, underground ancillary equipment, and containment systems, at any facility, that is subject to all of the technical requirements of 40 CFR 280 or an approved State UST program, or any oil USTs including below-grade vaulted tanks, deferred under 40 CFR 280, as originally promulgated, that supply emergency diesel generators at a nuclear power generation facility licensed by the Nuclear Regulatory Commission (NRC), except that such a tank may qualify for the exemption if it is subject to any NRC provision regarding design and quality criteria, including but not limited to 10 CFR 50 and the emergency generator tanks are marked on the facility diagram if the facility is otherwise subject to 40 CFR 112</li> <li>– any container with a storage capacity of less than 55 gal of oil</li> <li>– any facility or part thereof used exclusively for wastewater treatment and not used to satisfy any requirement of 40 CFR 112. [NOTE: The production, recovery, or recycling of oil is not considered wastewater treatment.]</li> <li>– any “motive power container” although the transfer of fuel or other oil into a motive power container at an otherwise regulated facility is not eligible for exemption</li> <li>– hot-mix asphalt, or any hot-mix asphalt container</li> <li>– any container for heating oil used solely at a single-family residence</li> <li>– any pesticide application equipment or related mix containers</li> <li>– intra-facility gathering lines subject to the regulatory requirements of 49 CFR 192 or 195, except that such a line’s location must be identified and marked as “exempt” on the facility diagram if the facility is otherwise subject to 40 CFR 112.)</li> </ul> <p>(NOTE: This NOTE provides clarification on the parameters of “completely buried storage capacity” as used in relationship to exemptions from 40 CFR 112. A completely buried storage capacity of a facility excludes:</p> <ul style="list-style-type: none"> <li>– the capacity of a completely buried tank and connected underground piping, underground ancillary equipment, and containment systems, that is currently</li> </ul>

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<p><b>PO.5.2.US.</b> The SPCC Plan is required to contain specific information (40 CFR 112.1(b), 112.1(d), and 112.7(a), 112.7(b), 112.7(d), and 112.7(j)) [Revised July 2002; Revised July 2004; Revised January 2007; Revised January 2009; Revised January 2010].</p>	<p>subject to all of the technical requirements of 40 CFR 280 or all of the technical requirements of an approved State UST program</p> <ul style="list-style-type: none"> <li>– the capacity of any underground oil storage tanks, including below-grade vaulted tanks, deferred under 40 CFR 280 that supply emergency diesel generators at a nuclear power generation facility licensed by the Nuclear Regulatory Commission provided that such a tank is subject to any Nuclear Regulatory Commission provision regarding design and quality criteria, including, but not limited to, 10 CFR 50.</li> </ul> <p>The completely buried storage capacity of a facility also excludes the capacity of a container that is “permanently closed,” [see definitions] and the capacity of intra-facility gathering lines subject to the regulatory requirements of 49 CFR 192 or 195.)</p> <p>(NOTE: See the first NOTE and the last NOTE in PO.5.1.US for applicability and exemptions.)</p> <p>Verify that the SPCC Plan is prepared in writing in accordance with good engineering practices.</p> <p>Verify that the SPCC Plan has the full approval of management at a level of authority to commit the necessary resources to fully implement the SPCC Plan.</p> <p>(NOTE: If the SPCC Plan does not follow the sequence specified in this checklist item, the facility must prepare an equivalent SPCC Plan acceptable to the Regional Administrator that meets all of the applicable requirements listed in this checklist, and the facility must supplement it with a section cross-referencing the location of requirements listed in this checklist item and the equivalent requirements in the other prevention plan.)</p> <p>Verify that, if the SPCC Plan calls for additional facilities or procedures, methods, or equipment not yet fully operational, these items are discussed in separate paragraphs, and the details of installation and operational start-up are explained.</p> <p>Verify that the SPCC Plan includes the physical layout of the facility and a facility diagram, which marks the location and contents of each fixed oil storage container and the storage area where mobile or portable containers are located.</p> <p>Verify that the facility diagram identifies the location of and marks as “exempt” underground tanks that are otherwise exempted from the requirements of 40 CFR 112.</p> <p>Verify that the facility diagram includes all transfer stations and connecting pipes, including intra-facility gathering lines that are otherwise exempted from 40 CFR 112.</p> <p>(NOTE: Except as provided in the requirements for qualified facilities [40 CFR 112.6 [see checklist items PO.5.5.US, PO.5.9.US, and PO.20.6.US], the SPCC Plan can deviate from the following requirements if equivalent environmental protection</p>

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	<p>is provided by some other means of spill prevention, control, or countermeasure, the reasons for nonconformance are stated in the SPCC Plan and alternate methods and how equivalent environmental protection will be achieved are described:</p> <ul style="list-style-type: none"> <li>– security</li> <li>– at facility tank car and tank truck loading/unloading racks (40 CFR 112.7(h)(2) and 112.7(h)(3), see checklist item PO.55.1.US): <ul style="list-style-type: none"> <li>– systems to prevent vehicles from departing before complete disconnection of flexible or fixed oil transfer lines</li> <li>– inspection for discharges prior to disconnection</li> </ul> </li> <li>– management of field-constructed aboveground containers (40 CFR 112.7(i), see checklist item PO.20.4.US).</li> <li>– requirements for facility drainage, bulk storage containers, and facility transfer operations [except in relation to secondary containment] [40 CFR 112.8 and 112.12, see checklist items PO.20.2.US, PO.20.4.US, and PO.40.1.US].)</li> </ul> <p>Verify that the SPCC includes:</p> <ul style="list-style-type: none"> <li>– a discussion of its conformance with 40 CFR 112.7</li> <li>– the type of oil in each container and its storage capacity (NOTE: for mobile or portable containers, either provide the type of oil and storage capacity for each container or provide an estimate of the potential number of mobile or portable containers, the types of oil, and anticipated storage capacities)</li> <li>– discharge prevention measures including procedures for routine handling of products (loading, unloading, and facility transfers, etc.)</li> <li>– discharge or drainage controls such as secondary containment around containers and other structures, equipment, and procedures for the control of a discharge</li> <li>– countermeasures for discharge discovery, response, and cleanup (both the facility's capability and those that might be required of a contractor)</li> <li>– methods of disposal of recovered materials in accordance with applicable legal requirements</li> <li>– a contact list and phone numbers for the facility response coordinator, National Response Center, cleanup contractors with whom the facility has an agreement for response, and all appropriate Federal, state, and local agencies who must be contacted in case of a discharge.</li> </ul> <p>Verify that, in relation to security, the SPCC Plan includes the following information (except for oil production facilities):</p> <ul style="list-style-type: none"> <li>– how access to oil handling, processing, and storage areas will be secured and controlled</li> <li>– how the master flow and drain valves are secured</li> <li>– how unauthorized access to starter controls on oil pumps is prevented</li> <li>– how out-of-service and loading/unloading connections of oil pipelines are secured</li> </ul>

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	<ul style="list-style-type: none"> <li>– the appropriateness of security lighting to both prevent acts of vandalism and assist in the discovery of oil discharges.</li> </ul> <p>Verify that, unless the facility has submitted a Response Plan under 40 CFR 112.20 (see checklist items PO.10.1.US through PO.10.4.US), the SPCC includes:</p> <ul style="list-style-type: none"> <li>– information and procedures to enable a person reporting a discharge to relate information on the exact address or location and phone number of the facility; the date and time of the discharge; the type of material discharged; estimates of the total quantity discharged; estimates of the quantity discharged; the source of the discharge; a description of all affected media; the cause of the discharge; any damages or injuries caused by the discharge; actions being used to stop, remove, and mitigate the effects of the discharge; whether an evacuation may be needed; and, the names of individuals and/or organizations who have also been contacted</li> <li>– procedures the facility will use when a discharge occurs in a way that will make them readily usable in an emergency, and include appropriate supporting material as appendices.</li> </ul> <p>Verify that, where experience indicates a reasonable potential for equipment failure (such as loading or unloading equipment, tank overflow, rupture, or leakage, or any other equipment known to be a source of a discharge), the SPCC Plan includes a prediction of the direction, rate of flow, and total quantity of oil which could be discharged from the facility as a result of each type of major equipment failure.</p> <p>Verify that, in addition to the minimal prevention standards listed in 40 CFR 112.7 (see checklist items PO.5.2.US, PO.5.7.US, PO.20.1.US, PO.20.4.US, and PO.55.1.US), the SPCC Plan includes a complete discussion of conformance with the applicable requirements and other effective discharge prevention and containment procedures listed in 40 CFR 112 or any applicable, more stringent state rules, regulations, and guidelines.</p> <p>Verify that, if the facility determines that the installation of any necessary equipment to prevent a discharge from any onshore or offshore facility is not practicable:</p> <ul style="list-style-type: none"> <li>– the SPCC Plan clearly explains why such measures are not practicable</li> <li>– both periodic integrity testing of the containers and periodic integrity and leak testing of the valves and piping is done for bulk storage containers</li> <li>– unless a Response Plan under 40 CFR 112.20 (see checklist items PO.10.1.US through PO.10.4.US) has been submitted, the following is included in the SPCC: <ul style="list-style-type: none"> <li>– an oil spill contingency plan following the provisions of 40 CFR 109</li> <li>– a written commitment of manpower, equipment, and materials required to expeditiously control and remove any quantity of oil discharged that may be harmful.</li> </ul> </li> </ul>

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<p><b>PO.5.3.US.</b> Each SPCC Plan must be reviewed at least once every 5 yr (40 CFR 112.1(b), 112.1(d), and 112.5(b)) [Revised July 2002; Citation Revised January 2009; Citation Revised January 2010].</p>	<p>(NOTE: Necessary equipment includes:</p> <ul style="list-style-type: none"> <li>– for onshore facilities: dikes, berms, or retaining walls sufficiently impervious to contain oil; curbing; culverting, gutters, or other drainage systems; weirs, booms, or other barriers; spill diversion ponds; retention ponds; sorbent materials</li> <li>– for offshore facilities: curbing or drip pans; sumps and collection systems.</li> <li>– for facility tank car and tank truck loading/unloading racks: an interlocked warning light or physical barrier system, warning signs, wheel chocks, or vehicle break interlock system in loading/unloading areas to prevent vehicles from departing before complete disconnection of flexible or fixed oil transfer lines</li> <li>– open and closed design valves for drainage of diked areas</li> <li>– for mobile or portable oil storage containers, a secondary means of containment.)</li> </ul> <p>(NOTE: The Settlement Agreement between EPA and the joint plaintiffs of the API and Marathon Oil dated 29 March 2004 stipulates that secondary containment may not be considered impracticable solely because a contingency plan is cheaper.)</p> <p>(NOTE: The Settlement Agreement between EPA and the joint plaintiffs of the API and Marathon Oil dated 29 March 2004 stipulates that a dry gas production facility is not excluded from the wastewater treatment exemption. A dry gas production facility is a facility that produces natural gas from a well (or wells) from which it does not also produce condensate or crude oil that can be drawn off the tanks, containers, or other production equipment at the facility.)</p> <p>(NOTE: See the first NOTE and the last NOTE in PO.5.1.US for applicability and exemptions.)</p> <p>Verify that the SPCC Plan is reviewed and evaluated at least once every 5 yr from the date the facility becomes subject to 40 CFR 112.</p> <p>(NOTE: If the facility was in operation on or before 16 August 2002, 5 yr from the date the last review was required under 40 CFR 112.)</p> <p>Verify that the SPCC Plan is amended within 6 mo of the review to include more effective prevention and control technology if the technology has been field-proven at the time of the review and will significantly reduce the likelihood of a discharge from the facility.</p> <p>Verify that any amendment is implemented as soon as possible, but not later than 6 mo following preparation of any amendment.</p> <p>Verify that the completion of the review and evaluation is documented and a statement signed as to whether the SPCC Plan will be amended.</p>

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<p><b>PO.5.4.US.</b> The SPCC Plan must be reviewed and/or amended under specific circumstances (40 CFR 112.1(b), 112.1(d), and 112.5(a)) [Revised February 1995; Revised July 2002].</p> <p><b>PO.5.5.US.</b> A registered professional engineer must certify each SPCC Plan and any amendments and the plan and each amendment must be prepared according to sound engineering practices (40 CFR 112.1(b), 112.1(d), 112.3(d), 112.3(g), 112.5(e), and 112.6(d)) [Revised February 1995; Revised July 2002; Revised January 2007; Revised January 2009; Revised January 2010].</p>	<p>(NOTE: The statement can be either at the beginning or end of the SPCC Plan or in a log or an appendix to the SPCC Plan. The following words will suffice, “I have completed review and evaluation of the SPCC Plan for (name of facility) on (date), and will (will not) amend the Plan as a result.”)</p> <p>(NOTE: See the first NOTE and the last NOTE in PO.5.1.US for information on what the requirements of 40 CFR 112 do and do not apply to.)</p> <p>Verify that the SPCC Plan is amended when there is a change in the facility design, construction, operation, or maintenance that materially affects its potential for a discharge as described in 40 CFR 112.1(b).</p> <p>(NOTE: Examples of changes that may require amendment of the SPCC Plan include, but are not limited to: commissioning or decommissioning containers; replacement, reconstruction, or movement of containers; reconstruction, replacement, or installation of piping systems; construction or demolition that might alter secondary containment structures; changes of product or service; or revision of standard operation or maintenance procedures at a facility.)</p> <p>Verify that an amendment is prepared within 6 mo and implemented as soon as possible, but not later than 6 mo following preparation of the amendment.</p> <p>(NOTE: See the first NOTE and the last NOTE in PO.5.1.US for applicability and exemptions)</p> <p>Verify that, except as provided in 40 CFR 112.6 (see below in this checklist item and PO.5.9.US, and PO.20.6.US) for qualified facilities, a licensed Professional Engineer (PE) reviews and certifies an SPCC Plan for it to be effective to satisfy the requirements of 40 CFR 112.</p> <p>(NOTE: By means of this certification the PE attests:</p> <ul style="list-style-type: none"> <li>– that he is familiar with the requirements of 40 CFR 112</li> <li>– that he or his agent has visited and examined the facility</li> <li>– that the SPCC Plan has been prepared in accordance with good engineering practice, including consideration of applicable industry standards, and with the requirements of 40 CFR 112</li> <li>– that procedures for required inspections and testing have been established</li> <li>– that the SPCC Plan is adequate for the facility that, if applicable, for a produced water container subject to 40 CFR 112.9(c)(6) [at onshore oil production facilities], any procedure to minimize the amount of free-phase oil is designed to reduce the accumulation of free-phase oil and the procedures and frequency for required inspections, maintenance and testing have been established and are described in the Plan.)</li> </ul> <p>(NOTE: By means of this certification the PE attests the following for SPCC at onshore oil production facilities:</p>

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	<ul style="list-style-type: none"> <li>– that, if applicable, all exempted produced water containers and any associated piping and appurtenances downstream of the container, including flowlines and other appurtenances associated with injection or discharge, meet the criteria described in 40 CFR 112.9(c)(6)(i) and are identified in the Plan</li> <li>– the appropriate produced water characteristics and any associated piping and appurtenances downstream of the container, procedures, or maintenance required to meet the standards of 40 CFR 110 required for the produced water container are also identified in the Plan</li> <li>– for a produced water container subject to 40 CFR 112.9(c)(6)(ii), any procedure to minimize the amount of free-phase oil is designed to reduce the accumulation of free-phase oil and the procedures and frequency for required inspections, maintenance and testing have been established and are described in the Plan.)</li> </ul> <p>Verify that a Professional Engineer certifies any technical amendment to the Plan. (NOTE: PE certification in no way relieves the owner or operator of a facility of his duty to prepare and fully implement an SPCC Plan in accordance with the requirements of 40 CFR 112.)</p> <p>(NOTE: The owner or operator of a qualified facility may self-certify their facility's Plan, as provided in 40 CFR 112.6 [see below in this checklist item and in PO.5.9.US and PO.20.6.US]. A qualified facility is one that meets one of the following Tier I or Tier II qualified facility criteria:</p> <ul style="list-style-type: none"> <li>– a Tier I qualified facility meets the qualification criteria for Tier II qualified facilities and has no individual aboveground oil storage container with a capacity greater than 5,000 U.S. gal</li> <li>– a Tier II qualified facility is one that has had no single discharge exceeding 1,000 U.S. gal or no two discharges each exceeding 42 U.S. gal within any 12 mo period in the 3 yr prior to the SPCC Plan self-certification date, or since becoming subject to 40 CFR 112 if the facility has been in operation for less than 3 yr [other than discharges that are the result of natural disasters, acts of war, or terrorism], and has an aggregate aboveground oil storage capacity of 10,000 U.S. gal or less.)</li> </ul> <p>(NOTE: The qualified facility owner or operator may not self certify alternative measures allowed under 40 CFR 112.7(a)(2) or 112.7(d) [see checklist item PO.5.2.US], that are included in the qualified facility's Plan. These measures must be reviewed and certified, in writing, by a licensed Professional Engineer as follows:</p> <ul style="list-style-type: none"> <li>– for each alternative measure allowed under 40 CFR 112.7(a)(2) [see checklist item PO.5.2.US], the Plan is accompanied by a written statement by a Professional Engineer stating that the reason for nonconformance and describing the alternative method and how it provides equivalent environmental protection in accordance with 40 CFR 112.7(a)(2) [see checklist item PO.5.2.US]</li> <li>– for each determination of impracticability of secondary containment pursuant to 40 CFR 112.7(d) [see checklist item PO.5.2.US], the Plan clearly explains</li> </ul>

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<p><b>PO.5.6.US.</b> When an SPCC Plan is required, a copy of the SPCC Plan is required to be available (40 CFR 112.1(b), 112.1(d), and 112.3(e)) <b>[Revised July 2002]</b>.</p> <p><b>PO.5.7.US.</b> Oil-handling personnel are required to be trained to prevent discharges (40 CFR 112.1(b), 112.1(d), and 112.7(f)) <b>[Revised July 2002]</b>.</p>	<p>why secondary containment measures are not practicable at this facility and provides the alternative measures required in 40 CFR 112.7(d) instead of secondary containment.)</p> <p>(NOTE: By certifying each measure allowed under 40 CFR 112.7(a)(2) and 112.7(d) [see checklist item PO.5.2.US], the Professional Engineer attests:</p> <ul style="list-style-type: none"> <li>– that he is familiar with the requirements of this 40 CFR 112</li> <li>– that he or his agent has visited and examined the facility</li> <li>– that the alternative method of environmental equivalence or the determination of impracticability and alternative measures is consistent with good engineering practice, including consideration of applicable industry standards, and with the requirements of 40 CFR 112.)</li> </ul> <p>(NOTE: The review and certification by the Professional Engineer under the qualified facility requirements is limited to the alternative method which achieves equivalent environmental protection or to the impracticability determination and measures in lieu of secondary containment pursuant.)</p> <p>(NOTE: See the first NOTE and the last NOTE in PO.5.1.US for information on what the requirements of 40 CFR 112 do and do not apply to.)</p> <p>Verify that the owner or operator of a facility for which an SPCC Plan is required maintains a complete copy of the SPCC Plan at the facility if the facility is normally attended at least 4 h/day, or at the nearest field office if the facility is not so attended.</p> <p>Verify that the SPCC Plan is available to the Regional Administrator for on-site review during normal working hours.</p> <p>(NOTE: See the first NOTE and the last NOTE in PO.5.1.US for information on what the requirements of 40 CFR 112 do and do not apply to.)</p> <p>Verify that, at a minimum, the facility trains oil-handling personnel in:</p> <ul style="list-style-type: none"> <li>– the operation and maintenance of equipment to prevent discharges</li> <li>– discharge procedure protocols</li> <li>– applicable pollution control laws, rules, and regulations</li> <li>– general facility operations</li> <li>– the contents of the facility SPCC Plan.</li> </ul> <p>Verify that a person is designated at each applicable facility who is accountable for discharge prevention and who reports to facility management.</p> <p>Verify that discharge prevention briefings are scheduled and conducted for oil-handling personnel at least once a year to assure adequate understanding of the SPCC Plan for that facility.</p>

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<p><b>PO.5.8.US.</b> When a facility is required to comply with 40 CFR 112 due to discharges of oil, certain parameters are required to be met (40 CFR 112.4) [Added July 2002].</p>	<p>Verify that briefings highlight and describe known discharges or failures, malfunctioning components, and any recently developed precautionary measures.</p> <p>(NOTE: A facility becomes subject to 40 CFR 112 when it has done one of the following:</p> <ul style="list-style-type: none"> <li>– discharged more than 1,000 U.S. gal of oil in a single discharge</li> <li>– discharged more than 42 U.S. gal of oil in each of two discharges occurring within any 12 mo period.)</li> </ul> <p>Verify that a facility which becomes subject to 40 CFR 112 due to discharges submits the following information to the Regional Administrator within 60 days from the time the facility becomes subject to 40 CFR 112:</p> <ul style="list-style-type: none"> <li>– name of the facility</li> <li>– your name</li> <li>– location of the facility</li> <li>– maximum storage or handling capacity of the facility and normal daily throughput</li> <li>– corrective action and countermeasures taken, including a description of equipment repairs and replacements</li> <li>– an adequate description of the facility, including maps, flow diagrams, and topographical maps, as necessary</li> <li>– the cause of such discharge, including a failure analysis of the system or subsystem in which the failure occurred</li> <li>– additional preventive measures taken or contemplated to minimize the possibility of recurrence</li> <li>– such other information as the Regional Administrator may reasonably require pertinent to the Plan or discharge.</li> </ul> <p>(NOTE: These requirements do not apply until the expiration of the time permitted for the initial preparation and implementation of the SPCC Plan, but not including any amendments to the SPCC Plan.)</p> <p>Verify that a complete copy of all information provided to the Regional Administrator is sent to the appropriate agency or agencies in charge of oil pollution control activities in the state in which the facility is located.</p> <p>Verify that, if required to do so in response to submitted information, the facility amends its SPCC Plan.</p> <p>(NOTE: When the Regional Administrator proposes by certified mail or by personal delivery that a facility's SPCC Plan be amended, the Regional Administrator must specify the terms of such proposed amendment. Within 30 days from receipt of notice requiring amendment, the facility may submit written information, views, and arguments on the proposed amendment. After considering all relevant material presented, the Regional Administrator must either notify the facility of any amendment required or rescind the notice.)</p>

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<p><b>PO.5.9.US.</b> If the owner or operator of a Tier I qualified facility chooses to self-certify their SPCC Plan, specific parameters must be met (40 CFR 112.3(g), 112.6(a)) [Added January 2007; Revised January 2009; Revised January 2010].</p>	<p>Verify that, if required to amend the SPCC Plan, the facility does the amendment within 30 days after notice unless the Regional Administrator specifies another effective date.</p> <p>Verify that the facility implements the amended Plan as soon as possible, but not later than 6 mo after being amended unless the Regional Administrator specifies another date.</p> <p>Verify that, if a decision made by the Regional Administrator requiring an amendment to an SPCC Plan is appealed, a complete copy of the appeal is sent to the USEPA Administrator in writing within 30 days of receipt of the notice from the Regional Administrator requiring the amendment.</p> <p>(NOTE: The USEPA Administrator may request additional information from the facility, or from any other person. The USEPA Administrator must render a decision within 60 days of receiving the appeal and must notify you of his decision.)</p> <p>(NOTE: A qualified facility is one that meets one of the following Tier I or Tier II qualified facility criteria:</p> <ul style="list-style-type: none"> <li>– a Tier I qualified facility meets the qualification criteria for Tier II qualified facilities and has no individual aboveground oil storage container with a capacity greater than 5,000 U.S. gal</li> <li>– a Tier II qualified facility is one that has had no single discharge exceeding 1,000 U.S. gal or no two discharges each exceeding 42 U.S. gal within any 12 mo period in the 3 yr prior to the SPCC Plan self-certification date, or since becoming subject to 40 CFR 112 if the facility has been in operation for less than 3 years (other than discharges that are the result of natural disasters, acts of war, or terrorism), and either: <ul style="list-style-type: none"> <li>– has an aggregate aboveground oil storage capacity of 10,000 U.S. gal or less</li> <li>– is an onshore oil production facility with: <ul style="list-style-type: none"> <li>– no more than two producing wells per single tank battery, each of which produce ten bbl or less of crude oil per well per day, if the facility has an injection well; or</li> <li>– no more than four producing wells per single tank battery, each of which produce ten barrels or less of crude oil per well per day, and with no injection wells at the facility.)</li> </ul> </li> </ul> </li> </ul> <p>Verify that the owner or operator of a facility that meets the Tier I qualified facility either:</p> <ul style="list-style-type: none"> <li>– prepares and implements an SPCC Plan that meet the template in Appendix G of 40 CFR 112, and: <ul style="list-style-type: none"> <li>– where experience indicates a reasonable potential for equipment failure (such as loading or unloading equipment, tank overflow, rupture, or leakage, or any other equipment known to be a source of discharge), include in a prediction of the direction and total quantity of oil which</li> </ul> </li> </ul>

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	<p>could be discharged from the facility as a result of each type of major equipment failure</p> <ul style="list-style-type: none"> <li>– construct all bulk storage container installations (except mobile refuelers and other non-transportation-related tank trucks), including mobile or portable oil storage containers, so that a secondary means of containment is provided for the entire capacity of the largest single container plus additional capacity to contain precipitation (NOTE: Dikes, containment curbs, and pits are commonly employed for this purpose. An alternative system consisting of a drainage trench enclosure that must be arranged so that any discharge will terminate and be safely confined in a catchment basin or holding pond can be used)</li> <li>– position or locate mobile or portable oil storage containers to prevent a discharge</li> <li>– ensure that each container is provided with a system or documented procedure to prevent overfills of the container, describe the system or procedure in the SPCC Plan and regularly test to ensure proper operation or efficacy</li> <li>– prepare and implement a SPCC Plan meeting requirements for Tier II qualified facilities</li> <li>– prepare and implement a Plan meeting the general Plan requirements in 40 CFR 112.7 and applicable requirements in subparts B and C, including having the Plan certified by a Professional Engineer</li> </ul> <p>Verify that, if the facility does not follow the Appendix G template, an equivalent plan is prepared that meets all of the applicable requirements in 40 CFR 112 and the equivalent plan is supplemented with a section cross-referencing the location of requirements listed in 40 CFR 112 and the equivalent requirements in the other prevention plan.</p> <p>Verify that, in order to complete the Appendix G template, the owner/operator certifies that:</p> <ul style="list-style-type: none"> <li>– they are familiar with the applicable requirements of 40 CFR 112</li> <li>– they have visited and examined the facility</li> <li>– the Plan has been prepared in accordance with accepted and sound industry practices and standards</li> <li>– procedures for required inspections and testing have been established in accordance with industry inspection and testing standards or recommended practices</li> <li>– the Plan will be fully implemented</li> <li>– the facility meets the qualification criteria for a Tier I facility</li> <li>– the Plan does not deviate from any requirement 40 CFR 112 as allowed by 40 CFR 112.7(a)(2) and 112.7(d) or include measures for produced water containers and any associated piping</li> <li>– the SPCC Plan and individual(s) responsible for implementing this SPCC Plan have the approval of management, and the facility owner or operator has committed the necessary resources to fully implement this Plan.</li> </ul>

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<p><b>PO.5.10.US.</b> Written procedures must be developed and implemented for inspections and tests required by 40 CFR 112 (40 CFR 112.7(e)) [Added July 2008].</p> <p><b>PO.5.11.US.</b> If the owner or operator of a Tier II qualified facility chooses to self-certify their SPCC Plan, specific parameters must be met (40 CFR 112.3(g), 112.6(b)) [Added January 2009; Revised January 2010].</p>	<p>Verify that any technical amendments to the Plan are certified when there is a change in the facility design, construction, operation, or maintenance that affects its potential for a discharge.</p> <p>Verify that, if the facility change results in the facility no longer meeting the Tier I qualifying criteria because an individual oil storage container capacity exceeds 5,000 U.S. gal or the facility capacity exceeds 10,000 U.S. gal in aggregate aboveground storage capacity, within 6 mo following preparation of the amendment, the facility does one of the following:</p> <ul style="list-style-type: none"> <li>– prepares and implements a Plan in accordance with the requirements for Tier II facilities [see checklist item PO.5.11.US]</li> <li>– prepares and implements a Plan in accordance with the general Plan requirements in 40 CFR 112, including having the Plan certified by a Professional Engineer.</li> </ul> <p>Verify that inspections and tests required by 40 CFR 112 are done in accordance with written procedures that the facility or the certifying engineer developed for the facility.</p> <p>Verify that the written procedures and a record of the inspections and tests, signed by the appropriate supervisor or inspector, are kept with the SPCC Plan for a period of 3 yr.</p> <p>(NOTE: Records of inspections and tests kept under usual and customary business practices will suffice.)</p> <p>(NOTE: A qualified facility is one that meets one of the following Tier I or Tier II qualified facility criteria:</p> <ul style="list-style-type: none"> <li>– a Tier I qualified facility meets the qualification criteria for Tier II qualified facilities and has no individual aboveground oil storage container with a capacity greater than 5,000 U.S. gal</li> <li>– a Tier II qualified facility is one that has had no single discharge exceeding 1,000 U.S. gal or no two discharges each exceeding 42 U.S. gal within any 12 mo period in the 3 yr prior to the SPCC Plan self-certification date, or since becoming subject to 40 CFR 112 if the facility has been in operation for less than 3 years (other than discharges that are the result of natural disasters, acts of war, or terrorism), and either: <ul style="list-style-type: none"> <li>– has an aggregate aboveground oil storage capacity of 10,000 U.S. gal or less</li> <li>– is an onshore oil production facility with: <ul style="list-style-type: none"> <li>– no more than two producing wells per single tank battery, each of which produce ten bbl or less of crude oil per well per day, if the facility has an injection well</li> </ul> </li> </ul> </li> </ul>

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	<p>– no more than four producing wells per single tank battery, each of which produce ten barrels or less of crude oil per well per day, and with no injection wells at the facility.)</p> <p>Verify that the owner/operator of a Tier II facility that has chosen to self-certify their Plan, certifies in the Plan that:</p> <ul style="list-style-type: none"> <li>– they are familiar with the requirements of 40 CFR 112</li> <li>– they have visited and examined the facility</li> <li>– the Plan has been prepared in accordance with accepted and sound industry practices and standards, and with the requirements of 40 CFR 112</li> <li>– procedures for required inspections and testing have been established</li> <li>– the Plan will be fully implemented</li> <li>– the facility meets the qualification criteria</li> <li>– the Plan and individual(s) responsible for implementing the Plan have the full approval of management and the facility owner or operator has committed the necessary resources to fully implement the Plan.</li> </ul> <p>Verify that the owner/operators certify any technical amendments to the Plan when there is a change in the facility design, construction, operation, or maintenance that affects its potential for a discharge, except:</p> <ul style="list-style-type: none"> <li>– if a Professional Engineer certified a portion of your Plan and the technical amendment affects this portion of the Plan, the amended provisions of the Plan are certified by a Professional Engineer</li> <li>– if the change is such that the facility no longer meets the Tier II qualifying criteria because it exceeds 10,000 U.S. gal in aggregate aboveground storage capacity the owner/operator, within 6 mo following the change, prepares and implements a Plan in accordance with the general Plan requirements in 40 CFR 112, including having the Plan certified by a Professional Engineer.</li> </ul> <p>Verify that the self-certified SPCC Plan complies with 40 CFR 112.7 and the applicable requirements in subparts B and C of 40 CFR 112, including:</p> <ul style="list-style-type: none"> <li>– the Plan does not include alternate methods which provide environmental equivalence unless each alternate method has been reviewed and certified in writing by a Professional Engineer</li> <li>– the Plan does not deviate from any requirement of 40 CFR 112 as allowed by 40 CFR 112.7(a)(2) and 112.7(d) or include an exemption/measures pursuant to 40 CFR 112.9(c)(6) for produced water containers and any associated piping and appurtenances downstream from the container</li> <li>– the Plan does not include any determinations that secondary containment is impracticable and provisions in lieu of secondary containment, unless each such determination and alternate measure has been reviewed and certified in writing by a Professional Engineer.</li> </ul>

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	(NOTE: The SPCC Plan may not include any alternative procedures for skimming produced water containers in lieu of sized secondary containment unless they have been reviewed and certified in writing by a Professional Engineer.)



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<b>PO.10</b>  <b>RESPONSE PLANS</b>  <b>PO.10.1.US.</b> Nontransportation related onshore facilities that, because of location, could reasonably be expected to cause substantial harm to the environment by discharging oil into or on the navigable waters or adjoining shoreline are required to prepare and submit a facility response plan to the Regional Administrator according to specific parameters (40 CFR 112.1(b), 112.1(d), 112.20(a)(1) through 112.20(a)(3), 112.20(e) through 112.20(h), and Appendix C) [Revised January 1999; Citation Revised July 2000; Revised July 2002; Revised July 2004; Revised January 2009].	<p>(NOTE: See Appendix 8-1 for a chart of due dates for the response plan.)</p> <p>(NOTE: The 40 CFR 112 definition of “navigable waters of the United States” has been revised in November 2008, see the definitions.)</p> <p>(NOTE: A facility could, because of its location, reasonably be expected to cause substantial harm if it meets any of the following criteria:</p> <ul style="list-style-type: none"> <li>– the facility transfers oil over water to or from vessels and has a total oil storage capacity greater than or equal to 42,000 gal</li> <li>– the facility’s total oil storage capacity is greater than or equal to 1 million gal and one of the following is true: <ul style="list-style-type: none"> <li>– the facility does not have secondary containment for each aboveground area sufficiently large to contain the capacity of the largest AST within each storage area plus sufficient freeboard to allow for precipitation</li> <li>– the facility is located at a distance such that discharge from the facility could cause injury to fish and wildlife and sensitive environment</li> <li>– the facility is located at a distance such that a discharge from the facility would shut down a public drinking water intake</li> <li>– the facility has had a reportable oil spill in an amount greater than or equal to 10,000 gal within the last 5 yr.)</li> </ul> </li> </ul> <p>(NOTE: Consult with the Regional Administrator if there is difficulty in determining if a facility meets any of these criteria.)</p> <p>Verify that a determination has been made as to whether or not a facility “could reasonably be expected to cause substantial harm to the environment by discharging oil into or on the navigable waters or adjoining shoreline” according to the guidance provided in Appendix C of 40 CFR 112.</p> <p>(NOTE: The Settlement Agreement between EPA and the joint plaintiffs of the API and Marathon Oil dated 29 March 2004 stipulates that as used above, “facility” is as defined in 40 CFR 112.2.)</p> <p>Verify that, if it has been determined a facility does not meet the substantial harm criteria; a copy of the certification form found in Appendix C of 40 CFR 112 is completed and maintained at the facility.</p> <p>Verify that the plan is coordinated with the local emergency response plan.</p> <p>Verify that the plan is reviewed and updated periodically to reflect changes in the facility.</p>

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	<p>Verify that the response plan includes the following:</p> <ul style="list-style-type: none"> <li>– facility information such as the location and type of facility, identity and tenure of the occupant, and qualified individuals</li> <li>– information about emergency response such as: <ul style="list-style-type: none"> <li>– the identity of private personnel and equipment needed to remove to the maximum extent possible the worst case discharge and other discharges of oil and to mitigate or prevent a substantial threat of a worst case discharge</li> <li>– evidence of contracts or other approved means for ensuring the availability of necessary personnel and equipment</li> <li>– identity and telephone number of individual or organizations to be contacted in the event of a discharge so that immediate communications between the qualified individuals and the appropriate Federal officials and the persons providing response personnel and equipment can be ensured</li> <li>– description of the information to pass to response personnel in the event of a reportable spill</li> <li>– a description of response personnel capabilities, including duties of persons at the facility during a response action and the response times and qualifications</li> <li>– a description of the facility’s response equipment and its location</li> <li>– plans for evacuation of the facility and a reference to community evacuation plans as appropriate</li> <li>– a diagram of evacuation routes</li> <li>– a description of the duties of the individual designated as being qualified to have full authority</li> </ul> </li> <li>– hazard evaluation, including a discussion of the facility’s history of discharges, areas where discharges could occur, and the potential effects</li> <li>– response planning for the following scenarios: <ul style="list-style-type: none"> <li>– a worst case discharge</li> <li>– a discharge of 2,100 gal or less is this amount if less than the worst case discharge amount</li> <li>– a discharge greater than 2,100 gal but less than or equal to 36,000 gal or 10 percent of the capacity of the largest tank at the facility, whichever is less provided that this amount is less than the worst case discharge</li> </ul> </li> <li>– discharge detection systems descriptions</li> <li>– plan implementation description including: <ul style="list-style-type: none"> <li>– response actions to be carried out by facility personnel or contracted personnel</li> <li>– a description of the equipment to be used for each scenario</li> <li>– plans to dispose of the contaminated cleanup materials</li> <li>– measures to provide adequate containment and drainage of spilled oil</li> </ul> </li> <li>– checklist and description of self-inspection, drills, and response training</li> <li>– diagrams of the site plan and drainage plan</li> <li>– security system descriptions</li> </ul>

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	<p>– response plan cover sheet.</p> <p>(NOTE: The duties of the qualified individual include:</p> <ul style="list-style-type: none"> <li>– activating internal alarm and hazard communication systems to notify all facility personnel</li> <li>– notifying personnel as needed</li> <li>– identifying the character, exact source, amount, and extent of the release as well as the other items needed for notifications</li> <li>– notifying and providing necessary information to Federal, state, and local authorities with designated response roles</li> <li>– assessing the interaction of the spilled substance with water and or other substances stored at the facility and notifying response personnel at the scene of that assessment</li> <li>– assessing the possible hazards to human health and the environment due to the release</li> <li>– assessing and implementing prompt removal actions to contain and remove the substance</li> <li>– coordinating rescue and response actions as previously arranged</li> <li>– activating funding mechanisms to start cleanup activities</li> <li>– directing cleanup activities until properly relieved of this responsibility.)</li> </ul> <p>Verify that the response plan includes an emergency response action plan either in the front of the response plan or as a separate document that includes the following:</p> <ul style="list-style-type: none"> <li>– the identity and telephone number of a qualified individual having full authority, including contracting authority, to implement removal actions</li> <li>– the identity of individuals or organizations to be contacted in the event of a discharge so that immediate communications between the qualified individuals and the appropriate Federal officials and the persons providing response personnel and equipment can be ensured</li> <li>– a description of the information to pass to response personnel in the event of a reportable spill</li> <li>– a description of the facility’s response equipment and its location</li> <li>– a description of response personnel capabilities, including duties of persons at the facility during a response action and their response times and qualifications</li> <li>– plans for evacuation of the facility and a reference to community evacuation plans as appropriate</li> <li>– a description of immediate measures to secure the source of discharge, and to provide adequate containment and drainage of spilled oil</li> <li>– a diagram of the facility.</li> </ul> <p>(NOTE: See the first NOTE and the last NOTE in PO.5.1.US for information on applicability and exemptions.)</p>

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<p><b>PO.10.2.US.</b> Facilities that have a material change must revise and update the facility response plan (40 CFR 112.20(d)(1)(iii)) [Citation Revised July 2014].</p>	<p>Verify that, after a facility change that may materially affect the response to a worst case discharge, revised portions of the plan are submitted to the Regional Administrator within 60 days of the change.</p> <p>(NOTE: A change in the facility's configuration that materially alters the information in the plan include:</p> <ul style="list-style-type: none"> <li>– a change in the type of oil handled, stored, or transferred that materially alters the required response resources</li> <li>– a material change in capabilities of the oil spill removal organizations that provide equipment and personnel to respond to discharges of oil</li> <li>– a material change in the facility's spill prevention and response equipment or emergency response procedures.)</li> </ul> <p>(NOTE: A material change does not include amendments to personnel and telephone numbers.)</p> <p>Verify that, when changes are submitted, the facility provides the USEPA issued facility identification number (where one has been assigned).</p>
<p><b>PO.10.3.US.</b> Facilities that are required to have a response plan are also required to develop and implement a facility response training program and a drill/exercise program that meet specific parameters (40 CFR 112.21).</p>	<p>Verify that the facility has a response training program for those individuals involved in spill response activities.</p> <p>Verify that the response training program includes correct instruction on procedures to response to discharges of oil and applicable laws, rules, and regulations.</p> <p>Verify that training is functional in nature according to job tasks for both supervisory and nonsupervisory operational personnel.</p> <p>Verify that the facility also has a program of facility drills/exercises, including evaluation procedures.</p> <p>(NOTE: It is suggested that the response training program be based on the USCG's Training Elements for Oil Spill Response and the drills/exercises of the National Preparedness for Response Exercise Program.)</p>
<p><b>PO.10.4.US.</b> The owner or operator of any non-transportation-related facility that handles, stores, or transports animal fats and vegetable oils must prepare and submit a facility response plan (40 CFR 112.20(a)(4)) [Added July 2000].</p>	<p>(NOTE: The owner or operator of a facility with a facility response plan that has been approved by 31 July 2000 need not prepare or submit a revised plan except as otherwise required by 40 CFR 112.20(b) through 40 CFR 112.20(d).)</p> <p>Verify that, except for facilities with approved plans, the owner or operator of a facility that has submitted a response plan to the Regional Administrator prior to 31 July 2000 reviews the plan to determine if it meets or exceeds the applicable provisions.</p> <p>(NOTE: An owner or operator need not prepare or submit a new plan if the existing plan meets or exceeds the applicable provisions of 40 CFR 112. If the plan does not</p>

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	<p>meet or exceed the applicable provisions, the owner or operator must prepare and submit a new plan by 28 September 2000.)</p> <p>Verify that the owner or operator of a newly constructed facility that commences operation after 31 July 2000 prepares and submits a plan.</p> <p>Verify that the owner or operator of an existing facility that must prepare and submit a plan after 31 July 2000 as a result of a planned or unplanned change in facility characteristics that causes the facility, to become regulated, prepares and submits a plan.</p> <p>Verify that the owner or operator of a facility submitting an amended plan after 31 July 2000, including plans that had been previously approved, reviews the plan to determine if it meets or exceeds the applicable provisions.</p> <p>Verify that, if the plan does not meet or exceed the applicable provisions, the owner or operator revises and resubmits revised portions of an amended plan to the Regional Administrator.</p>



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<p><b>PO.12</b></p> <p><b>TRANSPORTATION SPILL PLANS</b></p> <p><b>PO.12.1.US.</b> Certain communication and packaging requirements must be met when transporting any liquid petroleum oil in a packaging having a capacity of 3,500 gal or more or any liquid petroleum or non-petroleum oil in a quantity greater than 42,000 gallons per packaging (49 CFR 130.2(a) through 130.2(c), 130.11, and 130.21) [Added October 2000; Revised October 2013].</p> <p><b>PO.12.2.US.</b> Response plans are required when transporting any liquid petroleum oil in a packaging having a capacity of 3,500 gal or more or any liquid petroleum or non-petroleum oil in a quantity greater than 42,000 gallons per packaging</p>	<p>(NOTE: These requirements apply to:</p> <ul style="list-style-type: none"> <li>– any liquid petroleum oil in a packaging having a capacity of 3,500 gal or more</li> <li>– any liquid petroleum or non-petroleum oil in a quantity greater than 42,000 gal per packaging.)</li> </ul> <p>(NOTE: The requirements of this checklist item do not apply to:</p> <ul style="list-style-type: none"> <li>– any mixture or solution in which oil is in a concentration by weight of less than 10 percent</li> <li>– transportation of oil by aircraft or vessel</li> <li>– any petroleum oil carried in a fuel tank for the purpose of supplying fuel for propulsion of the transport vehicle to which it is attached</li> <li>– oil transport exclusively within the confines of a non-transportation-related or terminal facility in a vehicle not intended for use in interstate or intrastate commerce (see 40 CFR 112, appendix A).)</li> </ul> <p>Verify that no person offers oil subject these requirements for transportation unless that person provides the person accepting the oil for transportation a document indicating the shipment contains oil.</p> <p>Verify that no person transports oil subject to these requirements unless a readily available document indicating that the shipment contains oil is in the possession of the transport vehicle operator during transportation.</p> <p>(NOTE: A material subject to the requirements of these requirements need not be specifically identified as oil when the shipment document accurately describes the material as: aviation fuel, diesel fuel, fuel oil, gasoline, jet fuel, kerosene, motor fuel, or petroleum.)</p> <p>(NOTE: These requirements in this checklist item have no effect on:</p> <ul style="list-style-type: none"> <li>– the applicability of the Hazardous Materials Regulations set forth in 49 CFR subchapter C (49 CFR 171 through 49 CFR 177)</li> <li>– the discharge notification requirements of the United States Coast Guard (33 CFR 153) and EPA (40 CFR 110).)</li> </ul> <p>(NOTE: See PO.12.1.US for information on the applicability of this checklist item.)</p> <p>Verify that the transportation of oil subject to the requirements of 49 CFR 130 does not happen unless there is a current basic written plan that:</p> <ul style="list-style-type: none"> <li>– sets forth the manner of response to discharges that may occur during transportation</li> </ul>

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<p>(49 CFR 130.2(a) through 130.2(d), 130.31, and 130.33) [Added October 2000; Revised October 2013].</p>	<ul style="list-style-type: none"> <li>– takes into account the maximum potential discharge of the contents from the packaging</li> <li>– identifies private personnel and equipment available to respond to a discharge</li> <li>– identifies the appropriate persons and agencies (including their telephone numbers) to be contacted in regard to such a discharge and its handling, including the National Response Center</li> <li>– for each motor carrier, is retained on file at that person's principal place of business and at each location where dispatching of motor vehicles occurs; and for each railroad, is retained on file at that person's principal place of business and at the dispatcher's office.</li> </ul> <p>Verify that transportation of oil subject to the requirements of 49 CFR 130 in a quantity greater than 1,000 barrels (42,000 gal) does not happen unless there is a current comprehensive written plan that:</p> <ul style="list-style-type: none"> <li>– conforms with all requirements specified for the basic written plan</li> <li>– is consistent with the requirements of the National Contingency Plan (40 CFR part 300) and Area Contingency Plans</li> <li>– identifies the qualified individual having full authority to implement removal actions, and requires immediate communications between that individual and the appropriate Federal official and the persons providing spill response personnel and equipment</li> <li>– identifies, and ensures by contract or other means the availability of, private personnel (including address and phone number), and the equipment necessary to remove, to the maximum extent practicable, a worst case discharge (including a discharge resulting from fire or explosion) and to mitigate or prevent a substantial threat of such a discharge</li> <li>– describes the training, equipment testing, periodic unannounced drills, and response actions of facility personnel, to be carried out under the plan to ensure the safety of the facility and to mitigate or prevent the discharge, or the substantial threat of such a discharge</li> <li>– is submitted, and resubmitted in the event of any significant change, to the Federal Railroad Administrator (for tank cars), or to the Federal Highway Administrator (for cargo tanks) at East Building, 1200 New Jersey Avenue, SE., Washington, DC 20590-0001.</li> </ul> <p>Verify that, if during transportation of oil subject to 49 CFR 130 a discharge occurs into or on the navigable waters of the United States; on the adjoining shorelines to the navigable waters; or that may affect natural resources belonging to, appertaining to, or under the exclusive management authority of, the United States; the person transporting the oil implement this required plan in a manner consistent with the National Contingency Plan, 40 CFR 300, or as otherwise directed by the Federal on-scene coordinator.</p>

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<b>PO.13</b>  <b>MARINE SPILL PLANS</b>  <b>PO.13.1.US.</b> Oil spill response plans are required for all MTR facilities that because of their location could reasonably be expected to cause substantial harm to the environment by discharging oil into or on the navigable waters, adjoining shorelines, or exclusive economic zone (33 CFR 154.1015(a), 154.1015(b), and 154.1015(d), 154.1017(a), 154.1017(c), 154.1025(a), 154.1025(b), 154.1025(d), and 154.1065) [Added October 2010].	<p>(NOTE: This checklist item applies to the following MTR facilities that handle, store, or transport oil, in bulk, could reasonably be expected to cause substantial harm to the environment by discharging oil into or on the navigable waters or adjoining shorelines and are classified as substantial harm MTR facilities:</p> <ul style="list-style-type: none"> <li>– fixed MTR onshore facilities capable of transferring oil to or from a vessel with a capacity of 250 barrels or more and deepwater ports</li> <li>– mobile MTR facilities used or intended to be used to transfer oil to or from a vessel with a capacity of 250 barrels or more</li> <li>– those MTR facilities specifically designated as substantial harm facilities by the Captain of the Port (COTP) under 33 CFR 154.1016.)</li> </ul> <p>(NOTE: An MTR facility owner or operator who believes the facility is improperly classified may request review and reclassification.)</p> <p>Verify that an MTR facility identified in the above NOTE, or designated by the COTP as a substantial harm facility, prepares and submits a response plan to the appropriate COTP.</p> <p>Verify that response plans are reviewed annually.</p> <p>Verify that the annual review incorporates any revisions to the plan, including listings of fish and wildlife and sensitive environments identified in the ACP in effect 6 mo prior to plan review.</p> <p>Verify that this review occurs within 1 month of the anniversary date of submission of the plan to the COTP.</p> <p>Verify that the facility owner or operator submits any revisions to the response plan to the COTP and all other holders of the response plan for information or approval, as appropriate.</p> <p>Verify that, along with the revisions, the facility owner or operator submits a cover letter containing a detailed listing of all revisions to the response plan.</p> <p>Verify that, if no revisions are required, the facility owner or operator indicates the completion of the annual review on the record of changes page.</p> <p>(NOTE: The COTP will review the revisions submitted by the owner or operator and will give written notice to the owner or operator of any COTP objections to the proposed revisions within 30 days of the date the revisions were submitted to the</p>

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	<p>COTP. The revisions become effective not later than 30 days from their submission to the COTP unless the COTP indicates otherwise in writing.)</p> <p>Verify that, if the COTP indicates that the revisions need to be modified before implementation, the owner or operator modifies the revisions within the time period set by the COTP.</p> <p>Verify that any required revisions are entered in the plan and noted on the record of changes page.</p> <p>Verify that the facility owner or operator submits revisions to a previously submitted or approved plan to the COTP and all other holders of the response plan for information or approval within 30 days, whenever there is:</p> <ul style="list-style-type: none"> <li>– a change in the facility's configuration that significantly affects the information included in the response plan</li> <li>– a change in the type of oil (petroleum oil group) handled, stored, or transported that affects the required response resources</li> <li>– a change in the name(s) or capabilities of the oil spill removal organization</li> <li>– a change in the facility's emergency response procedures</li> <li>– a change in the facility's operating area that includes ports or geographic area(s) not covered by the previously approved plan. A facility may not operate in an area not covered in a plan previously submitted or approved, as appropriate, unless the revised plan is approved or interim operating approval is received</li> <li>– any other changes that significantly affect the implementation of the plan.</li> </ul> <p>(NOTE: Except as identified elsewhere in this checklist item, revisions to personnel and telephone number lists included in the response plan do not require COTP approval. The COTP and all other holders of the response plan shall be advised of these revisions and provided a copy of the revisions as they occur.)</p> <p>(NOTE: The COTP may require a facility owner or operator to revise a response plan at any time as a result of a compliance inspection if the COTP determines that the response plan does not meet the requirements of 33 CFR 154, Subpart F or as a result of inadequacies noted in the response plan during an actual pollution incident at the facility.)</p> <p>(NOTE: The owner or operator of an MTR facility who submitted a response plan prior to 29 May 1996, may elect to comply with response plan regulations by revising the appropriate section of the previously submitted plan in accordance with procedures outlined in this checklist item. An owner or operator of an MTR facility who elects to comply with all sections of the response plan regulations must resubmit the plan.)</p>

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<p><b>PO.13.2.US.</b> Oil spill response plans are required for all MTR facilities that handle, store, or transport oil in bulk could not only reasonably be expected to cause substantial harm, but also significant and substantial harm, to the environment by discharging oil into or on the navigable waters, adjoining shorelines, or exclusive economic zone and are classified as significant and substantial harm MTR facilities (33 CFR 154.1015(a), 154.1015(c), and 154.1015(d), 154.1017(b), 154.1025, and 154.1065) [Added October 2010].</p>	<p>Verify that no MTR facility required to have a response plan handles, stores, or transports oil unless it is operating in full compliance with a submitted response plan.</p> <p>(NOTE: A facility may not continue to handle, store, or transport oil if:</p> <ul style="list-style-type: none"> <li>– the COTP determines that the response resources identified in the facility certification statement or reference response plan do not substantially meet the content requirements</li> <li>– the contracts or agreements cited in the facility's certification statement or referenced response plans are no longer valid</li> <li>– the facility is not operating in compliance with the submitted plan</li> <li>– the response plan has not been resubmitted or approved within the last 5 yr</li> <li>– the period of the authorization has expired.</li> </ul> <p>(NOTE: This checklist item applies to the following MTR facilities that handle, store, or transport oil in bulk could not only reasonably be expected to cause substantial harm, but also significant and substantial harm, to the environment by discharging oil into or on the navigable waters, adjoining shorelines, or exclusive economic zone and are classified as significant and substantial harm MTR facilities:</p> <ul style="list-style-type: none"> <li>– deepwater ports, and fixed MTR onshore facilities capable of transferring oil to or from a vessel with a capacity of 250 barrels or more except for facilities that are part of a non-transportation-related fixed onshore facility with a storage capacity of less than 42,000 gal</li> <li>– those MTR facilities specifically designated as significant and substantial harm facilities by the Captain of the Port (COTP) under 33 CFR 154.1016.)</li> </ul> <p>(NOTE: An MTR facility owner or operator who believes the facility is improperly classified may request review and reclassification.)</p> <p>Verify that the owner or operator of an MTR facility identified in the NOTE above or designated by the COTP as a significant and substantial harm facility prepares and submits for review and approval a response plan to the appropriate COTP.</p> <p>Verify that response plans are reviewed annually.</p> <p>Verify that the annual review incorporates any revisions to the plan, including listings of fish and wildlife and sensitive environments identified in the ACP in effect 6 mo prior to plan review.</p> <p>Verify that this review occurs within 1 mo of the anniversary date of COTP approval of the plan.</p> <p>Verify that the facility owner or operator submits any revisions to the response plan to the COTP and all other holders of the response plan for information or approval, as appropriate.</p>

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	<p>Verify that, along with the revisions, the facility owner or operator submits a cover letter containing a detailed listing of all revisions to the response plan.</p> <p>Verify that, if no revisions are required, the facility owner or operator indicates the completion of the annual review on the record of changes page.</p> <p>(NOTE: The COTP will review the revisions submitted by the owner or operator and will give written notice to the owner or operator of any COTP objections to the proposed revisions within 30 days of the date the revisions were submitted to the COTP. The revisions become effective not later than 30 days from their submission to the COTP unless the COTP indicates otherwise in writing.)</p> <p>Verify that, if the COTP indicates that the revisions need to be modified before implementation, the owner or operator modifies the revisions within the time period set by the COTP.</p> <p>Verify that any required revisions are entered in the plan and noted on the record of changes page.</p> <p>Verify that the facility owner or operator submits revisions to a previously submitted or approved plan to the COTP and all other holders of the response plan for information or approval within 30 days, whenever there is:</p> <ul style="list-style-type: none"> <li>– a change in the facility's configuration that significantly affects the information included in the response plan</li> <li>– a change in the type of oil (petroleum oil group) handled, stored, or transported that affects the required response resources</li> <li>– a change in the name(s) or capabilities of the oil spill removal organization</li> <li>– a change in the facility's emergency response procedures</li> <li>– a change in the facility's operating area that includes ports or geographic area(s) not covered by the previously approved plan. A facility may not operate in an area not covered in a plan previously submitted or approved, as appropriate, unless the revised plan is approved or interim operating approval is received</li> <li>– any other changes that significantly affect the implementation of the plan.</li> </ul> <p>(NOTE: Except as identified elsewhere in this checklist item, revisions to personnel and telephone number lists included in the response plan do not require COTP approval. The COTP and all other holders of the response plan shall be advised of these revisions and provided a copy of the revisions as they occur.)</p> <p>(NOTE: The COTP may require a facility owner or operator to revise a response plan at any time as a result of a compliance inspection if the COTP determines that the response plan does not meet the requirements of 33 CFR 154, Subpart F or as a result of inadequacies noted in the response plan during an actual pollution incident at the facility.)</p>

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<p><b>PO.13.3.US.</b> Oil spill response plans for regulated MTR facilities must identify a qualified individual and at least one alternate who meet certain standards (33 CFR 154.1015(a) through 154.1015(c), and 154.1026) [Added October 2010].</p>	<p>(NOTE: The owner or operator of an MTR facility who submitted a response plan prior to 29 May 1996, may elect to comply with response plan regulations by revising the appropriate section of the previously submitted plan in accordance with procedures outlined in this checklist item. An owner or operator of an MTR facility who elects to comply with all sections of the response plan regulations must resubmit the plan.)</p> <p>(NOTE: Facilities in this checklist item may continue to handle, stored, or transport oil for 2 yr after the date of submission of a response plan. To continue to handle, store, or transport oil without a plan approved by the COTP, the facility owner or operator must certify in writing to the COTP that the owner or operator has ensured, by contract or other approved means the availability of the necessary private personnel and equipment to respond, to the maximum extent practicable to a worst case discharge or substantial threat of such a discharge from the facility. If the COTP is satisfied with the certification of response resources, the COTP will provide written authorization for the facility to handle, store, or transport oil while the submitted response plan is being reviewed. Pending approval of the submitted response plan, deficiencies noted by the COTP must be corrected.)</p> <p>(NOTE: A facility may not continue to handle, store, or transport oil if:</p> <ul style="list-style-type: none"> <li>– the COTP determines that the response resources identified in the facility certification statement or reference response plan do not substantially meet the content requirements</li> <li>– the contracts or agreements cited in the facility's certification statement or referenced response plans are no longer valid</li> <li>– the facility is not operating in compliance with the submitted plan</li> <li>– the response plan has not been resubmitted or approved within the last 5 yr</li> <li>– the period of the authorization has expired.</li> </ul> <p>Verify that no MTR facility required to have a response plan handles, stores, or transports oil unless it is operating in full compliance with a submitted response plan.</p> <p>(NOTE: This checklist item applies to the following MTR facilities that handle, store, or transport oil in bulk could not only reasonably be expected to cause substantial harm, but also significant and substantial harm, to the environment by discharging oil into or on the navigable waters, adjoining shorelines, or exclusive economic zone and are classified as significant and substantial harm MTR facilities:</p> <ul style="list-style-type: none"> <li>– deepwater ports, and fixed MTR onshore facilities capable of transferring oil to or from a vessel with a capacity of 250 barrels or more except for facilities that are part of a non-transportation-related fixed onshore facility with a storage capacity of less than 42,000 gal</li> <li>– those MTR facilities specifically designated as significant and substantial harm facilities by the Captain of the Port (COTP) under 33 CFR 154.1016.)</li> </ul>

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	<p>(NOTE: This checklist item applies to the following MTR facilities that handle, store, or transport oil, in bulk, could reasonably be expected to cause substantial harm to the environment by discharging oil into or on the navigable waters or adjoining shorelines and are classified as substantial harm MTR facilities:</p> <ul style="list-style-type: none"> <li>– fixed MTR onshore facilities capable of transferring oil to or from a vessel with a capacity of 250 barrels or more and deepwater ports</li> <li>– mobile MTR facilities used or intended to be used to transfer oil to or from a vessel with a capacity of 250 barrels or more</li> <li>– those MTR facilities specifically designated as substantial harm facilities by the Captain of the Port (COTP) under 33 CFR 154.1016.)</li> </ul> <p>Verify that the response plan identifies a qualified individual and at least one alternate.</p> <p>Verify that the qualified individual or alternate is available on a 24-h basis and able to arrive at the facility in a reasonable time.</p> <p>Verify that the qualified individual and alternate are:</p> <ul style="list-style-type: none"> <li>– located in the United States</li> <li>– speak fluent English</li> <li>– familiar with the implementation of the facility response plan</li> <li>– trained in the responsibilities of the qualified individual under the response plan.</li> </ul> <p>Verify that each qualified individual and alternate qualified individual identified in the plan are provide by the owner or operator with a document designating them as a qualified individual and specifying their full authority to:</p> <ul style="list-style-type: none"> <li>– activate and engage in contracting with oil spill removal organization(s)</li> <li>– act as a liaison with the predesignated Federal On-Scene Coordinator (OSC)</li> <li>– obligate funds required to carry out response activities.</li> </ul> <p>(NOTE: The owner or operator of a facility may designate an organization to fulfill the role of the qualified individual and the alternate qualified individual. The organization must then identify a qualified individual and at least one alternate qualified individual who meet the requirements of this checklist item. The facility owner or operator is required to list in the response plan the organization, the person identified as the qualified individual, and the person or person(s) identified as the alternate qualified individual(s).)</p> <p>(NOTE: The qualified individual is not responsible for either of the following:</p> <ul style="list-style-type: none"> <li>– the adequacy of response plans prepared by the owner or operator</li> <li>– contracting or obligating funds for response resources beyond the authority contained in their designation from the owner or operator of the facility.</li> </ul>

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<p><b>PO.13.4.US.</b> Oil spill response plans for regulated MTR facilities must contain specific information in a specific format (33 CFR 154.1015(a) through 154.1015(c), and 154.1030) [Added October 2010].</p>	<p>(NOTE: The liability of a qualified individual is considered to be in accordance with the provisions of 33 USC 1321(c)(4).)</p> <p>(NOTE: This checklist item applies to the following MTR facilities that handle, store, or transport oil in bulk could not only reasonably be expected to cause substantial harm, but also significant and substantial harm, to the environment by discharging oil into or on the navigable waters, adjoining shorelines, or exclusive economic zone and are classified as significant and substantial harm MTR facilities:</p> <ul style="list-style-type: none"> <li>– deepwater ports, and fixed MTR onshore facilities capable of transferring oil to or from a vessel with a capacity of 250 barrels or more except for facilities that are part of a non-transportation-related fixed onshore facility with a storage capacity of less than 42,000 gal</li> <li>– those MTR facilities specifically designated as significant and substantial harm facilities by the Captain of the Port (COTP) under 33 CFR 154.1016.)</li> </ul> <p>(NOTE: This checklist item applies to the following MTR facilities that handle, store, or transport oil, in bulk, could reasonably be expected to cause substantial harm to the environment by discharging oil into or on the navigable waters or adjoining shorelines and are classified as substantial harm MTR facilities:</p> <ul style="list-style-type: none"> <li>– fixed MTR onshore facilities capable of transferring oil to or from a vessel with a capacity of 250 barrels or more and deepwater ports</li> <li>– mobile MTR facilities used or intended to be used to transfer oil to or from a vessel with a capacity of 250 barrels or more</li> <li>– those MTR facilities specifically designated as substantial harm facilities by the Captain of the Port (COTP) under 33 CFR 154.1016.)</li> </ul> <p>Verify that the plan is written in English.</p> <p>Verify that the response plan is divided into the following sections and formatted in the following order unless noted otherwise</p> <ul style="list-style-type: none"> <li>– introduction and plan contents</li> <li>– emergency response action plan: <ul style="list-style-type: none"> <li>– notification procedures</li> <li>– facility's spill mitigation procedures</li> <li>– facility's response activities</li> <li>– fish and wildlife and sensitive environments</li> <li>– disposal plan</li> </ul> </li> <li>– training and exercises: <ul style="list-style-type: none"> <li>– training procedures</li> <li>– exercise procedures</li> </ul> </li> <li>– plan review and update procedures</li> <li>– appendices <ul style="list-style-type: none"> <li>– facility-specific information</li> </ul> </li> </ul>

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<p><b>PO.13.5.US.</b> MTR facilities for which oil spill response plans are required must ensure the availability of response resources (33 CFR 154.1015(a) through 154.1015(c) and 33 CFR 1028) [Added October 2010].</p>	<ul style="list-style-type: none"> <li>– list of contact</li> <li>– equipment lists and records</li> <li>– communications plan</li> <li>– site-specific safety and health plan.</li> <li>– list of acronyms and definitions</li> <li>– a geographic-specific appendix for each zone in which a mobile facility operates.</li> </ul> <p>Verify that the plan has some easily found marker identifying each section.</p> <p>(NOTE: See Appendix 8-4 for additional details on the contents required in response plans depending on the type of MTR facility concerned.)</p> <p>(NOTE: For initial and subsequent submission, a plan that does not follow the format specified must be supplemented with a detailed cross-reference section to identify the location of the applicable required sections.)</p> <p>(NOTE: The information contained in a response plan must be consistent with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) [40 CFR 300] and the Area Contingency Plan(s) (ACP) covering the area in which the facility operates.)</p> <p>Verify that facility owners or operators ensure that their response plans are in accordance with the ACP in effect 6 mo prior to initial plan submission or the annual plan review.</p> <p>(NOTE: Facility owners or operators are not required to, but may at their option, conform to an ACP which is less than 6 mo old at the time of plan submission.)</p> <p>Verify that the availability of response resources is ensured by the following methods:</p> <ul style="list-style-type: none"> <li>– a written contractual agreement with an oil spill removal organization. The agreement must identify and ensure the availability of specified personnel and equipment required under this subpart within stipulated response times in the specified geographic areas</li> <li>– certification by the facility owner or operator that specified personnel and equipment required under this subpart are owned, operated, or under the direct control of the facility owner or operator, and are available within stipulated response times in the specified geographic areas</li> <li>– active membership in a local or regional oil spill removal organization that has identified specified personnel and equipment required under this subpart that are available to respond to a discharge within stipulated response times in the specified geographic areas</li> <li>– a document which:</li> </ul>

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<p><b>PO.13.6.US.</b> MTR facilities for which oil spill response plans are required must ensure the plans address training and</p>	<ul style="list-style-type: none"> <li>– identifies the personnel, equipment, and services capable of being provided by the oil spill removal organization within stipulated response times in the specified geographic areas</li> <li>– sets out the parties' acknowledgment that the oil spill removal organization intends to commit the resources in the event of a response</li> <li>– permits the Coast Guard to verify the availability of the identified response resources through tests, inspections, and drills</li> <li>– is referenced in the response plan</li> <li>– the identification of an oil spill removal organization with specified equipment and personnel available within stipulated response times in specified geographic areas.</li> </ul> <p>(NOTE: The oil spill removal organization must provide written consent to being identified in the plan.)</p> <p>Verify that the contracts and documents identified in this checklist item are retained at the facility and are produced for review upon request by the COTP.</p> <p>(NOTE: This checklist item applies to the following MTR facilities that handle, store, or transport oil in bulk could not only reasonably be expected to cause substantial harm, but also significant and substantial harm, to the environment by discharging oil into or on the navigable waters, adjoining shorelines, or exclusive economic zone and are classified as significant and substantial harm MTR facilities:</p> <ul style="list-style-type: none"> <li>– deepwater ports, and fixed MTR onshore facilities capable of transferring oil to or from a vessel with a capacity of 250 barrels or more except for facilities that are part of a non-transportation-related fixed onshore facility with a storage capacity of less than 42,000 gal</li> <li>– those MTR facilities specifically designated as significant and substantial harm facilities by the Captain of the Port (COTP) under 33 CFR 154.1016.)</li> </ul> <p>(NOTE: This checklist item applies to the following MTR facilities that handle, store, or transport oil, in bulk, could reasonably be expected to cause substantial harm to the environment by discharging oil into or on the navigable waters or adjoining shorelines and are classified as substantial harm MTR facilities:</p> <ul style="list-style-type: none"> <li>– fixed MTR onshore facilities capable of transferring oil to or from a vessel with a capacity of 250 barrels or more and deepwater ports</li> <li>– mobile MTR facilities used or intended to be used to transfer oil to or from a vessel with a capacity of 250 barrels or more</li> <li>– those MTR facilities specifically designated as substantial harm facilities by the Captain of the Port (COTP) under 33 CFR 154.1016.)</li> </ul> <p>Verify that, a response plan submitted to meet the requirements of 33 CFR 154.1035 or 154.1040 (see checklist item PO.13.4.US. and Appendix 8-4), as</p>

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<p>spill exercises (33 CFR 154.1050 and 154.1055) [Added October 2010].</p>	<p>appropriate, identifies the training to be provided to each individual with responsibilities under the plan.</p> <p>Verify that a facility owner or operator identifies the method to be used for training any volunteers or casual laborers used during a response to comply with the requirements of 29 CFR 1910.120.</p> <p>Verify that a facility owner or operator ensures the maintenance of records sufficient to document training of facility personnel and makes them available for inspection upon request by the U.S. Coast Guard.</p> <p>Verify that records for facility personnel are maintained at the facility for 3 yr.</p> <p>Verify that, where applicable, a facility owner or operator ensures that an oil spill removal organization identified in a response plan maintains records sufficient to document training for the organization's personnel and makes them available for inspection upon request by the facility's management personnel, the qualified individual, and U.S. Coast Guard.</p> <p>Verify that records are maintained for 3 yr following completion of training.</p> <p>(NOTE: The facility owner or operator remains responsible for ensuring that all private response personnel are trained to meet the Occupational Safety and Health Administration (OSHA) standards for emergency response operations in 29 CFR 1910.120.)</p> <p>Verify that a response plan submitted by an owner or operator of an MTR facility includes an exercise program containing both announced and unannounced exercises.</p> <p>(NOTE: The following are the minimum exercise requirements for facilities covered by 33 CFR 154, Subpart F:</p> <ul style="list-style-type: none"> <li>– qualified individual notification exercises (quarterly)</li> <li>– spill management team tabletop exercises (annually)</li> <li>– equipment deployment exercises: <ul style="list-style-type: none"> <li>– semiannually for facility owned and operated equipment</li> <li>– annually for oil spill removal organization equipment</li> </ul> </li> <li>– emergency procedures exercises (optional)</li> <li>– annually, at least one of the above exercises is unannounced</li> <li>– the facility owner or operator designs the exercise program so that all components of the response plan are exercised at least once every 3 yr.</li> </ul> <p>Verify that, in a 3-yr period, at least one of spill management team tabletop exercises includes a worst case discharge scenario.</p>

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<p><b>PO.13.7.US.</b> Owner/ operators of facilities that handle, store, or transport Group I through Group IV petroleum oil must evaluate response resources identified in the response plan for the specified operating</p>	<p>(NOTE: Unannounced means the personnel participating in the exercise must not be advised in advance, of the exact date, time and scenario of the exercise.)</p> <p>(NOTE: All of the components do not have to be exercised at one time; they may be exercised over the 3-year period through the required exercises or through an Area exercise.)</p> <p>Verify that a facility owner or operator participates in unannounced exercises as directed by the COTP.</p> <p>(NOTE: The objectives of the unannounced exercises will be to test notifications and equipment deployment for response to the average most probable discharge. After participating in an unannounced exercise directed by a COTP, the owner or operator will not be required to participate in another COTP initiated unannounced exercise for at least 3 years from the date of the exercise.)</p> <p>Verify that a facility owner or operator participates in Area exercises as directed by the applicable On-Scene Coordinator.</p> <p>(NOTE: The Area exercises will involve equipment deployment to respond to the spill scenario developed by the Exercise Design Team, of which the facility owner or operator will be a member. After participating in an Area exercise, a facility owner or operator will not be required to participate in another Area exercise for at least 6 yr.)</p> <p>Verify that the facility owner or operator ensures that adequate records of all required exercises are maintained at the facility for 3 yr.</p> <p>Verify that records are made available to the Coast Guard upon request.</p> <p>Verify that the response plan specifies the planned exercise program and outlines the exercise program, including the types of exercises, frequency, scope, objectives and the scheme for exercising the entire response plan every 3 yr.</p> <p>(NOTE: Compliance with the National Preparedness for Response Exercise Program (PREP) Guidelines will satisfy the facility response plan exercise requirements. These guidelines are available from the TASC DEPT Warehouse, 33141Q 75th Avenue, Landover, MD 20875 (fax: 301-386-5394, stock number USCG-X0241). Compliance with an approved alternative program will also satisfy the facility response plan exercise requirements.)</p> <p>(NOTE: The criteria in Table 1 of appendix C of 33 CFR 154 [see text] are to be used solely for identification of appropriate equipment in a response plan. These criteria reflect conditions used for planning purposes to select mechanical response equipment and are not conditions that would limit response actions or affect normal facility operations.)</p>

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<p>environment according to certain criteria (33 CFR 154.1045(a) through 154.1045(l)) [Added October 2010].</p>	<p>Verify that the response resources are evaluated considering limitations for the COTP zones in which the facility operates, including but not limited to:</p> <ul style="list-style-type: none"> <li>– ice conditions</li> <li>– debris</li> <li>– temperature ranges</li> <li>– weather-related visibility</li> <li>– other appropriate environmental conditions as determined by the COTP.</li> </ul> <p>(NOTE: The COTP may reclassify a specific body of water or location within the COTP zone. Any reclassifications will be identified by the COTP in the applicable ACP. Reclassifications may be to one of the following:</p> <ul style="list-style-type: none"> <li>– a more stringent operating environment if the prevailing wave conditions exceed the significant wave height criteria during more than 35 percent of the year</li> <li>– less stringent operating environment if the prevailing wave conditions do not exceed the significant wave height criteria for the less stringent operating environment during more than 35 percent of the year.</li> </ul> <p>Verify that response equipment:</p> <ul style="list-style-type: none"> <li>– meet or exceed the operating criteria listed in Table 1 of appendix C of 33 CFR 154</li> <li>– function in the applicable operating environment</li> <li>– be appropriate for the petroleum oil carried.</li> </ul> <p>Verify that the response plan for a facility that handles, stores, or transports Group I through Group IV petroleum oils identifies response resources that are available, by contract or other approved means to respond to the facility's average most probable discharge.</p> <p>Verify that the response resources include, at a minimum:</p> <ul style="list-style-type: none"> <li>– 1,000 feet of containment boom or two times the length of the largest vessel that regularly conducts petroleum oil transfers to or from the facility, whichever is greater, and the means of deploying and anchoring the boom available at the spill site within 1 hour of the detection of a spill</li> <li>– oil recovery devices and recovered oil storage capacity capable of being at the spill site within 2 h of the discovery of a petroleum oil discharge from a facility.</li> </ul> <p>Verify that the response plan for a facility that handles, stores, or transports Group I through Group IV petroleum oils identifies response resources that are available, by contract or other approved means, to respond to a discharge up to the facility's maximum most probable discharge volume.</p>

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	<p>Verify that the response resources include sufficient containment boom, oil recovery devices, and storage capacity for any recovery of up to the maximum most probable discharge planning volume, as contained in appendix C.</p> <p>Verify that the response resources are appropriate for each group of petroleum oil that is handled, stored, or transported by the facility.</p> <p>Verify that response resources are positioned such that they can arrive at the scene of a discharge within the following specified times:</p> <ul style="list-style-type: none"> <li>– in higher volume port areas and the Great Lakes, response resources must be capable of arriving on scene within 6 h of the discovery of a petroleum oil discharge from a facility</li> <li>– in all other locations, response resources must be capable of arriving on scene within 12 h of the discovery of a petroleum oil discharge from a facility.</li> </ul> <p>(NOTE: The COTP may determine that mobilizing response resources to an area beyond the response times indicated in this checklist item invalidates the response plan. In this event, the COTP may impose additional operational restrictions [e.g., limitations on the number of transfers at a facility], or, at the COTP's discretion, the facility may operate with temporarily modified response plan development and evaluation criteria [e.g., modified response times, alternate response resources, etc.] )</p> <p>Verify that the response plan for a facility that handles, stores, or transports Group I through Group IV petroleum oils identifies the response resources that are available, by contract or other approved means, to respond to the worst case discharge volume of petroleum oil to the maximum extent practicable.</p> <p>Verify that the response resources are appropriate for:</p> <ul style="list-style-type: none"> <li>– the volume of the facility's worst case discharge</li> <li>– group(s) of petroleum oil that are handled, stored, or transported by the facility</li> <li>– the geographic area(s) in which the facility operates.</li> </ul> <p>Verify that the response resources include sufficient boom, oil recovery devices, and storage capacity to recover the worst case discharge planning volumes.</p> <p>(NOTE: The guidelines in appendix C of 33 CFR 154 must be used for calculating the quantity of response resources required to respond at each tier to the worst case discharge to the maximum extent practicable.)</p> <p>Verify that, when determining response resources necessary to meet the requirements of this checklist item, a portion of those resources must be capable of use in close-to-shore response activities in shallow water.</p>

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	<p>(NOTE: The following percentages of the response equipment identified for the applicable geographic area must be capable of operating in waters of 6 ft or less depth:</p> <ul style="list-style-type: none"> <li>– offshore: 10 percent</li> <li>– nearshore/inland/Great Lakes/rivers and canals: 20 percent.</li> </ul> <p>(NOTE: The COTP may determine that mobilizing response resources to an area beyond the response times indicated invalidates the response plan. In this event, the COTP may impose additional operational restrictions (e.g., limitations on the number of transfers at a facility), or, at the COTP's discretion, the facility may be permitted to operate with temporarily modified response plan development and evaluation criteria (e.g., modified response times, alternate response resources, etc.).</p> <p>Verify that response equipment identified in a response plan for a facility that handles, stores, or transports Group I through Group IV petroleum oils is capable of arriving on scene within the following times for the applicable response tier from the time of discovery of a discharge in a higher volume port area, Great Lakes, and in other areas:</p> <ul style="list-style-type: none"> <li>– higher volume port area (except for a TAPAA facility located in Prince William Sound, see 33 CFR 154.1135): <ul style="list-style-type: none"> <li>– Tier 1: 6 h</li> <li>– Tier 2: 30 h</li> <li>– Tier 3: 54 h</li> </ul> </li> <li>– Great Lakes: <ul style="list-style-type: none"> <li>– Tier I: 12 h</li> <li>– Tier 2: 36 h</li> <li>– Tier 3: 60 h</li> </ul> </li> <li>– all other river and canal, inland, nearshore, and offshore areas: <ul style="list-style-type: none"> <li>– Tier 1: 12 h</li> <li>– Tier 2: 36 h</li> <li>– Tier 3: 560 h</li> </ul> </li> </ul> <p>(NOTE: For the purposes of arranging for response resources for a facility that handles, stores, or transports Group I through Group IV petroleum oils, by contract or other approved means, response equipment identified for Tier 1 plan credit must be capable of being mobilized and en route to the scene of a discharge within 2 h of notification. The notification procedures identified in the plan must provide for notification and authorization of mobilization of identified Tier 1 response resources:</p> <ul style="list-style-type: none"> <li>– either directly or through the qualified individual</li> <li>– within 30 minutes of a discovery of a discharge or substantial threat of discharge.)</li> </ul> <p>Verify that response resources identified for Tier 2 and Tier 3 plan credit are capable of arriving on scene within the time specified for the applicable tier.</p>

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	<p>(NOTE: The response plan for a facility that is located in any environment with year-round preapproval for use of dispersants and that handles, stores, or transports Group II or III persistent petroleum oils may request a credit for up to 25 percent of the on-water recovery capability set forth here. To receive this credit, the facility owner or operator must identify in the plan and ensure, by contract or other approved means, the availability of specified resources to apply the dispersants and to monitor their effectiveness. The extent of the credit will be based on the volumes of the dispersant available to sustain operations at the manufacturers' recommend dosage rates. Resources identified for plan credit should be capable of being on scene within 12 h of a discovery of a discharge. Identification of these resources does not imply that they will be authorized for use. Actual authorization for use during a spill response will be governed by the provisions of the NCP and the applicable ACP.)</p> <p>Verify that a response plan for a facility that handles, stores, or transports Group I through Group IV petroleum oils identifies response resources with firefighting capability.</p> <p>Verify that the owner or operator of a facility that does not have adequate firefighting resources located at the facility or that cannot rely on sufficient local firefighting resources identifies and ensures, by contract or other approved means, the availability of adequate firefighting resources.</p> <p>Verify that the response plan also identifies an individual located at the facility to work with the fire department for petroleum oil fires.</p> <p>Verify that this individual also verifies that sufficient well-trained firefighting resources are available within a reasonable time to respond to a worst case discharge.</p> <p>(NOTE: The individual may be the qualified individual identified in the response plan or another appropriate individual located at the facility.)</p> <p>Verify that the response plan for a facility that handles, stores, or transports Groups I through IV petroleum oils identifies equipment and required personnel available, by contract or other approved means, to protect fish and wildlife and sensitive environments:</p> <ul style="list-style-type: none"> <li>– the identified response resources must include the quantities of boom sufficient to protect fish and wildlife and sensitive environments</li> <li>– the resources and response methods identified in a facility response plan is consistent with the required resources and response methods to be used in fish and wildlife and sensitive environments, contained in the appropriate ACP.</li> </ul> <p>Verify that facility owners or operators ensure that their response plans are in accordance with the ACP in effect 6 mo prior to initial plan submission or the annual plan review.</p>

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<p><b>PO.13.8.US.</b> Owner/ operators of facilities that handle, store, or transport Group V petroleum oil must provide certain information in their response plan (33 CFR 154.1045(a) through 154.1045(l)) [Added October 2010].</p>	<p>(NOTE: Facility owners or operators are not required to, but may at their option, conform to an ACP which is less than 6 mo old at the time of plan submission.)</p> <p>Verify that the response plan for a facility that handles, stores, or transports Groups I through IV petroleum oils identifies an oil spill removal organization(s) with response resources that are available, by contract or other approved means, to effect a shoreline cleanup operation commensurate with the quantity of emulsified petroleum oil to be planned for in shoreline cleanup operations.</p> <p>(NOTE: The shoreline cleanup response resources required must be determined as described in appendix C of 33 CFR 154.)</p> <p>Verify that the resources and response methods identified in a facility response plan are consistent with the required shoreline cleanup resources and methods contained in the appropriate ACP.</p> <p>Verify that an owner or operator of a facility that handles, stores, or transports Group V petroleum oils provides the following information in his or her response plan that identifies:</p> <ul style="list-style-type: none"> <li>– procedures and strategies for responding to a worst case discharge of Group V petroleum oils to the maximum extent practicable</li> <li>– sources of the equipment and supplies necessary to locate, recover, and mitigate such a discharge.</li> </ul> <p>Verify that an owner or operator of a facility that handles, stores, or transports Group V petroleum oil ensures that any equipment identified in a response plan is capable of operating in the conditions expected in the geographic area(s) in which the facility operates using the criteria in Table 1 of appendix C of 33 CFR 154 (see text).</p> <p>Verify that, when evaluating the operability of equipment, the facility owner or operator considers limitations that are identified in the ACPs for the COTP zones in which the facility operates, including:</p> <ul style="list-style-type: none"> <li>– ice conditions</li> <li>– debris</li> <li>– temperature ranges</li> <li>– weather-related visibility.</li> </ul> <p>Verify that the owner or operator of a facility that handles, stores, or transports Group V petroleum oil identifies the response resources that are available by contract or other approved means.</p> <p>Verify that the equipment identified in a response plan includes:</p>

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	<ul style="list-style-type: none"> <li>– sonar, sampling equipment, or other methods for locating the petroleum oil on the bottom or suspended in the water column</li> <li>– containment boom, sorbent boom, silt curtains, or other methods for containing the petroleum oil that may remain floating on the surface or to reduce spreading on the bottom</li> <li>– dredges, pumps, or other equipment necessary to recover petroleum oil from the bottom and shoreline</li> <li>– equipment necessary to assess the impact of such discharges</li> <li>– other appropriate equipment necessary to respond to a discharge involving the type of petroleum oil handled, stored, or transported.</li> </ul> <p>Verify that response resources identified in a response plan for a facility that handles, stores, or transports Group V petroleum oils is capable of being at the spill site within 24 h of discovery of a discharge.</p> <p>Verify that a response plan for a facility that handles, stores, or transports Group V petroleum oils must identify response resources with firefighting capability.</p> <p>Verify that the owner or operator of a facility that does not have adequate firefighting resources located at the facility or that cannot rely on sufficient local firefighting resources identifies and ensures, by contract or other approved means, the availability of adequate firefighting resources.</p> <p>Verify that the response plan also identifies an individual located at the facility to work with the fire department for petroleum oil fires.</p> <p>(NOTE: This individual shall also verify that sufficient well-trained firefighting resources are available within a reasonable response time to a worst case scenario. The individual may be the qualified individual and identified in the response plan or another appropriate individual located at the facility.)</p>



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<p><b>PO.15</b></p> <p><b>DISCHARGES/SPILLS</b></p> <p><b>PO.15.1.US.</b> Discharges of oil into or upon the navigable waters of the United States or adjoining shorelines or into or upon the waters of the contiguous zone or into areas that may affect natural resources belonging to, or under the exclusive management authority of the United States must be reported (40 CFR 110.2, 110.3, 110.5, and 110.6) <b>[Revised March 1996]</b>.</p> <p><b>PO.15.2.US.</b> Dispersants or emulsifiers cannot be added to oils that are discharged (40 CFR 110.4) <b>[Revised March 1996]</b>.</p>	<p>Determine if there have been any discharges of oils.</p> <p>(NOTE: Discharges of oil are defined as those which violate applicable water quality standards or cause a film or a sheen upon or discoloration of the surface of the water or adjoining shoreline or cause sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shores.)</p> <p>Verify that the National Response Center (NRC) was notified immediately after discovery of a discharge as defined in the above NOTE.</p> <p>(NOTE: If direct reporting to the NRC is not practicable, reports may be made to the Coast Guard or USEPA predesignated OSC.)</p> <p>(NOTE: The following discharges of oil are not considered harmful:</p> <ul style="list-style-type: none"> <li>– discharges from a properly functioning vessel engine and any discharges of such oil accumulated in the bilges of a vessel discharged in compliance with MARPOL 73/78, Annex I</li> <li>– other discharges permitted under MARPOL 73/78, Annex I</li> <li>– any discharge of oil explicitly permitted by the Administrator in connection with research, demonstration projects, or studies relating to the prevention, control, or abatement of oil pollution.)</li> </ul> <p>Verify that dispersants or emulsifiers are not added to discharges of oils.</p>





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<p>and 112.12(b) [<b>Revised April 2000; Revised July 2002</b>].</p>	<p>(NOTE: See the first NOTE and the last NOTE in PO.5.1.US for information on what the requirements of 40 CFR 112 do and do not apply to.)</p> <p>Verify that the facility restrains drainage from diked storage areas by valves to prevent a discharge into the drainage system or facility effluent treatment system, except where facility systems are designed to control such discharge.</p> <p>(NOTE: Diked areas may be emptied by pumps or ejectors; however, personnel must manually activate these pumps or ejectors and must inspect the condition of the accumulation before starting, to ensure no oil will be discharged.)</p> <p>Verify that no flapper-type drain valves are used to drain diked areas.</p> <p>(NOTE: If the facility drainage drains directly into a watercourse and not into an on-site wastewater treatment plant, personnel must inspect and may drain uncontaminated retained stormwater based on the procedures outlined in the following paragraphs.)</p> <p>Verify that facility drainage systems from undiked areas with a potential for a discharge (such as where piping is located outside containment walls or where tank truck discharges may occur outside the loading area) are designed to flow into ponds, lagoons, or catchment basins designed to retain oil or return it to the facility.</p> <p>(NOTE: If facility drainage is not engineered as described in the above paragraph, equip the final discharge of all ditches inside the facility with a diversion system that would, in the event of an uncontrolled discharge, retain oil in the facility.)</p> <p>Verify that catchment basins are not located in areas subject to periodic flooding.</p> <p>Verify that where drainage waters are treated in more than one treatment unit and treatment is continuous, and pump transfer is needed, two “lift” pumps are provided and at least one of the pumps is permanently installed.</p> <p>Verify that, whatever techniques are used, facility drainage systems are engineered to prevent a discharge in case there is an equipment failure or human error at the facility.</p>
<p><b>PO.20.3.US.</b> This checklist item has been deleted [<b>Deleted July 2002</b>].</p>	<p>(NOTE: The July 2002 revision of 40 CFR 112 resulted in the deletion of this checklist item.)</p>
<p><b>PO.20.4.US.</b> Bulk storage containers of oil are required to meet specific parameters (40 CFR 112.1(b), 112.1(d), 112.7(i), 112.8(c), 112.12(c)) [<b>Added July 2002; Revised July 2004; Revised January</b></p>	<p>(NOTE: This checklist item replaced ST.5.1.US through ST.5.5.US and ST.40.1.US as of the July 2002 revision of 40 CFR 112. Aboveground storage tank requirements issued by state regulatory agencies that are specific to “storage tanks” versus POL containers or POL storage facilities may be found in ST.4 and/or ST.5.)</p>

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<b>2007; Revised October 2009].</b>	<p>(NOTE: These requirements apply to petroleum oils and non-petroleum oils, animal fats and oils and greases, and fish and marine mammal oils; and vegetable oils [including oils from seeds, nuts, fruits, and kernels].)</p> <p>(NOTE: See the first NOTE and the last NOTE in PO.5.1.US for information on applicability and exemptions.)</p> <p>(NOTE: In the “Section by Section Analysis” associated with the 17 July 2002 version of 40 CFR 112, the USEPA comments on page 47066 that the minimum size bulk storage container is 55 gal. On page 47072, they comment that a bulk storage container may be aboveground, partially buried, bunkered, or completely buried.)</p> <p>Verify that a container is not used for the storage of oil unless its material and construction are compatible with the material stored and conditions of storage such as pressure and temperature.</p> <p>Verify that all bulk storage container installations (except mobile refuelers and other non-transportation related tank trucks) are constructed so a secondary means of containment is provided for the entire capacity of the largest single container and sufficient freeboard to contain precipitation.</p> <p>Verify that diked areas are sufficiently impervious to contain discharged oil.</p> <p>(NOTE: Dikes, containment curbs, and pits are commonly employed for this purpose. An alternative system consisting of a drainage trench enclosure that must be arranged so that any discharge will terminate and be safely confined in a facility catchment basin or holding pond may also be used.)</p> <p>Verify that the drainage of uncontaminated rainwater is not allowed from the diked area into a storm drain or discharge of an effluent into an open watercourse, lake, or pond, bypassing the facility treatment system unless the facility:</p> <ul style="list-style-type: none"> <li>– normally keeps the bypass valve sealed closed</li> <li>– inspects the retained rainwater to ensure that its presence will not cause a discharge</li> <li>– opens the bypass valve and reseals it following drainage under responsible supervision</li> <li>– keeps adequate records of such events, for example, any records required under permits (i.e., NPDES).</li> </ul> <p>Verify that any completely buried metallic storage tank installed on or after 10 January 1974 is protected from corrosion by coatings or cathodic protection compatible with local soil conditions and is regularly leak tested.</p>

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	<p>Verify that partially buried or bunkered metallic tanks are not used for the storage of oil, unless the buried section of the tank is protected from corrosion by coatings or cathodic protection compatible with local soil conditions.</p> <p>Verify that each aboveground container is tested or inspected for integrity on a regular schedule and whenever material repairs are made.</p> <p>(NOTE: The facility must determine, in accordance with industry standards, the appropriate qualifications for personnel performing tests and inspections, the frequency and type of testing and inspections, which take into account container size, configuration, and design (such as containers that are: shop-built, field-erected, skid-mounted, elevated, equipped with a liner, double-walled, or partially buried). Examples of these integrity tests include, but are not limited to: visual inspection, hydrostatic testing, radiographic testing, ultrasonic testing, acoustic emissions testing, or other systems of non-destructive testing.)</p> <p>Verify that the container's supports and foundations are inspected as well as frequent inspection of the outside of the container for signs of deterioration, discharges, or accumulation of oil inside diked areas.</p> <p>(NOTE: According to a letter issued by EPA's Office of Solid Waste and Emergency Response (OSWER) to the Petroleum Marketers Association of America (PMAA), well-designed shop-built containers with a shell capacity of 30,000 gal or under, combining appropriate visual inspection with the following measures would generally provide environmental protection equivalent to that provided by visual inspection plus another form of testing:</p> <ul style="list-style-type: none"> <li>– visual inspection plus elevation of a shop-built container in a manner that decreases corrosion potential [as compared to a container in contact with soil] and makes all sides of the container visible during inspection</li> <li>– visual inspection plus the placement of a barrier between the container and the ground, designed and operated in a way that ensures that any leaks are immediately detected.)</li> </ul> <p>(NOTE: For bulk storage containers that are subject to 21 CFR 110 [titled Current Good Manufacturing practice in manufacturing, packing, or Holding Human Food] are elevated, constructed of austenitic stainless steel, have no external insulation, and are shop-fabricated, a formal visual inspection must be performed on a regular schedule. Additionally, frequent inspection of the outside of these types of containers is required for signs of deterioration, discharges, or accumulation of oil inside diked areas.)</p> <p>Verify that comparison records are kept.</p> <p>Verify that records of inspections and tests are kept under usual and customary business practices.</p> <p>Verify that leakage through defective internal heating coils is controlled by monitoring the steam return and exhaust lines for contamination from internal</p>

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	<p>heating coils that discharge into an open watercourse, or pass the steam return or exhaust lines through a settling tank, skimmer, or other separation or retention system.</p> <p>Verify that each container installation engineered or updated in accordance with good engineering practice to avoid discharges, including at least one of the following devices:</p> <ul style="list-style-type: none"> <li>– high liquid level alarms with an audible or visual signal at a constantly attended operation or surveillance station (NOTE: In smaller facilities an audible air vent may suffice.)</li> <li>– high liquid level pump cutoff devices set to stop flow at a predetermined container content level</li> <li>– direct audible or code signal communication between the container gauge and the pumping station</li> <li>– a fast response system for determining the liquid level of each bulk storage container such as digital computers, telepulse, or direct vision gauges (NOTE: If you use this alternative, a person must be present to monitor gauges and the overall filling of bulk storage containers.)</li> </ul> <p>Verify that liquid level sensing devices are regularly tested to ensure proper operation.</p> <p>Verify that effluent treatment facilities are observed frequently enough to detect possible system upsets that could cause a discharge.</p> <p>Verify that personnel promptly correct visible discharges which result in a loss of oil from the container, including but not limited to, seams, gaskets, piping, pumps, valves, rivets, and bolts.</p> <p>Verify that any accumulations of oil in diked areas are promptly removed.</p> <p>Verify that mobile or portable oil storage containers:</p> <ul style="list-style-type: none"> <li>– are positioned or located to prevent a discharge</li> <li>– except for mobile refuelers and other non-transportation-related tank trucks, are furnished with a secondary means of containment, such as a dike or catchment basin, sufficient to contain the capacity of the largest single compartment or container with sufficient freeboard to contain precipitation.</li> </ul> <p>Verify that if field-constructed aboveground containers undergo a repair, alteration, reconstruction, or a change in service that might affect the risk of a discharge or failure due to brittle fracture or other catastrophe, or has discharged oil or failed due to brittle fracture failure or other catastrophe, the container is evaluated for risk of discharge or failure due to brittle fracture or other catastrophe and appropriate actions taken.</p>

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<p><b>PO.20.5.US.</b> Checklist item deleted [Added July 2002; Revised July 2004; Deleted January 2009].</p> <p><b>PO.20.6.US.</b> Bulk storage containers at qualified facilities must meet inspection and recordkeeping requirements (40 CFR 112.3(d), 112.6(c)(4), and 112.7(k)) [Added January 2007; Revised January 2010].</p>	<p>Checklist item deleted. The security requirements which must be detailed in the SPCC Plan are outlined in PO.5.2.US.</p> <p>(NOTE: A qualified facility is one that meets one of the following Tier I or Tier II qualified facility criteria:</p> <ul style="list-style-type: none"> <li>– a Tier I qualified facility meets the qualification criteria for Tier II qualified facilities and has no individual aboveground oil storage container with a capacity greater than 5,000 U.S. gal</li> <li>– a Tier II qualified facility is one that has had no single discharge exceeding 1,000 U.S. gal or no two discharges each exceeding 42 U.S. gal within any 12 mo period in the 3 yr prior to the SPCC Plan self-certification date, or since becoming subject to 40 CFR 112 if the facility has been in operation for less than 3 yr [other than discharges that are the result of natural disasters, acts of war, or terrorism], and has an aggregate aboveground oil storage capacity of 10,000 U.S. gal or less.)</li> </ul> <p>Verify that bulk storage containers at qualified facilities are inspected according to one of the following options:</p> <ul style="list-style-type: none"> <li>– comply with the requirements under 40 CFR 112.8(c)(6) or 40 CFR 112.12(c)(6) [see checklist item PO.20.4.US], as applicable</li> <li>– test/inspect each aboveground container for integrity on a regular schedule and whenever material repairs are made.</li> </ul> <p>Verify that, when choosing the test/inspection option, the facility determines, in accordance with industry standards:</p> <ul style="list-style-type: none"> <li>– the appropriate qualifications for personnel performing tests and inspections</li> <li>– the frequency and type of testing and inspections which take into account container size, configuration, and design (such as containers that are: shop built, skid-mounted, elevated, equipped with a liner, double walled, or partially buried).</li> </ul> <p>(NOTE: Examples of these integrity tests include, but are not limited to:</p> <ul style="list-style-type: none"> <li>– visual inspection</li> <li>– hydrostatic testing</li> <li>– radiographic testing</li> <li>– ultrasonic testing</li> <li>– acoustic emissions testing</li> <li>– other systems of non-destructive testing.)</li> </ul> <p>Verify that the facility keeps comparison records.</p>

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	<p>Verify that the owner/operator also inspects the container's supports and foundations and frequently inspects the outside of the container for signs of deterioration, discharges, or accumulation of oil inside diked areas.</p> <p>Verify that records of inspections and tests are kept under usual and customary business practices to satisfy the recordkeeping requirements.</p> <p>Verify that, if the owner or operator of oil-filled equipment at a qualified facility chooses to implement an alternative to secondary containment, the facility:</p> <ul style="list-style-type: none"> <li>– must not have had a single discharge from any oil-filled operational equipment exceeding 1,000 U.S. gal</li> <li>– must not have had two discharges from any oil-filled operational equipment each exceeding 42 U.S. gallons within any twelve month period in the three years prior to the SPCC Plan certification date</li> <li>– has become subject to 40 CFR 112 and the facility has been in operation for less than 3 yr (other than oil discharges that are the result of natural disasters, acts of war or terrorism).</li> </ul> <p>Verify that, if secondary containment is not provided for qualified oil-filled operational equipment, the owner or operator of a facility with qualified oil-filled operational equipment:</p> <ul style="list-style-type: none"> <li>– establishes and documents the facility procedures for inspections or a monitoring program to detect equipment failure and/or a discharge</li> <li>– unless a response plan has been submitted under 40 CFR 112.20 (see checklist item PO.10.1.US), include the following in the SPCC: <ul style="list-style-type: none"> <li>– an oil spill contingency plan following the provisions of 40 CFR 109</li> <li>– a written commitment of manpower, equipment, and materials required to expeditiously control and remove any quantity of oil discharged that may be harmful.</li> </ul> </li> </ul>



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<b>POL STORAGE</b>  <b>PO.25</b> <b>On Vessels/Ships</b>  <b>PO.25.1.US.</b> As of 20 June 1994 vessels carrying oil as secondary cargo are required to carry appropriate equipment and supplies for the containment and removal of on-deck oil cargo spills of at least 1/2 bbl (33 CFR 155.220).  <b>PO.25.2.US.</b> A tank vessel with a capacity of 250 or more barrels and an inland tank barge with the capacity of 250 or more barrels that is carrying oil as cargo are required to meet specific requirements (33 CFR 155.100 and 155.310).	<p>Verify that the equipment consists of:</p> <ul style="list-style-type: none"> <li>– sorbents</li> <li>– nonsparking hand scoops, shovels, and buckets</li> <li>– containers suitable for holding recovered waste</li> <li>– emulsifiers for deck cleaning</li> <li>– protective clothing.</li> </ul> <p>Verify that the equipment is ready for immediate use during cargo transfer operations.</p> <p>(NOTE: These requirements apply to the storage of petroleum products in containers other than tanks. For the storage of POL in storage tanks please see the section titled Storage Tank Management.)</p> <p>Determine if the facility has a tank vessel with a capacity of 250 or more bbl that carries oil.</p> <p>Verify that the tank vessel meets the following:</p> <ul style="list-style-type: none"> <li>– under or around each loading manifold and each transfer connection point, there is a fixed container or enclosed deck area that has a capacity of at least:             <ul style="list-style-type: none"> <li>– a 1/2 bbl [21 gal], if it serves one or more hoses with an inside diameter of 2 in. or less, or one or more loading arms with a nominal pipe size diameter of 2 in. or less</li> <li>– 1 bbl [42 gal], if it serves one or more hoses with an inside diameter of more than 2 in., but less than 4 in., or one or more loading arms with a nominal pipe size diameter of more than 2 in., but less than 4 in.</li> <li>– 2 bbl [84 gal], if it serves one or more hoses with an inside diameter of 4 in. or more, but less than 6 in., or one or more loading arms with a nominal pipe size diameter of 4 in. or more, but less than 6 in.</li> <li>– 3 bbl [126 gal], if it serves one or more hoses with an inside diameter of 6 in. or more, but less than 12 in., or one or more loading arms with a nominal pipe size diameter of 6 in. or more, but less than 12 in.</li> <li>– 4 bbl [168 gal], if it serves one or more hoses with an inside diameter of 12 in. or more, or one or more loading arms with a nominal pipe size diameter of 12 in. or more</li> </ul> </li> <li>– there is a means of drainage or removing discharged oil from each container or enclosed deck area without discharging oil into the water</li> <li>– there is a mechanical means of closing each drain and scupper in the container or enclosed deck area.</li> </ul>

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<p><b>PO.25.3.US.</b> U.S. non-oceangoing ships operating in the navigable waters of the United States are required to have the capacity to retain all oily mixtures on board (33 CFR 155.100 and 155.330).</p> <p><b>PO.25.4.US.</b> U.S. non-oceangoing ships of 100 gross tons or more that are fitted with main or auxiliary machinery spaces may not be</p>	<p>Verify that if the vessel does not meet the above criteria, it meets the following criteria:</p> <ul style="list-style-type: none"> <li>– there is a coaming of at least 4 in. high, but not more than 8 in. high, enclosing the immediate area of the cargo hatches, loading manifolds, and transfer connections, that has a capacity, in all conditions, of at least a 1/2 bbl [21 gal] per hatch, manifold, and connection within the enclosed area</li> <li>– there is a fixed or portable container under each loading manifold and each transfer connection within the coaming that holds at least a 1/2 bbl [21 gal]</li> <li>– there is a mechanical means of closing each drain and scupper within the coaming</li> <li>– there is a means of draining or removing discharged oil from the fixed or portable container and from within the coamings without discharging the oil to the water.</li> </ul> <p>(NOTE: These requirements apply to each ship that is operated under the authority of the United States, however, provisions for exemption of public vessels exist under certain circumstances.)</p> <p>Verify that by 21 January 1997 all oil tankers and offshore oil barges with a cargo capacity of 250 or more barrels have peripheral coamings, including port and starboard.</p> <p>(NOTE: These requirements apply to the storage of petroleum products in containers other than tanks. For the storage of POL in storage tanks please see the section titled Storage Tank Management.)</p> <p>Verify that U.S. non-oceangoing ships operating in the navigable waters of the United States have the ability to retain all oily mixtures on board and are equipped to discharge those oily mixtures to a reception facility.</p> <p>(NOTE: Retention may be done in the ship’s bilges; an oil residue sludge tank is not required.)</p> <p>(NOTE: These requirements apply to each ship that is operated under the authority of the United States, however, provisions for exemptions of public vessels exist under certain circumstances.)</p> <p>(NOTE: These requirements apply to the storage of petroleum products in containers other than tanks. For the storage of POL in storage tanks please see the section titled Storage Tank Management.)</p> <p>Verify that U.S. non-oceangoing ships of 100 gross tons or more with main or auxiliary machinery spaces meet the following:</p> <ul style="list-style-type: none"> <li>– the ship has at least one pump installed to discharge oily mixtures through a fixed piping system to a reception facility unless the ship has approved oily</li> </ul>

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<p>operated in the navigable waters of the United States unless specific requirements are met (33 CFR 155.100 and 155.410).</p> <p><b>PO.25.5.US.</b> Ships, except ships of less than 26 ft in length, are required to have a placard fixed in a conspicuous place in each machinery space or at the bilge and ballast pump control station (33 CFR 155.100 and 155.450).</p> <p><b>PO.25.6.US.</b> Ships are required to meet specific restrictions as to where oil can be carried on board (33 CFR 155.100 and 155.470).</p>	<p>water separating equipment for the processing of oily bilge slops or oily fuel oil tank ballasts</p> <ul style="list-style-type: none"> <li>– the piping system has at least one outlet that is accessible from the weather deck</li> <li>– the ship has a stop valve for each required outlet.</li> </ul> <p>(NOTE: These requirements do not apply to a fixed or floating drilling rig or other platform or to a ship that has approved oily water separating equipment for the processing of oily bilge slops or oil fuel tank ballast.)</p> <p>(NOTE: These requirements apply to each ship that is operated under the authority of the United States, however, provisions for exemption of public vessels exist under certain circumstances.)</p> <p>(NOTE: These requirements apply to the storage of petroleum products in containers other than tanks. For the storage of POL in storage tanks please see the section titled Storage Tank Management.)</p> <p>Verify that the placard is at least 5 in. by 8 in. and made of durable material.</p> <p>Verify that the placard states:</p> <ul style="list-style-type: none"> <li>– <b>DISCHARGE OF OIL PROHIBITED</b></li> <li>– The <i>Federal Water Pollution Control Act</i> prohibits the discharge of oil or oily waste into or upon the navigable waters of the United States or the waters of the contiguous zone, or which may affect natural resources belonging to, appertaining to, or under the exclusive management authority of the United States, if such discharge causes a film or discoloration of the surface of the water or causes a sludge or emulsion beneath the surface of the water. Violators are subject to substantial civil penalties and/or criminal sanctions including fines and imprisonment.</li> </ul> <p>Verify that the placard is printed in the language or languages of the crew.</p> <p>(NOTE: These requirements apply to each ship that is operated under the authority of the United States, however, provisions for exemptions of public vessels exist under certain circumstances.)</p> <p>(NOTE: These requirements apply to the storage of petroleum products in containers other than tanks. For the storage of POL in storage tanks please see the section titled Storage Tank Management.)</p> <p>Verify that ships of 400 gross tons and above for which the building contract was in place after 1 January 1982 (or if there is no building contract, the keel was laid or is in a similar state of construction after 1 July 1982) do not carry oil in the forepeak tank or a tank forward of the collision bulkhead.</p>

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<p><b>PO.25.7.US.</b> By 17 Oct 2007 certain vessels are required to have a tank level or pressure monitoring device that is permanently installed on each cargo tank (33 CFR 155.100 and 155.490) [Added January 2003].</p>	<p>Verify that self-propelled ships of 300 gross tons and above, to which the above paragraph does not apply, do not carry bulk oil in any space forward of a collision bulkhead, except when one of the following is met:</p> <ul style="list-style-type: none"> <li>– for a ship constructed after 30 June 1974, fuel oil for use on the ship is carried in tanks forward of a collision bulkhead and the tanks are at least 24 in. inboard of the hull structure</li> <li>– for ships constructed before 1 July 1974, fuel oil for use on the ship is carried in tanks forward of a collision bulkhead if the tanks were designated, installed, or constructed for fuel oil carriage before 1 July 1974.</li> </ul> <p>(NOTE: These requirements apply to each ship that is operated under the authority of the United States, however, provisions for exemptions of public vessels exist under certain circumstances.)</p> <p>(NOTE: These requirements apply to the storage of petroleum products in containers other than tanks. For the storage of POL in storage tanks please see the section titled Storage Tank Management.)</p> <p>(NOTE: The tank level or pressure monitoring [TLPM] device requirements of this section apply to:</p> <ul style="list-style-type: none"> <li>– U.S.-flag single-hull tank vessels carrying oil or oil residue as cargo</li> <li>– foreign-flag single-hull tank vessels carrying oil or oil residue as cargo when operating in the navigable waters of the United States and the exclusive economic zone (EEZ) when bound to or from a port or place in the United States.</li> </ul> <p>Verify that, by 17 October 2007, each vessel has a tank level or pressure monitoring device that is permanently installed on each cargo tank and meets the following requirements:</p> <ul style="list-style-type: none"> <li>– it is intrinsically safe as per 46 CFR 111.105;</li> <li>– it indicates any loss of power or failure of the tank level or pressure monitoring device and monitor the condition of the alarm circuitry and sensor by an electronic self-testing feature</li> <li>– it alarms at or before the cargo in the cargo tank either increases or decreases by a level of one percent from the cargo quantity in the tank after securing cargo transfer operations;</li> <li>– it operates in conditions up to sea state 5, moisture, and varying weather conditions</li> <li>– it has audible and visual alarm indicators that are distinctly identifiable as cargo tank level or pressure monitoring alarms that can be seen and heard on the navigation bridge of the tank ship or towing vessel and on the cargo deck area.</li> </ul>

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	<p>(NOTE: Double-hull tank vessels are exempt from the requirements of this checklist item. Plus, this checklist item does not apply to tank vessels that carry asphalt as their only cargo.)</p> <p>(NOTE: These requirements apply to each ship that is operated under the authority of the United States, however, provisions for exemptions of public vessels exist under certain circumstances.)</p> <p>(NOTE: These requirements apply to the storage of petroleum products in containers other than tanks. For the storage of POL in storage tanks please see the section titled Storage Tank Management.)</p>



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<b>POL STORAGE</b>  <b>PO.30</b> <b>Tank Vessels</b>  <b>PO.30.1.US.</b> Lamp and oil rooms on tankships are required to be wholly and tightly lined with metal (46 CFR 32.85-1) [Citation Revised July 2014].  <b>PO.30.2.US.</b> A CO <sub>2</sub> or water spray system is required to be installed in all lamp lockers, oil rooms, and similar spaces on tankships (46 CFR 34.05-5(a)(3)).  <b>PO.30.3.US.</b> Flammable liquids and gases, other than diesel fuel, that are going to be used as fuel for approved equipment are required to be stowed according to specific parameters on tankships (46 CFR 35.30-40).	<p>Verify that lamp and oil rooms are wholly and tightly lined with metal.</p> <p>(NOTE: These requirements apply to all U.S. flag vessels indicated in column 3 of Appendix 8-2, except:</p> <ul style="list-style-type: none"> <li>– any vessel operating exclusively on inland waters that are NOT navigable waters of the United States</li> <li>– any vessel that is laid up, dismantled, and out of commission</li> <li>– any vessel that has its title vested in the United States and is used for public purposes.)</li> </ul> <p>Verify that vessels contracted prior to 1 January 1962 are equipped with a CO<sub>2</sub> water spray or steam smothering system.</p> <p>Verify that vessels contracted prior to 19 November 1952 are equipped with a CO<sub>2</sub>, water spray, steam smothering, or foam system.</p> <p>(NOTE: These requirements apply to all U.S. flag vessels indicated in column 3 of Appendix 8-2, except:</p> <ul style="list-style-type: none"> <li>– any vessel operating exclusively on inland waters that are not navigable waters of the United States</li> <li>– any vessel that is laid up, dismantled, and out of commission</li> <li>– any vessel that has its title vested in the United States and is used for public purposes.)</li> </ul> <p>Verify that stowage is in containers approved by the DOT and American Society of Mechanical Engineers (ASME) or in a portable container approved by a recognized testing laboratory.</p> <p>Verify that the content is marked on the containers and the containers are labeled according to DOT flammability labeling requirements.</p> <p>Verify that containers are stowed on or above the weather deck.</p> <p>(NOTE: Approved containers of 5 gal or less may be stowed below the weather deck in a paint or lamp locker.)</p> <p>(NOTE: These requirements apply to all U.S. flag vessels indicated in column 3 of Appendix 8-2, except:</p> <ul style="list-style-type: none"> <li>– any vessel operating exclusively on inland waters that are not navigable waters of the United States</li> <li>– any vessel that is laid up, dismantled, and out of commission</li> </ul>

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<p><b>PO.30.4.US.</b> Tankships that have a keel laying date on or after 1 January 1975 are required to have a coaming or other barrier at least 3 m (1 ft) higher than adjacent spill containment barriers to prevent cargo spills from flowing aft of the house front (46 CFR 32.56-1 and 32.56-15).</p> <p><b>PO.30.5.US.</b> Specific provisions are required to be made for removing drainage from the pumproom bilges and adjacent cofferdams on tank vessels constructed or converted after 19 November 1952 (46 CFR 32.52-5 and 30.52-10).</p> <p><b>PO.30.6.US.</b> Checklist item deleted [<b>Deleted July 2014</b>].</p>	<p>– any vessel that has its title vested in the United States and is used for public purposes.)</p> <p>(NOTE: The measurement 3 m (1 ft) is how it appears in the regulation. An assumption is made that what is actually meant is 1 m (3 ft).)</p> <p>Verify that tankships with a keel laying date on or after 1 January 1975 have a coaming or other barrier at least 3 m (1 ft) higher than adjacent spill containment barriers to prevent cargo spills from flowing aft of the housefront.</p> <p>(NOTE: These requirements apply to all U.S. flag vessels indicated in column 3 of Appendix 8-2, except:</p> <ul style="list-style-type: none"> <li>– any vessel operating exclusively on inland waters that are not navigable waters of the United States</li> <li>– any vessel that is laid up, dismantled, and out of commission</li> <li>– any vessel that has its title vested in the United States and is used for public purposes.)</li> </ul> <p>Verify that some method of drainage removal such as a separate bilge pump, ejector, or suction is available.</p> <p>Verify that the bilge pump is not located in nor the piping passes through spaces containing machinery where sources of vapor ignition are normally present.</p> <p>Verify that where bilge suction is provided from a cargo or stripping pump, a stopcheck valve is fitted in the section branch and an additional stop valve is also fitted if the bilge suction branch can be subjected to a head of oil from the filling line.</p> <p>Verify that means are provided for controlling the cargo or pump room bilge pumps and their suctions or discharges so that a flooded pump room can be pumped out.</p> <p>(NOTE: For tank vessels on which the construction or conversion started on or before 19 November 1952, the bilge pumps and piping should be made to conform with these requirements as nearly as is possible.)</p> <p>(NOTE: These requirements apply to all U.S. flag vessels indicated in column 3 of Appendix 8-2, except:</p> <ul style="list-style-type: none"> <li>– any vessel operating exclusively on inland waters that are not navigable waters of the United States</li> <li>– any vessel that is laid up, dismantled, and out of commission</li> <li>– any vessel that has its title vested in the United States and is used for public purposes.)</li> </ul> <p>Checklist item deleted.</p>

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<b>POL STORAGE</b>  <b>PO.35</b> <b>Cargo and Miscellaneous Vessels</b>  <b>PO.35.1.US.</b> Lamp and oil lockers are required to be constructed of steel and wholly lined with metal (46 CFR 92.05-10).  <b>PO.35.2.US.</b> Checklist item deleted [ <b>Deleted July 2014</b> ].	<p>Verify that lamp and oil lockers are metal.</p> <p>(NOTE: These regulations apply to all U.S. flag vessels indicated in column 5 of Appendix 8-2, except:</p> <ul style="list-style-type: none"> <li>– any vessel operating exclusively on inland waters that are not navigable waters of the United States</li> <li>– any vessel that is laid up, dismantled, and out of commission</li> <li>– any vessel that has its title vested in the United States and is not used for public purposes, except for vessels of the U.S. Maritime Administration.)</li> </ul> <p>Checklist item deleted.</p>



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<p><b>PO.40</b></p> <p><b>PIPELINES</b></p> <p><b>PO.40.1.US.</b> Buried piping at facility transfer operations, pumping, or facility processes is required to meet specific parameters (40 CFR 112.1(b), 112.1(d), 112.8(d), and 112.12(d) <b>[Revised July 2002]</b>).</p> <p><b>PO.40.2.US.</b> This checklist item has been deleted <b>[Deleted July 2002]</b>.</p>	<p>(NOTE: These requirements apply to petroleum oils and non-petroleum oils, animal fats and oils and greases, and fish and marine mammal oils; and vegetable oils (including oils from seeds, nuts, fruits, and kernels)</p> <p>(NOTE: See the first NOTE and the last NOTE in PO.5.1.US for information on what the requirements of 40 CFR 112 do and do not apply to.)</p> <p>Verify that buried piping that is installed or replaced on or after 16 August 2002 has a protective wrapping and coating.</p> <p>(NOTE: Such buried piping must also be cathodically protected or otherwise satisfy the corrosion protection standards for piping in 40 CFR 280 or an approved State program.)</p> <p>Verify that if a section of buried line is exposed for any reason, it is carefully inspected it for deterioration and if corrosion damage is found, additional examination and corrective action is undertaken as indicated by the magnitude of the damage.</p> <p>Verify that the facility caps or blank-flanges the terminal connection at the transfer point and marks it as to origin when piping is not in service or is in standby service for an extended time.</p> <p>Verify that design pipe supports are properly designed to minimize abrasion and corrosion and allow for expansion and contraction.</p> <p>Verify that all aboveground valves, piping, and appurtenances are regularly inspected.</p> <p>Verify that during regular inspections, the general condition of items, such as flange joints, expansion joints, valve glands and bodies, catch pans, pipeline supports, locking of valves, and metal surfaces are assessed.</p> <p>Verify that integrity and leak testing is done on buried piping at the time of installation, modification, construction, relocation, or replacement.</p> <p>Verify that all vehicles entering the facility are warned to be sure that no vehicle will endanger aboveground piping or other oil transfer operations.</p> <p>(NOTE: The July 2002 revision of 40 CFR 112 resulted in the deletion of this checklist item.)</p>

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<p><b>PO.40.3.US.</b> In specific instances of failure in a pipeline for hazardous liquids, a report must be submitted (49 CFR 195.1(a), 195.1(b), 195.50, and 195.54) <b>[Revised July 1999; Revised October 2013]</b>.</p>	<p>(NOTE: This checklist item applies to pipeline facilities and the transportation of hazardous liquids or carbon dioxide associated with those facilities in or affecting interstate or foreign commerce, including pipeline facilities on the Outer Continental Shelf (OCS). Covered pipelines include, but are not limited to:</p> <ul style="list-style-type: none"> <li>– any pipeline that transports a highly volatile liquid</li> <li>– any pipeline segment that crosses a waterway currently used for commercial navigation</li> <li>– any of the following onshore gathering lines used for transportation of petroleum: <ul style="list-style-type: none"> <li>– a pipeline located in a non-rural area</li> <li>– a regulated rural gathering line as provided in 49 CFR 195.11</li> <li>– a pipeline located in an inlet of the Gulf of Mexico as provided in 49 CFR 195.413.</li> </ul> </li> <li>– except for a gathering line as described above, any pipeline located in a rural or non-rural area of any diameter regardless of operating pressure.)</li> </ul> <p>Verify that an accident report is submitted for each failure in a pipeline system in which there is a release of the hazardous liquid or carbon dioxide transported resulting in any of the following:</p> <ul style="list-style-type: none"> <li>– explosion or fire not intentionally set by the operator</li> <li>– release of 5 gal (19 L) or more of hazardous liquid or carbon dioxide, except that no report is required for a release of less than 5 barrels (0.8 cubic meters) resulting from a pipeline maintenance activity if the release is: <ul style="list-style-type: none"> <li>– not otherwise reportable under this section</li> <li>– not one described in 49 CFR 195.52(a)(4)</li> <li>– confined to company property or pipeline right-of-way</li> <li>– cleaned up promptly</li> </ul> </li> <li>– death of any person</li> <li>– personal injury necessitating hospitalization</li> <li>– estimated property damage, including cost of clean-up and recovery, value of lost product, and damage to the property of the operator or others, or both, exceeding \$50,000.</li> </ul> <p>Verify that each operator that experiences an accident that is required to be reported under 49 CFR 195.50, as soon as practicable, but not later than 30 days after discovery of the accident, files an accident report on DOT Form 7000-1.</p> <p>Verify that, whenever an operator receives any changes in the information reported or additions to the original report on DOT Form 7000-1, they file a supplemental report within 30 days.</p> <p>(NOTE: This checklist item does not apply to any of the following:</p> <ul style="list-style-type: none"> <li>– transportation of a hazardous liquid transported in a gaseous state</li> <li>– transportation of a hazardous liquid through a pipeline by gravity</li> </ul>

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	<ul style="list-style-type: none"> <li>– transportation of a hazardous liquid through any of the following low-stress pipelines: <ul style="list-style-type: none"> <li>– a pipeline subject to safety regulations of the U.S. Coast Guard; or</li> <li>– a pipeline that serves refining, manufacturing, or truck, rail, or vessel terminal facilities, if the pipeline is less than one mile long (measured outside facility grounds) and does not cross an offshore area or a waterway currently used for commercial navigation</li> </ul> </li> <li>– transportation of petroleum through an onshore rural gathering line that does not meet the definition of a “regulated rural gathering line” as provided in 49 CFR 195.11 (except for gathering lines in the inlets of the Gulf of Mexico subject to 49 CFR 195.413)</li> <li>– transportation of hazardous liquid or carbon dioxide in an offshore pipeline in state waters where the pipeline is located upstream from the outlet flange of the following farthest downstream facility: the facility where hydrocarbons or carbon dioxide are produced or the facility where produced hydrocarbons or carbon dioxide are first separated, dehydrated, or otherwise processed</li> <li>– transportation of hazardous liquid or carbon dioxide in a pipeline on the OCS where the pipeline is located upstream of the point at which operating responsibility transfers from a producing operator to a transporting operator</li> <li>– a pipeline segment upstream (generally seaward) of the last valve on the last production facility on the OCS where a pipeline on the OCS is producer-operated and crosses into state waters without first connecting to a transporting operator's facility on the OCS. Safety equipment protecting PHMSA-regulated pipeline segments is not excluded</li> <li>– transportation of hazardous liquid or carbon dioxide through onshore production (including flow lines), refining, or manufacturing facilities or storage or in-plant piping systems associated with such facilities</li> <li>– either of the following methods of transportation of hazardous liquid or carbon dioxide: <ul style="list-style-type: none"> <li>– by vessel, aircraft, tank truck, tank car, or other non-pipeline mode of transportation</li> <li>– through facilities located on the grounds of a materials transportation terminal if the facilities are used exclusively to transfer hazardous liquid or carbon dioxide between non-pipeline modes of transportation or between a non-pipeline mode and a pipeline [NOTE: These facilities do not include any device and associated piping that are necessary to control pressure in the pipeline under 49 CFR 195.406(b)]</li> </ul> </li> <li>– transportation of carbon dioxide downstream from either of the applicable following points: <ul style="list-style-type: none"> <li>– the inlet of a compressor used in the injection of carbon dioxide for oil recovery operations, or the point where recycled carbon dioxide enters the injection system, whichever is farther upstream</li> <li>– the connection of the first branch pipeline in the production field where the pipeline transports carbon dioxide to an injection well or to a header or manifold from which a pipeline branches to an injection well.</li> </ul> </li> </ul>

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<p><b>PO.40.4.US.</b> Under specific circumstances, if there is a release of a hazardous liquid or CO2 transported in a pipeline, telephone notification must be made as soon as possible after discovery of the release (49 CFR 195.1(a), 195.1(b), and 195.52) [Revised October 2013].</p>	<p>(NOTE: This checklist item applies to pipeline facilities and the transportation of hazardous liquids or carbon dioxide associated with those facilities in or affecting interstate or foreign commerce, including pipeline facilities on the Outer Continental Shelf (OCS). Covered pipelines include, but are not limited to:</p> <ul style="list-style-type: none"> <li>– any pipeline that transports a highly volatile liquid</li> <li>– any pipeline segment that crosses a waterway currently used for commercial navigation</li> <li>– any of the following onshore gathering lines used for transportation of petroleum: <ul style="list-style-type: none"> <li>– a pipeline located in a non-rural area</li> <li>– a regulated rural gathering line as provided in 49 CFR 195.11</li> <li>– a pipeline located in an inlet of the Gulf of Mexico as provided in 49 CFR 195.413.</li> </ul> </li> <li>– except for a gathering line as described above, any pipeline located in a rural or non-rural area of any diameter regardless of operating pressure.)</li> </ul> <p>Verify that, at the earliest practicable moment following discovery of a release of the hazardous liquid or carbon dioxide transported resulting in an event described in 49 CFR 195.50 (see checklist item PO.40.3.US) , the operator of the system give notice of any failure that:</p> <ul style="list-style-type: none"> <li>– caused a death or a personal injury requiring hospitalization</li> <li>– resulted in either a fire or explosion not intentionally set by the operator</li> <li>– caused estimated property damage, including cost of cleanup and recovery, value of lost product, and damage to the property of the operator or others, or both, exceeding \$50,000</li> <li>– resulted in pollution of any stream, river, lake, reservoir, or other similar body of water that violated applicable water quality standards, caused a discoloration of the surface of the water or adjoining shoreline, or deposited a sludge or emulsion beneath the surface of the water or upon adjoining shorelines</li> <li>– in the judgment of the operator was significant even though it did not meet the criteria of any other paragraph of this section.</li> </ul> <p>Verify that the notice is made to the National Response Center either by telephone to 800-424-8802 (in Washington, DC, 202-267-2675) or electronically at <a href="http://www.nrc.uscg.mil">http://www.nrc.uscg.mil</a>.</p> <p>Verify that the notice includes the following information:</p> <ul style="list-style-type: none"> <li>– name, address and identification number of the operator</li> <li>– name and telephone number of the reporter</li> <li>– the location of the failure</li> <li>– the time of the failure</li> <li>– the fatalities and personal injuries, if any</li> <li>– initial estimate of amount of product released</li> </ul>

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	<p>– all other significant facts known by the operator that are relevant to the cause of the failure or extent of the damages.</p> <p>(NOTE: A pipeline operator must have a written procedure to calculate and provide a reasonable initial estimate of the amount of released product.)</p> <p>Verify that an operator provides an additional telephonic report to the NRC if significant new information becomes available during the emergency response phase of a reported event at the earliest practicable moment after such additional information becomes known.</p> <p>(NOTE: This checklist item does not apply to any of the following:</p> <ul style="list-style-type: none"> <li>– transportation of a hazardous liquid transported in a gaseous state</li> <li>– transportation of a hazardous liquid through a pipeline by gravity</li> <li>– transportation of a hazardous liquid through any of the following low-stress pipelines: <ul style="list-style-type: none"> <li>– a pipeline subject to safety regulations of the U.S. Coast Guard; or</li> <li>– a pipeline that serves refining, manufacturing, or truck, rail, or vessel terminal facilities, if the pipeline is less than one mile long (measured outside facility grounds) and does not cross an offshore area or a waterway currently used for commercial navigation</li> </ul> </li> <li>– transportation of petroleum through an onshore rural gathering line that does not meet the definition of a “regulated rural gathering line” as provided in 49 CFR 195.11 (except for gathering lines in the inlets of the Gulf of Mexico subject to 49 CFR 195.413)</li> <li>– transportation of hazardous liquid or carbon dioxide in an offshore pipeline in state waters where the pipeline is located upstream from the outlet flange of the following farthest downstream facility: the facility where hydrocarbons or carbon dioxide are produced or the facility where produced hydrocarbons or carbon dioxide are first separated, dehydrated, or otherwise processed</li> <li>– transportation of hazardous liquid or carbon dioxide in a pipeline on the OCS where the pipeline is located upstream of the point at which operating responsibility transfers from a producing operator to a transporting operator</li> <li>– a pipeline segment upstream (generally seaward) of the last valve on the last production facility on the OCS where a pipeline on the OCS is producer-operated and crosses into state waters without first connecting to a transporting operator's facility on the OCS. Safety equipment protecting PHMSA-regulated pipeline segments is not excluded</li> <li>– transportation of hazardous liquid or carbon dioxide through onshore production (including flow lines), refining, or manufacturing facilities or storage or in-plant piping systems associated with such facilities</li> <li>– either of the following methods of transportation of hazardous liquid or carbon dioxide: <ul style="list-style-type: none"> <li>– by vessel, aircraft, tank truck, tank car, or other non-pipeline mode of transportation</li> <li>– through facilities located on the grounds of a materials transportation terminal if the facilities are used exclusively to transfer hazardous liquid</li> </ul> </li> </ul>

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<p><b>PO.40.5.US.</b> Facilities with onshore oil pipelines that, because of location, could reasonably be expected to cause substantial harm or significant and substantial harm to the environment by discharging oil into or on any navigable waters of the United States or adjoining shore lines are required to prepare a response plan (49 CFR 194.3, 194.7, and 194.101 through 194.107, 194.113) [<b>Revised April 2005; Revised July 2005</b>].</p>	<p>or carbon dioxide between non-pipeline modes of transportation or between a non-pipeline mode and a pipeline [NOTE: These facilities do not include any device and associated piping that are necessary to control pressure in the pipeline under 49 CFR 195.406(b)]</p> <ul style="list-style-type: none"> <li>– transportation of carbon dioxide downstream from either of the applicable following points: <ul style="list-style-type: none"> <li>– the inlet of a compressor used in the injection of carbon dioxide for oil recovery operations, or the point where recycled carbon dioxide enters the injection system, whichever is farther upstream</li> <li>– the connection of the first branch pipeline in the production field where the pipeline transports carbon dioxide to an injection well or to a header or manifold from which a pipeline branches to an injection well.</li> </ul> </li> </ul> <p>Verify that operators of substantial harm pipeline facilities prepare a response plan.</p> <p>Verify that pipelines for which response plans are required do not handle, store, or transport oil in that pipeline unless the operator has submitted an appropriate response plan.</p> <p>Verify that the operator operates its onshore pipeline facilities in accordance with the applicable response plan.</p> <p>(c) The operator of a pipeline line section described in § 194.103(c), may continue to operate the pipeline for two years after the date of submission of a response plan, pending approval or disapproval of that plan, only if the operator has submitted the certification required by § 194.119(e).</p> <p>(NOTE: A response plan is not required for:</p> <ul style="list-style-type: none"> <li>– a pipeline that is 6 5/8 in (168 millimeters) or less in outside nominal diameter, is 10 mi (16 km) or less in length, and all of the following conditions apply to the pipeline: <ul style="list-style-type: none"> <li>– the pipeline has not experienced a release greater than 1,000 barrels (159 cubic meters) within the previous 5 yr</li> <li>– the pipeline has not experienced at least two reportable releases, as defined in § 195.50, within the previous 5 yr</li> <li>– a pipeline containing any electric resistance welded pipe, manufactured prior to 1970, does not operate at a maximum operating pressure established under 49 CFR 195.406 that corresponds to a stress level greater than 50 percent of the specified minimum yield strength of the pipe</li> <li>– the pipeline is not in proximity to navigable waters, public drinking water intakes, or environmentally sensitive areas</li> </ul> </li> <li>– a line section that is greater than 6 5/8 in (168 millimeters) in outside nominal diameter and is greater than 10 mi in length, where the operator determines that it is unlikely that the worst case discharge from any point on the line section would adversely affect, within 12 h after the initiation of the discharge,</li> </ul>

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	<p>any navigable waters, public drinking water intake, or environmentally sensitive areas</p> <ul style="list-style-type: none"> <li>– a line section that is 6 5/8 in (168 millimeters) or less in outside nominal diameter and is 10 mi (16 km) or less in length, where the operator determines that it is unlikely that the worst case discharge from any point on the line section would adversely affect, within 4 h after the initiation of the discharge, any navigable waters, public drinking water intake, or environmentally sensitive areas.)</li> </ul> <p>Verify that each operator submits a statement with its response plan identifying which line sections in a response zone can be expected to cause significant and substantial harm to the environment in the event of a discharge of oil into or on the navigable waters or adjoining shorelines.</p> <p>(NOTE: If an operator expects a line section in a response zone to cause significant and substantial harm, then the entire response zone must, for the purpose of response plan review and approval, be treated as if it is expected to cause significant and substantial harm. However, an operator will not have to submit separate plans for each line section.)</p> <p>(NOTE: A line section can be expected to cause significant and substantial harm to the environment in the event of a discharge of oil into or on the navigable waters or adjoining shorelines if; the pipeline is greater than 6 5/8 in (168 millimeters) in outside nominal diameter, greater than 10 mi (16 km) in length, and the line section:</p> <ul style="list-style-type: none"> <li>– has experienced a release greater than 1,000 barrels (159 cubic meters) within the previous 5 yr</li> <li>– has experienced two or more reportable releases, as defined in § 195.50, within the previous 5 yr</li> <li>– containing any electric resistance welded pipe, manufactured prior to 1970, operates at a maximum operating pressure established under 49 CFR 195.406 that corresponds to a stress level greater than 50 percent of the specified minimum yield strength of the pipe</li> <li>– is located within a 5 mi (8 km) radius of potentially affected public drinking water intakes and could reasonably be expected to reach public drinking water intakes</li> <li>– is located within a 1 mi (1.6 km) radius of potentially affected environmentally sensitive areas, and could reasonably be expected to reach these areas.)</li> </ul> <p>Verify that the operator has determined the worst case discharge for each of its response zones and provided the methodology, including calculations, used to arrive at the volume.</p> <p>(NOTE: The worst case discharge is the largest volume, in barrels (cubic meters), of one of the following:</p> <ul style="list-style-type: none"> <li>– the pipeline's maximum release time in hours, plus the maximum shutdown response time in hours (based on historic discharge data or in the absence of such historic data, the operator's best estimate), multiplied by the maximum</li> </ul>

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	<p>flow rate expressed in barrels per hour (based on the maximum daily capacity of the pipeline), plus the largest line drainage volume after shutdown of the line section(s) in the response zone expressed in barrels (cubic meters)</p> <ul style="list-style-type: none"> <li>– the largest foreseeable discharge for the line section(s) within a response zone, expressed in barrels (cubic meters), based on the maximum historic discharge, if one exists, adjusted for any subsequent corrective or preventive action taken</li> <li>– if the response zone contains one or more breakout tanks, the capacity of the single largest tank or battery of tanks within a single secondary containment system, adjusted for the capacity or size of the secondary containment system, expressed in barrels (cubic meters).)</li> </ul> <p>(NOTE: Operators may claim prevention credits for breakout tank secondary containment and other specific spill prevention measures as outlined in the text of 49 CFR 194.105(b)(4).)</p> <p>Verify that each response plan includes procedures and a list of resources for responding, to the maximum extent practicable, to a worst case discharge and to a substantial threat of such a discharge.</p> <p>(NOTE: The “substantial threat” term is equivalent to abnormal operations outlined in 49 CFR 195.402(d). To comply with this requirement, an operator can incorporate by reference into the response plan the appropriate procedures from its manual for operations, maintenance, and emergencies, which is prepared in compliance with 49 CFR 195.402.)</p> <p>Verify that the operator has certified in the response plan that it reviewed the NCP and each applicable ACP and that its response plan is consistent with the NCP and each applicable ACP as follows:</p> <ul style="list-style-type: none"> <li>– as a minimum to be consistent with the NCP a facility response plan: <ul style="list-style-type: none"> <li>– demonstrates an operator's clear understanding of the function of the Federal response structure, including procedures to notify the National Response Center reflecting the relationship between the operator's response organization's role and the Federal On Scene Coordinator's role in pollution response</li> <li>– establishes provisions to ensure the protection of safety at the response site</li> <li>– identifies the procedures to obtain any required Federal and State permissions for using alternative response strategies such as in-situ burning and dispersants as provided for in the applicable ACPs</li> </ul> </li> <li>– as a minimum, to be consistent with the applicable ACP the plan: <ul style="list-style-type: none"> <li>– addresses the removal of a worst case discharge and the mitigation or prevention of a substantial threat of a worst case discharge</li> <li>– identifies environmentally and economically sensitive areas</li> <li>– describes the responsibilities of the operator and of Federal, State and local agencies in removing a discharge and in mitigating or preventing a substantial threat of a discharge</li> </ul> </li> </ul>

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	<p>– establishes the procedures for obtaining an expedited decision on use of dispersants or other chemicals.</p> <p>Verify that each response plan includes:</p> <ul style="list-style-type: none"> <li>– a core plan consisting of: <ul style="list-style-type: none"> <li>– an information summary as required in 49 CFR 194.113,</li> <li>– immediate notification procedures,</li> <li>– spill detection and mitigation procedures</li> <li>– the name, address, and telephone number of the oil spill response organization, if appropriate</li> <li>– response activities and response resources,</li> <li>– names and telephone numbers of Federal, State and local agencies which the operator expects to have pollution control responsibilities or support</li> <li>– training procedures</li> <li>– equipment testing</li> <li>– drill program: an operator will satisfy the requirement for a drill program by following the National Preparedness for Response Exercise Program (PREP) guidelines or an equivalent program</li> <li>– plan review and update procedures</li> </ul> </li> <li>– an appendix for each response zone that includes the information required above and the worst case discharge calculations that are specific to that response zone.</li> <li>– a description of the operator's response management system including the functional areas of finance, logistics, operations, planning, and command.</li> </ul> <p>(NOTE: An operator submitting a response plan for a single response zone does not need to have a core plan and a response zone appendix. The operator of a single response zone onshore pipeline shall have a single summary in the plan that contains the required information.)</p> <p>Verify that the plan demonstrates that the operator's response management system uses common terminology and has a manageable span of control, a clearly defined chain of command, and sufficient trained personnel to fill each position.</p> <p>Verify that the information summary for the core plan includes:</p> <ul style="list-style-type: none"> <li>– the name and address of the operator</li> <li>– for each response zone which contains one or more line sections that meet the criteria for determining significant and substantial harm, a listing and description of the response zones, including county(s) and state(s).</li> </ul> <p>Verify that the information summary for the response zone appendix includes:</p> <ul style="list-style-type: none"> <li>– the information summary for the core plan</li> <li>– the names or titles and 24-hour telephone numbers of the qualified individual(s) and at least one alternate qualified individual(s)</li> </ul>

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<p><b>PO.40.6.US.</b> The submission and approval of response plans must be done according to specific parameters (49 CFR 194.109 and 194.119) [Revised April 2005; Revised October 2013].</p>	<ul style="list-style-type: none"> <li>– the description of the response zone, including county(s) and state(s), for those zones in which a worst case discharge could cause substantial harm to the environment</li> <li>– a list of line sections for each pipeline contained in the response zone, identified by milepost or survey station number, or other operator designation</li> <li>– the basis for the operator's determination of significant and substantial harm</li> <li>– the type of oil and volume of the worst case discharge.</li> </ul> <p>(NOTE: See checklist item PO.40.5.US for information on who is required to develop this plan and the contents of the plan.)</p> <p>(NOTE: Instead of a response plan required by 49 CFR 194.103 [see checklist item PO.40.5.US], an operator may submit a response plan that complies with a state law or regulation, if the state law or regulation requires a plan that provides equivalent or greater spill protection than a plan required under this part. For example, a plan must:</p> <ul style="list-style-type: none"> <li>– have an information summary required by 49 CFR 194.113</li> <li>– list the names or titles and 24-h telephone numbers of the qualified individual(s) and at least one alternate qualified individual(s)</li> <li>– ensure through contract or other approved means the necessary private personnel and equipment to respond to a worst case discharge or a substantial threat of such a discharge.)</li> </ul> <p>Verify that each operator submits two copies of the response plan to Office of Pipeline Safety, Pipeline and Hazardous Materials Safety Administration, Department of Transportation, PHP 80, 1200 New Jersey Avenue, SE., Washington, DC 20590-0001.</p> <p>(NOTE: Submission of plans in electronic format is preferred.)</p> <p>(NOTE: If PHMSA determines that a response plan requiring approval does not meet all regulatory requirements, PHMSA will notify the operator of any alleged deficiencies, and to provide the operator and opportunity to respond, including the opportunity for an informal conference, on any proposed plan revisions and an opportunity to correct any deficiencies.)</p> <p>Verify that, if the operator disagrees with the PHMSA determination that a plan contains alleged deficiencies, they petition PHMSA for reconsideration within 30 days from the date of receipt of PHMSA's notice.</p> <p>(NOTE: After considering all relevant material presented in writing or at an informal conference, PHMSA will notify the operator of its final decision.)</p> <p>Verify that the operator complies with the final decision within 30 days of issuance unless PHMSA allows additional time.</p>

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<p><b>PO.40.7.US.</b> Checklist item deleted [<b>Deleted April 2005</b>].</p> <p><b>PO.40.8.US.</b> Copies of the response plan are required to be kept at specific locations and provided to pertinent individuals (49 CFR 194.111) [<b>Revised April 2005</b>].</p> <p><b>PO.40.9.US.</b> Training is required for the implementation of the response plan (49 CFR 194.117) [<b>Revised April 2005</b>].</p>	<p>(NOTE: For response zones of pipelines described in 49 CFR 194.103 [see checklist item PO.40.5.US] OPS will approve the response plan if OPS determines that the response plan meets all regulatory requirements. OPS may consult with the U.S. EPA or the USCG if a Federal on-scene coordinator (FOSC) has concerns about the operator's ability to respond to a worst case discharge. If OPS has not approved a response plan for this type of pipeline, the operator may submit a certification to OPS that the operator has obtained, through contract or other approved means, the necessary personnel and equipment to respond, to the maximum extent practicable, to a worst case discharge or a substantial threat of such a discharge. The certificate must be signed by the qualified individual or an appropriate corporate officer.)</p> <p>(NOTE: If OPS receives a request from a FOSC to review a response plan, OPS may require an operator to give a copy of the response plan to the FOSC. OPS may consider FOSC comments on response techniques, protecting fish, wildlife and sensitive environments, and on consistency with the ACP. OPS remains the approving authority for the response plan.)</p> <p>This checklist item has been merged into PO.40.6.US.</p> <p>(NOTE: See checklist item PO.40.5.US for information on who is required to develop this plan and the contents of the plan.)</p> <p>Verify that each operator maintains relevant portions of its response plan at the operator's headquarters and at other locations from which response activities may be conducted, for example, in field offices, supervisors' vehicles, or spill response trailers.</p> <p>Verify that each operator provides a copy of its response plan to each qualified individual.</p> <p>(NOTE: See checklist item PO.40.5.US for information on who is required to develop this plan and the contents of the plan.)</p> <p>Verify that each operator conducts training to ensure that all personnel know:</p> <ul style="list-style-type: none"> <li>– their responsibilities under the response plan</li> <li>– the name and address of, and the procedure for contacting, the operator on a 24-h basis</li> <li>– the name of, and procedures for contacting, the qualified individual on a 24-h basis.</li> </ul> <p>Verify that each operator conducts training to ensure that reporting personnel know:</p>

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<p><b>PO.40.10.US.</b> Pipeline response plans are required to be reviewed every 3 yr from the date of submission and modified to address new or different operating conditions or information (49 CFR 194.121) [Revised April 2005; Revised October 2013].</p>	<ul style="list-style-type: none"> <li>– the content of the information summary of the response plan</li> <li>– the toll-free telephone number of the National Response Center</li> <li>– the notification process.</li> </ul> <p>Verify that each operator conducts training to ensure that personnel engaged in response activities know:</p> <ul style="list-style-type: none"> <li>– the characteristics and hazards of the oil discharged</li> <li>– the conditions that are likely to worsen emergencies, including the consequences of facility malfunctions or failures, and the appropriate corrective actions</li> <li>– the steps necessary to control any accidental discharge of oil and to minimize the potential for fire, explosion, toxicity, or environmental damage</li> <li>– the proper firefighting procedures and use of equipment, fire suits, and breathing apparatus.</li> </ul> <p>Verify that each operator maintains a training record for each individual that has been trained.</p> <p>Verify that these records are maintained in the following manner as long as the individual is assigned duties under the response plan:</p> <ul style="list-style-type: none"> <li>– records for operator personnel must be maintained at the operator's headquarters</li> <li>– records for personnel engaged in response, other than operator personnel, shall be maintained as determined by the operator.</li> </ul> <p>(NOTE: No operator is relieved from the responsibility to ensure that all response personnel are trained to meet the OSHA standards for emergency response operations in 29 CFR 1910.120, including volunteers or casual laborers employed during a response who are subject to those standards pursuant to 40 CFR 311.)</p> <p>(NOTE: See checklist item PO.40.5.US for information on who is required to develop this plan and the contents of the plan.)</p> <p>Verify that each operator updates its response plan to address new or different operating conditions or information.</p> <p>Verify that each operator reviews its response plan in full at least every 5 yr from the date of the last submission or the last approval as follows:</p> <ul style="list-style-type: none"> <li>– for substantial harm plans, resubmit the response plans to OPS every 5 yr from the last submission date</li> <li>– for significant and substantial harm plans, resubmit every 5 yr from the last approval date.</li> </ul>

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<p><b>PO.40.11.US.</b> Operators with pipeline response plans are required identify and ensure the resource necessary to remove a worst case discharge and mitigate or prevent a substantial threat of a worst case discharge (49 CFR 194.115) [Added April 2005].</p>	<p>Verify that, if a new or different operating condition or information would substantially affect the implementation of a response plan, the operator immediately modifies its response plan to address such a change and, within 30 days of making such a change, submits the change to PHMSA.</p> <p>(NOTE: Examples of changes in operating conditions that would cause a significant change to an operator's response plan are:</p> <ul style="list-style-type: none"> <li>– an extension of the existing pipeline or construction of a new pipeline in a response zone not covered by the previously approved plan</li> <li>– relocation or replacement of the pipeline in a way that substantially affects the information included in the response plan, such as a change to the worst case discharge volume</li> <li>– the type of oil transported, if the type affects the required response resources, such as a change from crude oil to gasoline</li> <li>– the name of the oil spill removal organization</li> <li>– emergency response procedures</li> <li>– the qualified individual</li> <li>– a change in the NCP or an ACP that has significant impact on the equipment appropriate for response activities</li> <li>– any other information relating to circumstances that may affect full implementation of the plan.)</li> </ul> <p>(NOTE: If PHMSA determines that a change to a response plan does not meet the requirements of this part, PHMSA will notify the operator of any alleged deficiencies, and provide the operator an opportunity to respond, including an opportunity for an informal conference, to any proposed plan revisions and an opportunity to correct any deficiencies.)</p> <p>(NOTE: An operator who disagrees with a determination that proposed revisions to a plan are deficient may petition PHMSA for reconsideration, within 30 days from the date of receipt of PHMSA's notice. After considering all relevant material presented in writing or at the conference, PHMSA will notify the operator of its final decision. The operator must comply with the final decision within 30 days of issuance unless PHMSA allows additional time.)</p> <p>(NOTE: See checklist item PO.40.5.US for information on who is required to develop this plan and the contents of the plan.)</p> <p>Verify that each operator identifies and ensures, by contract or other approved means, the resources necessary to remove, to the maximum extent practicable, a worst case discharge and to mitigate or prevent a substantial threat of a worst case discharge.</p> <p>Verify that an operator identifies in the response plan the response resources which are available to respond within the time specified, after discovery of a worst case discharge, or to mitigate the substantial threat of such a discharge, as follows:</p>

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	<ul style="list-style-type: none"> <li>– high volume area: <ul style="list-style-type: none"> <li>– Tier 1, 6 h</li> <li>– Tier 2, 30 h</li> <li>– Tier 3, 54 h</li> </ul> </li> <li>– all other areas: <ul style="list-style-type: none"> <li>– Tier 1, 12 h</li> <li>– Tier 2, 36 h</li> <li>– Tier 3, 60 h.</li> </ul> </li> </ul>



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<p><b>PO.45</b></p> <p><b>SERVICE STATIONS</b></p> <p><b>PO.45.1.US.</b> Liquids at automotive service stations are required to be stored in approved closed containers not exceeding 60 gal capacity, in tanks underground, tanks in special enclosures, or in aboveground tanks that meet specific requirements (29 CFR 1910.106(g)(1)(i)(a) through 1910.106(g)(1)(i)(e), 1910.106(g)(1)(ii), and 1910.106(g)(1)(iii)) <b>[Revised April 2012]</b>.</p>	<p>Verify that, if aboveground tanks are located in an adjoining bulk plant, they are connected by piping to service station underground tanks if, in addition to valves at the aboveground tank, there is a valve also installed within the control of service station personnel.</p> <p>Verify that apparatus for dispensing Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100 °F [37.8 °C] into the fuel tanks of motor vehicles of the public is not located at a bulk plant unless it is separated by a fence or similar barrier from the area in which bulk operations are conducted.</p> <p>(NOTE: These requirements do not prohibit the dispensing of flammable liquids with a flashpoint below 100 °F [37.8 °C] in the open from a tank vehicle to a motor vehicle if:</p> <ul style="list-style-type: none"> <li>– the tank vehicle complies with the requirements in <i>Standard on Tank Vehicles for Flammable Liquids</i>, NFPA 385-1966</li> <li>– the dispensing is done on premises not open to the public</li> <li>– the dispensing hose does not exceed 50 ft in length</li> <li>– the dispensing nozzle is a listed automatic closing type without a latch open device.)</li> </ul> <p>Verify that, if tanks for flammable liquids are installed in enclosures because it is impractical due to property or building limitations to correctly install USTs (see 29 CFR 1910.106(b)(3)), the enclosure meets the following:</p> <ul style="list-style-type: none"> <li>– it is substantially liquid and vapor tight without backfill</li> <li>– sides, top, and bottom of the enclosure are of reinforced concrete at least 6-in. thick</li> <li>– openings for inspection are only on the top</li> <li>– tank connections are piped or closed so that neither vapors or liquid can escape into the enclosed space</li> <li>– means are provided so that portable equipment can be used to discharge to the outside any liquid or vapors that might accumulate if leakage occurs.</li> </ul> <p>Verify that no Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100 F [37.8 °C] are stored within any service station building except in closed containers of aggregate capacity not exceeding 60 gal.</p> <p>(NOTE: One container no exceeding 60 gal capacity equipped with an approved pump is permitted.).</p> <p>(NOTE: Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100 °F (37.8 °C), may be transferred from one container to</p>

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<p><b>PO.45.2.US.</b> Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100 °F (37.8 °C) at automotive service stations are required to not be stored or handled within a building having a basement or pit into which flammable vapors can travel unless certain parameters are met (29 CFR 1910.106(g)(1)(i)(f)) <b>[Revised April 2012]</b>.</p> <p><b>PO.45.3.US.</b> Dispensing of Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100 °F (37.8 °C) into portable containers is restricted at automotive service stations (29 CFR 1910.106(g)(1)(v)) <b>[Revised April 2012]</b>.</p> <p><b>PO.45.4.US.</b> Dispensing devices at automotive service stations are required to meet specific standards (29 CFR 1910.106(g)(3)(i) through 1910.106(g)(3)(iv) and 1910.106(g)(3)(vi)) <b>[Revised April 1995; Revised January 2012]</b>.</p>	<p>another in lubrication or service rooms of a service station building provided the electrical installation complies with 29 CFR 1910.106, Table H-19 and any heating equipment complies 29 CFR 1910.106(g)(6).)</p> <p>(NOTE: Category 3 flammable liquids with a flashpoint at or above 100 °F (37.8 °C) and Category 4 flammable liquids may be stored and dispensed inside service station buildings from tanks of not more than 120 gal capacity each.)</p> <p>Verify that Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100 °F (37.8 °C) are not stored or handled in a building with a basement or pit into which flammable vapors can travel unless the area is provided with adequate ventilation.</p> <p>Verify that Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100 °F (37.8 °C) are not dispensed into portable containers at automotive service stations unless the container is constructed of metal, has a tight closure with screwed or spring cover, and is fitted with a spout or designed to prevent spilling during pouring.</p> <p>Verify that dispensing systems are located so that all parts of the vehicle being served are located on the premises of the station.</p> <p>Verify that, if the dispensing unit is located inside a building, the following are met:</p> <ul style="list-style-type: none"> <li>– the dispensing area is separated from other areas in an approved manner</li> <li>– the dispensing unit and its piping are mounted either on a concrete island or protected against collision damage and is located in a position where it cannot be struck by a vehicle descending a ramp or other slope out of control</li> <li>– the dispensing area has an approved mechanical or gravity ventilation system.</li> </ul>

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	<p>(NOTE: When indoor dispensing units are below grade, only approved mechanical ventilation can be used, and the entire dispensing area must be protected by an approved automatic sprinkler system.)</p> <p>Verify that if the dispensing unit is located inside, ventilating systems are electronically interlocked with gasoline dispensing units so that the dispensing unit cannot be operated unless the ventilating fan motors are energized.</p> <p>Verify that all dispensing units are equipped with a clearly identified and easily accessible switch or circuit breaker at a location remote from the dispensing devices, including remote pumping systems, to shut off power in case of an emergency.</p> <p>Verify that Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100 °F (37.8 °C), are transferred from tanks by means of fixed pumps so designed and equipped as to allow control of the flow and to prevent leakage or accidental discharge.</p> <p>Verify that only listed devices are used for dispensing Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100 °F (37.8 °C) and no such device is used if it shows evidence of having been dismantled.</p> <p>Verify that every dispensing device for Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100 °F (37.8 °C), installed after 31 December 1978, contains evidence of listing placed so that any attempt to dismantle the device will result in damage to the evidence, visible without disassembly or dismounting of the nozzle.</p> <p>Verify that Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100 °F (37.8 °C), are not dispensed by pressure from drums, barrels, and similar containers.</p> <p>Verify that approved pumps taking suction through the top of the container or approved self-closing faucets are used.</p> <p>Verify that the dispensing units, except those attached to containers, are mounted on either a concrete island or protected against collision damage by suitable means.</p> <p>Verify that a listed manual or automatic-closing type hose nozzle valve is provided on dispensers used for the dispensing of Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100 °F (37.8 °C).</p> <p>Verify that manual-closing type valves are held open manually during dispensing.</p> <p>(NOTE: Automatic-closing type valves may be used in conjunction with approved latch-open devices.)</p>

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<b>PO.45.5.US.</b> Remote pumping systems for automotive service stations are required to meet additional requirements (29 CFR 1910.106(g)(3)(v)) [Added April 2012].	<p>(NOTE: This checklist item applies to systems for dispensing Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100 °F (37.8 °C), where such liquids are transferred from storage to individual or multiple dispensing units by pumps located elsewhere than at the dispensing units.)</p> <p>Verify that pumps are designed or equipped so that no part of the system will be subjected to pressures above its allowable working pressure.</p> <p>Verify that pumps installed above grade, outside of buildings, are located not less than 10 ft from lines of adjoining property which may be built upon, and not less than 5 ft from any building opening.</p> <p>(NOTE: When an outside pump location is impractical, pumps may be installed inside of buildings, as provided for dispensers in 29 CFR 1910.106(g)(3)(ii) (see checklist item PM.45.4.US) or in pits as described in this checklist item.)</p> <p>Verify that pumps are substantially anchored and protected against physical damage by vehicles.</p> <p>Verify that pits for subsurface pumps or piping manifolds of submersible pumps can withstand the external forces to which they may be subjected without damage to the pump, tank, or piping.</p> <p>Verify that the pit is no larger than necessary for inspection and maintenance and is provided with a fitted cover.</p> <p>Verify that a control is provided that permits the pump to operate only when a dispensing nozzle is removed from its bracket on the dispensing unit and the switch on this dispensing unit is manually actuated.</p> <p>(NOTE: This control will also stop the pump when all nozzles have been returned to their brackets.)</p> <p>Verify that an approved impact valve, incorporating a fusible link, designed to close automatically in the event of severe impact or fire exposure is properly installed in the dispensing supply line at the base of each individual dispensing device.</p> <p>Verify that, after the completion of the installation, including any paving, that section of the pressure piping system between the pump discharge and the connection for the dispensing facility is tested for at least 30 min at the maximum operating pressure of the system and these tests are repeated at 5-year intervals thereafter.</p>
<b>PO.45.6.US.</b> Automotive service stations must provide for drainage and waste disposal (29 CFR	<p>Verify that provisions are made in the area where Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100 °F (37.8 °C), are dispensed to prevent spilled liquids from flowing into the interior of service station buildings.</p>

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<p>1910.106(g)(7)) [Added April 2012].</p> <p><b>PO.45.7.US.</b> Marine service stations must meet specific requirements (29 CFR 1910.106(g)(4)) [Added April 2012].</p>	<p>(NOTE: This provision may be by grading driveways, raising door sills, or other equally effective means.)</p> <p>Verify that crankcase drainings and flammable liquids are not dumped into sewers but are stored in tanks or drums outside of any building until removed from the premises.</p> <p>Verify that the dispensing area is located away from other structures so as to provide room for safe ingress and egress of craft to be fueled.</p> <p>Verify that dispensing units are all at least 20 ft from any activity involving fixed sources of ignition.</p> <p>Verify that dispensing is by approved dispensing units with or without integral Pumps.</p> <p>(NOTE: Dispensing may be located on open piers, wharves, or floating docks or on shore or on piers of the solid fill type.)</p> <p>Verify that dispensing nozzles are automatic-closing without a hold-open latch.</p> <p>Verify that tanks, and pumps not integral with the dispensing unit, are on shore or on a pier of the solid fill type, except as follows:</p> <ul style="list-style-type: none"> <li>– where shore location would require excessively long supply lines to dispensers, tanks may be installed on a pier provided that applicable requirements relative to spacing, diking, and piping are complied with and the quantity stored does not exceed 1,100 gal aggregate capacity</li> <li>– shore tanks supplying marine service stations may be located above ground, where rock ledges or high water table make underground tanks impractical.</li> </ul> <p>Verify that, where tanks are at an elevation which would produce gravity head on the dispensing unit, the tank outlet is equipped with a pressure control valve positioned adjacent to and outside the tank block valve and adjusted so that liquid cannot flow by gravity from the tank in case of piping or hose failure.</p> <p>Verify that piping between shore tanks and dispensing units is as described in 29 CFR 1910.106(c) (see text) except that, where dispensing is from a floating structure, suitable lengths of oil-resistant flexible hose may be employed between the shore piping and the piping on the floating structure as made necessary by change in water level or shoreline.</p> <p>Verify that a readily accessible valve to shut off the supply from shore is provided in each pipeline at or near the approach to the pier and at the shore end of each pipeline adjacent to the point where flexible hose is attached.</p>

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	Verify that piping handling Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100 °F [37.8 °C] are grounded to control stray currents.

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<p><b>PO.50</b></p> <p><b>TRANSFER TERMINALS</b></p> <p><b>PO.50.1.US.</b> Facilities that can transfer oil or hazardous materials, in bulk, to or from a vessel with a capacity of 250 bbl [10,500 gal] or more are required to develop an operations manual to aid in the prevention of spills and discharges (33 CFR 154.100 and 154.300).</p> <p><b>PO.50.2.US.</b> Reception facilities for an oil loading port or terminal that loads a daily average of more than 1000 metric tons (1100 short tons) of oil other than crude oil or bunker oil to oceangoing tankers must have the capacity to receive specific types of waste (33 CFR 158.220).</p> <p><b>PO.50.3.US.</b> Reception facilities other than those in 33 CFR 158.220 (see checklist</p>	<p>Determine if the facility can transfer oil or hazardous materials, in bulk, to or from a vessel with a capacity of 250 bbl [10,500 gal] or more.</p> <p>Verify that there is an operating manual that describes:</p> <ul style="list-style-type: none"> <li>– how the facility is meeting the regulatory requirements for operations, including spill prevention</li> <li>– responsibilities of personnel</li> <li>– translations into additional languages as needed.</li> </ul> <p>Verify that a letter of adequacy has been received from the Coast Guard indicating the manual is sufficient.</p> <p>(NOTE: This also applies to each mobile facility that is used, or intended to be used to transfer oil or hazardous material, in bulk, to or from a vessel with a capacity of 250 bbl [10,500 gal] or more.)</p> <p>(NOTE: This requirement does not apply to transfer facilities in caretaker status.)</p> <p>Determine if the installation operates a reception facility for an oil loading port or terminal that loads a daily average of more than 1000 metric tons (1100 short tons) or oil other than crude oil or bunker oil to oceangoing tankers.</p> <p>Verify that the reception facility has the capacity to receive the following:</p> <ul style="list-style-type: none"> <li>– sludges from on-board fuel and lubricating oil processing in the amount of 10 metric tons (11 short tons)</li> <li>– oily bilge water in the amount of 10 metric tons (11 short tons) or 2 metric tons (2.2 short tons) multiplied by the daily vessel average, whichever quantity is greater</li> <li>– oily ballast in the amount of 30 percent of the deadweight tonnage of the largest of oceangoing tankers loading oil other than crude oil or bunker oil, at the port or terminal, that do not have an appropriate clean ballast tank or an appropriate segregated ballast tank multiplied by one or the daily vessel average, whichever quantity is greater</li> <li>– cargo residue in the amount of 0.2 percent of the total cargo capacity of the largest of the oceangoing tankers loading oil other than crude oil or bunker oil, at the port or terminal, multiplied by one or the daily vessel average, whichever quantity is greater.</li> </ul> <p>Verify that the reception facility has the capacity for receiving the following:</p>

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<p>item PO.50.2.US.) and other than ship repair yards, ports and terminal loading crude oil and those used exclusively by nonself-propelled tank barges are required to have specific types of reception facilities (33 CFR 158.230).</p> <p><b>PO.50.4.US.</b> A fixed facility that is capable of transferring oil in bulk, to or from a vessel with a capacity of 250 bbl [10,500 gal] or more is required to have an operations manual (33 CFR 154.100(a) and 154.300 through 154.325).</p>	<ul style="list-style-type: none"> <li>– sludge from on-board fuel and lubricating oil processing in the amount of 10 metric tons (11 short tons) or 1 metric ton (1.1 short tons) multiplied by the daily vessel average, whichever is greater</li> <li>– oil ballast water in the amount of 10 metric tons (11 short tons) or 2 metric tons (2.2 short tons) multiplied by the daily vessel average, whichever quantity is greater.</li> </ul> <p>Determine if the facility is capable of transferring oil in bulk, to or from a vessel with a capacity of 250 bbl [10,500 gal] or more.</p> <p>Verify that the facility has an operations manual that:</p> <ul style="list-style-type: none"> <li>– describes how the facility is meeting applicable operating and equipment requirements</li> <li>– describes the responsibilities of personnel in conducting transfer operations</li> <li>– includes translations into a language or languages understood by all designated persons in charge of transfer operations employed by the facility.</li> </ul> <p>Verify that the manual is current and readily available for examination by the Captain of the Port (COTP).</p> <p>Verify that a sufficient number of copies of the manual are readily available for facility personnel in charge while conducting a transfer operation.</p> <p>Verify that the manual contains the following specific information:</p> <ul style="list-style-type: none"> <li>– the geographic location of the facility</li> <li>– a physical description of the facility including a plan of the facility showing mooring areas, transfer locations, control stations, and locations of safety equipment</li> <li>– the hours of operation</li> <li>– the sizes, types, and number of vessels that the facility can transfer oil to or from simultaneously</li> <li>– the following cargo information: <ul style="list-style-type: none"> <li>– generic or chemical name</li> <li>– a description of the appearance of the cargo</li> <li>– the hazards involved in handling the cargo</li> <li>– instruction for safe handling</li> <li>– procedures to follow in the event of a spill or leak</li> <li>– a list of fire fighting procedures and extinguishing agents effective with fires involving the cargo</li> </ul> </li> <li>– the minimum number of persons on duty during transfer operations</li> <li>– the names and telephone numbers of the facility, Coast Guard, and other personnel who may be called in an emergency</li> <li>– the duties of the watchman for unmanned vessels moored at the facility</li> </ul>

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<p><b>PO.50.5.US.</b> Equipment used at a fixed facility that is capable of transferring oil in bulk, to or from a vessel with a capacity of 250 bbl [10,500 gal] or more is required to meet specific standards in order to prevent environmental pollution (33 CFR 154.100(a) and 154.500 through 154.510).</p> <p><b>PO.50.6.US.</b> A fixed facility that is capable of transferring oil in bulk, to or from a vessel with a capacity of 250 bbl [10,500 gal] or more is required to have discharge containment equipment and means to remove spilled</p>	<ul style="list-style-type: none"> <li>– a description of the required communication systems</li> <li>– the location and facilities of each personnel shelter</li> <li>– a description and instructions for the use of drip and discharge collection and vessel slop reception facilities</li> <li>– a description and location of each emergency shutdown system</li> <li>– quantities, types, and locations of monitoring devices, fire extinguishing equipment, containment equipment</li> <li>– quantities, type, location, instruction for use, and time limits for gaining access to containment equipment</li> <li>– maximum relief valve settings.</li> </ul> <p>Verify that the following procedures are outlined in the manual:</p> <ul style="list-style-type: none"> <li>– transferring oil</li> <li>– operating each loading arm</li> <li>– completion of pumping</li> <li>– emergencies</li> <li>– reporting and initial containment of oil discharges.</li> </ul> <p>Verify that the manual contains a brief summary of applicable Federal, state, and local oil pollution laws and regulations and a description of the training program for persons in charge.</p> <p>Verify that the manual has a letter of adequacy from the COTP.</p> <p>Verify that each hose used to transfer fuel to a vessel that has a fill pipe for which containment cannot practically be provided, is equipped with an automatic back pressure shutoff nozzle.</p> <p>Verify that each mechanical loading arm used for transferring oil has a means of being drained or closed before being disconnected after transfer operations are complete.</p> <p>Verify that fixed catchments, curbing, or other fixed means are in place to contain oil discharge in at least:</p> <ul style="list-style-type: none"> <li>– each hose connection manifold area</li> <li>– each hose handling and loading arm area (that area on that facility that is within the area traversed by the free end of the hose or loading arm when moved away from its normal stowed or idle position into a position for connection.</li> </ul>

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materials (33 CFR 154.100(a) and 154.530 through 154.550).	<p>Verify that the fixed catchments, curbing or other fixed means have a capacity of at least:</p> <ul style="list-style-type: none"> <li>– 2 bbl [84 gal] if it serves one or more hoses of 6 in. inside diameter or smaller, or loading arms of 6 in. nominal pipe size diameter or smaller</li> <li>– 3 bbl [126 gal] if it serves one or more hoses with an inside diameter of more than 6 in. but less than 12 in., or loading arms with nominal pipe size diameter of more than 6 in. but less than 12 in.</li> <li>– 4 bbl [168 gal] if it serves one or more hoses of 12 in. inside diameter or larger, or loading arms of 12 in. nominal pipe size diameter or larger.</li> </ul> <p>(NOTE: The requirement for 2 bbl [84 gal] capacity may be met by using portable means of not less than 1/2 bbl [21 gal] capacity for part or all of the facility if the COTP has found that fixed means to contain oil discharges are not feasible.)</p> <p>Verify that the facility has a means to safely and quickly remove discharged oil from the containment area without discharging the oil into the water.</p> <p>Verify that the facility has ready access to enough containment material and equipment to contain any oil discharged on the water from the operations of that facility.</p>

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<p><b>PO.55</b></p> <p><b>POL LOADING AND UNLOADING</b></p> <p><b>PO.55.1.US.</b> Onshore tank car and tank truck loading/unloading racks are required to meet specific structural standards (40 CFR 112.1(b), 112.1(d), and 112.7(h) [Revised October 1998; Revised July 2002; Revised January 2009; Revised January 2010].</p> <p><b>PO.55.2.US.</b> This checklist item has been deleted [Deleted July 2002].</p> <p><b>PO.55.3.US.</b> As of 20 June 1994, inland oil barges must have appropriate equipment and supplies ready during transfer operations for immediate use to control and remove on-deck oil cargo spills of at least 1 bbl [42 gal] (33 CFR 155.215).</p> <p><b>PO.55.4.US.</b> Transfer operations are required to be done according to specific parameters (33 CFR 156.100</p>	<p>(NOTE: See the first NOTE and the last NOTE in PO.5.1.US for information on applicability and exemptions.)</p> <p>Verify that where onshore facility tank car and tank truck loading/unloading rack (excluding offshore facilities) drainage does not flow into a catchment basin or treatment facility designed to handle discharges, a quick drainage system is used for tank car or tank truck loading and unloading areas.</p> <p>Verify that any containment system is designed to hold at least the maximum capacity of any single compartment of a tank car or tank truck loaded or unloaded at the facility.</p> <p>Verify that there is an interlocked warning light or physical barrier system, warning signs, wheel chocks, or vehicle break interlock system in the area adjacent to a loading/unloading rack to prevent vehicles from departing before complete disconnection of flexible or fixed oil transfer lines.</p> <p>Verify that, prior to filling and departure of any tank car or tank truck, the lowermost drain and all outlets of such vehicles are closely inspected, and if necessary, they are tightened, adjusted, or replaced to prevent liquid discharge while in transit.</p> <p>(NOTE: The July 2002 revision of 40 CFR 112 resulted in the deletion of this checklist item.)</p> <p>Verify that the equipment consists of:</p> <ul style="list-style-type: none"> <li>– sorbents</li> <li>– nonsparking hand scoops, shovels, and buckets</li> <li>– containers suitable for holding recovered waste</li> <li>– emulsifiers for deck cleaning</li> <li>– protective clothing.</li> </ul> <p>(NOTE: The oil barge owner or operator may rely on equipment available at the transfer facility receiving from or discharging to the barge if the use of the equipment has been prearranged by contract or other methods approved by the Coast Guard.)</p> <p>Verify that transfer operations are not conducted unless:</p> <ul style="list-style-type: none"> <li>– the moorings are strong enough to hold during expected conditions and long enough to allow for adjustments</li> </ul>

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<p>and 156.120) [Revised January 2003].</p> <p><b>PO.55.5.US.</b> In specific cases of discharges, transfer operations of oil must be stopped (33 CFR 156.100 and 156.125).</p> <p><b>PO.55.6.US.</b> Oil must not be transferred unless the declaration of inspection form has been filled out and signed (33 CFR 156.100 and 156.150).</p>	<ul style="list-style-type: none"> <li>– transfer hoses and loading arms are long enough to allow the vessel to move without straining hoses</li> <li>– each hose is supported to prevent kinks or other damage to the hose and strain on its coupling</li> <li>– each part of the transfer system is aligned to allow the flow of oil</li> <li>– parts of the transfer system not needed for the transfer are shutoff or securely blanked</li> <li>– the end of each hose and loading arm that is not connected for the transfer is blanked off</li> <li>– the transfer system is attached to a fixed connection on the vessel and the facility except that when a vessel is receiving fuel, an automatic back pressure shut off nozzle may be used</li> <li>– each overboard discharge or sea suction valve that is connected to the vessel's transfer or cargo tank system is sealed or lashed in the closed positions, except when in use</li> <li>– transfer hoses have no unrepaired loose covers, kinks, bulges, soft spots, or any other defect that would permit the discharge of material</li> <li>– discharge containment equipment is readily accessible</li> <li>– drains and scuppers are closed by mechanical means</li> <li>– connections in the transfer system are leak free.</li> <li>– each tank level or pressure monitoring device required under 33 CFR 155.490 (see checklist item PO.25.7.US) is activated and monitored whenever the tank is not actively being subjected to cargo operations.</li> </ul> <p>(NOTE: These requirements apply to the transfer of oil on the navigable waters or contiguous zone of the United States to, from, or within each vessel with a capacity of 250 bbl [10,500 gal] or more.)</p> <p>Verify that transfer operations of oil are stopped when there is a discharge:</p> <ul style="list-style-type: none"> <li>– in the transfer operation work area</li> <li>– into the water or upon adjacent shoreline in the transfer area.</li> </ul> <p>Verify that prior to restarting the transfer, the discharge is contained and cleaned up.</p> <p>(NOTE: These requirements apply to the transfer of oil on the navigable waters or contiguous zone of the United States to, from, or within each vessel with a capacity of 250 bbl [10,500 gal] or more.)</p> <p>Verify that this form has been signed prior to transfer.</p> <p>Verify that a copy of the form is retained on board the vessel or at the facility for at least 1 mo from the date of signature.</p>

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	(NOTE: These requirements apply to the transfer of oil or hazardous materials on the navigable waters or contiguous zone of the United States to, from, or within each vessel with a capacity of 250 bbl [10,500 gal] or more.)



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<p><b>PO.60</b></p> <p><b>USED OIL</b></p> <p><b>PO.60.1.US.</b> Depending on the constituents of the used oil, (see Appendix 8-3), facilities are required to handle used oil as a hazardous waste or according to specific used oil requirements (40 CFR 279.10 and 279.81) <b>[Revised March 2000]</b>.</p> <p><b>PO.60.2.US.</b> Used oil cannot be managed in surface impoundments or waste piles unless specific parameters are met (40 CFR 279.12(a)) <b>[Added March 2000]</b>.</p>	<p>Determine which types of the used oils listed in Appendix 8-3 are generated.</p> <p>Verify that used oil is handled according to its classification as one of the following:</p> <ul style="list-style-type: none"> <li>– a hazardous waste</li> <li>– used oil that falls under the requirements of 40 CFR 279 (see checklist items PO.65.1.US. through PO.90.1.US.)</li> <li>– used oil that is not subject to the requirements of 40 CFR 279 and neither is the mixture a hazardous waste by either listing or characteristic.</li> </ul> <p>Verify that used oil is not managed in surface impoundments or waste piles unless the units are subject to regulation under 40 CFR 264 or 265.</p>



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<p><b>PO.65</b></p> <p><b>USED OIL GENERATORS</b></p> <p><b>PO.65.1.US.</b> Used oil generators that detect a release (other than a UST release) after the effective date of the recycled used oil management program in effect in the State in which the release is located, must meet specific requirements (40 CFR 279.20(a) and 279.22(d)) [Revised June 1998; Reviewed March 2000].</p> <p><b>PO.65.2.US.</b> Generators are allowed to burn used oil in used oil-fired space heaters if specific parameters are met (40 CFR 279.20(a) and 279.23) [Reviewed March 2000].</p>	<p>Verify that, when a release is detected, the following is done:</p> <ul style="list-style-type: none"> <li>– stop the release</li> <li>– contain the released used oil</li> <li>– clean up and manage properly the released used oil and other materials</li> <li>– repair or replace any leaking used oil storage containers or tanks prior to returning them to service.</li> </ul> <p>(NOTE: Release reporting requirements are outlined in 40 CFR 110.2 through 110.12, see checklist item PO.15.1.US.)</p> <p>(NOTE: The requirements for used oil generators do not apply to the following:</p> <ul style="list-style-type: none"> <li>– household Do-it-Yourselfer (DIY) used oil generators</li> <li>– vessels at sea or at port (it is considered generation when it is transported ashore)</li> <li>– mixtures of used oil and diesel fuel mixed by the generator of the used oil for use in the generator’s own vehicles (NOTE: Prior to mixing, the used oil fuel is subject to 40 CFR 279, Subpart C.)</li> <li>– farmers who generate an average of 25 gal/mo or less of used oil from vehicles or machinery used on the farm in a calendar year.)</li> </ul> <p>(NOTE: In relation to used oil coming ashore from vessels, the owner or operator of the vessel and the person removing or accepting used oil from the vessel are cogenerators of the used oil and are both responsible for managing the waste as used oil once it is ashore.)</p> <p>Determine if any used oil-fired space heaters are prepared.</p> <p>Verify that the following parameters are met:</p> <ul style="list-style-type: none"> <li>– the heater burns only used oil that the facility generates or used oil received from household DIY used oil generators</li> <li>– the heater is designed to have a maximum capacity of not more than 0.5 MBtu/h</li> <li>– the combustion gases from the heater are vented to the ambient air.</li> </ul> <p>(NOTE: The requirements for used oil generators do not apply to the following:</p> <ul style="list-style-type: none"> <li>– household Do-it-Yourselfer (DIY) used oil generators</li> <li>– vessels at sea or at port (it is considered generation when it is transported ashore)</li> </ul>

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<p><b>PO.65.3.US.</b> Except in specific circumstances, used oil generators must ensure that their used oil is transported only by transporters who have a USEPA identification number (40 CFR 279.20(a), 279.24(a) through 279.24(c)) [Revised March 2000; Citation Revised July 2018].</p>	<ul style="list-style-type: none"> <li>– mixtures of used oil and diesel fuel mixed by the generator of the used oil for use in the generator’s own vehicles (NOTE: Prior to mixing, the used oil fuel is subject to 40 CFR 279, Subpart C.)</li> <li>– farmers who generate an average of 25 gal/mo or less of used oil from vehicles or machinery used on the farm in a calendar year.)</li> </ul> <p>(NOTE: In relation to used oil coming ashore from vessels, the owner or operator of the vessel and the person removing or accepting used oil from the vessel are cogenerators of the used oil and are both responsible for managing the waste as used oil once it is ashore.)</p> <p>Determine who is transporting used oil.</p> <p>Verify that the generator is not transporting the used oil themselves, the transporter has an USEPA identification number.</p> <p>(NOTE: Used oil generators may arrange for used oil to be transported by a transporter without an USEPA identification number if the used oil is reclaimed under a contractual agreement and the reclaimed oil is returned to the generator for use as lubricant, cutting oil, or coolant, and the contract (or tolling agreement) contains the following:</p> <ul style="list-style-type: none"> <li>– the type of used oil and frequency of shipments</li> <li>– verification that the vehicle used for transportation is owned by the used oil processor/re-refiner</li> <li>– verification that reclaimed oil will be returned to the generator.)</li> </ul> <p>Verify that if the used oil generator is transporting the used oil themselves (without a USEPA identification number) to approved collection centers the following parameters are met:</p> <ul style="list-style-type: none"> <li>– the used oil is generated at the generators site or is used oil collected from household do-it-yourselfers</li> <li>– the transporting vehicles is owned by the generator or an employee of the generator</li> <li>– no more than 55 gal is transported at any time</li> <li>– the used oil collection center is registered, licensed, permitted, or recognized by a state/county/municipal government to manage use oil.</li> </ul> <p>Verify that if the used oil generator is transporting the used oil themselves (without a USEPA identification number) to aggregation points owned by the generator, the following parameters are met:</p> <ul style="list-style-type: none"> <li>– the transporting vehicle is owned by the generator or an employee of the generator</li> <li>– no more than 55 gal is transported at any time</li> <li>– the used oil is transported to an aggregation point that is owned and/or operated by the same generator</li> </ul>

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<p><b>PO.65.4.US.</b> Used oil generators are not allowed to mix hazardous waste with used oil unless specific parameters are met (40 CFR 279.20(a) and 279.21(a)) [Revised March 2000].</p>	<p>(NOTE: The requirements for used oil generators do not apply to the following:</p> <ul style="list-style-type: none"> <li>– household Do-it-Yourselfer (DIY) used oil generators</li> <li>– vessels at sea or at port (it is considered generation when it is transported ashore)</li> <li>– mixtures of used oil and diesel fuel mixed by the generator of the used oil for use in the generator's own vehicles (NOTE: Prior to mixing, the used oil fuel is subject to 40 CFR 279, Subpart C.)</li> <li>– farmers who generate an average of 25 gal/mo or less of used oil from vehicles or machinery used on the farm in a calendar year.)</li> </ul> <p>(NOTE: In relation to used oil coming ashore from vessels, the owner or operator of the vessel and the person removing or accepting used oil from the vessel are cogenerators of the used oil and are both responsible for managing the waste as used oil once it is ashore.)</p> <p>Verify that hazardous waste is not mixed with used oil unless:</p> <ul style="list-style-type: none"> <li>– the resulting mixture does not exhibit any characteristics of hazardous waste</li> <li>– the waste is hazardous solely because it exhibits the characteristic of ignitability and the mixture does not exhibit ignitability characteristic.</li> </ul> <p>(NOTE: If the used oil contains greater than or equal to 1,000 ppm total halogens, it is presumed to be a hazardous waste because it has been mixed with halogenated hazardous waste listed in subpart D of 40 CFR 261. Demonstrating that the used oil does not contain hazardous waste may rebut the presumption. The rebuttable presumption does not apply to metalworking oils/fluids containing chlorinated paraffins, if they are processed, through a tolling arrangement to reclaim metalworking oils/fluids. The presumption does apply to metalworking oils/fluids if such oils/fluids are recycled in any other manner, or disposed. The rebuttable presumption does not apply to used oils contaminated with chlorofluorocarbons (CFCs) removed from refrigeration units if the CFCs are destined for reclamation. The rebuttable presumption does apply to used oils contaminated with CFCs that have been mixed with used oil from sources other than refrigeration units.)</p> <p>(NOTE: The requirements for used oil generators do not apply to the following:</p> <ul style="list-style-type: none"> <li>– household Do-it-Yourselfer (DIY) used oil generators</li> <li>– vessels at sea or at port (it is considered generation when it is transported ashore)</li> <li>– mixtures of used oil and diesel fuel mixed by the generator of the used oil for use in the generator's own vehicles (NOTE: Prior to mixing, the used oil fuel is subject to 40 CFR 279, Subpart C.)</li> <li>– farmers who generate an average of 25 gal/mo or less of used oil from vehicles or machinery used on the farm in a calendar year.)</li> </ul> <p>(NOTE: In relation to used oil coming ashore from vessels, the owner or operator of the vessel and the person removing or accepting used oil from the vessel are</p>

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<p><b>PO.65.5.US.</b> Containers used to store used oil at used oil generators must be in good condition and not leaking (40 CFR 279.20(a) and 279.22(b)) <b>[Reviewed March 2000]</b>.</p>	<p>cogenerators of the used oil and are both responsible for managing the waste as used oil once it is ashore.)</p> <p>Verify that containers are not leaking, bulging, rusting, damaged, or dented.</p> <p>Verify that used oil is transferred to a new container or managed in another appropriate manner when necessary.</p> <p>(NOTE: The requirements for used oil generators do not apply to the following:</p> <ul style="list-style-type: none"> <li>– household Do-it-Yourselfer (DIY) used oil generators</li> <li>– vessels at sea or at port (it is considered generation when it is transported ashore)</li> <li>– mixtures of used oil and diesel fuel mixed by the generator of the used oil for use in the generator’s own vehicles (NOTE: Prior to mixing, the used oil fuel is subject to 40 CFR 279, Subpart C.)</li> <li>– farmers who generate an average of 25 gal/mo or less of used oil from vehicles or machinery used on the farm in a calendar year.)</li> </ul> <p>(NOTE: In relation to used oil coming ashore from vessels, the owner or operator of the vessel and the person removing or accepting used oil from the vessel are cogenerators of the used oil and are both responsible for managing the waste as used oil once it is ashore.)</p>
<p><b>PO.65.6.US.</b> The label USED OIL must be clearly marked on containers used to store used oil and fill pipes used to transfer used oil into underground storage facilities (40 CFR 279.20(a) and 279.22(c)) <b>[Reviewed March 2000]</b>.</p>	<p>Verify that containers and fill pipes used to transfer used oil are clearly marked with the phrase USED OIL.</p> <p>(NOTE: The requirements for used oil generators do not apply to the following:</p> <ul style="list-style-type: none"> <li>– household Do-it-Yourselfer (DIY) used oil generators</li> <li>– vessels at sea or at port (it is considered generation when it is transported ashore)</li> <li>– mixtures of used oil and diesel fuel mixed by the generator of the used oil for use in the generator’s own vehicles (NOTE: Prior to mixing, the used oil fuel is subject to 40 CFR 279, Subpart C.)</li> <li>– farmers who generate an average of 25 gal/mo or less of used oil from vehicles or machinery used on the farm in a calendar year.)</li> </ul> <p>(NOTE: In relation to used oil coming ashore from vessels, the owner or operator of the vessel and the person removing or accepting used oil from the vessel are cogenerators of the used oil and are both responsible for managing the waste as used oil once it is ashore.)</p>
<p><b>PO.65.7.US.</b> Checklist item deleted <b>[Deleted October 2011]</b>.</p>	<p>(NOTE: To document inadequate management practices (MP) for used oil containers use checklist item number PO.2.1.US.)</p>
<p><b>PO.65.8.US.</b> Depending on their operations, used oil</p>	<p>Verify that used oil generators who transport used oil, except under the self-transport provisions of 40 CFR. 279.24 (see checklist item PO.65.3.US.), also</p>

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<p>generators are required to also meet the standards for transporters (40 CFR 279.20(a) and 279.20(b)(1)) [Added March 2000].</p> <p><b>PO.65.9.US.</b> Depending on their operations, used oil generators are required to also meet the standards for processors and re-refiners (40 CFR 279.20(a) and 279.20(b)(2)) [Added March 2000].</p>	<p>comply with 40 CFR 279.40 through 40 CFR 279.47 (see checklist items PO.75.1.US. through PO.75.9.US.).</p> <p>(NOTE: The requirements for used oil generators do not apply to the following:</p> <ul style="list-style-type: none"> <li>– household Do-it-Yourselfer (DIY) used oil generators</li> <li>– vessels at sea or at port (it is considered generation when it is transported ashore)</li> <li>– mixtures of used oil and diesel fuel mixed by the generator of the used oil for use in the generator's own vehicles (NOTE: Prior to mixing, the used oil fuel is subject to 40 CFR 279, Subpart C.)</li> <li>– farmers who generate an average of 25 gal/mo or less of used oil from vehicles or machinery used on the farm in a calendar year.)</li> </ul> <p>(NOTE: In relation to used oil coming ashore from vessels, the owner or operator of the vessel and the person removing or accepting used oil from the vessel are cogenerators of the used oil and are both responsible for managing the waste as used oil once it is ashore.)</p> <p>Verify that used oil generators who process or re-refine used oil also comply with 40 CFR 279.50 through 40 CFR 279.59 (see checklist items PO.87.1.US. through PO.87.16.US.).</p> <p>(NOTE: Used oil generators who perform the following activities are not processors provided that the used oil is generated onsite and is not being sent off-site to a burner of on- or off-specification used oil fuel:</p> <ul style="list-style-type: none"> <li>– filtering, cleaning, or otherwise reconditioning used oil before returning it for reuse by the generator</li> <li>– separating used oil from wastewater generated onsite to make the wastewater acceptable for discharge or reuse pursuant to section 402 or section 307(b) of the Clean Water Act or other applicable federal or state regulations governing the management or discharge of wastewaters</li> <li>– using oil mist collectors to remove small droplets of used oil from in-plant air to make plant air suitable for continued recirculation</li> <li>– draining or otherwise removing used oil from materials containing or otherwise contaminated with used oil in order to remove excessive oil to the extent possible</li> <li>– filtering, separating or otherwise reconditioning used oil before burning it in a space heater (see checklist item PO.65.2.US. for details of 40 CFR 279.23.)</li> </ul> <p>(NOTE: The requirements for used oil generators do not apply to the following:</p> <ul style="list-style-type: none"> <li>– household Do-it-Yourselfer (DIY) used oil generators</li> <li>– vessels at sea or at port (it is considered generation when it is transported ashore)</li> <li>– mixtures of used oil and diesel fuel mixed by the generator of the used oil for use in the generator's own vehicles (NOTE: Prior to mixing, the used oil fuel is subject to 40 CFR 279, Subpart C.)</li> </ul>

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<p><b>PO.65.10.US.</b> Depending on their operations, used oil generators are required to also meet the standards for used oil burners (40 CFR 279.20(a) and 279.20(b)(3)) <b>[Added March 2000]</b>.</p>	<p>– farmers who generate an average of 25 gal/mo or less of used oil from vehicles or machinery used on the farm in a calendar year.)</p> <p>(NOTE: In relation to used oil coming ashore from vessels, the owner or operator of the vessel and the person removing or accepting used oil from the vessel are cogenerators of the used oil and are both responsible for managing the waste as used oil once it is ashore.)</p> <p>Verify that used oil generators who burn off-specification used oil for energy recovery, except under the onsite space heater provisions of 40 CFR 279.23 (see checklist item PO.65.2.US.), comply with 40 CFR 279.60 through 40 CFR 279.67 (see checklist items PO.80.2.US. through PO.80.12.US.).</p> <p>(NOTE: The requirements for used oil generators do not apply to the following:</p> <ul style="list-style-type: none"> <li>– household Do-it-Yourselfer (DIY) used oil generators</li> <li>– vessels at sea or at port (it is considered generation when it is transported ashore)</li> <li>– mixtures of used oil and diesel fuel mixed by the generator of the used oil for use in the generator’s own vehicles (NOTE: Prior to mixing, the used oil fuel is subject to 40 CFR 279, Subpart C.)</li> <li>– farmers who generate an average of 25 gal/mo or less of used oil from vehicles or machinery used on the farm in a calendar year.)</li> </ul> <p>(NOTE: In relation to used oil coming ashore from vessels, the owner or operator of the vessel and the person removing or accepting used oil from the vessel are cogenerators of the used oil and are both responsible for managing the waste as used oil once it is ashore.)</p>
<p><b>PO.65.11.US.</b> Depending on their operations, used oil generators are required to also meet the standards for marketers (40 CFR 279.20(a) and 279.20(b)(4)) <b>[Added March 2000]</b>.</p>	<p>Verify that generators who direct shipments of off-specification used oil from their facility to a used oil burner, or first claim that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in 40 CFR 279.11 (see Appendix 8-3 of this document), also complies with 40 CFR 279.70 through 279.75 (see checklist items PO.85.1.US. through PO.85.9.US.).</p> <p>(NOTE: The requirements for used oil generators do not apply to the following:</p> <ul style="list-style-type: none"> <li>– household Do-it-Yourselfer (DIY) used oil generators</li> <li>– vessels at sea or at port (it is considered generation when it is transported ashore)</li> <li>– mixtures of used oil and diesel fuel mixed by the generator of the used oil for use in the generator’s own vehicles (NOTE: Prior to mixing, the used oil fuel is subject to 40 CFR 279, Subpart C.)</li> <li>– farmers who generate an average of 25 gal/mo or less of used oil from vehicles or machinery used on the farm in a calendar year.)</li> </ul> <p>(NOTE: In relation to used oil coming ashore from vessels, the owner or operator of the vessel and the person removing or accepting used oil from the vessel are</p>

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<p><b>PO.65.12.US.</b> Depending on their operations, used oil generators are required to also meet the standards for used oil disposers (40 CFR 279.20(a) and 279.20(b)(5)) <b>[Added March 2000]</b>.</p> <p><b>PO.65.13.US.</b> Used oil generators must retain certain records (40 CFR 279.74(b) and 279.74(c)) <b>[Added October 2003]</b>.</p>	<p>cogenerators of the used oil and are both responsible for managing the waste as used oil once it is ashore.)</p> <p>Verify that used oil generators who dispose of used oil, including the use of used oil as a dust suppressant, must also comply with 40 CFR 279.80 through 279.82 (see checklist items PO.60.1.US. and PO.90.1.US.).</p> <p>(NOTE: The requirements for used oil generators do not apply to the following:</p> <ul style="list-style-type: none"> <li>– household Do-it-Yourselfer (DIY) used oil generators</li> <li>– vessels at sea or at port (it is considered generation when it is transported ashore)</li> <li>– mixtures of used oil and diesel fuel mixed by the generator of the used oil for use in the generator’s own vehicles (NOTE: Prior to mixing, the used oil fuel is subject to 40 CFR 279, Subpart C.)</li> <li>– farmers who generate an average of 25 gal/mo or less of used oil from vehicles or machinery used on the farm in a calendar year.)</li> </ul> <p>(NOTE: In relation to used oil coming ashore from vessels, the owner or operator of the vessel and the person removing or accepting used oil from the vessel are cogenerators of the used oil and are both responsible for managing the waste as used oil once it is ashore.)</p> <p>Verify that a generator who first claims that used oil that is to be burned for energy recovery meets the fuel specifications under 40 CFR 279.11 (see Appendix 8-3) keeps a record of each shipment of used oil to the facility to which it delivers the used oil.</p> <p>Verify that records for each shipment include the following information:</p> <ul style="list-style-type: none"> <li>– the name and address of the facility receiving the shipment</li> <li>– the quantity of used oil fuel delivered</li> <li>– the date of shipment or delivery</li> <li>– a cross-reference to the record of used oil analysis or other information used to make the determination that the oil meets the specification as required under 40 CFR 279.72(a) (see checklist item PO.85.2.US).</li> </ul> <p>Verify that records are maintained for 3 yr.</p>



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<p><b>PO.70</b></p> <p><b>USED OIL COLLECTION CENTERS AND AGGREGATION POINTS</b></p> <p><b>PO.70.1.US.</b> Do-it-yourselfer (DIY) used oil collection centers are required to meet the same standards as used oil generators (40 CFR 279.30) [Reviewed March 2000].</p> <p><b>PO.70.2.US.</b> Used oil collection centers are required to be licensed/permitted and operated according to specific standards (40 CFR 279.31) [Reviewed March 2000].</p> <p><b>PO.70.3.US.</b> Used oil aggregation points must be operated according to the standards for used oil generators (40 CFR 279.32) [Reviewed March 2000].</p>	<p>Verify that DIY used oil collection centers meet the requirements outlined in the section titled Used Oil Generators.</p> <p>Determine if there is a used oil collection center.</p> <p>Verify that the collection center meets the requirements for used oil generators outlined in the section titled Used Oil Generators.</p> <p>Verify that the collection center is registered/licensed/permitted/ recognized by a state/county/ municipal government to manage used oil.</p> <p>Verify that the used oil aggregation point is operated according to the standards outlined in the section titled Used Oil Generators.</p>



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<b>PO.75</b>  <b>USED OIL TRANSPORTATION</b>  <b>PO.75.1.US.</b> Transporters who put used oil in a truck that has previously transported hazardous waste without emptying and cleaning the truck are required to transport and handle the used oil as a hazardous waste (40 CFR 279.40(c)) [Revised March 2000].  <b>PO.75.2.US.</b> Used oil transporters can consolidate or aggregate loads of used oil in specific situations (40 CFR 279.41) [Revised March 2000].  <b>PO.75.3.US.</b> Used oil transporters are required to	<p>Verify that used oil contaminated with hazardous waste is transported as a hazardous waste unless the mixture is otherwise determined not to exhibit any hazardous characteristics.</p> <p>(NOTE: These requirements concerning transportation and transfer of used oil do not apply to the following:</p> <ul style="list-style-type: none"> <li>– onsite transportation</li> <li>– generators who transport shipments of used oil totaling 55 gal or less from the generator to a used oil collection center</li> <li>– generators who transport shipments of used oil totaling 55 gal or less from the generator to a used oil aggregation point owned by the generator</li> <li>– transportation of used oil generated by household DIYs from the initial generator to a regulated generator, collection center, aggregation point, processor/ refiner, or burner.)</li> </ul> <p>Determine if the transporter consolidates or aggregates loads of used oil for purposes of transportation.</p> <p>Verify that transporters conduct only incidental processing operations such as settling and water separation, unless they also comply with the requirements for processors and re-refiners (see checklist items PO.87.1.US. through PO.87.16.US.).</p> <p>(NOTE: Transporters of used oil that is removed from oil bearing electrical transformers and turbines and filtered by the transporter or at a transfer facility prior to being returned to its original use are not subject to the processor/re-refiner requirements.)</p> <p>(NOTE: These requirements concerning transportation and transfer of used oil do not apply to the following:</p> <ul style="list-style-type: none"> <li>– onsite transportation</li> <li>– generators who transport shipments of used oil totaling 55 gal or less from the generator to a used oil collection center</li> <li>– generators who transport shipments of used oil totaling 55 gal or less from the generator to a used oil aggregation point owned by the generator</li> <li>– transportation of used oil generated by household DIYs from the initial generator to a regulated generator, collection center, aggregation point, processor/ refiner, or burner.)</li> </ul> <p>Verify that the used oil transporter has an USEPA identification number.</p>

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<p>have an USEPA identification number (40 CFR 279.42) [Revised March 2000].</p> <p><b>PO.75.4.US.</b> Transporters must meet specific requirements for deliveries and shipments of used oil (40 CFR 279.40(b), 279.43(a) through 279.43(b)) [Revised March 2000].</p>	<p>(NOTE: A used oil transporter who has not received an USEPA identification number may obtain one by notifying the USEPA or authorized regulatory agency of their used oil activity by submitting either a completed USEPA Form 8700-12, or a letter requesting an USEPA identification number.)</p> <p>(NOTE: These requirements concerning transportation and transfer of used oil do not apply to the following:</p> <ul style="list-style-type: none"> <li>– onsite transportation</li> <li>– generators who transport shipments of used oil totaling 55 gal or less from the generator to a used oil collection center</li> <li>– generators who transport shipments of used oil totaling 55 gal or less from the generator to a used oil aggregation point owned by the generator</li> <li>– transportation of used oil generated by household DIYs from the initial generator to a regulated generator, collection center, aggregation point, processor/ refiner, or burner.)</li> </ul> <p>Verify that all used oil is delivered to:</p> <ul style="list-style-type: none"> <li>– another used oil transporter provided that the transporter has a USEPA identification number</li> <li>– a used oil processing/re-refining facilities with a USEPA identification number</li> <li>– an off-specification used oil burner facility with a USEPA identification number</li> <li>– an on-specification used oil burner facility.</li> </ul> <p>Verify that DOT labeling, packaging, and placarding requirements under 49 CFR 171 through 180 are met.</p> <p>Verify that if the used oil meets the definition of hazardous material, the transporter complies with DOT regulations under 49 CFR 171.8.</p> <p>Verify that transporters who import used oil from abroad or export used oil outside of the United States meet all used oil transportation requirements while in the boundaries of the United States.</p> <p>(NOTE: These requirements concerning transportation and transfer of used oil do not apply to the following:</p> <ul style="list-style-type: none"> <li>– onsite transportation</li> <li>– generators who transport shipments of used oil totaling 55 gal or less from the generator to a used oil collection center</li> <li>– generators who transport shipments of used oil totaling 55 gal or less from the generator to a used oil aggregation point owned by the generator</li> <li>– transportation of used oil generated by household DIYs from the initial generator to a regulated generator, collection center, aggregation point, processor/ refiner, or burner.)</li> </ul>

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<p><b>PO.75.5.US.</b> Transporters are required to take specific actions if there is a discharge of used oil during transportation (40 CFR 279.43(c)) [Revised March 2000].</p>	<p>Verify that if there is a discharge, the following are done:</p> <ul style="list-style-type: none"> <li>– notification of authorities (the NRC)</li> <li>– containment of the discharge</li> <li>– submit a written report to the DOT</li> <li>– cleanup.</li> </ul> <p>(NOTE: A transporter must clean up any used oil discharge that occurs during transportation or take such action as may be required or approved by federal, state, or local officials so that the used oil discharge no longer presents a hazard to human health or the environment.)</p> <p>(NOTE: These requirements concerning transportation and transfer of used oil do not apply to the following:</p> <ul style="list-style-type: none"> <li>– onsite transportation</li> <li>– generators who transport shipments of used oil totaling 55 gal or less from the generator to a used oil collection center</li> <li>– generators who transport shipments of used oil totaling 55 gal or less from the generator to a used oil aggregation point owned by the generator</li> <li>– transportation of used oil generated by household DIYs from the initial generator to a regulated generator, collection center, aggregation point, processor/ refiner, or burner.)</li> </ul>
<p><b>PO.75.6.US.</b> Transporters are required to determine if the total halogen content of used oil being transported or stored at a transfer facility is above or below 1000 ppm (40 CFR 279.44) [Revised March 2000; Revised July 2005].</p>	<p>Verify that the transporter determines the total halogen content of the used oil by one of the following methods:</p> <ul style="list-style-type: none"> <li>– testing the used oil</li> <li>– applying knowledge of halogen content of the used oil in light of the materials or processes used.</li> </ul> <p>Verify that records of analyses are kept for 3 yr.</p> <p>(NOTE: If the used oil contains greater than or equal to 1,000 ppm total halogens, it is presumed to be a hazardous waste because it has been mixed with halogenated hazardous waste listed in subpart D of 40 CFR 261. The presumption may be rebutted by demonstrating that the used oil does not contain hazardous waste (for example, by showing that the used oil does not contain significant concentrations of halogenated hazardous constituents listed in appendix VIII of 40 CFR 261). The rebuttable presumption does not apply to metalworking oils/fluids containing chlorinated paraffins, if they are processed, through a tolling arrangement to reclaim metalworking oils/fluids. The presumption does apply to metalworking oils/fluids if such oils/fluids are recycled in any other manner, or disposed. The rebuttable presumption does not apply to used oils contaminated with chlorofluorocarbons (CFCs) removed from refrigeration units if the CFCs are destined for reclamation. The rebuttable presumption does apply to used oils contaminated with CFCs that have been mixed with used oil from sources other than refrigeration units.)</p>

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<p><b>PO.75.7.US.</b> Used oil transporters are required to keep records for used oil shipments and deliveries (40 CFR 279.46, 279.74(b), and 279.74(c)) <b>[Reviewed March 2000; Revised October 2003]</b>.</p>	<p>(NOTE: These requirements concerning transportation and transfer of used oil do not apply to the following:</p> <ul style="list-style-type: none"> <li>– onsite transportation</li> <li>– generators who transport shipments of used oil totaling 55 gal or less from the generator to a used oil collection center</li> <li>– generators who transport shipments of used oil totaling 55 gal or less from the generator to a used oil aggregation point owned by the generator</li> <li>– transportation of used oil generated by household DIYs from the initial generator to a regulated generator, collection center, aggregation point, processor/ refiner, or burner.)</li> </ul> <p>Verify that the following records are kept for each shipment accepted for transport:</p> <ul style="list-style-type: none"> <li>– name and address of the generator, transporter, or processor/re-refiner who provided the used oil for transport</li> <li>– USEPA identification number of the generator, transporter, or processor/re-refiner who provided the used oil for transport</li> <li>– the quantity of oil accepted</li> <li>– the day of acceptance</li> <li>– signature of receipt.</li> </ul> <p>Verify that the following records are kept for each delivery to another used oil transporter or to a used oil burner, processor/re-refiner, or disposal facility and for export/ import activities:</p> <ul style="list-style-type: none"> <li>– the name and address of the receiving facility or transporter</li> <li>– the USEPA identification number of the receiving facility or transporter</li> <li>– the quantity of used oil delivered</li> <li>– the date of delivery</li> <li>– the signature, dated upon receipt of the used oil, of a representative of the receiving facility or transporter.</li> </ul> <p>Verify that a transporter who first claims that used oil that is to be burned for energy recovery meets the fuel specifications under 40 CFR 279.11 (see Appendix 8-3) keeps a record of each shipment of used oil to the facility to which it delivers the used oil.</p> <p>Verify that the record for each shipment of used oil that is to be burned for energy recovery includes the following recovery contains the following information:</p> <ul style="list-style-type: none"> <li>– the name and address of the facility receiving the shipment</li> <li>– the quantity of used oil fuel delivered</li> <li>– the date of shipment or delivery</li> <li>– a cross-reference to the record of used oil analysis or other information used to make the determination that the oil meets the specification as required under 40 CFR 279.72(a) (see checklist item PO.85.2.US).</li> </ul>

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<p><b>PO.75.8.US.</b> Transfer facilities are required to store used oil in tanks and containers that meet specific requirements (40 CFR 279.45(b) through 279.45(g)) [Revised March 2000].</p>	<p>Verify that records are maintained for 3 yr.</p> <p>(NOTE: These requirements concerning transportation and transfer of used oil do not apply to the following:</p> <ul style="list-style-type: none"> <li>– onsite transportation</li> <li>– generators who transport shipments of used oil totaling 55 gal or less from the generator to a used oil collection center</li> <li>– generators who transport shipments of used oil totaling 55 gal or less from the generator to a used oil aggregation point owned by the generator</li> <li>– transportation of used oil generated by household DIYs from the initial generator to a regulated generator, collection center, aggregation point, processor/re-refiner, or burner.)</li> </ul> <p>Verify that used oil transfer facilities do not store used oil in units other than tanks, containers, or units subject to regulation under 40 CFR 264 or 265.</p> <p>Verify that containers and aboveground tanks used to stored used oil at transfer facilities are in good condition (no severe rusting, apparent structural defects or deterioration); and not leaking.</p> <p>Verify that containers used to store used oil at transfer facilities have secondary containment that meets the following minimum requirements:</p> <ul style="list-style-type: none"> <li>– dikes, berms, or retaining walls</li> <li>– a floor that covers the entire area within the dikes, berms, or retaining walls</li> <li>– an equivalent secondary containment system</li> <li>– the system is impervious to used oil and will prevent migration to the soil, groundwater, or surface water.</li> </ul> <p>Verify that aboveground storage tanks (ASTs) used to store used oil at transfer facilities have secondary containment that meets the following minimum requirements:</p> <ul style="list-style-type: none"> <li>– dikes, berms, or retaining walls</li> <li>– a floor that covers the entire area within the dikes, berms, or retaining walls</li> <li>– an equivalent secondary containment system</li> <li>– the system is impervious to used oil and will prevent migration to the soil, groundwater, or surface water.</li> </ul> <p>Verify that containers and aboveground storage tanks (ASTs) are labeled with the phrase USED OIL.</p> <p>Verify that fill pipes used to transfer used oil into underground storage tanks at transfer facilities are labeled with the phrase USED OIL.</p>

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<p><b>PO.75.9.US.</b> Specific steps must be followed in response to a release at a transfer facility (40 CFR 279.45(h)) [<b>Revised June 1998; Reviewed March 2000</b>].</p>	<p>(NOTE: In addition to these regulations under RCRA, used oil facilities may also be regulated under the 1990 Oil Pollution Act which requires facilities, that could reasonably be expected to discharge oil in harmful quantities, to prepare and implement rigorous Spill Prevention, Control, and Countermeasure (SPCC) Plans required under the Clean Water Act (40 CFR 112.7). The SPCC Plan regulations also require specific management procedures for loading, unloading, and storing petroleum products. Regulations covering response to oil discharges and contingency plans (40 CFR 300), as well as facility response plans to oil discharges (40 CFR 112.20) were revised and finalized in 1995.)</p> <p>(NOTE: These requirements concerning transportation and transfer of used oil do not apply to the following:</p> <ul style="list-style-type: none"> <li>– onsite transportation</li> <li>– generators who transport shipments of used oil totaling 55 gal or less from the generator to a used oil collection center</li> <li>– generators who transport shipments of used oil totaling 55 gal or less from the generator to a used oil aggregation point owned by the generator</li> <li>– transportation of used oil generated by household DIYs from the initial generator to a regulated generator, collection center, aggregation point, processor/ refiner, or burner.)</li> </ul> <p>(NOTE: This applies when the release is not from a UST and has occurred after the effective date of the recycled used oil management program in effect in the state in which the release is located.)</p> <p>Verify that the following steps are taken:</p> <ul style="list-style-type: none"> <li>– the release is stopped</li> <li>– the release is contained</li> <li>– the released used oil and other materials are cleaned up and properly managed</li> <li>– necessary repairs and replacements are done prior to returning containers or tanks to service.</li> </ul> <p>(NOTE: Release reporting requirements are outlined in 40 CFR 110.2 through 110.10, see checklist item PO.15.1.US.)</p> <p>(NOTE: These requirements concerning transportation and transfer of used oil do not apply to the following:</p> <ul style="list-style-type: none"> <li>– onsite transportation</li> <li>– generators who transport shipments of used oil totaling 55 gal or less from the generator to a used oil collection center</li> <li>– generators who transport shipments of used oil totaling 55 gal or less from the generator to a used oil aggregation point owned by the generator</li> <li>– transportation of used oil generated by household DIYs from the initial generator to a regulated generator, collection center, aggregation point, processor/ refiner, or burner.)</li> </ul>

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<p><b>PO.80</b></p> <p><b>USED OIL BURNERS</b></p> <p><b>PO.80.1.US.</b> Off-specification used oil fuel may be burned for energy recovery in certain circumstances (40 CFR 279.60(a), 279.60(c), 279.61(a), and 279.61(b)(2)). <b>[Revised March 2000].</b></p> <p><b>PO.80.2.US.</b> Used oil burners are required to have an USEPA identification number (40 CFR 279.60(a), 279.60(c), and 279.62) <b>[Revised March 2000].</b></p>	<p>Verify that off-specification used oil fuel is burned for energy recovery in only the following devices:</p> <ul style="list-style-type: none"> <li>– an industrial furnace identified in 40 CFR 260.10</li> <li>– a boiler that is defined in 40 CFR 260.10 and is identified as one of the following: <ul style="list-style-type: none"> <li>– industrial boilers that are located on the site of a facility engaged in a manufacturing process where substances are transformed into new products by mechanical or chemical processes</li> <li>– utility boilers used to produce electric power steam, heated or cooled air, or other gases or fluids for sale</li> <li>– used oil-fired space heaters, provided the burner meets the requirements in 40 CFR 279.23 (see checklist item PO.65.2.US.)</li> </ul> </li> <li>– hazardous waste incinerators (see Subpart O of 40 CFR 264 or 265).</li> </ul> <p>(NOTE: Used oil burners may aggregate off-specification used oil with virgin oil or on-specification used oil for purposes of burning, but may not aggregate for purposes of producing on-specification used oil.)</p> <p>(NOTE: The requirements for used oil burners do not apply to the following:</p> <ul style="list-style-type: none"> <li>– the used oil is burned by the generator in an onsite space heater under the provisions of 40 CFR 279.23 (see checklist item PO.65.2.US.)</li> <li>– the used oil is burned by a processor/re-refiner for purposes of processing used oil, which is considered burning incidentally to used oil processing</li> <li>– persons burning used oil that meets the used oil fuel specification of 40 CFR 279.11, if the burner complies with the requirements for used oil fuel marketers.)</li> </ul> <p>Verify that the used oil burner has an USEPA identification number.</p> <p>(NOTE: A used oil burner who has not received an USEPA identification number may obtain one by notifying the USEPA Regional Administrator or authorized regulatory agency of their used oil activity by submitting either a completed USEPA Form 8700-12 or a letter requesting an USEPA identification number.)</p> <p>(NOTE: The requirements for used oil burners do not apply to the following:</p> <ul style="list-style-type: none"> <li>– the used oil is burned by the generator in an onsite space heater under the provisions of 40 CFR 279.23 (see checklist item PO.60.2.US.)</li> <li>– the used oil is burned by a processor/re-refiner for purposes of processing used oil, which is considered burning incidentally to used oil processing</li> <li>– persons burning used oil that meets the used oil fuel specification of 40 CFR 279.11, if the burner complies with the requirements for used oil fuel marketers.)</li> </ul>

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<p><b>PO.80.3.US.</b> Used oil burners are required to determine if used oil is a hazardous waste (40 CFR 279.60(a), 279.60(c), and 279.63) [Revised March 2000; Revised July 2005].</p>	<p>Verify that the used oil is either tested or the used oil burner applies their knowledge of the halogen content of the used oil in light of the materials or processes used, or using information from another source.</p> <p>Verify that copies of analyses are maintained for 3 yr.</p> <p>(NOTE: If the used oil contains greater than or equal to 1,000 ppm total halogens, it is presumed to be a hazardous waste because it has been mixed with halogenated hazardous waste listed in subpart D of 40 CFR 261. The presumption may be rebutted by demonstrating that the used oil does not contain hazardous waste (for example, by showing that the used oil does not contain significant concentrations of halogenated hazardous constituents listed in appendix VIII of 40 CFR 261). The rebuttable presumption does not apply to metalworking oils/fluids containing chlorinated paraffins, if they are processed, through a tolling arrangement to reclaim metalworking oils/fluids. The presumption does apply to metalworking oils/fluids if such oils/fluids are recycled in any other manner, or disposed. The rebuttable presumption does not apply to used oils contaminated with chlorofluorocarbons (CFCs) removed from refrigeration units if the CFCs are destined for reclamation. The rebuttable presumption does apply to used oils contaminated with CFCs that have been mixed with used oil from sources other than refrigeration units.)</p> <p>(NOTE: The requirements for used oil burners do not apply to the following:</p> <ul style="list-style-type: none"> <li>– the used oil is burned by the generator in an onsite space heater under the provisions of 40 CFR 279.23 (see checklist item PO.60.2.US.)</li> <li>– the used oil is burned by a processor/re-refiner for purposes of processing used oil, which is considered burning incidentally to used oil processing</li> <li>– persons burning used oil that meets the used oil fuel specification of 40 CFR 279.11, if the burner complies with the requirements for used oil fuel marketers.)</li> </ul> <p><b>PO.80.4.US.</b> Used oil burners are required to store used oil in containers that meet specific requirements (40 CFR 279.60(a), 279.60(c), and 279.64(a) through 279.64(f)) [Revised March 2000].</p>
	<p>Verify that containers and aboveground tanks used to stored used oil at are in good condition (no severe rusting, apparent structural defects or deterioration); and not leaking.</p> <p>Verify that containers used to store used oil have secondary containment that meets the following minimum requirements:</p> <ul style="list-style-type: none"> <li>– dikes, berms, or retaining walls</li> <li>– a floor that covers the entire area within the dikes, berms, or retaining walls or an equivalent secondary containment system</li> <li>– the system is impervious to used oil to prevent migration to the soil, groundwater, or surface water.</li> </ul> <p>Verify that aboveground storage tanks (ASTs) used to store used oil have secondary containment that meets the following minimum requirements:</p>

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<p><b>PO.80.5.US.</b> Specific steps must be followed in response to a release at a used oil burner (40 CFR 279.60(a), 279.60(c), and 279.64(g)) <b>[Revised June 1998; Revised March 2000]</b>.</p>	<ul style="list-style-type: none"> <li>– dikes, berms, or retaining walls</li> <li>– a floor that covers the entire area within the dikes, berms, or retaining walls</li> <li>– an equivalent secondary containment system</li> <li>– the system is impervious to used oil to prevent migration to the soil, groundwater, or surface water.</li> </ul> <p>Verify that containers and aboveground storage tanks (ASTs) are labeled with the phrase USED OIL.</p> <p>Verify that fill pipes used to transfer used oil into underground storage tanks at transfer facilities are labeled with the phrase USED OIL.</p> <p>(NOTE: The requirements for used oil burners do not apply to the following:</p> <ul style="list-style-type: none"> <li>– the used oil is burned by the generator in an onsite space heater under the provisions of 40 CFR 279.23 (see checklist item PO.60.2.US.)</li> <li>– the used oil is burned by a processor/re-refiner for purposes of processing used oil, which is considered burning incidentally to used oil processing</li> <li>– persons burning used oil that meets the used oil fuel specification of 40 CFR 279.11, if the burner complies with the requirements for used oil fuel marketers.)</li> </ul> <p>(NOTE: These requirements apply when the release is not from an underground storage tank (UST) and has occurred after the effective date of the recycled used oil management program in effect in the state in which the release is located.)</p> <p>Verify that the following steps are taken by a burner:</p> <ul style="list-style-type: none"> <li>– the release is stopped</li> <li>– the release is contained</li> <li>– the released used oil and other materials are cleaned up and properly managed</li> <li>– necessary repairs and replacements are done on containers or tanks prior to returning them to service.</li> </ul> <p>(NOTE: The requirements for used oil burners do not apply to the following:</p> <ul style="list-style-type: none"> <li>– the used oil is burned by the generator in an onsite space heater under the provisions of 40 CFR 279.23 (see checklist item PO.60.2.US.)</li> <li>– the used oil is burned by a processor/re-refiner for purposes of processing used oil, which is considered burning incidentally to used oil processing</li> <li>– persons burning used oil that meets the used oil fuel specification of 40 CFR 279.11, if the burner complies with the requirements for used oil fuel marketers.)</li> </ul> <p>(NOTE: Release reporting requirements are outlined in 40 CFR 110.2 through 110.10, see checklist item PO.15.1.US.)</p>
<p><b>PO.80.6.US.</b> Used oil burners are required to keep a record of</p>	<p>Verify that some form of records are kept that document the following:</p>

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<p>each used oil shipment accepted for burning (40 CFR 279.60(a), 279.60(c), 279.65, 279.74(b), and 279.74(c)) [Revised March 2000; Revised October 2003].</p> <p><b>PO.80.7.US.</b> Before a burner can accept the first shipment of off-specification used oil fuel from a generator, transporter, or processor/re-refiner, the burner must provide a one-time written notice (40 CFR 279.60(a), 279.60(c), and 279.66) [Revised March 2000].</p>	<ul style="list-style-type: none"> <li>– the name and address of the transporter who delivered the used oil</li> <li>– the name and address of the generator or processor or re-refiner from whom the used oil was sent to the burner</li> <li>– the USEPA identification numbers of the transporter or, if applicable, the generator, processor/re-refiner</li> <li>– the quantity of used oil accepted</li> <li>– the date of acceptance.</li> </ul> <p>Verify that records are maintained for at least 3 yr.</p> <p>(NOTE: The requirements for used oil burners do not apply to the following:</p> <ul style="list-style-type: none"> <li>– the used oil is burned by the generator in an onsite space heater under the provisions of 40 CFR 279.23 (see checklist item PO.60.2.US.)</li> <li>– the used oil is burned by a processor/re-refiner for purposes of processing used oil, which is considered burning incidentally to used oil processing</li> <li>– persons burning used oil that meets the used oil fuel specification of 40 CFR 279.11, if the burner complies with the requirements for used oil fuel marketers.)</li> </ul> <p>Verify that a used oil burner who first claims that used oil that is to be burned for energy recovery meets the fuel specifications under 40 CFR 279.11 (see Appendix 8-3) keeps a record of each shipment of used oil to the facility to which it delivers the used oil.</p> <p>Verify that a record for each shipment of used oil that is to be burned for energy recovery includes the following recovery contains the following information:</p> <ul style="list-style-type: none"> <li>– the name and address of the facility receiving the shipment</li> <li>– the quantity of used oil fuel delivered</li> <li>– the date of shipment or delivery</li> <li>– a cross-reference to the record of used oil analysis or other information used to make the determination that the oil meets the specification as required under 40 CFR 279.72(a) (see checklist item PO.85.2.US).</li> </ul> <p>Verify that the burner issued a notice to the USEPA stating the location and description of the activity and certifying that the used oil will only be burned in an industrial furnace or boiler.</p> <p>Verify that the certification is maintained for 3 yr from the date of the last shipment received.</p> <p>(NOTE: The requirements for used oil burners do not apply to the following:</p> <ul style="list-style-type: none"> <li>– the used oil is burned by the generator in an onsite space heater under the provisions of 40 CFR 279.23 (see checklist item PO.60.2.US.)</li> <li>– the used oil is burned by a processor/re-refiner for purposes of processing used oil, which is considered burning incidentally to used oil processing</li> </ul>

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<p><b>PO.80.8.US.</b> Depending on their operations, used oil burners are required to also meet the standards for used oil generators (40 CFR 279.60(b)(1)) [Added March 2000].</p> <p><b>PO.80.9.US.</b> Depending on their operations, used oil burners are required to also meet the standards for used oil transporters (40 CFR 279.60(b)(2)) [Added March 2000].</p> <p><b>PO.80.10.US.</b> Depending on their operations, used oil burners are required to also meet the standards for processors and re-refiners (40 CFR 279.60(b)(3) and 279.61(b)) [Added March 2000].</p> <p><b>PO.80.11.US.</b> Depending on their operations, used oil burners are required to also meet the standards for marketers (40 CFR 279.60(b)(4)) [Added March 2000].</p> <p><b>PO.80.12.US.</b> Depending on their operations, used oil generators are required to also meet the standards for used oil disposers (40 CFR 279.60(b)(5)) [Added March 2000].</p>	<p>– persons burning used oil that meets the used oil fuel specification of 40 CFR 279.11, if the burner complies with the requirements for used oil fuel marketers.)</p> <p>Verify that used oil burners who generate used oil also comply with 40 CFR 279.20 through 40 CFR 279.24 (see checklist items PO.65.1.US. through PO.65.12.US.).</p> <p>Verify that used oil burners who transport used oil also comply with 40 CFR 279.40 through 40 CFR 279.47 (see checklist items PO.75.1.US. through PO.75.9.US.).</p> <p>Verify that used oil burners who process or re-refine used oil also comply with 40 CFR 279.50 through 40 CFR 279.59 (see checklist items PO.87.1.US. through PO.87.16.US.).</p> <p>(NOTE: Used oil burners may aggregate off-specification used oil with virgin oil or on-specification used oil for purposes of burning, but may not aggregate for purposes of producing on-specification used oil.)</p> <p>Verify that burners who direct shipments of off-specification used oil from their facility to a used oil burner or first claim that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in 40 CFR 279.11 also complies with 40 CFR 279.70 through 40 CFR 279.75 (see checklist items PO.85.1.US. through PO.85.9.US.).</p> <p>Verify that used oil burners who dispose of used oil, including the use of used oil as a dust suppressant, must also comply with 40 CFR 279.80 through 279.82 (see checklist items PO.60.1.US. and PO.90.1.US.).</p>



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<p><b>PO.85</b></p> <p><b>USED OIL MARKETING</b></p> <p><b>PO.85.1.US.</b> Used oil fuel marketers may only initiate a shipment of off-specification used oil to a used oil burner who has an USEPA identification number and burns the used oil in an industrial furnace or boiler (40 CFR 279.70(a)(1), 279.70(b) and 279.71) [Revised March 2000].</p> <p><b>PO.85.2.US.</b> Generators, transporters, processor/refiners, or burners must determine if used oil to be burned for energy recovery is off or on-specification (40 CFR 279.70(b) and 279.72) [Revised March 2000].</p> <p><b>PO.85.3.US.</b> Used oil fuel marketers are required to have a USEPA identification</p>	<p>Determine if the facility is a used oil fuel marketer initiates a shipment of off-specification used oil to a used oil burner.</p> <p>Verify that it is going to an appropriate used oil burner.</p> <p>(NOTE: These requirements do not apply to the following:</p> <ul style="list-style-type: none"> <li>– persons who direct shipments of on-specification used oil and who are not the first person to claim the oil is on-specification</li> <li>– used oil generators and transporters who transport used oil received only from generators, unless the generator or transporter directs a shipment of off-specification used oil from their facility to a used oil burner.)</li> </ul> <p>(NOTE: The standards for used oil marketing applies to any person who does either of the following (40 CFR 279.70(a)):</p> <ul style="list-style-type: none"> <li>– directs a shipment of off-specification used oil from their facility to a used oil burner</li> <li>– first claims that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in 40 CFR 279.11 (See Appendix 8-3 of this document).).</li> </ul> <p>Verify that a determination as to whether the used oil fuel is off or on-specification is made by analyses or obtaining copies of other analyses.</p> <p>Verify that records of analyses are maintained for 3 yr.</p> <p>(NOTE: These requirements do not apply to the following:</p> <ul style="list-style-type: none"> <li>– persons who direct shipments of on-specification used oil and who are not the first person to claim the oil is on-specification</li> <li>– used oil generators and transporters who transport used oil received only from generators, unless the generator or transporter directs a shipment of off-specification used oil from their facility to a used oil burner.)</li> </ul> <p>(NOTE: The standards for used oil marketing applies to any person who does either of the following (40 CFR 279.70(a)):</p> <ul style="list-style-type: none"> <li>– directs a shipment of off-specification used oil from their facility to a used oil burner</li> <li>– first claims that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in 40 CFR 279.11 (See Appendix 8-3 of this document).).</li> </ul> <p>Verify that the used oil fuel marketer has a USEPA identification number.</p>

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<p>number (40 CFR 279.70(b) and 279.73) [Revised March 2000].</p> <p><b>PO.85.4.US.</b> Any used oil marketer that directs a shipment of used oil to a burner is required to keep specific records (40 CFR 279.70(b), 279.74(a), and 279.74(c)) [Revised June 1998; Reviewed March 2000; Revised October 2003].</p>	<p>(NOTE: A used oil marketer who has not received an USEPA identification number may obtain one by notifying the USEPA or authorized regulatory agency of their used oil activity by submitting either a completed USEPA Form 8700-12 or a letter requesting an USEPA identification number.)</p> <p>(NOTE: These requirements do not apply to the following:</p> <ul style="list-style-type: none"> <li>– persons who direct shipments of on-specification used oil and who are not the first person to claim the oil is on-specification</li> <li>– used oil generators and transporters who transport used oil received only from generators, unless the generator or transporter directs a shipment of off-specification used oil from their facility to a used oil burner.)</li> </ul> <p>(NOTE: The standards for used oil marketing applies to any person who does either of the following (40 CFR 279.70(a)):</p> <ul style="list-style-type: none"> <li>– directs a shipment of off-specification used oil from their facility to a used oil burner</li> <li>– first claims that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in 40 CFR 279.11 (See Appendix 8-3 of this document).).</li> </ul> <p>Verify that records containing the following information are kept of each shipment of off-specification oil:</p> <ul style="list-style-type: none"> <li>– the name and address of the transporter who delivers the used oil to the burner</li> <li>– the name and address of the burner who will receive the used oil</li> <li>– the USEPA identification number of the burner</li> <li>– the quantity of used oil shipped</li> <li>– the date of shipment.</li> </ul> <p>(NOTE: These records may take the form of a bill of lading, log, invoice, or manifest, or other shipping documents.)</p> <p>Verify that records are maintained for 3 yr.</p> <p>(NOTE: These requirements do not apply to the following:</p> <ul style="list-style-type: none"> <li>– persons who direct shipments of on-specification used oil and who are not the first person to claim the oil is on-specification</li> <li>– used oil generators and transporters who transport used oil received only from generators, unless the generator or transporter directs a shipment of off-specification used oil from their facility to a used oil burner.)</li> </ul> <p>(NOTE: The standards for used oil marketing applies to any person who does either of the following (40 CFR 279.70(a)):</p> <ul style="list-style-type: none"> <li>– directs a shipment of off-specification used oil from their facility to a used oil burner</li> <li>– first claims that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in 40 CFR 279.11 [See Appendix 8-3 of this document]).</li> </ul>

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<p><b>PO.85.5.US.</b> Before a used oil generator, transporter, or processor/re-refiner directs the first shipment of off-specification used oil to a burner, they must obtain a one-time written and signed notice from the burner (40 CFR 279.70(b) and 279.75) [Reviewed March 2000].</p>	<p>Verify that notice from the burner has been received that indicates the burner notified the USEPA of the location and used oil management activities and that the burner will only burn off-specification oil in approved furnaces and boilers.</p> <p>Verify that a copy of the notice is kept for 3 yr from the date the last shipment of off-specification used oil is shipped to the burner.</p> <p>(NOTE: The standards for used oil marketing applies to any person who does either of the following (40 CFR 279.70(a)):</p> <ul style="list-style-type: none"> <li>– directs a shipment of off-specification used oil from their facility to a used oil burner</li> <li>– first claims that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in 40 CFR 279.11 (See Appendix 8-3 of this document).).</li> </ul>
<p><b>PO.85.6.US.</b> Depending on their operations, used oil marketers are required to also meet the standards for used oil generators (40 CFR 279.70(c)(1)) [Added March 2000].</p>	<p>Verify that used oil marketers who generate used oil also comply with 40 CFR 279.20 through 40 CFR 279.24 (see checklist items PO.65.1.US. through PO.65.12.US.).</p> <p>(NOTE: The standards for used oil marketing applies to any person who does either of the following (40 CFR 279.70(a)):</p> <ul style="list-style-type: none"> <li>– directs a shipment of off-specification used oil from their facility to a used oil burner</li> <li>– first claims that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in 40 CFR 279.11 (See Appendix 8-3 of this document).).</li> </ul>
<p><b>PO.85.7.US.</b> Depending on their operations, used oil marketers are required to also meet the standards for used oil transporters (40 CFR 279.70(c)(2)) [Added March 2000].</p>	<p>Verify that used oil marketers who transport used oil also comply with 40 CFR 279.40 through 40 CFR 279.47 (see checklist items PO.75.1.US. through PO.75.9.US.).</p> <p>(NOTE: The standards for used oil marketing applies to any person who does either of the following (40 CFR 279.70(a)):</p> <ul style="list-style-type: none"> <li>– directs a shipment of off-specification used oil from their facility to a used oil burner</li> <li>– first claims that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in 40 CFR 279.11 (See Appendix 8-3 of this document).).</li> </ul>
<p><b>PO.85.8.US.</b> Depending on their operations, used oil marketers are required to also meet the standards for processors and re-refiners (40</p>	<p>Verify that used oil marketers who process or re-refine used oil also comply with 40 CFR 279.50 through 40 CFR 279.59 (see checklist items PO.87.1.US. through PO.87.16.US.).</p> <p>(NOTE: The standards for used oil marketing applies to any person who does either of the following (40 CFR 279.70(a)):</p>

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<p>CFR 279.70(c)(3)) [Added March 2000].</p> <p><b>PO.85.9.US.</b> Depending on their operations, used oil marketers are required to also meet the standards for used oil burners (40 CFR 279.70(c)(3)) [Added March 2000].</p>	<ul style="list-style-type: none"> <li>– directs a shipment of off-specification used oil from their facility to a used oil burner</li> <li>– first claims that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in 40 CFR 279.11 (See Appendix 8-3 of this document).).</li> </ul> <p>Verify that used oil marketers who burn off-specification used oil for energy recovery also comply with 40 CFR 279.60 through 40 CFR 279.67 (see checklist items PO.80.2.US. through PO.80.12.US.).</p> <p>(NOTE: The standards for used oil marketing applies to any person who does either of the following (40 CFR 279.70(a)):</p> <ul style="list-style-type: none"> <li>– directs a shipment of off-specification used oil from their facility to a used oil burner</li> <li>– first claims that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in 40 CFR 279.11 (See Appendix 8-3 of this document).).</li> </ul>

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<p><b>PO.87</b></p> <p><b>USED OIL PROCESSORS AND RE-REFINERS</b></p> <p><b>PO.87.1.US.</b> Used oil processors and re-refiners are required to have an USEPA identification number (40 CFR 279.50(a) and 279.51) [Added March 2000].</p> <p><b>PO.87.2.US.</b> Used oil processing and re-refining are required to meet specific preparedness and prevention requirements (40 CFR 279.50(a) and 279.52(a)) [Added March 2000; Revised January 2007].</p>	<p>Verify that the used oil processor and re-refiner have a USEPA identification number.</p> <p>(NOTE: A used oil processors and re-refiners who has not received an USEPA identification number may obtain one by notifying the USEPA or authorized regulatory agency of their used oil activity by submitting either a completed USEPA Form 8700-12 or a letter requesting an USEPA identification number.)</p> <p>(NOTE: These requirements do not apply to either of the following:</p> <ul style="list-style-type: none"> <li>– transporters that conduct incidental processing operations that occur during the normal course of transportation as provided in 40 CFR 279.41 (see checklist item PO.75.2.US.)</li> <li>– burners that conduct incidental processing operations that occur during the normal course of used oil management prior to burning as provided in 40 CFR 279.61(b) (see checklist items PO.80.1.US. and PO.80.10.US.).)</li> </ul> <p>(NOTE: The standards for used oil marketers apply to any person who does either of the following (40 CFR 279.70(a)):</p> <ul style="list-style-type: none"> <li>– directs a shipment of off-specification used oil from their facility to a used oil burner</li> <li>– first claims that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in 40 CFR 279.11 (See Appendix 8-3 of this document).).</li> </ul> <p>Verify that facilities are maintained and operated to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of used oil to air, soil, or surface water that could threaten human health or the environment.</p> <p>Verify that all facilities are equipped with the following, unless none of the hazards posed by used oil handled at the facility could require the particular kind of equipment specified:</p> <ul style="list-style-type: none"> <li>– an internal communications or alarm system capable of providing immediate emergency instruction (voice or signal) to facility personnel</li> <li>– a device, such as a telephone (immediately available at the scene of operations) or a hand-held two-way radio, capable of summoning emergency assistance from local police departments, fire departments, or state or local emergency response teams</li> <li>– portable fire extinguishers, fire control equipment (including special extinguishing equipment, such as that using foam, inert gas, or dry chemicals), spill control equipment and decontamination equipment</li> </ul>

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	<p>– water at adequate volume and pressure to supply water hose streams, or foam producing equipment, or automatic sprinklers, or water spray systems.</p> <p>Verify that all facility communications or alarm systems, fire protection equipment, spill control equipment, and decontamination equipment, where required, is tested and maintained as necessary to assure its proper operation in time of emergency.</p> <p>Verify that, whenever used oil is being poured, mixed, spread, or otherwise handled, all personnel involved in the operation have immediate access to an internal alarm or emergency communication device, either directly or through visual or voice contact with another employee.</p> <p>(NOTE: If there is ever just one employee on the premises while the facility is operating, the employee must have immediate access to a device, such as a telephone (immediately available at the scene of operation) or a hand-held two-way radio, capable of summoning external emergency assistance.)</p> <p>Verify that aisle space is maintained to allow the unobstructed movements of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of facility operation in an emergency, unless aisle space is not needed for any of these purposes.</p> <p>Verify that, the following arrangements are made as appropriate for the type of used oil handled at the facility and the potential need for the services of these organizations:</p> <ul style="list-style-type: none"> <li>– arrangements to familiarize the police, fire departments, and emergency response teams with the layout of the facility, properties of used oil handled at the facility and associated hazards, places where facility personnel would normally be working, entrances to roads inside the facility, and possible evacuation routes</li> <li>– where more than one police and fire department might respond to an emergency, agreements designating primary emergency authority to a specific police and a specific fire department, and agreements with any others to provide support to the primary emergency authority</li> <li>– agreements with state emergency response teams, emergency response contractors, and equipment suppliers</li> <li>– arrangements to familiarize local hospitals with the properties of used oil handled at the facility and the types of injuries or illnesses which could result from fires, explosions, or releases at the facility.</li> </ul> <p>Verify that if state or local authorities declined to enter into such arrangements, the refusal is documented in the operating record.</p> <p>(NOTE: These requirements do not apply to either of the following:</p> <ul style="list-style-type: none"> <li>– transporters that conduct incidental processing operations that occur during the normal course of transportation as provided in 40 CFR 279.41(see checklist item PO.75.2.US.)</li> </ul>

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<p><b>PO.87.3.US.</b> Used oil processing and re-refining are required to have a contingency plan (40 CFR 279.50(a) and 279.52(b)(1) through 279.52(b)(4)) [Added March 2000; Revised January 2007].</p>	<p>– burners that conduct incidental processing operations that occur during the normal course of used oil management prior to burning as provided in 40 CFR 279.61(b) (see checklist items PO.80.1.US. and PO.80.10.US.).)</p> <p>(NOTE: The standards for used oil marketers apply to any person who does either of the following (40 CFR 279.70(a)):</p> <ul style="list-style-type: none"> <li>– directs a shipment of off-specification used oil from their facility to a used oil burner</li> <li>– first claims that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in 40 CFR 279.11 (See Appendix 8-3 of this document).).</li> </ul> <p>Verify that the contingency plan is designed to minimize hazards to human health or the environment from fires, explosions, or any unplanned sudden or non-sudden release of used oil to air, soil, or surface water.</p> <p>Verify that the provisions of the plan are carried out immediately whenever there is a fire, explosion, or release of used oil that could threaten human health or the environment.</p> <p>Verify that the contingency plan describes the actions personnel must take to in response to fires, explosions, or any unplanned sudden or non-sudden release of used oil to air, soil, or surface water at the facility.</p> <p>(NOTE: If the owner or operator has already prepared a Spill Prevention, Control, and Countermeasures (SPCC) Plan in accordance with 40 CFR 112, or 40 CFR 1510 of chapter V, or some other emergency or contingency plan, the owner or operator need only amend that plan to incorporate used oil management provisions.)</p> <p>Verify that the plan:</p> <ul style="list-style-type: none"> <li>– describes arrangements agreed to by local police departments, fire departments, hospitals, contractors, and state and local emergency response teams to coordinate emergency services</li> <li>– lists names, addresses, and phone numbers (office and home) of all persons qualified to act as emergency coordinator</li> <li>– a list of all emergency equipment at the facility (such as fire extinguishing systems, spill control equipment, communications and alarm systems (internal and external), and decontamination equipment), where this equipment is required</li> <li>– the location and a physical description of all emergency equipment, and a brief outline of its capabilities</li> <li>– includes an evacuation plan for facility personnel where there is a possibility that evacuation could be necessary, including signal(s) to be used to begin evacuation, evacuation routes, and alternate evacuation routes (in cases where the primary routes could be blocked by releases of used oil or fires).</li> </ul>

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<p><b>PO.87.4.US.</b> Used oil processing and re-refining are required to have an emergency coordinator and emergency procedures (40 CFR 279.50(a), 279.52(b)(5), and 279.52(b)(6)) [Added March 2000; Revised January 2007].</p>	<p>Verify that a copy of the contingency plan and all revisions to the plan are maintained at the facility; and submitted to all local police departments, fire departments, hospitals, and state and local emergency response teams that may be called upon to provide emergency services.</p> <p>Verify that the contingency plan is reviewed, and immediately amended, if necessary, whenever one of the following occurs:</p> <ul style="list-style-type: none"> <li>– applicable regulations are revised</li> <li>– the plan fails in an emergency</li> <li>– the facility changes (in its design, construction, operation, maintenance, or other circumstances) in away that materially increases the potential for fires, explosions, or releases of used oil, or changes the response necessary in an emergency</li> <li>– the list of emergency coordinators changes</li> <li>– the list of emergency equipment changes.</li> </ul> <p>(NOTE: These requirements do not apply to either of the following:</p> <ul style="list-style-type: none"> <li>– transporters that conduct incidental processing operations that occur during the normal course of transportation as provided in 40 CFR 279.41(see checklist item PO.75.2.US.)</li> <li>– burners that conduct incidental processing operations that occur during the normal course of used oil management prior to burning as provided in 40 CFR 279.61(b) (see checklist items PO.80.1.US. and PO.80.10.US.).)</li> </ul> <p>(NOTE: The standards for used oil marketers apply to any person who does either of the following (40 CFR 279.70(a)):</p> <ul style="list-style-type: none"> <li>– directs a shipment of off-specification used oil from their facility to a used oil burner</li> <li>– first claims that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in 40 CFR 279.11 [See Appendix 8-3 of this document].).</li> </ul> <p>Verify that there is, at all times, at least one employee either on the facility premises or on call (i.e., available to respond to an emergency by reaching the facility within a short period of time) with the responsibility for coordinating all emergency response measures.</p> <p>Verify that the emergency coordinator is thoroughly familiar with all aspects of the facility's contingency plan, all operations and activities at the facility, the location and characteristic of used oil handled, the location of all records within the facility, and facility layout.</p> <p>Verify that the emergency coordinator has the authority to commit the resources needed to carry out the contingency plan.</p>

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	<p>Verify that whenever there is an imminent or actual emergency situation, the emergency coordinator (or the designee when the emergency coordinator is on call) immediately:</p> <ul style="list-style-type: none"> <li>– activates internal facility alarms or communication systems, where applicable, to notify all facility personnel</li> <li>– notifies appropriate state or local agencies with designated response roles if their help is needed.</li> </ul> <p>Verify that whenever there is a release, fire, or explosion, the emergency coordinator immediately identifies the character, exact source, amount, and areal extent of any released materials.</p> <p>(NOTE: This identification may be done by observation or review of facility records or manifests and, if necessary, by chemical analysis.)</p> <p>Verify that the emergency coordinator also assesses possible hazards to human health or the environment that may result from the release, fire, or explosion.</p> <p>Verify that, if the emergency coordinator determines that the facility has had a release, fire, or explosion which could threaten human health, or the environment, outside the facility, findings are reported as follows:</p> <ul style="list-style-type: none"> <li>– immediately notify appropriate local authorities if evacuation of local areas may</li> <li>– be advisable</li> <li>– immediately notify either the government official designated as the on-scene coordinator for the geographical area or the NRC (using their 24-h toll free number 800/424-8802).</li> </ul> <p>Verify that the report to the on-scene coordinator includes:</p> <ul style="list-style-type: none"> <li>– name and telephone number of reporter</li> <li>– name and address of facility</li> <li>– time and type of incident (e.g., release, fire)</li> <li>– name and quantity of material(s) involved, to the extent known</li> <li>– the extent of injuries, if any</li> <li>– the possible hazards to human health, or the environment, outside the facility.</li> </ul> <p>Verify that, during an emergency, the emergency coordinator takes all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other used oil or hazardous waste at the facility.</p> <p>Verify that, if the facility stops operation in response to a fire, explosion, or release, the emergency coordinator monitors for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment, wherever this is appropriate.</p>

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	<p>Verify that, immediately after an emergency, the emergency coordinator provides for recycling, storing, or disposing of recovered used oil, contaminated soil or surface water, or any other material that results from a release, fire, or explosion at the facility.</p> <p>Verify that the emergency coordinator ensures that, in the affected areas of the facility:</p> <ul style="list-style-type: none"> <li>– no waste or used oil that may be incompatible with the released material is recycled, treated, stored, or disposed of until cleanup procedures are completed</li> <li>– all emergency equipment listed in the contingency plan is cleaned and fit for its intended use before operations are resumed.</li> </ul> <p>Verify that the operating record includes the time, date and details of any incident that requires implementing the contingency plan.</p> <p>Verify that within 15 days after the incident, a written report which includes the following on the incident is submitted to the USEPA Regional Administrator or authorized regulatory agency:</p> <ul style="list-style-type: none"> <li>– name, address, and telephone number of the owner or operator</li> <li>– name, address, and telephone number of the facility</li> <li>– date, time, and type of incident (e.g., fire, explosion)</li> <li>– name and quantity of material(s) involved</li> <li>– the extent of injuries, if any</li> <li>– an assessment of actual or potential hazards to human health or the environment, where this is applicable</li> <li>– estimated quantity and disposition of recovered material that resulted from the incident.</li> </ul> <p>(NOTE: These requirements do not apply to either of the following:</p> <ul style="list-style-type: none"> <li>– transporters that conduct incidental processing operations that occur during the normal course of transportation as provided in 40 CFR 279.41(see checklist item PO.75.2.US.)</li> <li>– burners that conduct incidental processing operations that occur during the normal course of used oil management prior to burning as provided in 40 CFR 279.61(b) (see checklist items PO.80.1.US. and PO.80.10.US.).)</li> </ul> <p>(NOTE: The standards for used oil marketers apply to any person who does either of the following (40 CFR 279.70(a)):</p> <ul style="list-style-type: none"> <li>– directs a shipment of off-specification used oil from their facility to a used oil burner</li> <li>– first claims that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in 40 CFR 279.11 (See Appendix 8-3 of this document).).</li> </ul>

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<p><b>PO.87.5.US.</b> Used oil processors and re-refiners are required determine if used oil is a hazardous waste (40 CFR 279.50(a), 40 CFR 279.53) [Added March 2000; Revised July 2005].</p>	<p>Verify that the used oil is either tested or the used oil processor/re-refiner applies their knowledge of the halogen content of the used oil in light of the materials or processes used, or using information from another source.</p> <p>Verify that copies of analyses are maintained for 3 yr.</p> <p>(NOTE: If the used oil contains greater than or equal to 1,000 ppm total halogens, it is presumed to be a hazardous waste because it has been mixed with halogenated hazardous waste listed in subpart D of 40 CFR 261. The presumption may be rebutted by demonstrating that the used oil does not contain hazardous waste (for example, by showing that the used oil does not contain significant concentrations of halogenated hazardous constituents listed in appendix VIII of 40 CFR 261). The rebuttable presumption does not apply to metalworking oils/fluids containing chlorinated paraffins, if they are processed, through a tolling arrangement to reclaim metalworking oils/fluids. The presumption does apply to metalworking oils/fluids if such oils/fluids are recycled in any other manner, or disposed. The rebuttable presumption does not apply to used oils contaminated with chlorofluorocarbons (CFCs) removed from refrigeration units if the CFCs are destined for reclamation. The rebuttable presumption does apply to used oils contaminated with CFCs that have been mixed with used oil from sources other than refrigeration units.)</p> <p>(NOTE: These requirements do not apply to either of the following:</p> <ul style="list-style-type: none"> <li>– transporters that conduct incidental processing operations that occur during the normal course of transportation as provided in 40 CFR 279.41(see checklist item PO.75.2.US.)</li> <li>– burners that conduct incidental processing operations that occur during the normal course of used oil management prior to burning as provided in 40 CFR 279.61(b) (see checklist items PO.80.1.US. and PO.80.10.US.).)</li> </ul> <p>(NOTE: The standards for used oil marketers apply to any person who does either of the following (40 CFR 279.70(a)):</p> <ul style="list-style-type: none"> <li>– directs a shipment of off-specification used oil from their facility to a used oil burner</li> <li>– first claims that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in 40 CFR 279.11 (See Appendix 8-3 of this document).).</li> </ul>
<p><b>PO.87.6.US.</b> Used oil processors/re-refiners are required to store used oil in containers and tanks that meet specific requirements (40 CFR 279.50(a) and 40 CFR 279.54(a) through 279.54(f)) [Added March 2000].</p>	<p>Verify that containers and aboveground tanks used to stored used oil at are in good condition (no severe rusting, apparent structural defects or deterioration); and not leaking.</p> <p>Verify that containers used to store used oil have secondary containment that meets the following minimum requirements:</p> <ul style="list-style-type: none"> <li>– dikes, berms, or retaining walls</li> <li>– a floor that covers the entire area within the dikes, berms, or retaining walls</li> <li>– an equivalent secondary containment system</li> </ul>

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<p><b>PO.87.7.US.</b> Specific steps must be followed in response to a release at a used oil processor/re-refiner (40 CFR 279.50(a) and 40 CFR 279.54(g)) [Added March 2000].</p>	<ul style="list-style-type: none"> <li>– the system is impervious to used oil to prevent migration to the soil, groundwater, or surface water.</li> </ul> <p>Verify that aboveground storage tanks (ASTs) used to store used oil have secondary containment that meets the following minimum requirements:</p> <ul style="list-style-type: none"> <li>– dikes, berms, or retaining walls</li> <li>– a floor that covers the entire area within the dikes, berms, or retaining walls</li> <li>– the system is impervious to prevent migration to the soil, groundwater, or surface water.</li> </ul> <p>Verify that containers and aboveground storage tanks (ASTs) are labeled with the phrase USED OIL.</p> <p>Verify that fill pipes used to transfer used oil into underground storage tanks at transfer facilities are labeled with the phrase USED OIL.</p> <p>(NOTE: These requirements do not apply to either of the following:</p> <ul style="list-style-type: none"> <li>– transporters that conduct incidental processing operations that occur during the normal course of transportation as provided in 40 CFR 279.41(see checklist item PO.75.2.US.)</li> <li>– burners that conduct incidental processing operations that occur during the normal course of used oil management prior to burning as provided in 40 CFR 279.61(b) (see checklist items PO.80.1.US. and PO.80.10.US.).)</li> </ul> <p>(NOTE: The standards for used oil marketers apply to any person who does either of the following (40 CFR 279.70(a)):</p> <ul style="list-style-type: none"> <li>– directs a shipment of off-specification used oil from their facility to a used oil burner</li> <li>– first claims that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in 40 CFR 279.11 (See Appendix 8-3 of this document).).</li> </ul> <p>(NOTE: This applies when the release is not from an underground storage tank (UST) and has occurred after the effective date of the recycled used oil management program in effect in the state in which the release is located.)</p> <p>Verify that the following steps are taken:</p> <ul style="list-style-type: none"> <li>– the release is stopped</li> <li>– the release is contained</li> <li>– the released used oil and other materials are cleaned up and properly managed</li> <li>– necessary repairs and replacements are done on containers or tanks prior to returning them to service.</li> </ul> <p>(NOTE: These requirements do not apply to either of the following:</p>

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<p><b>PO.87.8.US.</b> Used oil processors/re-refiners are required to follow specific steps for closure (40 CFR 279.50(a) and 40 CFR 279.54(h)) [Added March 2000].</p>	<ul style="list-style-type: none"> <li>– transporters that conduct incidental processing operations that occur during the normal course of transportation as provided in 40 CFR 279.41(see checklist item PO.75.2.US.)</li> <li>– burners that conduct incidental processing operations that occur during the normal course of used oil management prior to burning as provided in 40 CFR 279.61(b) (see checklist items PO.80.1.US. and PO.80.10.US.).)</li> </ul> <p>(NOTE: The standards for used oil marketers apply to any person who does either of the following (40 CFR 279.70(a)):</p> <ul style="list-style-type: none"> <li>– directs a shipment of off-specification used oil from their facility to a used oil burner</li> <li>– first claims that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in 40 CFR 279.11 (See Appendix 8-3 of this document).).</li> </ul> <p>Verify that when closing a tank system, the owner or operator removes or decontaminates used oil residues in tanks, contaminated containment system components, contaminated soils, and structures and equipment contaminated with used oil, and manages them as hazardous waste, unless the materials are not hazardous waste.</p> <p>(NOTE: If the owner or operator demonstrates that not all contaminated soils can be practicably removed or decontaminated, then the owner or operator must close the tank system and perform post-closure care in accordance with the closure and post-closure care requirements that apply to hazardous waste landfills.)</p> <p>Verify that, at closure, containers holding used oils or residues of used oil are removed from the site.</p> <p>Verify that, in relation to containers, the owner or operator removes or decontaminates used oil residues, contaminated containment system components, contaminated soils, and structures and equipment contaminated with used oil, and manages them as hazardous waste, unless the materials are not hazardous waste.</p> <p>(NOTE: These requirements do not apply to either of the following:</p> <ul style="list-style-type: none"> <li>– transporters that conduct incidental processing operations that occur during the normal course of transportation as provided in 40 CFR 279.41(see checklist item PO.75.2.US.)</li> <li>– burners that conduct incidental processing operations that occur during the normal course of used oil management prior to burning as provided in 40 CFR 279.61(b) (see checklist items PO.80.1.US. and PO.80.10.US.).)</li> </ul> <p>(NOTE: The standards for used oil marketers apply to any person who does either of the following (40 CFR 279.70(a)):</p> <ul style="list-style-type: none"> <li>– directs a shipment of off-specification used oil from their facility to a used oil burner</li> </ul>

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<p><b>PO.87.9.US.</b> Used oil processors/re-refiners are required to develop and follow a written waste analysis plan (40 CFR 279.50(a) and 40 CFR 279.55) [Added March 2000].</p>	<ul style="list-style-type: none"> <li>– first claims that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in 40 CFR 279.11 (See Appendix 8-3 of this document.).</li> </ul> <p>Verify that the used oil processor/re-refiner has, and follows, a written waste analysis plan and a copy of the plan is at the facility.</p> <p>Verify that the plan specifies the following:</p> <ul style="list-style-type: none"> <li>– whether sample analyses or knowledge of the halogen content of the used oil will be used to make this determination</li> <li>– if sample analyses are used to make this determination: <ul style="list-style-type: none"> <li>– the sampling method used to obtain representative samples to be analyzed</li> <li>– the frequency of sampling to be performed, and whether the analysis will be performed onsite or off-site</li> <li>– the methods used to analyze used oil for the parameters specified in 40 CFR 279.53</li> </ul> </li> <li>– the type of information that will be used to determine the halogen content of the used oil.</li> </ul> <p>Verify that the plan specifies the following if 40 CFR 279.72 (see checklist item PO.85.2.US.) is applicable:</p> <ul style="list-style-type: none"> <li>– whether sample analyses or other information will be used to make this determination</li> <li>– if sample analyses are used to make this determination: <ul style="list-style-type: none"> <li>– the sampling method used to obtain representative samples to be analyzed</li> <li>– whether used oil will be sampled and analyzed prior to or after any processing/re-refining</li> <li>– the frequency of sampling to be performed, and whether the analysis will be performed onsite or off-site</li> <li>– the methods used to analyze used oil for the parameters specified in 40 CFR 279.72 (see checklist item PO.85.2.US.)</li> </ul> </li> <li>– the type of information that will be used to make the on-specification used oil fuel determination.</li> </ul> <p>(NOTE: These requirements do not apply to either of the following:</p> <ul style="list-style-type: none"> <li>– transporters that conduct incidental processing operations that occur during the normal course of transportation as provided in 40 CFR 279.41(see checklist item PO.75.2.US.)</li> <li>– burners that conduct incidental processing operations that occur during the normal course of used oil management prior to burning as provided in 40 CFR 279.61(b) (see checklist items PO.80.1.US. and PO.80.10.US.).)</li> </ul>

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<p><b>PO.87.10.US.</b> Used oil processors/re-refiners are required to meet specific documentation requirements (40 CFR 279.50(a), 40 CFR 279.56, 279.57, 279.74(b), and 279.74(c)) [Added March 2000; Revised October 2003].</p>	<p>(NOTE: The standards for used oil marketers apply to any person who does either of the following (40 CFR 279.70(a)):</p> <ul style="list-style-type: none"> <li>– directs a shipment of off-specification used oil from their facility to a used oil burner</li> <li>– first claims that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in 40 CFR 279.11 (See Appendix 8-3 of this document).).</li> </ul> <p>Verify that used oil processors/re-refiners keep a record of each used oil shipment accepted for processing/re-refining and each record includes the following information:</p> <ul style="list-style-type: none"> <li>– the name and address of the transporter who delivered the used oil to the processor/re-refiner</li> <li>– the name and address of the generator or processor/re-refining from whom the used oil was sent for processing/re-refining</li> <li>– the USEPA identification number of the transporter who delivered the used oil to the processor/re-refiner</li> <li>– the USEPA identification number (if applicable) of the generator or processor/re-refiner from whom the used oil was sent for processing/re-refining</li> <li>– the quantity of used oil accepted</li> <li>– the date of acceptance.</li> </ul> <p>(NOTE: Records may take the form of a log, invoice, manifest, bill of lading, or other shipping documents.)</p> <p>Verify that used oil processor/re-refiners keep a record containing the following for each shipment of used oil that is shipped to a used oil burner, processor/ re-refiner, or disposal facility:</p> <ul style="list-style-type: none"> <li>– the name and address of the transporter who delivers the used oil to the burner, processor/re-refiner, or disposal facility</li> <li>– the name and address of the burner, processor/re-refiner or disposal facility who will receive the used oil</li> <li>– the USEPA identification number of the transporter who delivers the used oil to the burner, processor/re-refiner, or disposal facility</li> <li>– the USEPA identification number of the burner, processor/re-refiner, or disposal facility who will receive the used oil</li> <li>– the quantity of used oil shipped</li> <li>– the date of shipment.</li> </ul> <p>Verify that a used oil processor/re-refiner who first claims that used oil that is to be burned for energy recovery meets the fuel specifications under 40 CFR 279.11 (see Appendix 8-3) keeps a record of each shipment of used oil to the facility to which it delivers the used oil.</p>

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	<p>Verify that a record for each shipment of used oil that is to be burned for energy recovery includes the following recovery contains the following information:</p> <ul style="list-style-type: none"> <li>– the name and address of the facility receiving the shipment</li> <li>– the quantity of used oil fuel delivered</li> <li>– the date of shipment or delivery</li> <li>– a cross-reference to the record of used oil analysis or other information used to make the determination that the oil meets the specification as required under 40 CFR 279.72(a) (see checklist item PO.85.2.US).</li> </ul> <p>Verify that acceptance and delivery records are kept for at least 3 yr.</p> <p>Verify that there is a written operating record at the facility containing the following information:</p> <ul style="list-style-type: none"> <li>– records and results of used oil analyses performed as described in the analysis plan</li> <li>– summary reports and details of all incidents that require implementation of the contingency plan.</li> </ul> <p>Verify that information is maintained in the operating record until closure of the facility.</p> <p>Verify that the used oil processor/re-refiner reports to the USEPA Regional Administrator or authorized regulatory agency, in the form of a letter, on a biennial basis (by 1 March of each even numbered year), the following information concerning used oil activities during the previous calendar year:</p> <ul style="list-style-type: none"> <li>– the USEPA identification number, name, and address of the processor/re-refiner</li> <li>– the calendar year covered by the report</li> <li>– the quantities of used oil accepted for processing/re-refining and the manner in which the used oil was processed/re-refined, including the specific processes employed.</li> </ul> <p>(NOTE: These requirements do not apply to either of the following:</p> <ul style="list-style-type: none"> <li>– transporters that conduct incidental processing operations that occur during the normal course of transportation as provided in 40 CFR 279.41 [see checklist item PO.75.2.US]</li> <li>– burners that conduct incidental processing operations that occur during the normal course of used oil management prior to burning as provided in 40 CFR 279.61(b) [see checklist items PO.80.1.US. and PO.80.10.US].)</li> </ul> <p>(NOTE: The standards for used oil marketers apply to any person who does either of the following (40 CFR 279.70(a)):</p> <ul style="list-style-type: none"> <li>– directs a shipment of off-specification used oil from their facility to a used oil burner</li> </ul>

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<p><b>PO.87.11.US.</b> Used oil processors/re-refiners who initiate shipments of used oil off-site must ship the used oil using a used oil transporter who has obtained an USEPA identification number (40 CFR 279.50(a) and 40 CFR 279.58) [Added March 2000].</p>	<p>– first claims that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in 40 CFR 279.11 [See Appendix 8-3 of this document].)</p> <p>Verify that used oil processors/re-refiners who initiate shipments of used oil off-site, ship the used oil using a used oil transporter who has obtained an USEPA identification number.</p> <p>(NOTE: These requirements do not apply to either of the following:</p> <ul style="list-style-type: none"> <li>– transporters that conduct incidental processing operations that occur during the normal course of transportation as provided in 40 CFR 279.41(see checklist item PO.75.2.US.)</li> <li>– burners that conduct incidental processing operations that occur during the normal course of used oil management prior to burning as provided in 40 CFR 279.61(b) (see checklist items PO.80.1.US. and PO.80.10.US.).)</li> </ul> <p>(NOTE: The standards for used oil marketers apply to any person who does either of the following (40 CFR 279.70(a)):</p> <ul style="list-style-type: none"> <li>– directs a shipment of off-specification used oil from their facility to a used oil burner</li> <li>– first claims that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in 40 CFR 279.11 (See Appendix 8-3 of this document).).</li> </ul>
<p><b>PO.87.12.US.</b> Depending on their operations, used oil processors/re-refiners are required to also meet the standards for used oil generators (40 CFR 279.50(a) and 40 CFR 279.50(b)(1)) [Added March 2000].</p>	<p>Verify that used oil processors/re-refiners who generate used oil also comply with 40 CFR 279.20 through 40 CFR 279.24 (see checklist items PO.65.1.US. through PO.65.12.US.).</p> <p>(NOTE: These requirements do not apply to either of the following:</p> <ul style="list-style-type: none"> <li>– transporters that conduct incidental processing operations that occur during the normal course of transportation as provided in 40 CFR 279.41(see checklist item PO.75.2.US.)</li> <li>– burners that conduct incidental processing operations that occur during the normal course of used oil management prior to burning as provided in 40 CFR 279.61(b) (see checklist items PO.80.1.US. and PO.80.10.US.).)</li> </ul> <p>(NOTE: The standards for used oil marketers apply to any person who does either of the following (40 CFR 279.70(a)):</p> <ul style="list-style-type: none"> <li>– directs a shipment of off-specification used oil from their facility to a used oil burner</li> <li>– first claims that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in 40 CFR 279.11 (See Appendix 8-3 of this document).).</li> </ul>

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<p><b>PO.87.13.US.</b> Depending on their operations, used oil processors/re-refiners are required to also meet the standards for used oil transporters (40 CFR 279.50(a) and 40 CFR 279.50(b)(2)) [Added March 2000].</p>	<p>Verify that used oil processors/re-refiners who transport used oil also comply with 40 CFR 279.40 through 40 CFR 279.47 (see checklist items PO.75.1.US. through PO.75.9.US.).</p> <p>(NOTE: These requirements do not apply to either of the following:</p> <ul style="list-style-type: none"> <li>– transporters that conduct incidental processing operations that occur during the normal course of transportation as provided in 40 CFR 279.41(see checklist item PO.75.2.US.)</li> <li>– burners that conduct incidental processing operations that occur during the normal course of used oil management prior to burning as provided in 40 CFR 279.61(b) (see checklist items PO.80.1.US. and PO.80.10.US.).)</li> </ul> <p>(NOTE: The standards for used oil marketers apply to any person who does either of the following (40 CFR 279.70(a)):</p> <ul style="list-style-type: none"> <li>– directs a shipment of off-specification used oil from their facility to a used oil burner</li> <li>– first claims that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in 40 CFR 279.11 (See Appendix 8-3 of this document).).</li> </ul>
<p><b>PO.87.14.US.</b> Depending on their operations, used oil processors/re-refiners are required to also meet the standards for used oil burners (40 CFR 279.50(a) and 40 CFR 279.50(b)(3)) [Added March 2000].</p>	<p>Verify that used oil processors/re-refiners who burn off-specification used oil for energy recovery also comply with 40 CFR 279.60 through 40 CFR 279.67 (see checklist items PO.80.2.US. through PO.80.12.US.).</p> <p>(NOTE: This does not apply to processor/re-refiners burning used oil for energy recovery under either of the following conditions:</p> <ul style="list-style-type: none"> <li>– the used oil is burned in an onsite space heater that meets the requirements of 40 CFR 279.23 (see checklist item PO.65.2.US.)</li> <li>– the used oil is burned for purposes of processing used oil, which is considered burning incidentally to used oil processing;</li> </ul> <p>(NOTE: These requirements do not apply to either of the following:</p> <ul style="list-style-type: none"> <li>– transporters that conduct incidental processing operations that occur during the normal course of transportation as provided in 40 CFR 279.41(see checklist item PO.75.2.US.)</li> <li>– burners that conduct incidental processing operations that occur during the normal course of used oil management prior to burning as provided in 40 CFR 279.61(b) (see checklist items PO.80.1.US and PO.80.10.US.).)</li> </ul> <p>(NOTE: The standards for used oil marketers apply to any person who does either of the following (40 CFR 279.70(a)):</p> <ul style="list-style-type: none"> <li>– directs a shipment of off-specification used oil from their facility to a used oil burner</li> <li>– first claims that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in 40 CFR 279.11 (See Appendix 8-3 of this document).).</li> </ul>

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<p><b>PO.87.15.US.</b> Depending on their operations, used oil processors/re-refiners are required to also meet the standards for marketers (40 CFR 279.50(a) and 40 CFR 279.50(b)(4)) <b>[Added March 2000]</b>.</p> <p><b>PO.87.16.US.</b> Depending on their operations, used oil processors/re-refiners are required to also meet the standards for used oil disposers (40 CFR 279.50(a) and 40 CFR 279.50(b)(5)) <b>[Added March 2000]</b>.</p>	<p>Verify that processors/re-refiners who direct shipments of off-specification used oil from their facility to a used oil burner or first claim that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in 40 CFR 279.11, also complies with 40 CFR 279.70 through 40 CFR 279.75 (see checklist items PO.85.1.US. through PO.85.9.US.).</p> <p>(NOTE: The standards for used oil marketers apply to any person who does either of the following (40 CFR 279.70(a)):</p> <ul style="list-style-type: none"> <li>– directs a shipment of off-specification used oil from their facility to a used oil burner</li> <li>– first claims that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in 40 CFR 279.11 (See Appendix 8-3 of this document).).</li> </ul> <p>Verify that used oil processors/re-refiners who dispose of used oil, including the use of used oil as a dust suppressant, must also comply with 40 CFR 279.80 through 279.82 (see checklist items PO.60.1.US. and PO.90.1.US.).</p> <p>(NOTE: The standards for used oil marketers apply to any person who does either of the following (40 CFR 279.70(a)):</p> <ul style="list-style-type: none"> <li>– directs a shipment of off-specification used oil from their facility to a used oil burner</li> <li>– first claims that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in 40 CFR 279.11 (See Appendix 8-3 of this document).).</li> </ul>



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<b>PO.90</b>  <b>DUST SUPPRESSION WITH USED OIL</b>  <b>PO.90.1.US.</b> Used oil cannot be used for dust suppression unless allowed by the state (40 CFR 279.12(b) and 279.82) [Revised March 2000].	Verify that used oil is not used for dust suppression.



## Appendix 8-1

### Compliance Dates for Facilities Requiring a Response Plan (40 CFR 112.20) [Revised July 2000]

Facility Type	Due Date
1. Facilities that started operations after 18 February 1993 but before 30 August 1994 that could, because of location, be reasonably expected to cause substantial harm to the environment by discharging oil into or on the navigable waters or adjoining shorelines.	30 August 1994
2. Newly constructed facilities that started operations after 30 August 1994 that could, because of location, be reasonably expected to cause substantial harm to the environment by discharging oil into or on the navigable waters or adjoining shorelines.	Prior to start of operations
<b>3. Facilities which are required to submit a plan after 30 August 1994 because of changes in design, construction, operation, or maintenance rendering the facility such that it could, because of location, be reasonably expected to cause substantial harm to the environment by discharging oil into or on the navigable waters or adjoining shorelines.</b>	Prior to the changed part of the facility starting operation
4. Facilities which are required to submit a plan after 30 August 1994 as a result of unplanned events or change in facility characteristics rendering the facility such that it could, because of location, be reasonably expected to cause substantial harm to the environment by discharging oil into or on the navigable waters or adjoining shorelines.	Within 6 mo of the unplanned event or change
5. Animal fat and vegetable oil facilities that are newly constructed that commences operation after 31 July 2000.	Prior to start of operations
6. Animal fat and vegetable oil facilities that are required to prepare and submit a plan after 31 July 2000 as a result of a planned or unplanned change in facility characteristics that causes the facility to become regulated.	Prior to the changed part of the facility starting operation Within 6 mo of the unplanned change

## Appendix 8-2

### Classes of Vessels (46 CFR 30.01-5(d))

Method of propulsion	Size or other limitations <sup>1</sup> under subchapter	Classes of vessels (including motorboats) examined or inspected under various Coast Guard regulations <sup>1</sup>			
		Vessels inspected and certificated Passenger D- Tank Vessels <sup>2</sup>	Vessels inspected and certificated under either subchapter H- Cargo and Vessel 2, 3 ,4, 5 or Subchapter T- Small Passenger Vessels <sup>2, 3, 4</sup>	Vessels inspected and certificated under subchapter I- Uninspected Misc. Vessels <sup>2 ,5</sup>	Vessels subject to provisions of subchapter C- Vessels <sup>2 3, 6, 7, 8</sup>
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
Steam	Vessels not over 65 ft in length.	All vessels carrying combustible or flammable liquid cargo in bulk.	All vessels carrying more than 6 passengers. <sup>7</sup>	All tugboats and tow-boats.	All vessels except those covered by columns 3, 4, 5, and 7.
	Vessels over 65 ft in length.	All vessels carrying combustible or flammable liquid cargo in bulk.	<ol style="list-style-type: none"> <li>1. All vessels carrying more than 12 passengers on an international voyage, except yachts.</li> <li>2. All vessels of not over 15 gross tons which carry more than 6 passengers.<sup>7</sup></li> <li>3. All other vessels carrying passengers,<sup>7</sup> except:               <ol style="list-style-type: none"> <li>a. Yachts.</li> <li>b. Documented cargo or tank vessels issued a permit to carry not more than 16 persons in addition to the crew.</li> <li>c. Towing and fishing vessels, in other than ocean and coastwise service, may carry persons on the legitimate business of the vessel, in addition to crew, but not to</li> </ol> </li> </ol>	All vessels except those covered by columns 3 and 4.	None

Method of propulsion	Size or other limitations <sup>1</sup> under subchapter	Classes of vessels (including motorboats) examined or inspected under various Coast Guard regulations <sup>1</sup>			
		Vessels inspected and certificated Passenger D- Tank Vessels <sup>2</sup>	Vessels inspected and certificated under either subchapter H- Cargo and Vessel 2, 3 ,4, 5 or Subchapter T- Small Passenger Vessels <sup>2, 3, 4</sup>	Vessels inspected and certificated under subchapter I- Uninspected Misc. Vessels <sup>2 ,5</sup>	Vessels subject to provisions of subchapter C- Vessels <sup>2 3, 6, 7, 8</sup>
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
			exceed one for each net ton of the vessel.		
Motor	Vessels not over 15 gross tons.  Vessels over 15 gross tons except seagoing motor vessels of 300 gross tons and over.	All vessels carrying combustible or flammable liquid cargo in bulk.  All vessels carrying combustible or flammable liquid cargo in bulk. <sup>5</sup>	All vessels carrying more than 6 passengers. <sup>7</sup>  1. All vessels carrying more than 12 passengers on an international voyage, except yachts. 2. All vessels not over 65 ft in length which carry more than 6 passengers. <sup>7</sup> 3. All other vessels of over 65 ft in length carrying passengers for hire except documented cargo or tank vessels issued a permit to carry not more than 16 persons in addition to the crew.	Those vessels carrying dangerous cargoes when required by 46 CFR 98 or 49 CFR 171-179.  All vessels carrying freight for hire except those covered by columns 3 and 4.	All vessels except those covered by columns 3, 4, 5, and 7.  All vessels except those covered by columns 3, 4, 5, and 7.
	Seagoing motor vessels of 300 gross tons and over.	All vessels carrying combustible or flammable liquid cargo in bulk. <sup>5</sup>	1. All vessels carrying more than 12 passengers on an international voyage, except yachts. 2. All other vessels carrying passengers, <sup>7</sup> except: a. Yachts. b. Documented cargo or tank vessels issued a permit to carry not more than 16 persons in addition to the crew.	All vessels except those covered by columns 3 and 4, and those engaged in the fishing, oystering, clamming crabbing, or any other branch of the fishery, kelp, or sponge industry.	All vessels except those covered by columns 3, 4, 5, and 7.

Method of propulsion	Size or other limitations <sup>1</sup> under subchapter	Classes of vessels (including motorboats) examined or inspected under various Coast Guard regulations <sup>1</sup>			
		Vessels inspected and certificated Passenger D- Tank Vessels <sup>2</sup>	Vessels inspected and certificated under either subchapter H- Cargo and Vessel 2, 3 ,4, 5 or Subchapter T- Small Passenger Vessels <sup>2, 3, 4</sup>	Vessels inspected and certificated under subchapter I- Uninspected Misc. Vessels <sup>2, 5</sup>	Vessels subject to provisions of subchapter C- Vessels <sup>2 3, 6, 7, 8</sup>
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
Sail	Vessels not over 700 gross tons.	All vessels carrying combustible or liquid cargo in bulk.	All vessels carrying more than 6 passengers. <sup>7</sup>	Those vessels carrying dangerous cargoes when required by 46 CFR 98 or 49 CFR 171-179.	None
	Vessels over 700 gross tons.	All vessels carrying combustible or liquid cargo in bulk.	All vessels carrying passengers for hire.	Those vessels carrying dangerous cargoes when required by 46 CFR 98 or 146.	None
Nonself-propelled	Vessels less than 100 gross tons.	All vessels carrying combustible or liquid cargo in bulk.	Those vessels carrying dangerous cargoes when required by 49 CFR 171-179.	Those Vessels carrying dangerous cargoes when required by 46 CFR 98 or 49 CFR 171-179.	All barges carrying passengers except those covered by column 4.
	Vessels 100 gross tons or over.	All vessels carrying combustible or flammable liquid cargo in bulk.	All seagoing barges except those covered by columns 3 and 4; and those inland barges carrying dangerous car goes when required by 49 CFR 171- 179.	All seagoing barges except those covered by columns 3 and 4; and those inland barges carrying dangerous cargoes when required by 46 CFR 98 or 49 CFR 171- 179.	All barges carrying passengers except columns 4 and 7.

<sup>1</sup>Where length is used in this table it means the length measured from end to end over the deck, excluding sheer. This expression means a straight line measurement of the overall length from the foremost part of the vessel to the aftermost part of the vessel, measured parallel to the centerline.

<sup>2</sup>Subchapter E (Load Lines), F (Marine Engineering), J (Electrical Engineering), and N (Dangerous Cargoes) of this chapter may also be applicable under certain conditions. The provisions of 49 CFR 171-179 apply whenever hazardous materials are on board vessels (including motorboats), except when specifically exempted by law.

<sup>3</sup>Public nautical schoolships, other than vessels of the Navy and Coast Guard, shall meet the requirements of 46 CFR 167 of subchapter R (Nautical Schools) of this chapter. Civilian nautical schools, as defined by 46 USC 1331, shall meet the requirements of subchapter H (Passenger Vessels) and 46 CFR 168 of subchapter R (Nautical Schools) of this chapter.

<sup>4</sup>Subchapter H (Passenger Vessels) of this chapter covers only those vessels of 100 gross tons or more. Subchapter T (Small Passenger Vessels) covers only those vessels of less than 100 gross tons.

<sup>5</sup>Vessels covered by subchapter H (Passenger Vessels) or I (Cargo and Miscellaneous Vessels) of this chapter, where the principal purpose or use of the vessel is not the carriage of liquid cargo, may be granted a permit to carry a limited amount of flammable or combustible liquid cargo in bulk. The portion of the vessel used for the carriage of the flammable or combustible liquid cargo shall meet the requirements of subchapter D (Tank Vessels) in addition to the requirements of subchapter H (Passenger Vessels) or I (Cargo and Miscellaneous Vessels) of this chapter.

<sup>6</sup>Any vessel on an international voyage is subject to the requirements of the International Convention for Safety of Life at Sea, 1974.

<sup>7</sup>The meaning of the term *passenger* is as defined in the act of 10 May 1956 (Section 1, 70 Statute 151; 46 USC 390). On oceanographic vessels scientific personnel on board shall not be deemed to be passengers or seamen, but for calculations of lifesaving equipment, etc., shall be counted as persons.

<sup>8</sup>Boilers and machinery are subject to examination on vessels over 40 ft in length.



### Appendix 8-3

#### Used Oil Classifications

(40 CFR 261.3(a)(2)(v), 279.10 and 279.11)

**[Revised June 1998; Reviewed March 2000; Revised October 2003; Revised January 2007, Revised January 2017]**

Used Oils Which Are Required to be Handled According to the Requirements in 40 CFR 279 (40 CFR 279.10(b)(2)(ii), 279.10(b)(2)(iii), 279.10(b)(3), 279.10(c)(2), 279.10(d), 279.10(e)(2), 279.10(i), and 279.11)

1. Used oil containing more than 1000 ppm of total halogens but the generator has demonstrated that the used oil does not contain hazardous waste.
2. Used metalworking oils/fluids containing chlorinated paraffins when they are recycled or disposed of and the generator has demonstrated that the used oil does not contain hazardous waste.
3. Used oils contaminated with CFCs that have been mixed with used oil from sources other than refrigeration units (or from refrigeration units but the unit is destined for reclamation) and the generator has demonstrated that the used oil does not contain hazardous waste.
4. Materials produced from used oil that are burned for energy recovery.
5. Mixtures of used oil and a characteristic hazardous waste if the resultant mixture does not exhibit any characteristics of hazardous waste.
6. Mixtures of used oil and a waste that is hazardous solely because it exhibits the characteristic of ignitability and is not a listed waste, provided that the mixture does not exhibit the ignitability characteristic.
7. Mixtures of used oil and very small quantity generator (VSQG) hazardous waste.
8. Mixtures of used oil and fuels or other fuel products, except those mixed on-site by the generator for use in the generators own vehicles if the used oil and the diesel fuel have been mixed.
9. Used oil burned for energy recovery, and any fuel produced from used oil by processing, blending, or other treatment unless the used oil is shown not to exceed any of the allowable levels of the constituents and properties in the following specifications. (NOTE: Once used oil that is to be burned for energy recovery has been shown not to exceed any specification and the person making that showing complies with 40 CFR 279.72, 279.73, and 279.74(b), the used oil is no longer subject to 40 CFR 279.)

Arsenic	5 ppm maximum
Cadmium	2 ppm maximum
Chromium	10 ppm maximum
Lead	100 ppm maximum
Flash Point	100 F minimum
Total halogens	4000 ppm maximum
10. Materials containing or otherwise contaminated with used oil that are burned for energy recovery.
11. Used oil drained or removed from materials containing or otherwise contaminated with used oil.
12. Used oil containing PCBs (as defined at 40 CFR 761.3) at any concentration less than 50 ppm is subject to the requirements of 40 CFR 279 unless, because of dilution, it is regulated under 40 CFR 761 as a used oil containing PCBs at 50 ppm or greater. PCB-containing used oil subject to the requirements of 40 CFR 279 may also be subject to the prohibitions and requirements found at 40 CFR 761, including 40 CFR 761.20(d) and (e). No person may avoid these provisions by diluting used oil containing PCBs, unless otherwise specifically provided for in 40 CFR 279 or 40 CFR 761.

Used Oil that is Required to be Handled as a Hazardous Waste (40 CFR 261.3(a)(2)(v), 279.10(b)).

1. Mixtures of used oil and listed hazardous waste.
2. Used oil containing more than 1000 ppm total halogens (NOTE: Used oil containing more than 1,000 ppm total halogens is presumed to be a hazardous waste because it has been mixed with halogenated hazardous waste listed in subpart D of part 261 of this chapter. Persons may rebut this presumption by demonstrating that the used oil does not contain hazardous waste (for example, by showing that the used oil does not contain significant concentrations of halogenated hazardous constituents listed in appendix VIII of 40 CFR 261).
3. Used metalworking oils/fluids containing chlorinated paraffins if processed through a tolling agreement.
4. Used oil contaminated with CFCs removed from refrigeration units where the CFCs are destined for reclamation.
5. Mixtures of used oil and hazardous waste if the resultant mixture exhibits characteristics of a hazardous waste.

Used Oil that is not Subject to the Requirements of 40 CFR 279, Nor is it to be Handled as a Hazardous Waste Unless Testing Indicates Hazardous Constituents (40 CFR 279.10(c)(1), 279.10(d)(2), 279.10(e)(1), 279.10(e)(3), 279.10(e)(4), and 279.10(f) through 279.10(i)).

1. Mixtures of used oil and diesel fuel mixed on-site by the generator of the used oil for use in the generator's own vehicles.
2. Materials that are reclaimed from used oil that are used beneficially and are not burned for energy recovery or used in a manner constituting disposal.
3. Materials derived from used oil that are disposed of or used in a manner constituting disposal.
4. Used oil re-refining distillation bottoms that are used as feedstock to manufacture asphalt products.
5. Wastewater discharges with de minimis quantities of used oil.
6. Used oil within a crude oil or natural gas pipeline.
7. Used oil on vessels.
8. Materials containing or otherwise contaminated with used oil from which the used oil has been properly drained or removed so that no signs of visible free-flowing remains.
9. Used oil containing PCBs at concentrations of 50 ppm or greater is not subject to the requirements of 40 CFR 279, but is subject to regulation under 40 CFR 761. No person may avoid these provisions by diluting used oil containing PCBs, unless otherwise specifically provided for in 40 CFR 279 or 40 CFR 761.

## Appendix 8-4

### Response Plan Requirements Specific to MTR Facility Type (33 CFR 154.1035, 154.1040, and 154.1041) [Added October 2010]

(NOTE: This Appendix contains content information for the following three situations:

- I. For facilities that could reasonably be expected to cause significant and substantial harm to the environment.*
- II. For facilities that could reasonably be expected to cause substantial harm to the environment.*
- III. Mobile MTR facilities.*

***I. Specific response plan requirements for facilities that could reasonably be expected to cause significant and substantial harm to the environment.***

- A. Introduction and plan content. This section of the plan must include facility and plan information as follows:
1. The facility's name, street address, city, county, state, ZIP code, facility telephone number, and fax number, if so equipped. Include mailing address if different from street address.
  2. The facility's location described in a manner that could aid both a reviewer and a responder in locating the specific facility covered by the plan, such as, river mile or location from a known landmark that would appear on a map or chart.
  3. The name, address, and procedures for contacting the facility's owner or operator on a 24-h basis.
  4. A table of contents.
  5. During the period that the submitted plan does not have to conform to the format contained in 33 CFR 154, Subpart F, a cross index, if appropriate.
  6. A record of change(s) to record information on plan updates.

B. Emergency Response Action Plan. This section of the plan must be organized in the subsections described in this paragraph:

1. Notification procedures.
  - (i) This subsection must contain a prioritized list identifying the person(s), including name, telephone number, and their role in the plan, to be notified of a discharge or substantial threat of a discharge of oil. The telephone number need not be provided if it is listed separately in the list of contacts required in the plan. This Notification Procedures listing must include--
    - A. Facility response personnel, the spill management team, oil spill removal organizations, and the qualified individual(s) and the designated alternate(s); and
    - B. Federal, State, or local agencies, as required.
  - (ii) This subsection must include a form, such as that depicted in Figure 1, which contains information to be provided in the initial and follow-up notifications to Federal, State, and local agencies. The form shall include notification of the National Response Center as required in part 153 of this chapter. Copies of the form also must be placed at the location(s) from which notification may be made. The initial notification form must include space for the information contained in Figure 1. The form must contain a prominent statement that initial notification must not be delayed pending collection of all information.

**Figure 1--Information on discharge \***  
**[Involved Parties]**

<b>A) Reporting party</b>	<b>(B) Suspected responsible party</b>
<b>Name</b>	<b>Name</b>
<b>Phones () -</b>	<b>Phones () -</b>
<b>Company</b>	<b>Company</b>

<b>Position</b> <b>Address</b> <b>Address</b>   <b>City</b> <b>State</b> <b>Zip</b>	<b>Organization Type</b> <b>Private citizen</b> <b>Private enterprise</b> <b>Public utility</b> <b>Local government</b> <b>State government</b> <b>Federal government</b>  <b>City</b> <b>State</b> <b>Zip</b>
<p>* It is not necessary to wait for all information before calling NRC. National Response Center--1-800-424-8802 or direct telephone: 202-267-2675.</p> <p><b>Were materials Discharged (Y/N)</b>  <b>Calling for Responsible Party (Y/N)</b></p>	
<p align="center"><b>Incident Description</b></p>	
<p>Source and/or Cause of Incident</p>	
<p>Date - - Time: Cause</p>	
<p>Incident Address/Location Nearest City Distance from City</p>	
<p>Storage Tank Container Type--Above ground (Y/N) Below ground (Y/N) Unknown</p>	
<p align="center"><b>Facility Capacity</b></p>	
<p>Tank Capacity Latitude Degrees Longitude Degrees Mile Post or River Mile</p>	
<p align="center"><b>Materials</b></p>	
<p>Discharge Unit of Quantity Measure Discharged Material Quantity in Water</p>	
<p align="center"><b>Response Action</b></p>	
<p>Actions Taken to Correct or Mitigate Incident</p>	
<p align="center"><b>Impact</b></p>	
<p>Number of Injuries Number of Fatalities Were there Evacuations (Y/N/U)? Number Evacuated Was there any Damage (Y/N/U)? Damage in Dollars</p>	
<p align="center"><b>Additional Information</b></p>	
<p>Any information about the Incident not recorded elsewhere in the report</p>	
<p align="center"><b>Caller Notifications</b></p>	

2. Facility's spill mitigation procedures.

- (i) This subsection must describe the volume(s) and oil groups that would be involved in the--
  - (A) Average most probable discharge from the MTR facility;
  - (B) Maximum most probable discharge from the MTR facility;
  - (C) Worst case discharge from the MTR facility; and
  - (D) Where applicable, the worst case discharge from the non-transportation-related facility. This must be the same volume provided in the response plan for the non-transportation-related facility.
- (ii) This subsection must contain prioritized procedures for facility personnel to mitigate or prevent any discharge or substantial threat of a discharge of oil resulting from operational activities associated with internal or external facility transfers including specific procedures to shut down affected operations. Facility personnel responsible for performing specified procedures to mitigate or prevent any discharge or potential discharge shall be identified by job title. A copy of these procedures shall be maintained at the facility operations center. These procedures must address actions to be taken by facility personnel in the event of a discharge, potential discharge, or emergency involving the following equipment and scenarios:
  - (A) Failure of manifold, mechanical loading arm, other transfer equipment, or hoses, as appropriate;
  - (B) Tank overflow;
  - (C) Tank failure;
  - (D) Piping rupture;
  - (E) Piping leak, both under pressure and not under pressure, if applicable;
  - (F) Explosion or fire; and
  - (G) Equipment failure (e.g. pumping system failure, relief valve failure, or other general equipment relevant to operational activities associated with internal or external facility transfers.)
- (iii) This subsection must contain a listing of equipment and the responsibilities of facility personnel to mitigate an average most probable discharge.

3. Facility's response activities.

- (i) This subsection must contain a description of the facility personnel's responsibilities to initiate a response and supervise response resources pending the arrival of the qualified individual.
- (ii) This subsection must contain a description of the responsibilities and authority of the qualified individual and alternate as required in 33 CFR 154.1026.
- (iii) This subsection must describe the organizational structure that will be used to manage the response actions. This structure must include the following functional areas.
  - (A) Command and control;
  - (B) Public information;
  - (C) Safety;
  - (D) Liaison with government agencies;
  - (E) Spill Operations;
  - (F) Planning;
  - (G) Logistics support; and
  - (H) Finance.
- (iv) This subsection must identify the oil spill removal organizations and the spill management team to:
  - (A) Be capable of providing the following response resources:
    - (1) Equipment and supplies to meet the requirements of 33 CFR 154.1045, 33 CFR 154.1047 or subparts H or I of 33 CFR 154, as appropriate; and
    - (2) Trained personnel necessary to continue operation of the equipment and staff of the oil spill removal organization and spill management team for the first 7 days of the response.
  - (B) This section must include job descriptions for each spill management team member within the organizational structure described in paragraph (b)(3)(iii) of this section. These job descriptions should include the responsibilities and duties of each spill management team member in a response action.

- (v) For mobile facilities that operate in more than one COTP zone, the plan must identify the oil spill removal organization and the spill management team in the applicable geographic-specific appendix. The oil spill removal organization(s) and the spill management team discussed in paragraph (b)(3)(iv)(A) of this section must be included for each COTP zone in which the facility will handle, store, or transport oil in bulk.
4. Fish and wildlife and sensitive environments.
- (i) This section of the plan must identify areas of economic importance and environmental sensitivity, as identified in the ACP, which are potentially impacted by a worst case discharge. ACPs are required under section 311(j)(4) of the FWPCA to identify fish and wildlife and sensitive environments. The applicable ACP shall be used to designate fish and wildlife and sensitive environments in the plan. Changes to the ACP regarding fish and wildlife and sensitive environments shall be included in the annual update of the response plan, when available.
  - (ii) For a worst case discharge from the facility, this section of the plan must--
    - (A) List all fish and wildlife and sensitive environments identified in the ACP which are potentially impacted by a discharge of persistent oils, non-persistent oils, or non-petroleum oils.
    - (B) Describe all the response actions that the facility anticipates taking to protect these fish and wildlife and sensitive environments.
    - (C) Contain a map or chart showing the location of those fish and wildlife and sensitive environments which are potentially impacted. The map or chart shall also depict each response action that the facility anticipates taking to protect these areas. A legend of activities must be included on the map page.
  - (iii) For a worst case discharge, this section must identify appropriate equipment and required personnel, available by contract or other approved means as described in 33 CFR 154.1028, to protect fish and wildlife and sensitive environments which fall within the distances calculated using the methods outlined in this paragraph as follows:
    - (A) Identify the appropriate equipment and required personnel to protect all fish and wildlife and sensitive environments in the ACP for the distances, as calculated in paragraph (b)(4)(iii)(B) of this section, that the persistent oils, non-persistent oils, or non-petroleum oils are likely to travel in the noted geographic area(s) and number of days listed in table 2 of appendix C of this part;
    - (B) Calculate the distances required by paragraph (b)(4)(iii)(A) of this section by selecting one of the methods described in this paragraph:
      - (1) Distances may be calculated as follows:
        - (i) For persistent oils and non-petroleum oils discharged into non-tidal waters, the distance from the facility reached in 48 hours at maximum current.
        - (ii) For persistent and non-petroleum oils discharged into tidal waters, 15 miles from the facility down current during ebb tide and to the point of maximum tidal influence or 15 miles, whichever is less, during flood tide.
        - (iii) For non-persistent oils discharged into non-tidal waters, the distance from the facility reached in 24 hours at maximum current.
        - (iv) For non-persistent oils discharged into tidal waters, 5 miles from the facility down current during ebb tide and to the point of maximum tidal influence or 5 miles, whichever is less, during flood tide.
      - (2) A spill trajectory or model may be substituted for the distances calculated under paragraph (b)(4)(iii)(B)(1) of this section. The spill trajectory or model must be acceptable to the COTP.
      - (3) The procedures contained in the Environmental Protection's Agency's regulations on oil pollution prevention for non-transportation-related onshore facilities at 40 CFR 112, appendix C, Attachment C III may be substituted for the distances listed in non-tidal and tidal waters; and
    - (C) Based on historical information or a spill trajectory or model, the COTP may require the additional fish and wildlife and sensitive environments also be protected.
5. Disposal Plan. This subsection must describe any actions to be taken or procedures to be used to ensure that all recovered oil and oil contaminated debris produced as a result of any discharge are disposed according to Federal, state, or local requirements.

C. Training and exercises. This section must be divided into the following two subsections:

1. Training procedures. This subsection must describe the training procedures and programs of the facility owner or operator to meet the requirements in 33 CFR 154.1050.
2. Exercise procedures. This subsection must describe the exercise program to be carried out by the facility owner or operator to meet the requirements in 33 CFR 154.1055.

D. Plan review and update procedures. This section must address the procedures to be followed by the facility owner or operator to meet the requirements of 33 CFR 154.1065 and the procedures to be followed for any post-discharge review of the plan to evaluate and validate its effectiveness.

E. Appendices. This section of the response plan must include the appendices described in this paragraph.

1. Facility-specific information. This appendix must contain a description of the facility's principal characteristics.
  - (i) There must be a physical description of the facility including a plan of the facility showing the mooring areas, transfer locations, control stations, locations of safety equipment, and the location and capacities of all piping and storage tanks.
  - (ii) The appendix must identify the sizes, types, and number of vessels that the facility can transfer oil to or from simultaneously.
  - (iii) The appendix must identify the first valve(s) on facility piping separating the transportation-related portion of the facility from the non-transportation-related portion of the facility, if any. For piping leading to a manifold located on a dock serving tank vessels, this valve is the first valve inside the secondary containment required by 40 CFR 112.
  - (iv) The appendix must contain information on the oil(s) and hazardous material handled, stored, or transported at the facility in bulk. A material safety data sheet meeting the requirements of 29 CFR 1910.1200, 33 CFR 154.310(a)(5) or an equivalent will meet this requirement. This information can be maintained separately providing it is readily available and the appendix identifies its location. This information must include:
    - (A) The generic or chemical name;
    - (B) A description of the appearance and odor;
    - (C) The physical and chemical characteristics;
    - (D) The hazards involved in handling the oil(s) and hazardous materials. This shall include hazards likely to be encountered if the oil(s) and hazardous materials come in contact as a result of a discharge; and
    - (E) A list of firefighting procedures and extinguishing agents effective with fires involving the oil(s) and hazardous materials.
  - (v) The appendix may contain any other information which the facility owner or operator determines to be pertinent to an oil spill response.
2. List of contacts. This appendix must include information on 24-hour contact of key individuals and organizations. If more appropriate, this information may be specified in a geographic-specific appendix. The list must include:
  - (i) The primary and alternate qualified individual(s) for the facility;
  - (ii) The contact(s) identified under paragraph (b)(3)(iv) of this section for activation of the response resources; and
  - (iii) Appropriate Federal, State, and local officials.
3. Equipment list and records. This appendix must include the information specified in this paragraph.
  - (i) The appendix must contain a list of equipment and facility personnel required to respond to an average most probable discharge, as defined in 33 CFR 154.1020. The appendix must also list the location of the equipment.
  - (ii) The appendix must contain a detailed listing of all the major equipment identified in the plan as belonging to an oil spill removal organization(s) that is available, by contract or other approved means as described in 33 CFR 154.1028(a), to respond to a maximum most probable or worst case discharge, as defined in 33 CFR 154.1020. The detailed listing of all major equipment may be located in a separate document referenced by the plan. Either the appendix or the separate document referenced in the plan must provide the location of the major response equipment.
  - (iii) It is not necessary to list response equipment from oil spill removal organization(s) when the organization has been classified by the Coast Guard and their capacity has been determined to equal or exceed the response capability needed by the facility. For oil spill removal organization(s) classified by the Coast Guard, the classification must be noted in this section of the plan. When it is necessary

for the appendix to contain a listing of response equipment, it shall include all of the following items that are identified in the response plan: Skimmers; booms; dispersant application, in-situ burning, bioremediation equipment and supplies, and other equipment used to apply other chemical agents on the NCP Product Schedule (if applicable); communications, firefighting, and beach cleaning equipment; boats and motors; disposal and storage equipment; and heavy equipment. The list must include for each piece of equipment:

- (A) The type, make, model, and year of manufacture listed on the nameplate of the equipment;
  - (B) For oil recovery devices, the effective daily recovery rate, as determined using section 6 of appendix C of this part;
  - (C) For containment boom, the overall boom height (draft and freeboard) and type of end connectors;
  - (D) The spill scenario in which the equipment will be used for or which it is contracted;
  - (E) The total daily capacity for storage and disposal of recovered oil;
  - (F) For communication equipment, the type and amount of equipment intended for use during response activities. Where applicable, the primary and secondary radio frequencies must be specified.
  - (G) Location of the equipment; and
  - (H) The date of the last inspection by the oil spill removal organization(s).
4. Communications plan. This appendix must describe the primary and alternate method of communication during discharges, including communications at the facility and at remote locations within the areas covered by the response plan. The appendix may refer to additional communications packages provided by the oil spill removal organization. This may reference another existing plan or document.
  5. Site-specific safety and health plan. This appendix must describe the safety and health plan to be implemented for any response location(s). It must provide as much detailed information as is practicable in advance of an actual discharge. This appendix may reference another existing plan requiring under 29 CFR 1910.120.
  6. List of acronyms and definitions. This appendix must list all acronyms used in the response plan including any terms or acronyms used by Federal, State, or local governments and any operational terms commonly used at the facility. This appendix must include all definitions that are critical to understanding the response plan.

## ***II. Specific requirements for facilities that could reasonably be expected to cause substantial harm to the environment.***

The response plan will meet all of the requirements listed in Part I of this Appendix, except as modified below:

1. The facility's response activities section of the response plan need not list the facility or corporate organizational structure that will be used to manage the response
2. The owner or operator of a facility must ensure the availability of response resources required to be identified in the plan by contract or other approved means.
3. A facility owner or operator must have at least 200 ft of containment boom and the means of deploying and anchoring the boom available at the spill site within 1 h of the detection of a spill to respond to the average most probable discharge in lieu of 1,000 ft of containment boom or two times the length of the largest vessel that regularly conducts petroleum oil transfer to or from the facility, whichever is greater. Based on site-specific or facility-specific information, the COTP may specify that additional quantities of containment boom are available within one hour. In addition, there must be adequate sorbent material for initial response to an average most probable discharge. If the facility is a fixed facility, the containment boom and sorbent material must be located at the facility. If the facility is a mobile facility, the containment boom and sorbent must be available locally and be at the site of the discharge within 1 hour of its discovery.

## ***III Response information to be maintained on mobile MTR facilities.***

Each mobile MTR facility must carry the following information as contained in the response plan when performing transfer operations:

1. A description of response activities for a discharge which may occur during transfer operations. This may be a narrative description or a list of procedures to be followed in the event of a discharge.
2. Identity of response resources to respond to a discharge from the mobile MTR facility.

3. List of the appropriate persons and agencies (including the telephone numbers) to be contacted in regard to a discharge and its handling, including the National Response Center.

(NOTE: The owner or operator of the mobile facility must also retain the information in this paragraph at the principal place of business.)

## SECTION 9

### SOLID WASTE MANAGEMENT U.S. TEAM Guide, December 2018

#### A. Applicability

This section addresses the collection, storage, and disposal of solid waste at facilities. Solid waste is considered to be non-hazardous trash, rubbish, garbage, bulky wastes, liquids or sludges generated by any operations and activities. The handling and disposal of asbestos waste materials are addressed in Section 11, Toxic Substances Management.

Recycling and resource recovery activities are also included in this section because they are considered a form of solid waste management.

Assessors are required to review state and local regulations and, if applicable, the appropriate Agency Supplement, to perform a comprehensive assessment.

Select portions of this section (i.e., Review of Federal Legislation, State and Local Regulations, Key Compliance Requirements, Key Terms and Definitions, Typical Records to Review, Typical Physical Features to Inspect, and the Checklist) have been reviewed by USEPA personnel from the Office of Enforcement and Compliance Assurance (OECA) and USEPA's Office of General Counsel. USEPA's comments and suggestions for changes have been incorporated in this version of the TEAM Guide. USEPA did not review all portions of this section. USEPA also did not review and comment on items pertaining to federal Executive Orders, DOT regulations, OSHA regulations or any other area outside of Title 40 of the Code of Federal Regulations. Portions that have been added or revised as a result of this review are identified as being reviewed, revised, or added in March 2000, for example **[Added March 2000]**.

#### B. Federal Legislation

- *Resource Conservation and Recovery Act (RCRA)* of 1976. This is the Federal law that governs the disposal of solid waste. Subtitle D of this act, as last amended in November 1984, Public Law (PL) 98-616, 42 U.S. Code (USC) 6941-6949a, establishes Federal standards and requirements for state and regional authorities respecting solid waste disposal. The objectives of this subtitle are to assist in developing and encouraging methods for the disposal of solid waste which are environmentally sound and which maximize the utilization of valuable resources recoverable from solid waste. The objectives are to be achieved through Federal technical and financial assistance to states and regional authorities for comprehensive planning (42 USC 6941).
- *The Solid Waste Disposal Act* of 1965, as amended. This act requires that Federal facilities comply with all Federal, state, interstate, and local requirements concerning the disposal and management of solid wastes. These requirements include permitting, licensing, and reporting.
- *The Occupational Safety and Health Act (OSHA)*. The general purpose of this act is to assure, as much as possible, every individual working in the United States safe and healthful working conditions. The control of medical waste, including infectious and pathological waste, is one aspect of assuring safe and healthy working conditions.
- *The Clean Air Act Amendments* of 1990 (CAAA90). This act, Public Law (PL) 101-549 (42 U.S. Code (USC) 7401-7671q), is currently the Federal legislation regulating the prevention and control of air pollution. As a result of this act, regulations have been promulgated concerning the control, monitoring, and reporting of emissions from municipal solid waste landfills (MSWLFs).
- EO 12088, *Federal Compliance with Pollution Standards*. This EO, dated 13 October 1978, requires Federally owned and operated facilities to comply with applicable Federal, state, and local pollution control standards. It makes the head of each executive agency responsible for ensuring that the agencies, facilities, programs, and activities the Agency funds meet applicable Federal, state, and local environmental requirements for correcting

situations that are not in compliance with such requirements. In addition, the EO requires that each agency ensure that sufficient funds for environmental compliance are included in the agency budget. Sections 1-4, "Pollution Control Plan" was revoked by EO 13148 **[Revised October 2002]**.

### C. State/Local Regulations

For information on regulations in specific states, see the State Supplements to TEAM Guide.

The Federal government set minimum national standards for municipal solid waste disposal in 40 CFR 258, but state and local governments are responsible for implementing and enforcing waste programs. Currently USEPA has delegated its authority to implement various provisions of RCRA to all states, except Alaska, Hawaii, Iowa, and two U.S. territories. States are required to develop their own programs based on the Federal regulations. Most states and municipalities have already developed their own regulations governing the permitting, licensing, and operations of landfills, incinerators, and source separation/recycling programs **[Revised March 2000]**.

States are required to incorporate revised criteria for MSWLFs into their permit programs and gain approval from U.S. Environmental Protection Agency (USEPA). States that apply for and receive USEPA approval of their programs have the opportunity to provide a lot of flexibility in implementing the regulations. This flexibility allows states to take local conditions into account and gives them the authority to alter some of the requirements. Evaluators will need to determine if a state has been granted approval for the 40 CFR 258 program in order to accurately assess compliance with the criteria. Many states have also instigated categories of special wastes that cannot be placed in landfills or dumps, or may only be disposed of under specific circumstances **[Reviewed March 2000]**.

### D. Key Compliance Requirements

- **Storage/Collection** - All solid waste and materials separated for recycling must be stored so that it does not cause a fire, safety, or health hazard. Collection systems are required to be operated in a manner to protect the health and safety of personnel associated with the operation. All collection equipment is required to have a suitable cover to prevent spillage and be constructed, operated, and maintained adequately. Solid wastes or materials separated for recycling are required to be collected according to a certain schedule, and in a safe, efficient manner (40 CFR 243.200-1, 243.201-1, 243.202-1(a) through 243.202-1(c), 243.203-1, and 243.204-1) **[Reviewed March 2000]**.
- **Solid Waste Containers** - Personnel should be periodically informed about materials that are prohibited from disposal in solid waste receptacles (MP).
- **Recycling** - Facilities should participate in any state or local recycling programs and reduce the volume of solid waste materials at the source whenever practical. Businesses and other organizations employing over 100 office workers are required to recover high-grade paper. Residential facilities at which more than 500 families reside are required to recycle newspapers. Any facility generating 10 tons or more of waste corrugated containers per month is required to segregate or collect them separately for recycling (40 CFR 246.200-1 and 246.202-1) **[Reviewed March 2000]**.
- **Open Dumping** - 40 CFR 257 details the criteria for determining whether or not an activity would be considered an open dump for the purposes of state solid waste management planning under RCRA. See Appendix 9-1a for a list of the criteria that a facility or practice must meet in order for it to not be considered an open dump. **[Reviewed March 2000]**.
- **Municipal Solid Waste Landfills (MSWLFs)** - MSWLFs must meet restrictions for location, the types of waste to be placed in them, emissions from the MSWLF, and the types of monitoring required. Limitations, design criteria, and closure requirements vary depending on whether it is a new or existing MSWLF (40 CFR 258 and 40 CFR 60.750 through 60.759) **[Reviewed March 2000]**.

- **Thermal Processing Facilities** - Thermal processing facilities that are designed to process or are processing 50 tons or more per day of municipal solid wastes must be operated in a manner that prevents water and/or air contamination. Additionally, there must be an operating plan that specifies procedures and precautions to be taken if unacceptable wastes are delivered to or left at the thermal processing facility. The residue and solid waste resulting from the thermal processing must be disposed of in a manner that prevents environmental damage (40 CFR 240) **[Reviewed March 2000]**.
- **Medical Waste** - Contaminated reusable sharps and other regulated wastes are required to be placed in puncture resistant, color coded, leakproof containers, as soon as possible after use until properly reprocessed. Specimens of blood or other potentially infectious material are required to be placed in a container that prevents leakage during collection, handling, processing, storage, transport, or shipping and specific labeling and handling requirements are followed (29 CFR 1910.1030(d)).
- **Medical Waste Containers** - All bins, cans, and other receptacles intended for reuse that have the likelihood of becoming contaminated with blood or other potentially infectious materials are required to be inspected and decontaminated on a regularly scheduled basis. Labels affixed to containers of regulated wastes, refrigerators and freezers containing blood, and other containers used to store, transport, or ship blood or other potentially infectious materials must meet specific standards, which include the biohazard symbol, and being colored a fluorescent orange with contrasting-colored lettering and symbols (29 CFR 1910.1030(d)(4)(ii)(c) and 1910.1030(g)(1)(i)).
- The following is a summary of the solid waste-related goals outlined in EO 13423:
  1. **Building Performance:** Construct or renovate buildings in accordance with sustainability strategies, including resource conservation, reduction, and use; siting; and indoor environmental quality.
  2. **Procurement:** Expand purchases of environmentally-sound goods and services, including biobased products.
  3. **Pollution Prevention:** Reduce use of chemicals and toxic materials and purchase lower risk chemicals and toxic materials from top priority list.

## **E. Key Compliance Definitions**

- *Active Collection System* - a gas collection system that uses gas mover equipment (40 CFR 60.751) **[Reviewed March 2000]**.
- *Active Landfill* - a landfill in which solid waste is being placed or a landfill that is planned to accept waste in the future (40 CFR 60.751) **[Reviewed March 2000]**.
- *Active Life* - the period of operation beginning with the initial receipt of solid waste and ending with the completion of closure activities (40 CFR 258.2) **[Reviewed March 2000]**.
- *Active Life* - the period of operation beginning with the initial receipt of solid waste and ending at the final receipt of solid waste (40 CFR 257.5(b)) **[Added April 2004]**.
- *Active Portion* - that part of a facility or unit that has received or is receiving wastes and that has not been closed (40 CFR 258.2) **[Reviewed March 2000]**.
- *Agency* - an executive agency as defined in section 105 of title 5, United States Code, excluding the Government Accountability Office. For the purpose of the E.O., military departments, as defined in 5 U.S.C. 102, are covered under the auspices of DoD (*Instructions for Implementing EO 13423*, Section XIII, Definitions) **[Added July 2007]**.
- *Agricultural Waste* - byproducts generated by the rearing of animals and the production and harvest of crops or trees. Animal waste, a large component of agricultural waste, includes waste (e.g., feed waste, bedding and litter,

and feedlot and paddock runoff) from livestock, dairy, and other animal-related agricultural and farming practices (7 CFR 330.400(b)) **[Added July 2006]**.

- *Airport* - public-use airport open to the public without prior permission and without restrictions within the physical capacities of available facilities (40 CFR 257.3-8(e)) **[Added April 2004]**.
- *Alley Collection* - the collection of solid waste from containers placed adjacent to or in an alley (40 CFR 243.101) **[Added March 2000]**.
- *Agricultural Solid Waste* - the solid waste that is generated by the rearing of animals, and the producing and harvesting of crops or trees (40 CFR 243.101) **[Added March 2000]**.
- *Animal Feed* - any crop grown for consumption by animals, such as pasture crops, forage, and grain (40 CFR 257.3-5(c)) **[Added April 2004]**.
- *Appropriate Facility or Organization* - any Federal facility or organization that is subject to compliance with environmental regulation or conducts activities that can have a significant impact on the environment, either directly or indirectly, individually or cumulatively, due to the operations of that facility's or organization's mission, processes, or functions (*Instructions for Implementing EO 13423*, Section XIII, Definitions) **[Added July 2007]**.
- *Approved Facility* - a facility approved by the Administrator, Animal and Plant Health Inspection Service, upon his determination that it has equipment and uses procedures that are adequate to prevent the dissemination of plant pests and livestock or poultry diseases, and that it is certified by an appropriate Government official as currently complying with the applicable laws for environmental protection (7 CFR 330.400(b)) **[Added July 2006]**.
- *Approved Sewage System* - a sewage system approved by the Administrator, Animal and Plant Health Inspection Service, upon his determination that the system is designed and operated in such a way as to preclude the discharge of sewage effluents onto land surfaces or into lagoons or other stationary waters, and otherwise is adequate to prevent the dissemination of plant pests and livestock or poultry diseases, and that is certified by an appropriate Government official as currently complying with the applicable laws for environmental protection (7 CFR 330.400(b)) **[Added July 2006]**.
- *Aquifer* - a geological formation, group of formations, or a portion of a formation capable of yielding significant quantities of groundwater to wells or springs (40 CFR 257.3-4(c) and 258.2) **[Reviewed March 2000; Revised April 2004]**.
- *Background Soil pH* - the pH of the soil prior to the addition of substances that alter the hydrogen ion concentration (40 CFR 257.3-5(c)) **[Added April 2004]**.
- *Based Flood* - a flood that has a 1 percent or greater chance of recurring in any year or a flood of a magnitude equaled or exceeded once in 100 yr on the average over a significantly long period (40 CFR 257.3-1(b)) **[Added April 2004]**.
- *Biological Product* - a virus, therapeutic serum, toxin, antitoxin, vaccine, blood, blood component or derivative, allergenic product, or analogous product, or arsphenamine or derivative of arsphenamine (or any other trivalent arsenic compound) applicable to the prevention, treatment, or cure of a disease or condition of human beings or animals. A biological product includes a material subject to regulation under 42 U.S.C. 262 or 21 U.S.C. 151-159. Unless otherwise excepted, a biological product known or reasonably expected to contain a pathogen that meets the definition of a Category A or B infectious substance must be assigned the identification number UN 2814, UN 2900, or UN 3373, as appropriate (49 CFR 173.134(a)(2)) **[Added January 2003; Revised July 2006]**.
- *Bioreactor* - a MSW landfill or portion of a MSW landfill where any liquid other than leachate (leachate includes landfill gas condensate) is added in a controlled fashion into the waste mass (often in combination with

recirculating leachate) to reach a minimum average moisture content of at least 40 percent by weight to accelerate or enhance the anaerobic (without oxygen) biodegradation of the waste (40 CFR 63.1990) **[Added April 2003]**.

- *Bird Hazard* - an increase in the likelihood of bird/aircraft collisions that may cause damage to the aircraft or injury to its occupants (40 CFR 257.3-8(e)) **[Added April 2004]**.
- *Blood* - human blood, human blood components, and products made from human blood (29 CFR 1910.1030(a)).
- *Bottom Ash* - the solid material that remains on a hearth or falls off the grate after thermal processing is complete (40 CFR 240.101(b)) **[Reviewed March 2000]**.
- *Bulky Wastes* - large items of solid waste such as household appliances, furniture, large auto parts, trees, branches, stumps, and other oversize wastes, which large size precludes or complicates their handling by normal solid waste collection, processing, or disposal methods (40 CFR 243.101) **[Reviewed March 2000]**.
- *Cargo Residues* - the remnants of any cargo which are not covered by other MARPOL Annexes and which remain on the deck or in holds following loading or unloading, including loading and unloading excess or spillage, whether in wet or dry condition or entrained in wash water, but does not include cargo dust remaining on the deck after sweeping or dust on the external surfaces of the ship (33 CFR 154.05) **[Added October 2013]**.
- *Carrier* - the principal operator of a means of conveyance (7 CFR 330.400(b)) **[Added July 2006]**.
- *Carryout Collection* - collection of solid waste from a storage area proximate to the dwelling unit(s) or establishment (40 CFR 243.101) **[Added March 2000]**.
- *Cation Exchange Capacity* - the sum of exchangeable cations a soil can absorb expressed in milli-equivalents per 100 grams of soil as determined by sampling the soil to the depth of cultivation or solid waste placement, whichever is greater, and analyzing by the summation method for distinctly acid soils or the sodium acetate method for neutral, calcareous or saline soils ("Methods of Soil Analysis, Agronomy Monograph No. 9." C. A. Black, ed., American Society of Agronomy, Madison, Wisconsin. pp 891-901, 1965) (40 CFR 257.3-5(c)) **[Added April 2004]**.
- *Class 7 (Radioactive) Material* - see the definition of Radioactive material
- *Closed Landfill* - a landfill in which solid waste is no longer being placed, and in which no additional solid wastes will be placed without first filing a notification of modification (40 CFR 60.751) **[Reviewed March 2000]**.
- *Closure* - that point in time when a landfill becomes a closed landfill (40 CFR 60.751) **[Reviewed March 2000]**.
- *Collection* - the act of removing solid waste (or materials which have been separated for the purpose of recycling) from a central storage point (40 CFR 243.101) **[Reviewed March 2000]**.
- *Collection Frequency* - the number of times collection is provided in a given period of time (40 CFR 243.101) **[Reviewed March 2000]**.
- *Commercial Solid Waste* - all types of solid waste generated by stores, offices, restaurants, warehouses, and other nonmanufacturing activities, excluding residential and industrial wastes (40 CFR 243.101 and 40 CFR 60.751) **[Reviewed March 2000]**.
- *Compactor Collection Vehicle* - a vehicle with an enclosed body containing mechanical devices that convey solid waste into the main compartment of the body and compress it into a smaller volume of greater density (40 CFR 243.101) **[Added March 2000]**.

- *Construction and Demolition (C&D) Landfill* - a solid waste disposal facility subject to the requirements in 40 CFR 257, subparts A or B that receives construction and demolition waste and does not receive hazardous waste (defined in 40 CFR 261.3) or industrial solid waste (defined in 40 CFR 258.2). Only a C&D landfill that meets the requirements of 40 CFR 257, subpart B may receive very small quantity generator waste (defined in 40 CFR 260.10). A C&D landfill typically receives any one or more of the following types of solid wastes: roadwork material, excavated material, demolition waste, construction/renovation waste, and site clearance waste (40 CFR 257.2 and 258.2) **[Added July 2003; Revised January 2017]**.
- *Construction and Demolition Wastes* - the waste building materials, packaging, and rubble resulting from the construction, renovation, repair, and demolition operation on pavements, houses, commercial buildings, and other structures (40 CFR 243.101) **[Reviewed March 2000]**.
- *Contaminate* - introduce a substance that would cause (40 CFR 257.3-4(c)) **[Added April 2004]**:
  1. the concentration of that substance in the ground water to exceed the maximum contaminant level specified in appendix I, or
  2. an increase in the concentration of that substance in the groundwater where the existing concentration of that substance exceeds the maximum contaminant level specified in appendix I.
- *Contaminated* - the presence or the reasonably anticipated presence of blood or other potentially infectious materials on an item or surface (29 CFR 1910.1030(a)).
- *Contaminated Sharps* - any contaminated object that can penetrate the skin, including but not limited to, needles, scalpels, broken glass, broken capillary tubes, and exposed ends of dental wires (29 CFR 1910.1030(a)).
- *Controlled Landfill* - any landfill at which collection and control systems are required under 40 CFR 60.750 - 759 as a result of the nonmethane organic compounds (NMOC) emission rate. The landfill is considered controlled at the time a collection and control system design plan is submitted (40 CFR 60.751) **[Revised June 1998; Reviewed March 2000]**.
- *Corrugated Container Waste* - discarded corrugated boxes (40 CFR 246.101) **[Reviewed March 2000]**.
- *Crops for Direct Human Consumption* - crops that are consumed by humans without processing to minimize pathogens prior to distribution to the consumer (40 CFR 257.3-6(c)) **[Added April 2004]**.
- *Culture* - an infectious substance containing a pathogen that is intentionally propagated. Culture does not include a human or animal patient specimen (49 CFR 173.134(a)(3)) **[Added January 2003; Revised July 2006]**.
- *Cultures and Stocks* - a material prepared and maintained for growth and storage and containing a Risk Group 2, 3 or 4 infectious substance (49 CFR 171.8 and 173.134(a)(3)) **[Added January 2003]**.
- *Curb Collection* - collection of solid waste placed adjacent to a street (40 CFR 243.101) **[Added March 2000]**.
- *Destruction or Adverse Modification* - a direct or indirect alteration of critical habitat which appreciably diminishes the likelihood of the survival and recovery of threatened or endangered species using that habitat (40 CFR 257.3-2(c)) **[Added April 2004]**.
- *Deviation* - any instance in which an affected source subject to 40 CFR 63, Subpart AAAA, or an owner or operator of such a source (40 CFR 63.1990) **[Added April 2003]**:
  1. Fails to meet any requirement or obligation established by this subpart, including, but not limited to, any emissions limitation (including any operating limit) or work practice standard;
  2. Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit; or

3. Fails to meet any emission limitation, (including any operating limit), or work practice standard in this subpart during startup, shutdown, and malfunction (SSM), regardless of whether or not such failure is permitted by this subpart.

For the purposes of the landfill monitoring and SSM plan requirements, deviations include the following (40 CFR 63.1965):

1. A deviation occurs when the control device operating parameter boundaries described in 40 CFR 60.758(c)(1) of subpart WWW are exceeded.
  2. A deviation occurs when 1 hour or more of the hours during the 3-h block averaging period does not constitute a valid hour of data. A valid hour of data must have measured values for at least three 15-min monitoring periods within the hour.
  3. A deviation occurs when a SSM plan is not developed, implemented, or maintained on site.
- *Decontamination* - the use of physical or chemical means to remove, inactivate, or destroy bloodborne pathogens on a surface or item to the point where they are no longer capable of transmitting infectious particles and the surface or item is rendered safe for handling, use, or disposal (29 CFR 1910.1030(a)).
  - *Design Capacity* - the weight of solid waste of a specified gross calorific value that a thermal processing facility is designed to process in 24 h of continuous operation (40 CFR 240.101(d)).
  - *Design Capacity* - in relation to air quality restrictions, the maximum amount of solid waste a landfill can accept, as indicated in terms of volume or mass in the most recent permit issued by the State, local, or Tribal agency responsible for regulating the landfill, plus any in-place waste not accounted for in the most recent permit. If the owner or operator chooses to convert the design capacity from volume to mass or from mass to volume to demonstrate its design capacity is less than 2.5 million megagrams or 2.5 million m<sup>3</sup>, the calculation must include a site specific density, which must be recalculated annually (40 CFR 60.751) **[Revised June 1998; Reviewed March 2000]**.
  - *Diagnostic Specimen* - any human or animal material, including excreta, secretions, blood and its components, tissue, and tissue fluids being transported for diagnostic or investigational purposes, but excluding live infected humans or animals. A diagnostic specimen is not assigned a UN identification number unless the source patient or animal has or may have a serious human or animal disease from a Risk Group 4 pathogen, in which case it must be classed as Division 6.2, described as an infectious substance, and assigned to UN 2814 or UN 2900, as appropriate. Assignment to UN 2814 or UN 2900 is based on known medical condition and history of the patient or animal, endemic local conditions, symptoms of the source patient or animal, or professional judgment concerning individual circumstances of the source patient or animal (49 CFR 171.8 and 173.134(a)(4)) **[Added January 2003]**.
  - *Dishwater* - the liquid residue from the manual or automatic washing of dishes and cooking utensils which have been pre-cleaned to the extent that any food particles adhering to them would not normally interfere with the operation of automatic dishwashers (33 CFR 154.05) **[Added October 2013]**.
  - *Discharge* - any release, however caused, from a ship and includes any escape, disposal, spilling, leaking, pumping, emitting or emptying. It does not include (33 CFR 154.05) **[Added October 2013]**:
    1. Dumping within the meaning of the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, done at London on 13 November 1972; or
    2. Release of oil or oily mixtures directly arising from the exploration, exploitation and associated off-shore processing of sea-bed mineral resources.
  - *Discharge* - as defined by MARPOL in relation to harmful substances or effluent containing such substances, means any release however caused from a ship, and includes any escape, disposal, spilling, leaking, pumping, emitting or emptying. It does not include (33 CFR 154.05) **[Added October 2013]**:

1. Dumping within the meaning of the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, done at London on November 13, 1972; or
  2. The release of harmful substances directly arising from the exploration, exploitation, and associated offshore processing of seabed mineral resources; or
  3. The release of harmful substances for purposes of legitimate scientific research relating to pollution abatement or control.
- *Disease Vector* - rodents, flies, and mosquitoes capable of transmitting disease to humans (40 CFR 257.3-6(c)) **[Added April 2004]**.
  - *Disposal* - the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water so that such solid waste or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including ground waters (40 CFR 257.2) **[Added April 2004]**.
  - *Disposal Facility* - all contiguous land and structures, other appurtenances and improvements on the land used for disposal of solid waste (40 CFR 60.751) **[Reviewed March 2000]**.
  - *Division 6.1 (Poisonous Material)* - a material, other than a gas, which is known to be so toxic to humans as to afford a hazard to health during transportation, or which, in the absence of adequate data on human toxicity (49 CFR 173.132(a)) **[Added January 2003]**:
    1. Is presumed to be toxic to humans because it falls within any one of the following categories when tested on laboratory animals (whenever possible, animal test data that has been reported in the chemical literature should be used):
      - a. Oral Toxicity. A liquid with an LD50 for acute oral toxicity of not more than 500 mg/kg or a solid with an LD50 for acute oral toxicity of not more than 200 mg/kg.
      - b. Dermal Toxicity. A material with an LD50 for acute dermal toxicity of not more than 1000 mg/kg.
      - c. Inhalation Toxicity:
        - i. A dust or mist with an LC50 for acute toxicity on inhalation of not more than 10 mg/L; or
        - ii. A material with a saturated vapor concentration in air at 20 deg. C (68 °F) greater than or equal to one-fifth of the LC50 for acute toxicity on inhalation of vapors and with an LC50 for acute toxicity on inhalation of vapors of not more than 5000 mL/mm<sup>3</sup>; or
    2. Is an irritating material, with properties similar to tear gas, which causes extreme irritation, especially in confined spaces.
  - *Division 6.2 (infectious substance)* - a material known or reasonably expected to contain a pathogen. A pathogen is a microorganism (including bacteria, viruses, rickettsiae, parasites, fungi) or other agent, such as a proteinaceous infectious particle (prion) that can cause disease in humans or animals. An infectious substance must be assigned the identification number UN 2814, UN 2900, UN 3373, or UN 3291 as appropriate, and must be assigned to one of the following categories: (49 CFR 173.134(a)(1)) **[Added January 2003; Revised July 2006]**:
    1. Category A: An infectious substance in a form capable of causing permanent disability or life-threatening or fatal disease in otherwise healthy humans or animals when exposure to it occurs. An exposure occurs when an infectious substance is released outside of its protective packaging, resulting in physical contact with humans or animals. A Category A infectious substance must be assigned to identification number UN 2814 or UN 2900, as appropriate. Assignment to UN 2814 or UN 2900 must be based on the known medical history or symptoms of the source patient or animal, endemic local conditions, or professional judgment concerning the individual circumstances of the source human or animal.
    2. Category B: An infectious substance that is not in a form generally capable of causing permanent disability or life-threatening or fatal disease in otherwise healthy humans or animals when exposure to it occurs. This includes Category B infectious substances transported for diagnostic or investigational purposes. A Category B infectious substance must be described as "Biological substance, Category B" and assigned

identification number UN 3373. This does not include regulated medical waste, which must be assigned identification number UN 3291.

The following are not subject to the requirements of this subchapter as Division 6.2 materials (49 CFR 173.134(b)) **[Added January 2003; Revised July 2006]**:

1. A material that does not contain an infectious substance or that is unlikely to cause disease in humans or animals.
2. Non-infectious biological materials from humans, animals, or plants. Examples include non-infectious cells, tissue cultures, blood or plasma from individuals not suspected of having an infectious disease, DNA, RNA or other non-infectious genetic elements.
3. A material containing micro-organisms that are non-pathogenic to humans or animals.
4. A material containing pathogens that have been neutralized or inactivated such that they no longer pose a health risk.
5. A material with a low probability of containing an infectious substance, or where the concentration of the infectious substance is at a level naturally occurring in the environment so it cannot cause disease when exposure to it occurs. Examples of these materials include: Foodstuffs; environmental samples, such as water or a sample of dust or mold; and substances that have been treated so that the pathogens have been neutralized or deactivated, such as a material treated by steam sterilization, chemical disinfection, or other appropriate method, so it no longer meets the definition of an infectious substance.
6. A biological product, including an experimental or investigational product or component of a product, subject to Federal approval, permit, review, or licensing requirements, such as those required by the Food and Drug Administration of the U.S. Department of Health and Human Services or the U.S. Department of Agriculture.
7. Blood collected for the purpose of blood transfusion or the preparation of blood products; blood products; plasma; plasma derivatives; blood components; tissues or organs intended for use in transplant operations; and human cell, tissues, and cellular and tissue-based products regulated under authority of the Public Health Service Act (42 U.S.C. 264-272) and/or the Food, Drug, and Cosmetic Act (21 U.S.C. 332 et seq.).
8. Blood, blood plasma, and blood components collected for the purpose of blood transfusion or the preparation of blood products and sent for testing as part of the collection process, except where the person collecting the blood has reason to believe it contains an infectious substance, in which case the test sample must be shipped as a Category A or Category B infectious substance in accordance with 49 CFR 173.196 or 49 CFR 173.199, as appropriate.
9. Dried blood spots or specimens for fecal occult blood detection placed on absorbent filter paper or other material.
10. A Division 6.2 material, other than a Category A infectious substance, contained in a patient sample being transported for research, diagnosis, investigational activities, or disease treatment or prevention, or a biological product, when such materials are transported by a private or contract carrier in a motor vehicle used exclusively to transport such materials. Medical or clinical equipment and laboratory products may be transported aboard the same vehicle provided they are properly packaged and secured against exposure or contamination. If the human or animal sample or biological product meets the definition of regulated medical waste in paragraph (a)(5) of this section, it must be offered for transportation and transported in conformance with the appropriate requirements for regulated medical waste.
11. A human or animal sample (including, but not limited to, secretta, excreta, blood and its components, tissue and tissue fluids, and body parts) being transported for routine testing not related to the diagnosis of an infectious disease, such as for drug/alcohol testing, cholesterol testing, blood glucose level testing, prostate specific antibody testing, testing to monitor kidney or liver function, or pregnancy testing, or for tests for diagnosis of non-infectious diseases, such as cancer biopsies, and for which there is a low probability the sample is infectious.
12. Laundry and medical equipment and used health care products, as follows:
  - a. Laundry or medical equipment conforming to the regulations of the Occupational Safety and Health Administration of the Department of Labor in 29 CFR 1910.1030. This exception includes medical equipment intended for use, cleaning, or refurbishment, such as reusable surgical equipment, or equipment used for testing where the components within which the equipment is contained essentially function as packaging. This exception does not apply to medical equipment being transported for disposal.

- b. Used health care products not conforming to the requirements in 29 CFR 1910.1030 and being returned to the manufacturer or the manufacturer's designee are excepted from the requirements of this subchapter when offered for transportation or transported in accordance with this paragraph (b)(12). For purposes of this paragraph, a health care product is used when it has been removed from its original packaging. Used health care products contaminated with or suspected of contamination with a Category A infectious substance may not be transported under the provisions of this paragraph.
    - i. Each used health care product must be drained of free liquid to the extent practicable and placed in a watertight primary container designed and constructed to assure that it remains intact under conditions normally incident to transportation. For a used health care product capable of cutting or penetrating skin or packaging material, the primary container must be capable of retaining the product without puncture of the packaging under normal conditions of transport. Each primary container must be marked with a BIOHAZARD marking conforming to 29 CFR 1910.1030(g)(1)(i).
    - ii. Each primary container must be placed inside a watertight secondary container designed and constructed to assure that it remains intact under conditions normally incident to transportation. The secondary container must be marked with a BIOHAZARD marking conforming to 29 CFR 1910.1030(g)(1)(i).
    - iii. The secondary container must be placed inside an outer packaging with sufficient cushioning material to prevent movement between the secondary container and the outer packaging. An itemized list of the contents of the primary container and information concerning possible contamination with a Division 6.2 material, including its possible location on the product, must be placed between the secondary container and the outside packaging.
    - iv. Each person who offers or transports a used health care product under the provisions of this paragraph must know about the requirements of this paragraph.
  - 13. Any waste or recyclable material, other than regulated medical waste, including--
    - a. Garbage and trash derived from hotels, motels, and households, including but not limited to single and multiple residences;
    - b. Sanitary waste or sewage;
    - c. Sewage sludge or compost;
    - d. Animal waste generated in animal husbandry or food production; or
    - e. Medical waste generated from households and transported in accordance with applicable state, local, or tribal requirements.
  - 14. Corpses, remains, and anatomical parts intended for interment, cremation, or medical research at a college, hospital, or laboratory.
  - 15. Forensic material transported on behalf of a U.S. Government, state, local or Indian tribal government agency, except that--
    - a. Forensic material known or suspected to contain a Category B infectious substance must be shipped in a packaging conforming to the provisions of 49 CFR 173.24.
    - b. Forensic material known or suspected to contain a Category A infectious substance or an infectious substance listed as a select agent in 42 CFR Part 73 must be transported in packaging capable of meeting the test standards in 49 CFR 178.609. The secondary packaging must be marked with a BIOHAZARD symbol conforming to specifications in 29 CFR 1910.1030(g)(1)(i). An itemized list of contents must be enclosed between the secondary packaging and the outer packaging.
  - 16. Agricultural products and food as defined in the Federal Food, Drug, and Cosmetics Act (21 U.S.C. 332 et seq.).
- *Domestic Septage* - either liquid or solid material removed from a septic tank, cesspool, portable toilet, Type III marine sanitation device, or similar treatment works that receives only domestic sewage. Domestic septage does not include liquid or solid material removed from a septic tank, cesspool, or similar treatment works that receives either commercial wastewater or industrial wastewater and does not include grease removed from a grease trap at a restaurant (40 CFR 257.2) [**Added April 2004**].
  - *Domestic Wastes* - all types of wastes generated in the living spaces on board a ship except victual wastes (33 CFR 151.05).

- *Emissions Limitation* - any emission limit, opacity limit, operating limit, or visible emissions limit (40 CFR 63.1990) [**Added April 2003**].
- *Emission Rate Cutoff* - the threshold annual emission rate to which a landfill compares its estimated emission rate to determine if control under the regulation is required (40 CFR 60.751) [**Reviewed March 2000**].
- *Enclosed Combustor* - an enclosed firebox which maintains a relatively constant limited peak temperature generally using a limited supply of combustion air. An enclosed flare is considered an enclosed combustor (40 CFR 60.751) [**Reviewed March 2000**].
- *Endangered or Threatened Species* - any species listed as such pursuant to section 4 of the Endangered Species Act (40 CFR 257.3-2(c)) [**Added April 2004**].
- *EPA Approved State Plan* - a State plan that USEPA has approved based on the requirements in 40 CFR 60, subpart B to implement and enforce 40 CFR 60, Subpart Cc. An approved State plan becomes effective on the date specified in the notice published in the Federal Register announcing USEPA's approval (40 CFR 63.1990) [**Added April 2003**].
- *Existing MSWLF Unit* - any MSWLF unit that is receiving solid waste as of the appropriate dates specified in 40 CFR 258.1(e) (see Appendix 9-1). Waste placement in existing units must be consistent with past operating practices or modified practices to ensure good management (40 CFR 258.2) [**Reviewed March 2000**].
- *Existing Unit* - any non-municipal non-hazardous waste disposal unit that is receiving VSQG hazardous waste as of 1 January 1998 (40 CFR 257.5(b)) [**Added April 2004; Revised January 2017**].
- *Explosive Gas* – methane (40 CFR 257.3-8(e)) [**Added April 2004**].
- *Facility* - any building, installation, structure, land, and other property owned or operated by, or constructed or manufactured and leased to, the Federal Government, as well as any fixture. This term includes a group of facilities at a single or multiple location(s) managed as an integrated operation, as well as government-owned contractor operated facilities. For purposes of energy reporting, “facility” excludes land and sites where the utilities are not paid by the reporting agency (i.e., in cases where no separate periodic invoice for utilities is required to be paid) (*Instructions for Implementing EO 13423*, Section XIII, Definitions) [**Added July 2007**].
- *Facility* - all contiguous land and structures, other appurtenances and improvements on the land use for the disposal of solid waste (40 CFR 257.2 and 258.2) [**Reviewed March 2000; Revised April 2004**].
- *Facility Structures* - any buildings and sheds or utility or drainage lines on the facility (40 CFR 257.3-8(e)) [**Added April 2004**].
- *Federal Plan* - the USEPA plan to implement 40 CFR 60, Subpart Cc for existing MSW landfills located in States and Indian country where State plans or tribal plans are not currently in effect. On the effective date of an USEPA approved State or tribal plan, the Federal plan no longer applies. The Federal plan is found at 40 CFR 62, subpart GGG 40 CFR 63.1990) [**Added April 2003**].
- *Flare* - an open combustor without enclosure or shroud (40 CFR 60.751) [**Reviewed March 2000**].
- *Floodplain* - the lowland and relatively flat areas adjoining inland and coastal waters, including flood-prone areas of offshore islands, which are inundated by the base flood (40 CFR 257.3-1(b) and 257.8(b)) [**Added April 2004**].
- *Fly Ash* - suspended particles, charred paper, dust, soot, and other partially oxidized matter carried in the products of combustion (40 CFR 240.101) [**Reviewed March 2000**].

- *Food-chain Crops* - tobacco, crops grown for human consumption, and animal feed for animals whose products are consumed by humans. Incorporated into the soil means the injection of solid waste beneath the surface of the soil or the mixing of solid waste with the surface soil (40 CFR 257.3-5(c)) **[Added April 2004]**.
- *Food Waste* - the organic residues generated by the handling, storage, sale, preparation, cooking, and serving of foods, commonly called garbage (40 CFR 243.101) **[Reviewed March 2000]**.
- *Food Wastes* - any spoiled or unspoiled food substances and includes fruits, vegetables, dairy products, poultry, meat products and food scraps generated aboard ship (33 CFR 154.05) **[Added October 2013]**.
- *Fuel Oil* - any oil used to fuel the propulsion and auxiliary machinery of the ship carrying the fuel. The term “fuel oil” is also known as “oil fuel” (33 CFR 154.05) **[Added October 2013]**.
- *Garbage* - all waste material that is derived in whole or in part from fruits, vegetables, meats, or other plant or animal (including poultry) material, and other refuse of any character whatsoever that has been associated with any such material (7 CFR 330.400(b)) **[Revised July 2006]**.
- *Garbage* - all kinds of food wastes, domestic wastes and operational wastes, all plastics, cargo residues, cooking oil, fishing gear, and animal carcasses generated during the normal operation of the ship and liable to be disposed of continuously or periodically except those substances which are defined or listed in other Annexes to the present Convention. Garbage does not include fresh fish and parts thereof generated as a result of fishing activities undertaken during the voyage, or as a result of aquaculture activities which involve the transport of fish including shellfish for placement in the aquaculture facility and the transport of harvested fish including shellfish from such facilities to shore for processing (33 CFR 151.05) **[Added October 2013]**.
- *Gas Mover Equipment* - the equipment used to transport landfill gas through the header system (40 CFR 60.751) **[Reviewed March 2000]**.
- *Graywater* - drainage from the dishwasher, shower, laundry, bath, and washbasin drains, and does not include drainage from toilets, urinals, hospitals, and cargo spaces (33 CFR 151.05).
- *Ground Water* - water below the land surface in a zone of saturation (40 CFR 258.2) **[Reviewed March 2000]**.
- *Groundwater* - water below the land surface in the zone of saturation. Underground drinking water source means one of the following (40 CFR 257.3-4(c)) **[Added April 2004]**:
  1. an aquifer supplying drinking water for human consumption
  2. an aquifer in which the ground water contains less than 10,000 mg/l total dissolved solids.
- *Harmful Substance* - any substance which, if introduced into the sea, is liable to create hazards to human health, harm living resources and marine life, damage amenities, or interfere with other legitimate uses of the sea, and includes any substance subject to control by MARPOL (33 CFR 154.05) **[Added October 2013]**.
- *Hazardous Waste* - a waste or combination of wastes of a solid, liquid, contained gaseous, or semisolid form which may cause, or contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness, taking into account the toxicity of such waste, its persistence and degradability in nature, its potential for accumulation or concentration in tissue, and other factors that may otherwise cause or contribute to adverse acute or chronic effects on the health of persons or other organisms (40 CFR 243.101) **[Reviewed March 2000]**.
- *High-Grade Paper* - letterhead, dry copy papers, miscellaneous business forms, stationary, typing paper, tablet sheets, and computer printout paper and cards, commonly sold as “white ledger”, “computer printout” and “tab card” grade by the wastepaper industry (40 CFR 246.101) **[Reviewed March 2000]**.

- *Household Waste* - any solid waste, (including garbage, trash, and sanitary waste in septic tanks) derived from households (including single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use-recreation areas) (40 CFR 258.2 and 40 CFR 60.751) **[Reviewed March 2000]**.
- *Incineration* - to reduce garbage to ash by burning (7 CFR 330.400(b)) **[Added July 2006]**.
- *Incorporated Into The Soil* - the injection of solid waste beneath the surface of the soil or the mixing of solid waste with the surface soil (40 CFR 257.3-6(c)) **[Added April 2004]**.
- *Indian Lands of Indian Country* - this means (40 CFR 258.2) **[Reviewed March 2000]**:
  1. all land within the limits of any Indian reservation under the jurisdiction of the U.S. Government, notwithstanding the issuance of any patent, and including rights-of-way running throughout the reservation
  2. all dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or without the limits of the state
  3. all Indian allotments, the Indian titles to which have not been extinguished, including rights of way running through the same.
- *Indian Tribe* - any Indian tribe, band, nation, or community recognized by the Secretary of the Interior (SOI) and exercising substantial governmental duties and powers on Indian lands (40 CFR 258.2) **[Reviewed March 2000]**.
- *Industrial Solid Waste* - the solid waste generated by industrial processes and manufacturing that is not a hazardous waste (40 CFR 243.101) **[Reviewed March 2000]**.
- *Industrial Solid Waste* - in relation to MSWLF, solid waste generated by manufacturing or industrial processes that is not a hazardous waste regulated under subtitle C of RCRA. Such waste may include, but is not limited to, waste resulting from the following manufacturing processes: electric power generation; fertilizer/agricultural chemicals; food and related products/byproducts; inorganic chemicals; iron and steel manufacturing; leather and leather products; nonferrous metals manufacturing/foundries; organic chemicals; plastics and resins manufacturing; pulp and paper industry; rubber and miscellaneous plastic products; stone, glass, clay, and concrete products; textile manufacturing; transportation equipment; and water treatment. This term does not include mining waste or oil and gas waste (40 CFR 258.2 and 40 CFR 60.751) **[Reviewed March 2000]**.
- *Infectious Waste* - this includes (40 CFR 243.101) **[Revised March 2000]**:
  1. equipment, instruments, utensils, and formites of a disposable nature from the rooms of patients who are suspected to have or have been diagnosed as having a communicable disease and must, therefore, be isolated as required by public health agencies;
  2. laboratory wastes, such as pathological specimens (e.g., all tissues, specimens of blood elements, excreta, and secretions obtained from patients or laboratory animals) and disposable fomites (any substance that may harbor or transmit pathogenic organisms) attendant thereto;
  3. surgical operating room pathologic specimens and disposable fomites attendant thereto, and similar disposable materials from outpatient areas and emergency rooms.
- *Infectious Waste* - this includes (40 CFR 246.101) **[Revised March 2000]**:
  1. equipment, instruments, utensils, and fomites (any substance that may harbor or transmit pathogenic organisms) of a disposable nature from the rooms of patients who are suspected to have or have been diagnosed as having a communicable disease and must, therefore, be isolated as required by public health agencies;
  2. laboratory wastes, such as pathological specimens (e.g. all tissues, specimens of blood elements, excreta, and secretions obtained from patients or laboratory animals) and disposable fomites attendant thereto;
  3. surgical operating room pathologic specimens and disposable fomites attendant thereto and similar disposable materials from outpatient areas and emergency rooms.

- *Institutional Solid Waste* - solid wastes generated by educational, health care, correctional and other institutional facilities (40 CFR 243.101) [**Reviewed March 2000**].
- *Interior Well* - any well or similar collection component located inside the perimeter of the landfill waste. A perimeter well located outside the landfill waste is not an interior well (40 CFR 60.751) [**Revised June 1998; Reviewed March 2000**].
- *Interstate*- from one State into or through any other State (7 CFR 330.400(b)) [**Added July 2006**].
- *Land Application Unit* - an area where wastes are applied onto or incorporated into the soil surface (excluding manure spreading operations) for agricultural purposes or for treatment and disposal (40 CFR 257.2) [**Added April 2004**].
- *Landfill* - an area of land or an excavation in which wastes are placed for permanent disposal, and that is not a land application unit, surface impoundment, injection well, or waste pile as those terms are defined under 40 CFR 257.2 (40 CFR 60.751 and 257.2) [**Added March 2000; Revised April 2004**].
- *Lateral Expansion* - a horizontal expansion of the waste boundaries of an existing municipal solid waste landfill unit (40 CFR 258.2 and 40 CFR 60.751) [**Reviewed March 2000**].
- *Lateral Expansion* - a horizontal expansion of the waste boundaries of an existing non-municipal non-hazardous waste disposal unit (40 CFR 257.5(b)) [**Added April 2004**].
- *Leachate* - in relation to MSWLFs, this is a liquid that has passed through or emerged from solid waste and contains soluble, suspended, or miscible materials removed from such waste (40 CFR 258.2) [**Reviewed March 2000**].
- *Leachate* - liquid that has passed through or emerged from solid waste and contains soluble, suspended or miscible materials removed from such wastes (40 CFR 257.2) [**Added April 2004**].
- *Life Cycle Cost* - the sum of the present values of capital costs, installation costs, operating costs, maintenance costs, and disposal costs over the lifetime of the project, product, or measure (*Instructions for Implementing EO 13423*, Section XIII, Definitions) [**Added July 2007**].
- *Life-cycle Cost-Effective* - that the life-cycle costs of a product, project, or measure are estimated to be equal to or less than the base case (i.e., current or standard practice or product) (*Instructions for Implementing EO 13423*, Section XIII, Definitions) [**Added July 2007**].
- *Low Specific Activity (LSA) Material* - Class 7 (radioactive) material with limited specific activity which satisfies the descriptions and limits set forth below. Shielding materials surrounding the LSA material may not be considered in determining the estimated average specific activity of the package contents. LSA material must be in one of three groups (49 CFR 173.403) [**Added January 2003**]:
  1. LSA-I.
    - a. Ores containing only naturally occurring radionuclides (e.g., uranium, thorium) and uranium or thorium concentrates of such ores; or
    - b. Solid unirradiated natural uranium or depleted uranium or natural thorium or their solid or liquid compounds or mixtures; or
    - c. Class 7 (radioactive) material, other than fissile material, for which the A2 value is unlimited; or
    - d. Mill tailings, contaminated earth, concrete, rubble, other debris, and activated material in which the Class 7 (radioactive) material is essentially uniformly distributed and the average specific activity does not exceed 10-6A2/g.
  2. LSA-II.
    - a. Water with tritium concentration up to 0.8 TBq/L (20.0 Ci/iter); or

- b. Material in which the Class 7 (radioactive) material is distributed throughout and the average specific activity does not exceed  $10^{-4}$  A2/g for solids and gases, and  $10^{-5}$  A2/g for liquids.
  - 3. LSA-III. Solids (e.g., consolidated wastes, activated materials) that meet the requirements of 49 CFR 173.468 and which:
    - a. The Class 7 (radioactive) material is distributed throughout a solid or a collection of solid objects, or is essentially uniformly distributed in a solid compact binding agent (such as concrete, bitumen, ceramic, etc.); and
    - b. The Class 7 (radioactive) material is relatively insoluble, or it is intrinsically contained in a relatively insoluble material, so that, even under loss of packaging, the loss of Class 7 (radioactive) material per package by leaching when placed in water for seven days would not exceed 0.1 A2; and
    - c. The average specific activity of the solid does not exceed  $2 \times 10^{-3}$  A2/g.
- *Lower Explosive Limit (LEL)* - the lowest percent by volume of a mixture of explosive gases which will propagate a flame in air at 25 degrees C and atmospheric pressure (40 CFR 257.3-8(e)) **[Added April 2004]**.
- *Management Practice (MP)* - practices that, although not mandated by law, are encouraged to promote safe operating procedures.
- *MARPOL 73/78* - the *International Convention for the Prevention of Pollution from Ships*, 1973 as amended by the Protocol of 1978 (33 CFR 151.05).
- *Medical/Pathological Wastes* - any solid waste that is generated in the diagnosis, treatment, or immunization of human beings or animals, in research pertaining thereto, or in the production or testing of biologicals. This does not include hazardous waste or household waste (40 CFR 259.10).
- *Mining Wastes* - residues which result from the extraction of raw materials from the earth (40 CFR 243.101) **[Reviewed March 2000]**.
- *Modification* - an increase in the permitted volume design capacity of the landfill by either horizontal or vertical expansion based on the permitted design capacity as of 30 May 1991 (40 CFR 60.751) **[Added June 1998; Reviewed March 2000]**.
- *Municipal Solid Waste* - residential and commercial solid wastes generated within a community (40 CFR 240.101) **[Reviewed March 2000]**.
- *Municipal Solid Waste Landfill* - an entire disposal facility in a contiguous geographical space, where household waste is placed in or on land. An MSW landfill may also receive other types of RCRA Subtitle D wastes (40 CFR 257.2) such as commercial solid waste, nonhazardous sludge, conditionally exempt small quantity generator waste, and industrial solid waste. Portions of an MSW landfill may be separated by access roads. An MSW landfill may be publicly or privately owned. An MSW landfill may be a new MSW landfill, an existing MSW landfill, or a lateral expansion (40 CFR 60.751) **[Added March 2000]**.
- *Municipal Solid Waste Landfill Emissions* - gas generated by the decomposition of organic waste deposited in an MSWLF or derived from the evolution of organic compounds in the waste (40 CFR 60.751) **[Reviewed March 2000]**.
- *Municipal Solid Waste Landfill or MSW Landfill* - an entire disposal facility in a contiguous geographical space where household waste is placed in or on land. A municipal solid waste landfill may also receive other types of RCRA Subtitle D wastes (see 40 CFR 257.2 of this chapter) such as commercial solid waste, nonhazardous sludge, conditionally exempt small quantity generator waste, and industrial solid waste. Portions of a municipal solid waste landfill may be separated by access roads. A municipal solid waste landfill may be publicly or privately owned. A municipal solid waste landfill may be a new municipal solid waste landfill, an existing municipal solid waste landfill, or a lateral expansion (40 CFR 63.1990) **[Added April 2003]**.

- *Municipal Solid Waste Landfill (MSWLF) Unit* - a discrete area of land or an excavation that receives household waste, and that is not a land application unit, surface impoundment, injection well, or waste pile, as those terms are defined in this section. A MSWLF unit also may receive other types of RCRA Subtitle D wastes, such as commercial solid waste, nonhazardous sludge, and industrial solid waste. Such a landfill may be publicly or privately owned. An MSWLF unit may be a new MSWLF unit, an existing MSWLF unit or a lateral expansion (40 CFR 257.2) **[Added April 2004]**.
- *Municipal Solid Waste Landfill (MSWLF) Unit* - a discrete area of land or an excavation that receives household waste, and that is not a land application unit, surface impoundment, injection well, or waste pile, as those terms are defined under 40 CFR 257.2. A MSWLF unit also may receive other types of RCRA Subtitle D wastes, such as commercial solid waste, nonhazardous sludge, very small quantity generator waste and industrial solid waste. Such a landfill may be publicly or privately owned. A MSWLF unit may be a new MSWLF unit, an existing MSWLF unit or a lateral expansion. A construction and demolition landfill that receives residential lead-based paint waste and does not receive any other household waste is not a MSWLF unit (40 CFR 258.2) **[Reviewed March 2000; Revised July 2003; Revised January 2017]**.
- *New MSWLF Unit* - any MSWLF unit that has not received wastes prior to 9 October 1993, or prior to 9 October 1997 if the MSWLF unit disposes of less than 20 tons of municipal solid waste daily, based on an annual average and the MSWLF unit serves either (40 CFR 258.2) **[Reviewed March 2000]**:
  1. a community that experiences an annual interruption of at least 3 consecutive months of surface transportation that prevents access to a regional waste management facility
  2. a community that has no practicable waste management alternative and the landfill is located in an areas that annually receives less than or equal to 25 in. of precipitation.
- *New Unit* - any non-municipal non-hazardous waste disposal unit that has not received VSQG hazardous waste prior to 1 January 1998 (40 CFR 257.5(b)) **[Added April 2004; Revised January 2017]**.
- *Nondegradable Waste* - any waste that does not decompose through chemical breakdown or microbiological activity. Examples are, but are not limited to, concrete, municipal waste combustor ash, and metal (40 CFR 60.751) **[Reviewed March 2000]**.
- *Open Burning* - the combustion of solid waste without (40 CFR 257.3-7(c)) **[Added April 2004]**:
  1. control of combustion air to maintain adequate temperature for efficient combustion,
  2. containment of the combustion reaction in an enclosed device to provide sufficient residence time and mixing for complete combustion, and
  3. control of the emission of the combustion products.
- *Open Burning* - in relation to MSWLFs, the combustion of solid waste without (40 CFR 258.2) **[Reviewed March 2000]**:
  1. control of combustion air to maintain adequate temperature for efficient combustion
  2. containment of the combustion reaction in an enclosed device to provide sufficient residence time and mixing for complete combustions
  3. control of the emission of the combustion product.
- *Open Burning* - burning of solid wastes in the open, such as in an open dump (40 CFR 240.101(r)) **[Reviewed March 2000]**.
- *Open Dump* - a land disposal site at which solid wastes are disposed of in a manner that does not protect the environment, are susceptible to open burning, and are exposed to the elements, vectors, and scavengers (40 CFR 240.101) **[Reviewed March 2000]**.

- *Open Dump* - a facility for the disposal of solid waste which does not comply with 40 CFR 257 (40 CFR 257.2) **[Added April 2004]**.
- *Operator* - the person(s) responsible for the overall operation of a facility or part of a facility (40 CFR 258.2) **[Added March 2000]**.
- *Owner* - the person(s) who owns a facility or part of a facility (40 CFR 258.2) **[Added March 2000]**.
- *Passive Collection System* - a gas collection system that solely uses positive pressure within the landfill to move the gas rather than using gas mover equipment (40 CFR 60.751) **[Reviewed March 2000]**.
- *Pasture Crops* - crops such as legumes, grasses, grain stubble and stover which are consumed by animals while grazing (40 CFR 257.3-5(c)) **[Added April 2004]**.
- *Patient Specimen* - human or animal material collected directly from humans or animals and transported for research, diagnosis, investigational activities, or disease treatment or prevention. Patient specimen includes excreta, secretions, blood and its components, tissue and tissue swabs, body parts, and specimens in transport media (e.g., transwabs, culture media, and blood culture bottles) (49 CFR 173.134(a)(4)) **[Added July 2006]**:
- *Periodic Application of Cover Material* - the application and compaction of soil or other suitable material over disposed solid waste at the end of each operating day or at such frequencies and in such a manner as to reduce the risk of fire and to impede vectors access to the waste (40 CFR 257.3-6(c) and 257.3-8(e)) **[Added April 2004]**.
- *pH* - the logarithm of the reciprocal of hydrogen ion concentration (40 CFR 257.3-5(c)) **[Added April 2004]**.
- *Practice* - the act of disposal of solid waste (40 CFR 257.2) **[Added April 2004]**.
- *Putrescible Wastes* - solid waste which contains organic matter capable of being decomposed by microorganisms and of such a character and proportion as to be capable of attracting or providing food for birds (40 CFR 257.3-8(e)) **[Added April 2004]**.
- *Radioactive Material* - any material having a specific activity greater than 70 Bq per gram (0.002 microcurie per gram) (see definition of "specific activity") (49 CFR 173.403) **[Added January 2003]**.
- *Recycling* - the series of activities, including collection, separation, and processing, by which products or other materials are recovered from the solid waste stream for use in the form of raw materials in the manufacture of new products other than fuel for producing heat or power by combustion (*Instructions for Implementing EO 13423, Section XIII, Definitions*) **[Added July 2007]**.
- *Regulated Medical Waste* - a waste or reusable material derived from the medical treatment of an animal or human, which includes diagnosis and immunization, or from biomedical research, which includes the production and testing of biological products. Regulated medical waste is assigned to UN 3291, except for regulated medical waste containing a Category A infectious substance, which must be classed as a Division 6.2 material, described as an infectious substance, and assigned to UN 2814 or UN 2900, as appropriate (49 CFR 173.134(a)(5)) **[Added January 2003; Revised July 2003]**.

The following provisions apply to the transportation of regulated medical waste (49 CFR 173.134(c)) **[Added January 2003; Revised July 2006]**:

1. A regulated medical waste transported by a private or contract carrier is excepted from--
  - a. The requirement for an "INFECTIOUS SUBSTANCE" label if the outer packaging is marked with a "BIOHAZARD" marking in accordance with 29 CFR 1910.1030; and
  - b The specific packaging requirements of 49 CFR 173.197, if packaged in a rigid non-bulk packaging conforming to the general packaging requirements of 49 CFR 173.24 and 173.24a and packaging

requirements specified in 29 CFR 1910.1030, provided the material does not include a waste concentrated stock culture of an infectious substance. Sharps containers must be securely closed to prevent leaks or punctures.

2. A waste stock or culture of a Category B infectious substance may be offered for transportation and transported as a regulated medical waste when it is packaged in a rigid non-bulk packaging conforming to the general packaging requirements of 49 CFR 173.24 and 173.24a and packaging requirements specified in 29 CFR 1910.1030 and transported by a private or contract carrier in a vehicle used exclusively to transport regulated medical waste. Medical or clinical equipment and laboratory products may be transported aboard the same vehicle provided they are properly packaged and secured against exposure or contamination. Sharps containers must be securely closed to prevent leaks or punctures.
- *Regulated Wastes* - liquid or semi-liquid blood or other potentially infectious materials, contaminated items that would release blood or other potentially infectious materials in a liquid or semi-liquid state if compressed; items that are caked with dried blood or other potentially infectious materials and are capable of releasing these materials during handling, contaminated sharps, and pathological and microbiological wastes containing blood or other potentially infectious materials (29 CFR 1910.1030(a)).
  - *Residential Lead-based Paint Waste* - waste containing lead-based paint, which is generated as a result of activities such as abatement, rehabilitation, renovation and remodeling in homes and other residences. The term residential lead-based paint waste includes, but is not limited to, lead-based paint debris, chips, dust, and sludges (40 CFR 258.2) [Added July 2003].
  - *Residential Solid Waste* - the wastes generated by the normal activities of households, including, but not limited to, food wastes, rubbish, ashes, and bulky wastes (40 CFR 243.101) [Reviewed March 2000].
  - *Risk Group* - a ranking of a microorganism's ability to cause injury through disease. A risk group is defined by criteria developed by the World Health Organization (WHO) based on the severity of the disease caused by the organism, the mode and relative ease of transmission, the degree of risk to both an individual and a community, and the reversibility of the disease through the availability of known and effective preventative agents and treatment. There is no relationship between a risk group and a packing group. The criteria for each risk group according to the level of risk are as follows (49 CFR 171.8 and 173.134(a)(6)) [Added January 2003]:

Risk Group	Pathogen	Risk to Individuals	Risk to the Community
4	A pathogen that usually causes serious human or animal disease and that can be readily transmitted from one individual to another, directly or indirectly, and for which effective treatments and preventive measures are not usually available.	High	High
3	A pathogen that usually causes serious human or animal disease but does not ordinarily spread from one infected individual to another, and for which effective treatments and preventive measures are available.	High	Low
2	A pathogen that can cause human or animal disease but is unlikely to be a serious hazard, and, while capable of causing serious infection on exposure, for	Moderate	Low

<b>Risk Group</b>	<b>Pathogen</b>	<b>Risk to Individuals</b>	<b>Risk to the Community</b>
	which there are effective treatments and preventive measures available and the risk of spread of infection is limited.		
<b>1</b>	A microorganism that is unlikely to cause human or animal disease. A material containing only such microorganisms is not subject to the requirements of this subchapter.	<b>None or very low</b>	<b>None or very low</b>

- *Root Crops* - plants whose edible parts are grown below the surface of the soil (40 CFR 257.3-5(c)) [**Added April 2004**].
- *Rubbish* - A general term for solid waste, excluding food wastes and ashes, taken from residences, commercial establishments, and institutions (40 CFR 243.101) [**Added March 2000**].
- *Runoff* - in relation to MSWLF, any rainwater, leachate, or other liquid that drains over land from any part of a facility (40 CFR 258.2) [**Reviewed March 2000**].
- *Runon* - any rainwater, leachate, or other liquid that drains over land onto any part of a facility (40 CFR 258.2).
- *Sanitary Landfill* - a land disposal site employing an engineered method of disposing of solid wastes on land in a manner that minimizes environmental hazards by spreading the solid wastes in thin layers, compacting the solid wastes to the smallest practical volume, and applying and compacting cover material at the end of each operating day (40 CFR 240.101) [**Reviewed March 2000**].
- *Sanitary Landfill* - a facility for the disposal of solid waste which complies with 40 CFR 257 (40 CFR 257.2) [**Added April 2004**].
- *Satellite Vehicle*- a small collection vehicle that transfers its load into a larger vehicle operating in conjunction with it (40 CFR 243.101) [**Added March 2000**].
- *Saturated Zone* - that part of the earth's crust in which all voids are filled with water (40 CFR 258.2) [**Added March 2000**].
- *Scavenging* - the uncontrolled and unauthorized removal of materials at any point in the solid waste management system (40 CFR 243.101) [**Added March 2000**].
- *Separate Collection* - collection of recyclable materials which have been separated at the point of generation and keeping those materials separated from other collected solid waste in separate compartments of a single collection vehicle or through the use of separate collection vehicles (40 CFR 246.101) [**Reviewed March 2000**].
- *Sewage Sludge* - solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works. Sewage sludge includes, but is not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment processes; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screenings generated during preliminary treatment of domestic sewage in a treatment works (40 CFR 257.2) [**Added April 2004**].

- *Sharps* - any object contaminated with a pathogen or that may become contaminated with a pathogen through handling or during transportation and also capable of cutting or penetrating skin or a packaging material. Sharps includes needles, syringes, scalpels, broken glass, culture slides, culture dishes, broken capillary tubes, broken rigid plastic, and exposed ends of dental wires (49 CFR 171.8 and 173.134(a)(7)) **[Added January 2003]**.
- *Ship* - a vessel of any type whatsoever, operating in the marine environment (33 CFR 151.05).
- *Sludge* - the accumulated semi liquid suspension of settled solids deposited from wastewaters or other fluids in tanks or basins (40 CFR 240.101) **[Reviewed March 2000]**.
- *Sludge* - in relation to MSWLF, any solid, semi-solid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility exclusive of the treated effluent from a wastewater treatment plant (40 CFR 258.2) **[Reviewed March 2000]**.
- *Sludge* - any solid, semisolid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility or any other such waste having similar characteristics and effect (40 CFR 257.2) **[Added April 2004]**.
- *Soil pH* - the value obtained by sampling the soil to the depth of cultivation or solid waste placement, whichever is greater, and analyzing by the electrometric method. ("Methods of Soil Analysis, Agronomy Monograph No. 9," C.A. Black, ed., American Society of Agronomy, Madison, Wisconsin, pp. 914-926, 1965 (40 CFR 257.3-5(c)) **[Added April 2004]**.
- *Solid Waste* - any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include solid or dissolved materials in domestic sewage, or solid or dissolved material in irrigation return flows or industrial discharges which are point sources subject to permits under section 402 of the *Federal Water Pollution Control Act*, as amended (86 Stat. 880), or source, special nuclear, or byproduct material as defined by the *Atomic Energy Act of 1954*, as amended (68 Stat. 923) (40 CFR 257.2) **[Added April 2004]**.
- *Solid Waste* - in relation to MSWLF, any garbage or refuse, sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility and other discarded materials, including solid, liquid, semi-solid, or contained gaseous material resulting from industrial, commercial mining and agricultural operations, and from community activities, but does not include solid or dissolved materials in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges that are point sources subject to permit under 33 USC 1342, or source, special nuclear, or byproduct material as defined by the *Atomic Energy Act of 1954*, as amended (68 Statute 932) (40 CFR 258.2) **[Reviewed March 2000]**.
- *Solid Waste* - garbage, refuse, sludge, and other discarded solid materials resulting from industrial and commercial operations and from community activities. It does not include solids or dissolved materials in domestic sewage or other significant pollutants in water resources (40 CFR 240.101) **[Reviewed March 2000]**.
- *Solid Waste* - any garbage, sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges that are point sources subject to permits under 33 U.S.C. 1342, or source, special nuclear, or by-product material as defined by the *Atomic Energy Act of 1954*, as amended (42 U.S.C 2011 et seq.) (40 CFR 60.751) **[Added March 2000]**.
- *Solid Waste Boundary* - the outermost perimeter of the solid waste (projected in the horizontal plane) as it would exist at completion of the disposal activity (40 CFR 257.3-4(c)) **[Added April 2004]**.

- *Solid Waste Diversion* - non-hazardous solid waste diverted from entering a disposal facility. Waste prevention, reuse, composting, mulching, recycling, and donation are generally accepted waste diversion methods (*Instructions for Implementing EO 13423*, Section XIII, Definitions) [**Added July 2007**].
- *Solid Waste Storage Container* - a receptacle used for the temporary storage of solid waste while awaiting collection (40 CFR 243.101) [**Added March 2000**].
- *Source Separation* - the setting aside of recyclable materials at their point of generation by the generator (40 CFR 246.101) [**Reviewed March 2000**].
- *Special Wastes* - nonhazardous solid wastes requiring handling other than that normally used for municipal solid wastes (40 CFR 240.101) [**Reviewed March 2000**].
- *Specific Activity of a Radionuclide* - the activity of the radionuclide per unit mass of that nuclide. The specific activity of a material in which the radionuclide is essentially uniformly distributed is the activity per unit mass of the material (49 CFR 173.403) [**Added January 2003**].
- *State* – any of the several States of the United States, the Commonwealth of the Northern Mariana Islands, the Commonwealth of Puerto Rico, the District of Columbia, Guam, the Virgin Islands of the United States, or any other territory or possession of the United States (7 CFR 330.100) [**Added July 2006**].
- *State* - any of the several states, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands (40 CFR 257.5(b) and 258.2) [**Added March 2000; Revised April 2004**].
- *State Director* - the chief administrative officer of the lead state agency responsible for implementing the state permit program for 40 CFR 257, subpart B and 40 CFR 258 regulated facilities (40 CFR 257.5(b) and 258.2) [**Added March 2000; Revised April 2004**].
- *Stationary Compactor* - a powered machine which is designed to compact solid waste or recyclable materials, and which remains stationary when in operation. (40 CFR 243.101) [**Added March 2000**].
- *Sterilization* - cooking garbage at an internal temperature of 212 °F for 30 min (7 CFR 330.400(b)) [**Added July 2006**].
- *Storage* - the interim containment of solid waste after generation and prior to collection for ultimate recovery or disposal (40 CFR 243.101) [**Added March 2000**].
- *Stores* - the food, supplies, and other provisions carried for the day-to-day operation of a conveyance and the care and feeding of its operators (7 CFR 330.400(b)) [**Added July 2006**].
- *Street Wastes* - materials picked up by manual or mechanical sweepings of alleys, streets, and sidewalks; wastes from public waste receptacles; and material removed from catch basins (40 CFR 243.101) [**Added March 2000**].
- *Sufficient Density* - any number, spacing, and combination of collection system components, including vertical wells, horizontal collectors, and surface collectors, necessary to maintain emission and migration control as determined by measures of performance (40 CFR 60.751) [**Reviewed March 2000**].
- *Sufficient Extraction Rate* - a rate sufficient to maintain a negative pressure at all wellheads in the collection system without causing air infiltration, including any wellheads connected to the system as a result of expansion or excess surface emissions, for the life of the blower (40 CFR 60.751) [**Reviewed March 2000**].
- *Surface Impoundment or Impoundment* - a facility or part of a facility that is a natural topographic depression, human-made excavation, or diked area formed primarily of earthen materials (although it may be lined with

human-made materials), that is designed to hold an accumulation of liquid wastes or wastes containing free liquids and that is not an injection well. Examples of surface impoundments are holding storage, settling, and aeration pits, ponds, and lagoons (40 CFR 257.2) **[Added April 2004]**.

- *Sustainable* - to create and maintain conditions, under which humans and nature can exist in productive harmony, that permit fulfilling the social, economic, and other requirements of present and future generations of Americans (EO 13423, Section 9, paragraph k).
- *Taking* - harassing, harming, pursuing, hunting, wounding, killing, trapping, capturing, or collecting or attempting to engage in such conduct (40 CFR 257.3-2(c)) **[Added April 2004]**.
- *Thermal Processing* - processing of waste material by means of heat (40 CFR 240.101) **[Reviewed March 2000]**.
- *Toxin* - a Division 6.1 material from a plant, animal, or bacterial source. A toxin containing an infectious substance or a toxin contained in an infectious substance must be classed as Division 6.2, described as an infectious substance, and assigned to UN 2814 or UN 2900, as appropriate (49 CFR 171.8 and 173.134(a)(8)) **[Added January 2003]**.
- *Transfer Station* - a station at which solid wastes are concentrated for transport to a processing facility or land disposal site. A transfer station may be fixed or mobile (40 CFR 243.101) **[Reviewed March 2000]**.
- *Trenching or Burial Operation* - the placement of sewage sludge or septic tank pumpings in a trench or other natural or man-made depression and the covering with soil or other suitable material at the end of each operating day such that the wastes do not migrate to the surface (40 CFR 257.3-6(c)) **[Added April 2004]**.
- *Tribal Plan* - a plan submitted by a tribal authority pursuant to 40 CFR 9, 35, 49, 50, and 81 to implement and enforce 40 CFR 60, subpart Cc, 40 CFR 63.1990) **[Added April 2003]**.
- *Universal Precautions* - an approach to infection control. According to the concept of Universal Precautions, all human blood and certain human body fluids are treated as if known to be infectious for HIV, HBV, and other bloodborne pathogens (29 CFR 1910.1030(a)).
- *Uppermost Aquifer* - the geologic formation nearest the natural ground surface that is an aquifer, as well as, lower aquifers that are hydraulically interconnected with this aquifer within the facility's property boundary (40 CFR 257.5(b) and 258.2) **[Reviewed March 2000; Revised April 2004]**.
- *Used Health Care Product* - a medical, diagnostic, or research device or piece of equipment, or a personal care product used by consumers, medical professionals, or pharmaceutical providers that does not meet the definition of a diagnostic specimen, biological product, or regulated medical waste, is contaminated with potentially infectious body fluids or materials, and is not decontaminated or disinfected to remove or mitigate the infectious hazard prior to transportation (49 CFR 173.134(a)(8)) **[Added January 2003]**.
- *Vector* - a carrier, usually an arthropod, that is capable of transmitting a pathogen from one organism to another (40 CFR 240.202) **[Reviewed March 2000]**.
- *Washout* - the carrying away of solid waste by waters of the base flood (40 CFR 257.3-1(b) and 257.8(b)) **[Added April 2004]**.
- *Waste Management Unit Boundary* - a vertical surface located at the hydraulically downgradient limit of the unit. This vertical surface extends down into the uppermost aquifer (40 CFR 257.5(b) and 258.2) **[Reviewed March 2000; Revised April 2004]**.
- *Waste Pile or Pile* - any noncontainerized accumulation of solid, nonflowing waste that is used for treatment or storage (40 CFR 257.2) **[Added April 2004]**.

- *Waste Prevention* - any change in the design, manufacturing, purchase, or use of materials or products, including packaging, to reduce their amount or toxicity before they are discarded. Waste prevention also refers to the reuse of products or materials (*Instructions for Implementing EO 13423*, Section XIII, Definitions) [**Added July 2007**].
- *Work Practice Standard* - any design, equipment, work practice, or operational standard, or combination thereof, that is promulgated pursuant to section 112(h) of the Clean Air Act 40 CFR 63.1990) [**Added April 2003**].
- *Yard Waste* - solid waste composed predominantly of grass clippings, leaves, twigs, branches, and other garden refuse (7 CFR 330.400(b)) [**Added July 2006**].

#### **F. Records To Review**

- Record of current nonhazardous solid waste management practices
- Estimated generation rates
- Documentation of locations (map) and descriptions of all nonhazardous waste storage, and disposal sites
- Records of operational history of all active and inactive disposal sites
- State and Federal inspection reports
- Environmental monitoring procedures or plans
- Records of resource recovery practices, including the sale of materials for the purpose of recycling
- Solid waste removal contracts and inspection records
- Operating record for onsite MSWLFs
- Groundwater monitoring well data
- Regional solid waste management plan
- Pollution prevention management plan

#### **G. Physical Features To Inspect**

- Resource recovery facilities
- Incineration and land disposal sites (active and inactive)
- Areas where nonhazardous waste is disposed
- Construction debris areas
- Waste receptacles
- Solid waste vehicle storage and washing areas
- Compost facilities
- Transfer stations
- Recycling centers

## H. Guidance for Solid Waste Management Checklist Users

	<b>REFER TO CHECKLIST ITEMS:</b>
All Facilities	SO.1.1.US.
Missing, Risk Management, and Positive Checklist Items	SO.2.1.US. through SO.2.3.US
Storage/Collection of Solid Waste	SO.10.1.US. through SO.10.6.US.
Recycling	SO.25.1.US. through SO.25.8.US.
Non-MSWLF Sites and Facilities (NOTE: The checklist items previously found in SO.35 and SO.40 were deleted when 40 CFR 241 was deleted by the USEPA as published in the April 26, 1996 Federal Register.)	SO.30.1.US. through SO.30.22.US.
Site Criteria For New Landfills Other Than an MSWLFs (NOTE: The checklist items previously found in SO.45 were deleted when 40 CFR 241 was deleted by the USEPA as published in the April 26, 1996 Federal Register.)	SO.45.1.US. through SO.45.3.US.
MSWLFs	
Location Restrictions	SO.55.1.US. through SO.55.6.US.
Design Criteria	SO.60.1.US. through SO.60.4.US.
Operating Criteria	SO.65.1.US. through SO.65.11.US.
Emissions	SO.67.1.US. through SO.67.12.US.
Groundwater Monitoring Criteria	SO.70.1.US. through SO.70.12.US.
Closure Criteria	SO.75.1.US. through SO.75.5.US.
Postclosure Care Requirements	SO.80.1.US. and SO.80.3.US.
Documentation	SO.85.1.US through SO.85.8.US
Thermal Processing Facilities	SO.90.1.US. through SO.90.16.US.
Resource Recovery Facilities (NOTE: These checklist items have been removed due to the deletion of 40 CFR 245 by the USEPA as published in the 31 December 1996 Federal Register.)	SO.95.1.US. and SO.95.2.US.
Disposal of Refuse From Outside the United States	SO.100.1.US. through SO.100.3.US
Medical Waste	
Containers/Labeling/Storage Areas	SO.110.1.US. through SO.110.6.US.
Transportation	SO.115.1.US through SO.115.4.US
Solid Waste From Ships	SO.130.1.US.
Land Application of Solid Waste	SO.200.1.US

Appendix 9-1, Compliance Dates for MSWLFs and 40 CFR 258

Appendix 9-1a, *Open Dumping*

Appendix 9-2, MSWLF Units Exempt from Compliance With 40 CFR 258

Appendix 9-2a, MSW Landfill Compliance Dates

Appendix 9-3, Design Criteria Concentration Values

Appendix 9-4, Constituents for Detection Monitoring

Appendix 9-5, List of Hazardous Inorganic and Organic Constituents

Select portions of this section (i.e., Review of Federal Legislation, State and Local Regulations, Key Compliance Requirements, Key Terms and Definitions, Typical Records to Review, Typical Physical Features to Inspect, and the Checklist) have been reviewed by USEPA personnel from the Office of Enforcement and Compliance Assurance (OECA) and USEPA's Office of General Counsel. USEPA's comments and suggestions for changes have been incorporated in this version of the TEAM Guide. USEPA did not review all portions of this section. USEPA also did not review and comment on items pertaining to federal Executive Orders, DOT regulations, OSHA regulations or any other area outside of Title 40 of the Code of Federal Regulations. Portions that have been added or revised as a result of this review are identified as being reviewed, revised, or added in March 2000, for example [**Added March 2000**].



<b>COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT U.S. TEAM GUIDE</b>	
<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS: December 2018</b>
<p><b>SO.1.</b></p> <p><b>ALL FACILITIES</b></p> <p><b>SO.1.1.US.</b> The current status of any ongoing or unresolved consent orders, compliance agreements, notice of violations (NOVs), inter-agency agreements, or equivalent state enforcement actions is required to be examined (a finding under this checklist item will have the enforcement action/identifying information as the citation).</p>	<p>Determine if noncompliance issues have been resolved by reviewing a copy of the previous report, consent orders, compliance agreements, NOVs, interagency agreements, or equivalent state enforcement actions.</p>



<b>COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT U.S. TEAM GUIDE</b>	
<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS: December 2018</b>
<p><b>SO.2.</b></p> <p><b>MISSING, RISK MANAGEMENT AND POSITIVE CHECKLIST ITEMS</b></p> <p><b>SO.2.1.US.</b> Facilities are required to comply with all applicable Federal regulatory requirements not contained in this checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of finding).</p> <p><b>SO.2.2.US.</b> Risk management techniques should be promoted in environmental efforts (MP) [Added April 2002].</p> <p><b>SO.2.3.US.</b> Facilities should go above and beyond statutory and regulatory compliance (MP) [Added April 2002].</p>	<p>Determine if any new regulations have been issued since the finalization of TEAM.</p> <p>Determine if the facility has activities or facilities that are regulated, but not addressed in this checklist.</p> <p>Verify that the facility is in compliance with all applicable and newly issued regulations.</p> <p>Determine if risk management techniques are promoted in environmental efforts.</p> <p>Determine if the facility has gone above and beyond simply complying with environmental requirements.</p>



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<p><b>SO.10.</b></p> <p><b>STORAGE/ COLLECTION OF SOLID WASTE</b></p> <p><b>SO.10.1.US.</b> All solid wastes and all materials separated for recycling are required to be stored according to specific guidelines (40 CFR 243.100(b), 243.100(i), and 243.200-1) [Revised January 2000; Reviewed March 2000; Revised January 2004].</p>	<p>(NOTE: These requirements apply to the collection of residential, commercial, and institutional solid wastes and street wastes. Excluded from these requirements are mining, agricultural, and industrial solid wastes; hazardous wastes; sludges; construction and demolition wastes; and infectious wastes.)</p> <p>Verify that all solid wastes are stored so as not to cause a fire, health, or safety hazard.</p> <p>Verify that all solid waste containing food wastes are stored in covered or closed containers that are nonabsorbent, leakproof, durable, easily cleaned, and designed for safe handling.</p> <p>Verify that solid waste containers are of an adequate size and number to contain all waste generated between collections.</p> <p>Verify that bulky wastes are stored so as not to create a nuisance and to avoid the accumulation of solid waste and water in and around the bulky items.</p> <p>Verify that reusable containers are capable of being serviced without the collector coming into contact with the waste.</p> <p>Verify that waste containers used for the storage of solid waste (or materials which have been separated for recycling) meet the standards established by ANSI for waste containers as follows:</p> <ul style="list-style-type: none"> <li>– Waste Containers--Safety Requirements, 1994, American National Standards Institute, ANSI Z245.30-1994</li> <li>– Waste Containers--Compatibility Dimensions, 1996, American National Standards Institute, ANSI Z245.60-1996.</li> </ul> <p>(NOTE: Copies may be obtained from American National Standards Institute, 11 W. 42nd Street, New York, NY 10036.)</p> <p>(NOTE: By calling 1-800-CLEAN-UP you can identify where to take paper, metal cans, glass bottles, tires, and other materials to be recycled for any town or city in the United States.)</p> <p>(NOTE: Federal agencies that have decided not to adopt the requirements contained in 40 CFR 243 are required to provide a report of the analysis and rationale used. See 40 CFR 243.100(i) for details on the content of this report.)</p>

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<p><b>SO.10.2.US.</b> All facilities are required to operate their collection systems in a manner to protect the health and safety of personnel associated with the operation (40 CFR</p>	<p>(NOTE: The following guidelines (NOT requirements) are suggested for container design in 40 CFR 243.200-2:</p> <ul style="list-style-type: none"> <li>– reusable waste containers: <ul style="list-style-type: none"> <li>– should be constructed of corrosion resistant metal or other material which will not absorb water, grease, or oil</li> <li>– should be leakproof, including sides, seams, and bottoms, and be durable enough to withstand anticipated usage without rusting, cracking, or deforming in a manner that would impair serviceability</li> <li>– should have interiors that are smooth without interior projections or rough seams that would make it difficult to clean or interfere with emptying it</li> <li>– should have exteriors that are safe for handling with no cracks, holes, or jagged edges</li> </ul> </li> <li>– store containers on a firm, level, well-drained surface that is large enough to accommodate all of the containers and is maintained in a clean, spillage-free condition</li> <li>– reusable waste containers that are emptied manually have a capacity of no more than 35 gal in volume, unless they are mounted on casters and can be serviced by being rolled to the collection vehicle and tilted for emptying</li> <li>– containers are constructed with rounded edges and tapered sides with the larger diameter at the top of the container to facilitate discharge of the solid waste by gravity</li> <li>– containers have two handles or bails located directly opposite one another on the sides of the container</li> <li>– containers have covers that are tight-fitting to resist the intrusion of water and vectors, and should be equipped with a suitable handle</li> <li>– containers are designed so that they cannot be tipped over easily</li> <li>– reusable waste containers that are emptied mechanically are designed or equipped to prevent spillage or leakage during onsite storage, collection, or transport</li> <li>– container are easily cleanable and designed to allow easy access for depositing the waste and removing it by gravity or by mechanical means</li> <li>– containers are easily accessible to the collection vehicle in an area which can safely accommodate the dimensions and weight of the vehicle</li> <li>– single-use plastic and paper bags meet National Sanitation Foundation Standard No. 31 for polyethylene refuse bags and Standard No. 32 for paper refuse bags, respectively (NOTE: bags do not need to have been certified by the National Sanitation Foundation)</li> <li>– single-use bags containing food wastes are stored within the confines of a building or container between collection periods.)</li> </ul> <p>Verify that the collection system is operated safely.</p> <p>(NOTE: These requirements apply to the collection of residential, commercial, and institutional solid wastes and street wastes. Excluded from these requirements are</p>

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<p>243.100(b), 243.100(i), and 243.201-1) [Revised January 2000; Reviewed March 2000; Revised January 2004].</p>	<p>mining, agricultural, and industrial solid wastes; hazardous wastes; sludges; construction and demolition wastes; and infectious wastes.)</p> <p>(NOTE: Federal agencies that have decided not to adopt the requirements contained in 40 CFR 243 are required to provide a report of the analysis and rationale used. See 40 CFR 243.100(i) for details on the content of this report.)</p> <p>(NOTE: The following guidelines (NOT requirements) are suggested for operations in 40 CFR 243.201-2:</p> <ul style="list-style-type: none"> <li>– all solid waste collection personnel receive instructions and training in safe container and waste handling techniques, and in the proper operation of collection equipment, such as those presented in Operation Responsible: Safe Refuse Collection</li> <li>– PPE such as gloves, safety glasses, respirators, and footwear is used by collection employees, as appropriate, and PPE meets the applicable provisions of the OSHA Standards for Subpart I--Personal Protective Equipment (29 CFR 1910.132 through 1910.137)</li> <li>– scavenging is prohibited at all times to avoid injury and to prevent interference with collection operations</li> <li>– when conducting carryout collection, a leakproof and puncture-proof carrying container is used to minimize the potential for physical contact between the collector and the solid waste or the liquids which may derive from it.)</li> </ul>
<p><b>SO.10.3.US.</b> Collection equipment must be maintained according to certain standards if such equipment is considered to be operating in interstate or foreign commerce (40 CFR 243.100(b), 243.100(i), and 243.202-1(a)) [Revised January 2000; Reviewed March 2000].</p>	<p>(NOTE: These requirements apply to the collection of residential, commercial, and institutional solid wastes and street wastes. Excluded from these requirements are mining, agricultural, and industrial solid wastes; hazardous wastes; sludges; construction and demolition wastes; and infectious wastes.)</p> <p>Verify that all vehicles used for the collection and transportation of solid waste meet all applicable standards established by the Federal Government including:</p> <ul style="list-style-type: none"> <li>– <i>Motor Carrier Safety Standards</i> (49 CFR 390 through 396)</li> <li>– <i>Noise Emission Standards for Motor Carriers Engaged in Interstate Commerce</i> (40 CFR 202)</li> <li>– <i>Federal Motor Vehicle Safety Standards</i> (49 CFR 500 through 580) (Federally owned collection equipment only).</li> </ul> <p>(NOTE: Federal agencies that have decided not to adopt the requirements contained in 40 CFR 243 are required to provide a report of the analysis and rationale used. See 40 CFR 243.100(i) for details on the content of this report.)</p>
<p><b>SO.10.4.US.</b> All collection equipment is required to meet specific criteria (40 CFR 243.100(b), 243.100(i),</p>	<p>(NOTE: These requirements apply to the collection of residential, commercial, and institutional solid wastes and street wastes. Excluded from these requirements are</p>

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<p>243.202-1(b), and 243.202-1(d)) [Revised January 2000; Reviewed March 2000; Revised January 2004].</p>	<p>mining, agricultural, and industrial solid wastes; hazardous wastes; sludges; construction and demolition wastes; and infectious wastes.)</p> <p>Verify that all vehicles used for the collection and transportation of solid wastes or materials separated for recycling are enclosed or have suitable cover to prevent spillage.</p> <p>Verify that collection equipment used for the collection, storage, and transportation of solid waste (or materials separated for recycling) meet the following ANSI standards:</p> <ul style="list-style-type: none"> <li>– Mobile Refuse Collection and Compaction Equipment--Safety Requirements, 1992, American National Standards Institute, ANSI Z245.1-1992</li> <li>– Stationary Compactors--Safety Requirements, 1997, American National Standards Institute, ANSI Z245.2-1997.</li> </ul> <p>(NOTE: A copy may be obtained from American National Standards Institute, 11 W. 42nd Street, New York, NY 10036.)</p> <p>(NOTE: Federal agencies that have decided not to adopt the requirements contained in 40 CFR 243 are required to provide a report of the analysis and rationale used. See 40 CFR 243.100(i) for details on the content of this report.)</p> <p>(NOTE: The following guidelines (NOT requirements) are suggested for collection equipment design in 40 CFR 243.202-2:</p> <ul style="list-style-type: none"> <li>– whenever possible, enclosed, metal, leak-resistant compactor vehicles are used for the collection of solid wastes</li> <li>– safety devices, including, but not limited to, the following are provided on all collection vehicles: <ul style="list-style-type: none"> <li>– exterior rear-view mirrors</li> <li>– back-up lights</li> <li>– four-way emergency flashers</li> <li>– easily accessible first aid equipment</li> <li>– easily accessible fire extinguisher</li> <li>– audible reverse warning device</li> </ul> </li> <li>– if crew members ride outside the cab of the collection vehicle for short trips the vehicle is equipped with handholds and platforms big enough to safeguard against slipping</li> <li>– vehicle size takes into consideration: Local weight and height limits for all roads over which the vehicle will travel; turning radius; and loading height in the unloading position to insure overhead clearance in transfer stations, service buildings, incinerators, or other facilities</li> <li>– engines which conserve fuel and minimize pollution are used in collection vehicles to reduce fuel consumption and air pollution.)</li> </ul> <p>(NOTE: 40 CFR 243.202-3(a) suggests (NOT requires) that collection vehicles be maintained and serviced according to manufacturers' recommendations, and receive</p>

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<p><b>SO.10.5.US.</b> Solid wastes or materials separated for recycling are required to be collected according to a certain schedule (40 CFR 243.100(b), 243.100(i), and 243.203-1) [Revised January 2000; Reviewed March 2000; Revised January 2004].</p>	<p>periodic vehicle safety checks, including, but not limited to, inspection of brakes, windshield wipers, taillights, backup lights, audible reverse warning devices, tires, and hydraulic systems. Any irregularities should be repaired before the vehicle is used and vehicles should be cleaned thoroughly at least once a week.)</p> <p>(NOTE: These requirements apply to the collection of residential, commercial, and institutional solid wastes and street wastes. Excluded from these requirements are mining, agricultural, and industrial solid wastes; hazardous wastes; sludges; construction and demolition wastes; and infectious wastes.)</p> <p>Verify that solid wastes that contain food wastes are collected at a minimum of once during each week.</p> <p>Verify that bulky wastes are collected a minimum of once every 3 mo.</p> <p>Verify that all wastes are collected with sufficient frequency to inhibit the propagation or attraction of vectors and the creation of nuisances.</p> <p>(NOTE: Federal agencies that have decided not to adopt the requirements contained in 40 CFR 243 are required to provide a report of the analysis and rationale used. See 40 CFR 243.100(i) for details on the content of this report.)</p> <p>(NOTE: The following guidelines (NOT requirements) are suggested for collection equipment design in 40 CFR 243.203-2:</p> <ul style="list-style-type: none"> <li>– a minimum collection frequency consistent with public health and safety is adopted to minimize collection costs and fuel consumption</li> <li>– in establishing collection frequencies, generation rates, waste composition, and storage capacity will be taken into consideration</li> <li>– when solid wastes are separated at the point of storage into various categories for the purpose of resource recovery, a collection frequency is designated for each waste category.)</li> </ul> <p><b>SO.10.6.US.</b> Solid waste is required to be collected in a safe, efficient manner (40 CFR 243.100(b), 243.100(i), and 243.204-1) [Revised January 2000; Reviewed March 2000; Revised January 2004].</p> <p>(NOTE: These requirements apply to the collection of residential, commercial, and institutional solid wastes and street wastes. Excluded from these requirements are mining, agricultural, and industrial solid wastes; hazardous wastes; sludges; construction and demolition wastes; and infectious wastes.)</p> <p>Verify that solid wastes or materials separated for recycling are collected in a safe, efficient manner.</p> <p>Verify that the collection vehicle operator immediately cleans up any spillage caused by his operations.</p> <p>(NOTE: Federal agencies that have decided not to adopt the requirements contained in 40 CFR 243 are required to provide a report of the analysis and rationale used. See 40 CFR 243.100(i) for details on the content of this report.)</p>

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	(NOTE: 40 CFR 243.202-3(b) suggests (NOT requires) that solid waste not be allowed to remain in collection vehicles over 24 h and is only left in a vehicle overnight when this practice does not constitute a fire, health, or safety hazard.)

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<p><b>SO.25</b></p> <p><b>RECYCLING</b></p> <p><b>SO.25.1.US.</b> Checklist item deleted [<b>Deleted October 2011</b>].</p> <p><b>SO.25.2.US.</b> Office facilities of over 100 office workers are required to recover high- grade paper (40 CFR 246.200-1) [<b>Reviewed March 2000</b>].</p> <p><b>SO.25.3.US.</b> Facilities at which more than 500 families reside are required to recycle newspapers (40 CFR 246.201-1) [<b>Reviewed March 2000</b>].</p> <p><b>SO.25.4.US.</b> Facilities generating 10 tons or more of waste corrugated containers per month are required to segregate/separately collect for recycling or alternative energy use (40 CFR 246.202-1) [<b>Reviewed March 2000</b>].</p> <p><b>SO.25.5.US.</b> Checklist item moved [<b>Added April 2003; Moved January 2004</b>].</p> <p><b>SO.25.6.US.</b> Checklist item moved [<b>Added April 2003; Moved January 2004</b>].</p> <p><b>SO.25.7.US.</b> Federal agencies which decide to not source separate must make available to the EPA the analysis and rationale used in making the determination (40 CFR</p>	<p>(NOTE: To document inadequate recycling management practices (MP) use checklist item number SO.2.1.US.)</p> <p>Determine if there are over 100 office workers.</p> <p>Verify that high-grade paper is separated at the source of generation.</p> <p>Verify that high-grade paper is separately collected.</p> <p>Verify that high-grade paper is sold for recycling.</p> <p>Determine if there are more than 500 families residing onsite.</p> <p>Verify that used newspapers are separated at the source of generation.</p> <p>Verify that used newspapers are separately collected.</p> <p>Verify that used newspapers are sold for recycling.</p> <p>Determine if the facility generates 10 tons or more of waste corrugated containers per month.</p> <p>Verify that waste corrugated containers are collected separately.</p> <p>Verify that waste corrugated containers are recycled or used as an alternative energy resource.</p> <p>This checklist item about recyclable materials used in a manner constituting disposal was moved to HW.10.6.US.</p> <p>This checklist item about recyclable materials reclaimed to recover economically significant amounts of gold, silver, platinum, palladium, iridium, osmium, rhodium, ruthenium, or any combination of these has been moved to HW.10.7.US.</p> <p>Verify that federal agencies that make the determination not to source separate as described in 40 CFR 246.200-1, 246.201-1, and 246.202-1 (see checklist items SO.25.1.US through SO.25.4.US), for whatever reason, makes available to the EPA the analysis and rationale used in making that determination.</p>

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<p>246.100(f) [Added July 2006].</p>	<p>(NOTE: The EPA Administrator shall publish notice of the availability of this report to the general public in the Federal Register. The following are considered to be valid reasons for not source separating under individual facts and circumstances: inability to sell the recovered materials due to lack of market, and costs so unreasonably high as to render source separation for materials recovery economically impracticable.)</p> <p>Verify that the required report includes:</p> <ul style="list-style-type: none"> <li>– a description of alternative actions considered with emphasis on those alternatives which involve source separation for materials recovery</li> <li>– a description of ongoing actions which will be continued and new actions taken or proposed</li> <li>– identification of all agency facilities which will be affected by these actions including a brief description of how such facilities will be affected</li> <li>– an analysis in support of the action chosen by the agency including technical data, market studies, and policy considerations used in arriving at such a determination.</li> </ul> <p>Verify that agencies make every effort to present information succinctly in a form easily understood, but in sufficient detail so that the factors influencing the decision not to source separate for materials recovery are clear.</p> <p>Verify that the report is submitted to the EPA Administrator as soon as possible after a final agency determination has been made not to adopt the requirements of these guidelines, but in no case later than sixty days after such final determination.</p> <p>(NOTE: The Administrator will indicate to the agency his concurrence/nonconcurrence with the agency's decision, including his reason therefore. Implementation of actions that would preclude source separation for materials recovery shall be deferred, for sixty days where feasible, in order to give the Administrator an opportunity to receive, analyze and seek clarification of the required report.)</p> <p>(NOTE: It is recommended that where the required report required concerns an action for which an Environmental Impact Statement (EIS) is required by the NEPA, that the report be circulated together with the EIS.)</p>
<p><b>SO.25.8.US.</b> Checklist item deleted [Added July 2007; Deleted April 2015].</p>	<p>(NOTE: This checklist item requiring a recycling coordinator was deleted due to EO 13423 being revoked by EO 13693.)</p>



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<p><b>SO.30</b></p> <p><b>NON-MSWLF SITES AND FACILITIES</b></p> <p><b>SO.30.1.US.</b> Checklist item deleted. <b>[Deleted May 1996].</b></p> <p><b>SO.30.2.US.</b> Checklist item deleted. <b>[Deleted May 1996].</b></p> <p><b>SO.30.3.US.</b> Checklist item deleted. <b>[Deleted May 1996].</b></p> <p><b>SO.30.4.US.</b> Checklist item deleted. <b>[Deleted May 1996].</b></p> <p><b>SO.30.5.US.</b> Open dumping is prohibited (40 CFR 257.1(a)(2)) <b>[Moved April 1999; Reviewed March 2000; Revised April 2004].</b></p> <p><b>SO.30.6.US.</b> Checklist item deleted <b>[Deleted October 2011].</b></p> <p><b>SO.30.7.US.</b> Solid waste disposal facilities or practices must not pose a reasonable probability of adverse effects on health or the environment in a floodplain (40 CFR 257.1, 257.3, and 257.3-1(a)) <b>[Added April 2004].</b></p>	<p>(NOTE: This checklist item has been removed due to the deletion of 40 CFR 241 by the USEPA as published in the April 26, 1996 Federal Register.)</p> <p>(NOTE: This checklist item has been removed due to the deletion of 40 CFR 241 by the USEPA as published in the April 26, 1996 Federal Register.)</p> <p>(NOTE: This checklist item has been removed due to the deletion of 40 CFR 241 by the USEPA as published in the April 26, 1996 Federal Register.)</p> <p>(NOTE: This checklist item has been removed due to the deletion of 40 CFR 241 by the USEPA as published in the April 26, 1996 Federal Register.)</p> <p>NOTE: This was previously SO.35.20.US.) Verify that open dumping is not practiced.</p> <p>(NOTE: See checklist items SO.30.7.US through SO.30.14.US for descriptions of what constitutes open dumping.)</p> <p>(NOTE: To document inadequate solid waste management practices (MP) use checklist item number SO.2.1.US.)</p> <p>Verify that facilities or practices in floodplains do not restrict the flow of the base flood, reduce the temporary water storage capacity of the floodplain, or result in washout of solid waste, so as to pose a hazard to human life, wildlife, or land or water resources.</p> <p>(NOTE: The criteria in 40 CFR 257.1 through 257.4 are for determining which solid waste disposal facilities and practices pose a reasonable probability of adverse effects on health or the environment under sections 1008(a)(3) and 4004(a) of RCRA. Facilities and practices failing to satisfy the criteria in 40 CFR 257.1 through 257.4 result in open dumping.)</p> <p>(NOTE: These criteria also provide guidelines for the disposal of sewage sludge on the land when the sewage sludge is not used or disposed through a practice regulated in 40 CFR 503.)</p>

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<p><b>SO.30.8.US.</b> Solid waste disposal facilities or practices must not pose a reasonable probability of adverse effects on health or the environment to threatened or endangered species (40 CFR 257.1, 257.3, 257.3-2(a), and 257.3-2(b)) [Added April 2004].</p>	<p>(NOTE: These criteria apply to all solid waste disposal facilities and practices with the following exceptions:</p> <ul style="list-style-type: none"> <li>– the criteria do not apply to agricultural wastes, including manures and crop residues, returned to the soil as fertilizers or soil conditioners</li> <li>– the criteria do not apply to overburden resulting from mining operations intended for return to the mine site</li> <li>– the criteria do not apply to the land application of domestic sewage or treated domestic sewage</li> <li>– the criteria do not apply to the location and operation of septic tanks. The criteria do, however, apply to the disposal of septic tank pumpings</li> <li>– the criteria do not apply to solid or dissolved materials in irrigation return flows</li> <li>– the criteria do not apply to industrial discharges which are point sources subject to permits under section 402 of the Clean Water Act, as amended</li> <li>– the criteria do not apply to source, special nuclear or byproduct material as defined by the Atomic Energy Act, as amended (68 Stat. 923)</li> <li>– the criteria do not apply to hazardous waste disposal facilities subject to regulation under subtitle C of RCRA</li> <li>– the criteria do not apply to disposal of solid waste by underground well injection subject to the regulations (40 CFR 146) for the Underground Injection Control Program (UICP) under the Safe Drinking Water Act, as amended, 42 U.S.C. 3007 et seq</li> <li>– the criteria of this part do not apply to municipal solid waste landfill units, which are subject to the revised criteria contained in 40 CFR 258</li> <li>– the criteria do not apply to the use or disposal sewage sludge on the land when the sewage sludge is used or disposed in accordance with 40 CFR 503.)</li> </ul> <p>Verify that facilities or practices do not cause or contribute to the taking of any endangered or threatened species of plants, fish, or wildlife.</p> <p>Verify that the facility or practice does not result in the destruction or adverse modification of the critical habitat of endangered or threatened species as identified in 50 CFR 17.</p> <p>(NOTE: The criteria in 40 CFR 257.1 through 257.4 are for determining which solid waste disposal facilities and practices pose a reasonable probability of adverse effects on health or the environment under sections 1008(a)(3) and 4004(a) of RCRA. Facilities and practices failing to satisfy the criteria in 40 CFR 257.1 through 257.4 result in open dumping.)</p> <p>(NOTE: These criteria also provide guidelines for the disposal of sewage sludge on the land when the sewage sludge is not used or disposed through a practice regulated in 40 CFR 503.)</p> <p>(NOTE: These criteria apply to all solid waste disposal facilities and practices with the following exceptions:</p>

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<p><b>SO.30.9.US.</b> Solid waste disposal facilities or practices must not pose a reasonable probability of adverse effects on health or the environment through wastewater discharges (40 CFR 257.1, 257.3, and 257.3-3) [Added April 2004].</p>	<ul style="list-style-type: none"> <li>– the criteria do not apply to agricultural wastes, including manures and crop residues, returned to the soil as fertilizers or soil conditioners</li> <li>– the criteria do not apply to overburden resulting from mining operations intended for return to the mine site</li> <li>– the criteria do not apply to the land application of domestic sewage or treated domestic sewage</li> <li>– the criteria do not apply to the location and operation of septic tanks. The criteria do, however, apply to the disposal of septic tank pumpings</li> <li>– the criteria do not apply to solid or dissolved materials in irrigation return flows</li> <li>– the criteria do not apply to industrial discharges which are point sources subject to permits under section 402 of the Clean Water Act, as amended</li> <li>– the criteria do not apply to source, special nuclear or byproduct material as defined by the Atomic Energy Act, as amended (68 Stat. 923)</li> <li>– the criteria do not apply to hazardous waste disposal facilities which are subject to regulation under subtitle C of RCRA</li> <li>– the criteria do not apply to disposal of solid waste by underground well injection subject to the regulations (40 CFR 146) for the Underground Injection Control Program (UICP) under the Safe Drinking Water Act, as amended, 42 U.S.C. 3007 et seq</li> <li>– the criteria of this part do not apply to municipal solid waste landfill units, which are subject to the revised criteria contained in 40 CFR 258</li> <li>– the criteria do not apply to the use or disposal sewage sludge on the land when the sewage sludge is used or disposed in accordance with 40 CFR 503.)</li> </ul> <p>Verify that, a facility does not cause a discharge of pollutants into waters of the United States that is in violation of the requirements of NPDES.</p> <p>Verify that a facility does not cause a discharge of dredged material or fill material to waters of the United States that is in violation of the requirements under section 404 of the <i>Clean Water Act</i>.</p> <p>Verify that a facility or practice does not cause non-point source pollution of waters of the United States that violates applicable legal requirements implementing an area-wide or Statewide water quality management plan that has been approved by the Administrator.</p> <p>(NOTE: The criteria in 40 CFR 257.1 through 257.4 are for determining which solid waste disposal facilities and practices pose a reasonable probability of adverse effects on health or the environment under sections 1008(a)(3) and 4004(a) of RCRA. Facilities and practices failing to satisfy the criteria in 40 CFR 257.1 through 257.4 result in open dumping.)</p> <p>(NOTE: These criteria also provide guidelines for the disposal of sewage sludge on the land when the sewage sludge is not used or disposed through a practice regulated in 40 CFR 503.)</p>

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<p><b>REGULATORY REQUIREMENTS:</b></p>	<p><b>REVIEWER CHECKS: December 2018</b></p>
<p><b>SO.30.10.US.</b> Solid waste disposal facilities or practices must not pose a reasonable probability of adverse effects on health or the environment through groundwater contamination (40 CFR 257.1, 257.3, 257.3-4(a), and 257.3-4(b)) [Added April 2004].</p>	<p>(NOTE: These criteria apply to all solid waste disposal facilities and practices with the following exceptions:</p> <ul style="list-style-type: none"> <li>– the criteria do not apply to agricultural wastes, including manures and crop residues, returned to the soil as fertilizers or soil conditioners</li> <li>– the criteria do not apply to overburden resulting from mining operations intended for return to the mine site</li> <li>– the criteria do not apply to the land application of domestic sewage or treated domestic sewage</li> <li>– the criteria do not apply to the location and operation of septic tanks. The criteria do, however, apply to the disposal of septic tank pumpings</li> <li>– the criteria do not apply to solid or dissolved materials in irrigation return flows</li> <li>– the criteria do not apply to industrial discharges which are point sources subject to permits under section 402 of the <i>Clean Water Act</i>, as amended</li> <li>– the criteria do not apply to source, special nuclear or byproduct material as defined by the <i>Atomic Energy Act</i>, as amended (68 Stat. 923)</li> <li>– the criteria do not apply to hazardous waste disposal facilities which are subject to regulation under subtitle C of RCRA</li> <li>– the criteria do not apply to disposal of solid waste by underground well injection subject to the regulations (40 CFR 146) for the Underground Injection Control Program (UICP) under the <i>Safe Drinking Water Act</i>, as amended, 42 U.S.C. 3007 et seq</li> <li>– the criteria of this part do not apply to municipal solid waste landfill units, which are subject to the revised criteria contained in 40 CFR 258</li> <li>– the criteria do not apply to the use or disposal sewage sludge on the land when the sewage sludge is used or disposed in accordance with 40 CFR 503.)</li> </ul> <p>Verify that a facility or practice does not contaminate an underground drinking water source beyond the solid waste boundary or beyond a specified alternative boundary.</p> <p>(NOTE: For purposes of section 1008(a)(3) of the Act or section 405(d) of the CWA, a party charged with open dumping or a violation of section 405(e) with respect to sewage sludge that is not used or disposed through a practice regulated in 40 CFR 503 may demonstrate that compliance should be determined at an alternative boundary in lieu of the solid waste boundary. The court shall establish an alternative boundary only if it finds that such a change would not result in contamination of ground water which may be needed or used for human consumption. For purposes of sections 4004(a) and 1008(a)(3), the State may establish an alternative boundary for a facility to be used in lieu of the solid waste boundary only if it finds that such a change would not result in the contamination of ground water that may be needed or used for human consumption.)</p> <p>(NOTE: The criteria in 40 CFR 257.1 through 257.4 are for determining which solid waste disposal facilities and practices pose a reasonable probability of adverse</p>

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	<p>effects on health or the environment under sections 1008(a)(3) and 4004(a) of RCRA. Facilities and practices failing to satisfy the criteria in 40 CFR 257.1 through 257.4 result in open dumping.)</p> <p>(NOTE: These criteria also provide guidelines for the disposal of sewage sludge on the land when the sewage sludge is not used or disposed through a practice regulated in 40 CFR 503.)</p> <p>(NOTE: These criteria apply to all solid waste disposal facilities and practices with the following exceptions:</p> <ul style="list-style-type: none"> <li>– the criteria do not apply to agricultural wastes, including manures and crop residues, returned to the soil as fertilizers or soil conditioners</li> <li>– the criteria do not apply to overburden resulting from mining operations intended for return to the mine site</li> <li>– the criteria do not apply to the land application of domestic sewage or treated domestic sewage</li> <li>– the criteria do not apply to the location and operation of septic tanks. The criteria do, however, apply to the disposal of septic tank pumpings</li> <li>– the criteria do not apply to solid or dissolved materials in irrigation return flows</li> <li>– the criteria do not apply to industrial discharges which are point sources subject to permits under section 402 of the CWA, as amended</li> <li>– the criteria do not apply to source, special nuclear or byproduct material as defined by the AEA, as amended (68 Stat. 923)</li> <li>– the criteria do not apply to hazardous waste disposal facilities which are subject to regulation under subtitle C of RCRA</li> <li>– the criteria do not apply to disposal of solid waste by underground well injection subject to the regulations (40 CFR 146) for the Underground Injection Control Program (UICP) under the SDWA, as amended, 42 U.S.C. 3007 et seq</li> <li>– the criteria of this part do not apply to municipal solid waste landfill units, which are subject to the revised criteria contained in 40 CFR 258</li> <li>– the criteria do not apply to the use or disposal sewage sludge on the land when the sewage sludge is used or disposed in accordance with 40 CFR 503.)</li> </ul>
<p><b>SO.30.11.US.</b> Checklist item moved to SO.200.1.US [Added April 2004; Moved July 2008].</p>	<p>Checklist item moved to SO.200.1.US</p>
<p><b>SO.30.12.US.</b> Solid waste disposal facilities or practices must not pose a reasonable probability of adverse effects on health or the environment through disease vectors (40 CFR 257.1, 257.3, and 257.3-</p>	<p>Verify that the facility or practice does not exist or occur unless the onsite population of disease vectors is minimized through the periodic application of cover material or other techniques as appropriate so as to protect public health.</p> <p>Verify that a facility or practice involving disposal of sewage sludge or septic tank pumpings does not exist or occur unless in compliance with one of the following:</p>

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6(a) through 257.3-6(b)) <b>[Added April 2004].</b>	<ul style="list-style-type: none"> <li>– sewage sludge that is applied to the land surface or is incorporated into the soil is treated by a Process to Significantly Reduce Pathogens prior to application or incorporation, and:             <ul style="list-style-type: none"> <li>– public access to the facility is controlled for at least 12 mo</li> <li>– grazing by animals whose products are consumed by humans is prevented for at least 1 mo</li> </ul> </li> <li>– septic tank pumpings that are applied to the land surface or incorporated into the soil are treated by a Process to Significantly Reduce Pathogens prior to application or incorporation, unless public access to the facility is controlled for at least 12 mo and unless grazing by animals whose products are consumed by humans is prevented for at least 1 mo</li> <li>– sewage sludge or septic tank pumpings that are applied to the land surface or are incorporated into the soil are treated by a Process to Further Reduce Pathogens, prior to application or incorporation, if crops for direct human consumption are grown within 18 mo subsequent to application or incorporation.</li> </ul> <p>(NOTE: The provisions for sewage sludge that is applied to the land surface or is incorporated into the soil do not apply to sewage sludge disposed of by a trenching or burial operation.)</p> <p>(NOTE: The provisions for septic tank pumpings that are applied to the land surface or incorporated into the soil do not apply to septic tank pumpings disposed of by a trenching or burial operation.)</p> <p>(NOTE: The provisions for treating sewage sludge or septic tank pumpings that are applied to the land surface or are incorporated into the soil are not required if there is no contact between the solid waste and the edible portion of the crop; however, in this case the solid waste is treated by a Process to Significantly Reduce Pathogens, prior to application; public access to the facility is controlled for at least 12 mo; and grazing by animals whose products are consumed by humans is prevented for at least 1 mo.)</p> <p>(NOTE: If crops for direct human consumption are not grown within 18 mo of application or incorporation, the requirements for treatment by a Process to Significantly Reduce Pathogens and restrict access apply.)</p> <p>(NOTE: The criteria in 40 CFR 257.1 through 257.4 are for determining which solid waste disposal facilities and practices pose a reasonable probability of adverse effects on health or the environment under sections 1008(a)(3) and 4004(a) of RCRA. Facilities and practices failing to satisfy the criteria in 40 CFR 257.1 through 257.4 result in open dumping.)</p> <p>(NOTE: These criteria also provide guidelines for the disposal of sewage sludge on the land when the sewage sludge is not used or disposed through a practice regulated in 40 CFR 503.)</p>

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<p><b>SO.30.13.US.</b> Solid waste disposal facilities or practices must not pose a reasonable probability of adverse effects on health or the environment through air emissions (40 CFR 257.1, 257.3, 257.3-7(a), and 257.3-7(b)) <b>[Added April 2004]</b>.</p>	<p>(NOTE: These criteria apply to all solid waste disposal facilities and practices with the following exceptions:</p> <ul style="list-style-type: none"> <li>– the criteria do not apply to agricultural wastes, including manures and crop residues, returned to the soil as fertilizers or soil conditioners</li> <li>– the criteria do not apply to overburden resulting from mining operations intended for return to the mine site</li> <li>– the criteria do not apply to the land application of domestic sewage or treated domestic sewage</li> <li>– the criteria do not apply to the location and operation of septic tanks. The criteria do, however, apply to the disposal of septic tank pumpings</li> <li>– the criteria do not apply to solid or dissolved materials in irrigation return flows</li> <li>– the criteria do not apply to industrial discharges which are point sources subject to permits under section 402 of the CWA, as amended</li> <li>– the criteria do not apply to source, special nuclear or byproduct material as defined by the AEA, as amended (68 Stat. 923)</li> <li>– the criteria do not apply to hazardous waste disposal facilities that are subject to regulation under subtitle C of RCRA</li> <li>– the criteria do not apply to disposal of solid waste by underground well injection subject to the regulations (40 CFR 146) for the Underground Injection Control Program (UICP) under the SDWA, as amended, 42 U.S.C. 3007 et seq</li> <li>– the criteria of this part do not apply to municipal solid waste landfill units, which are subject to the revised criteria contained in 40 CFR 258</li> <li>– the criteria do not apply to the use or disposal sewage sludge on the land when the sewage sludge is used or disposed in accordance with 40 CFR 503.)</li> </ul> <p>Verify that the facility or practice does not engage in open burning of residential, commercial, institutional, or industrial solid waste.</p> <p>(NOTE: This requirement does not apply to infrequent burning of agricultural wastes in the field, silvicultural wastes for forest management purposes, land-clearing debris, diseased trees, debris from emergency clean-up operations, and ordinance.)</p> <p>(NOTE: The criteria in 40 CFR 257.1 through 257.4 are for determining which solid waste disposal facilities and practices pose a reasonable probability of adverse effects on health or the environment under sections 1008(a)(3) and 4004(a) of RCRA. Facilities and practices failing to satisfy the criteria in 40 CFR 257.1 through 257.4 result in open dumping.)</p> <p>(NOTE: These criteria also provide guidelines for the disposal of sewage sludge on the land when the sewage sludge is not used or disposed through a practice regulated in 40 CFR 503.)</p> <p>(NOTE: These criteria apply to all solid waste disposal facilities and practices with the following exceptions:</p>

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<p><b>SO.30.14.US.</b> Solid waste disposal facilities or practices must not pose a reasonable probability of adverse effects on health or the environment through unsafe practices (40 CFR 257.1, 257.3, and 257.3-8(a) through 257.3-8(d)) [Added April 2004].</p>	<ul style="list-style-type: none"> <li>– the criteria do not apply to agricultural wastes, including manures and crop residues, returned to the soil as fertilizers or soil conditioners</li> <li>– the criteria do not apply to overburden resulting from mining operations intended for return to the mine site</li> <li>– the criteria do not apply to the land application of domestic sewage or treated domestic sewage</li> <li>– the criteria do not apply to the location and operation of septic tanks. The criteria do, however, apply to the disposal of septic tank pumpings</li> <li>– the criteria do not apply to solid or dissolved materials in irrigation return flows</li> <li>– the criteria do not apply to industrial discharges which are point sources subject to permits under section 402 of the CWA, as amended</li> <li>– the criteria do not apply to source, special nuclear or byproduct material as defined by the AEA, as amended (68 Stat. 923)</li> <li>– the criteria do not apply to hazardous waste disposal facilities that are subject to regulation under subtitle C of RCRA</li> <li>– the criteria do not apply to disposal of solid waste by underground well injection subject to the regulations (40 CFR 146) for the Underground Injection Control Program (UICP) under the SDWA, as amended, 42 U.S.C. 3007 et seq</li> <li>– the criteria of this part do not apply to municipal solid waste landfill units, which are subject to the revised criteria contained in 40 CFR 258</li> <li>– the criteria do not apply to the use or disposal sewage sludge on the land when the sewage sludge is used or disposed in accordance with 40 CFR 503.)</li> </ul> <p>Verify that the concentration of explosive gases generated by the facility or practice do not exceed:</p> <ul style="list-style-type: none"> <li>– 25 percent of the lower explosive limit (LEL) for the gases in facility structures (excluding gas control or recovery system components)</li> <li>– the LEL for the gases at the property boundary.</li> </ul> <p>Verify that a facility or practice does not pose a hazard to the safety of persons or property from fires.</p> <p>(NOTE: The hazard avoidance for fires may be accomplished through compliance with 40 CFR 257.3-7 [See checklist item SO.30.13.US] and through the periodic application of cover material or other techniques as appropriate.)</p> <p>Verify that a facility or practice disposing of putrescible wastes that may attract birds and which occurs within 10,000 ft (3,048 m) of any airport runway used by turbojet aircraft or within 5,000 ft (1,524 m) of any airport runway used by only piston-type aircraft do not pose a bird hazard to aircraft.</p> <p>Verify that a facility or practice does not allow uncontrolled public access so as to expose the public to potential health and safety hazards at the disposal site.</p>

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<p><b>SO.30.15.US.</b> Nonmunicipal nonhazardous waste disposal units that receive VSQG hazardous waste must meet certain location restrictions (40 CFR 257.1, 257.5(a), 257.8, and 257.9)) [Added April</p>	<p>(NOTE: The criteria in 40 CFR 257.1 through 257.4 are for determining which solid waste disposal facilities and practices pose a reasonable probability of adverse effects on health or the environment under sections 1008(a)(3) and 4004(a) of RCRA. Facilities and practices failing to satisfy the criteria in 40 CFR 257.1 through 257.4 result in open dumping.)</p> <p>(NOTE: These criteria also provide guidelines for the disposal of sewage sludge on the land when the sewage sludge is not used or disposed through a practice regulated in 40 CFR 503.)</p> <p>(NOTE: These criteria apply to all solid waste disposal facilities and practices with the following exceptions:</p> <ul style="list-style-type: none"> <li>– the criteria do not apply to agricultural wastes, including manures and crop residues, returned to the soil as fertilizers or soil conditioners</li> <li>– the criteria do not apply to overburden resulting from mining operations intended for return to the mine site</li> <li>– the criteria do not apply to the land application of domestic sewage or treated domestic sewage</li> <li>– the criteria do not apply to the location and operation of septic tanks. The criteria do, however, apply to the disposal of septic tank pumpings</li> <li>– the criteria do not apply to solid or dissolved materials in irrigation return flows</li> <li>– the criteria do not apply to industrial discharges which are point sources subject to permits under section 402 of the CWA, as amended</li> <li>– the criteria do not apply to source, special nuclear or byproduct material as defined by the AEA, as amended (68 Stat. 923)</li> <li>– the criteria do not apply to hazardous waste disposal facilities that are subject to regulation under subtitle C of RCRA</li> <li>– the criteria do not apply to disposal of solid waste by underground well injection subject to the regulations (40 CFR part 146) for the Underground Injection Control Program (UICP) under the SDWA, as amended, 42 U.S.C. 3007 et seq</li> <li>– the criteria of this part do not apply to municipal solid waste landfill units, which are subject to the revised criteria contained in 40 CFR 258</li> <li>– the criteria do not apply to the use or disposal sewage sludge on the land when the sewage sludge is used or disposed in accordance with 40 CFR 503.)</li> </ul> <p>(NOTE: These requirements in this section apply to owners/operators of any nonmunicipal nonhazardous waste disposal unit that receives VSQG hazardous waste. Nonmunicipal nonhazardous waste disposal units that meet the requirements of this checklist item may receive VSQG wastes. Any owner/operator of a nonmunicipal nonhazardous waste disposal unit that receives VSQG hazardous waste continues to be subject to the requirements in 40 CFR 257.3-2, 257.3-3, 257.3-5, 257.3-6, 257.3-7, 257.3-8(a), 257.3-8(b), and 257.3-8(d) [see checklist items SO.30.7.US through SO.30.14.US].)</p>

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<b>2004; Revised January 2017].</b>	<p>Verify that any nonmunicipal nonhazardous waste disposal unit that is receiving VSQG hazardous waste is in compliance with the requirements in 40 CFR 257.7 through 257.30.</p> <p>Verify that any nonmunicipal nonhazardous waste disposal unit that does not meet the requirements in this checklist item does not receive VSQG wastes.</p> <p>(NOTE: Any nonmunicipal nonhazardous waste disposal unit that is not receiving VSQG Hazardous waste as of 1 January 1998, continues to be subject to the requirements in 40 CFR 257.1 through 257.4. [See checklist items SO.30.7.US through SO.30.14.US].)</p> <p>(NOTE: Any nonmunicipal nonhazardous waste disposal unit that is receiving VSQG Hazardous waste after 1 January 1998 must be in compliance with 40 CFR 257.1 through 257.4. [See checklist items SO.30.7.US through SO.30.14.US].)</p> <p>Verify that owners or operators of new units, existing units, and lateral expansions located in 100-yr floodplains demonstrate that the unit will not restrict the flow of the 100-yr flood, reduce the temporary water storage capacity of the floodplain, or result in washout of solid waste so as to pose a hazard to human health and the environment.</p> <p>Verify that the owner or operator places the floodplain demonstration in the operating record and notifies the State Director that it has been placed in the operating record.</p> <p>Verify that owners or operators of new units and lateral expansions do not locate such units in wetlands, unless the owner or operator makes the following demonstrations to the Director of an approved State:</p> <p>–</p> <ul style="list-style-type: none"> <li>– where applicable under section 404 of the CWA or applicable State wetlands laws, the presumption that a practicable alternative to the proposed landfill is available which does not involved wetlands is clearly rebutted</li> <li>– the construction and operation of the unit will not: <ul style="list-style-type: none"> <li>– cause or contribute to violations of any applicable State water quality standard</li> <li>– violate any applicable toxic effluent standard or prohibition under section 307 of the CWA</li> <li>– jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of a critical habitat, protected under the Endangered Species Act of 1973</li> <li>– violate any requirement under the <i>Marine Protection, Research, and Sanctuaries Act of 1972</i> for the protection of a marine sanctuary</li> </ul> </li> <li>– the unit will not cause or contribute to significant degradation of wetlands.</li> </ul> <p>Verify that the owner/operator demonstrates the integrity of the unit and its ability to protect ecological resources by addressing the following factors:</p>

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	<p>–</p> <ul style="list-style-type: none"> <li>– erosion, stability, and migration potential of native wetland soils, muds, and deposits used to support the unit</li> <li>– erosion, stability, and migration potential of dredged and fill materials used to support the unit</li> <li>– the volume and chemical nature of the waste managed in the unit</li> <li>– impacts on fish, wildlife, and other aquatic resources and their habitat from release of the waste</li> <li>– the potential effects of catastrophic release of waste to the wetland and the resulting impacts on the environment</li> <li>– any additional factors, as necessary, to demonstrate that ecological resources in the wetland are sufficiently protected.</li> </ul> <p>Verify that, to the extent required under section 404 of the <i>Clean Water Act</i> or applicable State wetlands laws, steps have been taken to attempt to achieve no net loss of wetlands (as defined by acreage and function) by first avoiding impacts to wetlands to the maximum extent practicable, then minimizing unavoidable impacts to the maximum extent practicable, and finally offsetting remaining unavoidable wetland impacts through all appropriate and practicable compensatory mitigation actions (e.g., restoration of existing degraded wetlands or creation of man-made wetlands).</p> <p>(NOTE: The criteria in 40 CFR 257.5 through 257.30 are adopted to ensure that nonmunicipal nonhazardous waste disposal units that receive VSQG waste do not present risks to human health and the environment taking into account the practicable capability of such units in accordance with section 4010(c) of RCRA. Facilities and practices failing to satisfy the criteria in 40 CFR 257.5 through 257.30 result in open dumping.)</p> <p>(NOTE: These criteria also provide guidelines for the disposal of sewage sludge on the land when the sewage sludge is not used or disposed through a practice regulated in 40 CFR 503.)</p> <p>–</p> <p>(NOTE: These criteria apply to all solid waste disposal facilities and practices with the following exceptions:</p> <ul style="list-style-type: none"> <li>– the criteria do not apply to agricultural wastes, including manures and crop residues, returned to the soil as fertilizers or soil conditioners</li> <li>– the criteria do not apply to overburden resulting from mining operations intended for return to the mine site</li> <li>– the criteria do not apply to the land application of domestic sewage or treated domestic sewage</li> <li>– the criteria do not apply to the location and operation of septic tanks. The criteria do, however, apply to the disposal of septic tank pumpings</li> <li>– the criteria do not apply to solid or dissolved materials in irrigation return flows</li> <li>– the criteria do not apply to industrial discharges which are point sources subject to permits under section 402 of the CWA, as amended</li> </ul>

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<p><b>REGULATORY REQUIREMENTS:</b></p>	<p><b>REVIEWER CHECKS: December 2018</b></p>
<p><b>SO.30.16.US.</b> Nonmunicipal nonhazardous waste disposal units that receive VSQG hazardous waste must meet certain groundwater monitoring requirements (40 CFR 257.1, 257.5(a), 257.21(a) through 257.21(e), and 257.22)) [Added April 2004; Revised January 2017].</p>	<ul style="list-style-type: none"> <li>– the criteria do not apply to source, special nuclear or byproduct material as defined by the AEA, as amended (68 Stat. 923)</li> <li>– the criteria do not apply to hazardous waste disposal facilities that are subject to regulation under subtitle C of RCRA</li> <li>– the criteria do not apply to disposal of solid waste by underground well injection subject to the regulations (40 CFR part 146) for the Underground Injection Control Program (UICP) under the SDWA, as amended, 42 U.S.C. 3007 et seq</li> <li>– the criteria of this part do not apply to municipal solid waste landfill units, which are subject to the revised criteria contained in 40 CFR 258</li> <li>– the criteria do not apply to the use or disposal sewage sludge on the land when the sewage sludge is used or disposed in accordance with 40 CFR 503.)</li> </ul> <p>(NOTE: These requirements in this section apply to owners/operators of any nonmunicipal nonhazardous waste disposal unit that receives VSQG hazardous waste. Nonmunicipal nonhazardous waste disposal units that meet the requirements of this checklist may receive VSQG wastes. Any owner/operator of a nonmunicipal nonhazardous waste disposal unit that receives VSQG hazardous waste continues to be subject to the requirements in 40 CFR 257.3-2, 257.3-3, 257.3-5, 257.3-6, 257.3-7, 257.3-8(a), 257.3-8(b), and 257.3-8(d) [See checklist items SO.30.7.US through SO.30.14.US].)</p> <p>(NOTE: Groundwater monitoring requirements may be suspended by the Director of an approved State for a unit if the owner or operator can demonstrate that there is no potential for migration of hazardous constituents from that unit to the uppermost aquifer during the active life of the unit plus 30 yr. This demonstration must be certified by a qualified groundwater scientist and approved by the Director of an approved State.)</p> <p>Verify that groundwater monitoring is conducted throughout the active life of the unit plus 30 yr.</p> <p>(NOTE: The Director of an approved State may decrease the 30-yr period if the owner/operator demonstrates that a shorter period of time is adequate to protect human health and the environment and the Director approves the demonstration.)</p> <p>Verify that a groundwater monitoring system is installed that consists of a sufficient number of wells, installed at appropriate locations and depths, to yield groundwater samples from the uppermost aquifer that:</p> <ul style="list-style-type: none"> <li>– represent the quality of background ground water that has not been affected by leakage from a unit</li> <li>– represent the quality of ground water passing the relevant point of compliance specified by the Director of an approved State or at the waste management unit boundary in an unapproved State.</li> </ul>

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	<p>(NOTE: A determination of background quality may include sampling of wells that are not hydraulically upgradient of the waste management area where one of the following are true:</p> <ul style="list-style-type: none"> <li>– hydrogeologic conditions do not allow the owner or operator to determine what wells are hydraulically upgradient</li> <li>– sampling at other wells will provide an indication of background ground-water quality that is as representative, or more representative, than that provided by the upgradient wells.)</li> </ul> <p>Verify that the downgradient monitoring system is installed at the relevant point of compliance specified by the Director of an approved State or at the waste management unit boundary in an unapproved State that ensures detection of ground-water contamination in the uppermost aquifer.</p> <p>Verify that, when physical obstacles preclude installation of ground-water monitoring wells at the relevant point of compliance at existing units, the downgradient monitoring system is installed at the closest practicable distance hydraulically downgradient from the relevant point of compliance specified by the Director of an approved State that ensures detection of groundwater contamination in the uppermost aquifer.</p> <p>Verify that monitoring wells are cased in a manner that maintains the integrity of the monitoring well bore hole.</p> <p>Verify that the casing is screened or perforated and packed with gravel or sand, where necessary, to enable collection of ground-water samples.</p> <p>Verify that the annular space (i.e., the space between the bore hole and well casing) above the sampling depth is sealed to prevent contamination of samples and the ground water.</p> <p>Verify that the owner or operator notifies the State Director that the design, installation, development, and decommission of any monitoring wells, piezometers and other measurement, sampling, and analytical devices documentation has been placed in the operating record.</p> <p>Verify that the monitoring wells, piezometers, and other measurement, sampling, and analytical devices are operated and maintained so that they perform to design specifications throughout the life of the monitoring program.</p> <p>(NOTE: The criteria in 40 CFR 257.5 through 257.30 are adopted to ensure that non-municipal non-hazardous waste disposal units that receive VSQG waste do not present risks to human health and the environment taking into account the practicable capability of such units in accordance with section 4010(c) of RCRA. Facilities and practices failing to satisfy the criteria in 40 CFR 257.5 through 257.30 result in open dumping.)</p>

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<p><b>SO.30.17.US.</b> Nonmunicipal nonhazardous waste disposal units that receive VSQG hazardous waste must meet certain groundwater sampling and analysis requirements (40 CFR 257.1, 257.5(a), 257.21(a) through 257.21(e), and 257.23)) [Added April 2004; Revised January 2017].</p>	<p>(NOTE: These criteria also provide guidelines for the disposal of sewage sludge on the land when the sewage sludge is not used or disposed through a practice regulated in 40 CFR 503.)</p> <p>(NOTE: These criteria apply to all solid waste disposal facilities and practices with the following exceptions:</p> <ul style="list-style-type: none"> <li>– the criteria do not apply to agricultural wastes, including manures and crop residues, returned to the soil as fertilizers or soil conditioners</li> <li>– the criteria do not apply to overburden resulting from mining operations intended for return to the mine site</li> <li>– the criteria do not apply to the land application of domestic sewage or treated domestic sewage</li> <li>– the criteria do not apply to the location and operation of septic tanks. The criteria do, however, apply to the disposal of septic tank pumpings</li> <li>– the criteria do not apply to solid or dissolved materials in irrigation return flows</li> <li>– the criteria do not apply to industrial discharges which are point sources subject to permits under section 402 of the CWA, as amended</li> <li>– the criteria do not apply to source, special nuclear or byproduct material as defined by the AEA, as amended (68 Stat. 923)</li> <li>– the criteria do not apply to hazardous waste disposal facilities that are subject to regulation under subtitle C of RCRA</li> <li>– the criteria do not apply to disposal of solid waste by underground well injection subject to the regulations (40 CFR part 146) for the Underground Injection Control Program (UICP) under the SDWA, as amended, 42 U.S.C. 3007 et seq</li> <li>– the criteria of this part do not apply to municipal solid waste landfill units, which are subject to the revised criteria contained in 40 CFR 258</li> <li>– the criteria do not apply to the use or disposal sewage sludge on the land when the sewage sludge is used or disposed in accordance with 40 CFR 503.)</li> </ul> <p>(NOTE: These requirements in this section apply to owners/operators of any nonmunicipal nonhazardous waste disposal unit that receives VSQG hazardous waste. Nonmunicipal nonhazardous waste disposal units that meet the requirements of this checklist may receive VSQG wastes. Any owner/operator of a nonmunicipal nonhazardous waste disposal unit that receives VSQG hazardous waste continues to be subject to the requirements in 40 CFR 257.3-2, 257.3-3, 257.3-5, 257.3-6, 257.3-7, 257.3-8(a), and 257.3-8(b), and 257.3-8 (d) [See checklist items SO.30.7.US through SO.30.14.US].)</p> <p>Verify that the groundwater monitoring program includes consistent sampling and analysis procedures that are designed to ensure monitoring results that provide an accurate representation of groundwater quality at the background and downgradient wells.</p>

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	<p>Verify that the owner or operator notifies the State Director that the sampling and analysis program documentation has been placed in the operating record and the program includes procedures and techniques for:</p> <ul style="list-style-type: none"> <li>– sample collection</li> <li>– sample preservation and shipment</li> <li>– analytical procedures</li> <li>– chain of custody control</li> <li>– quality assurance and quality control.</li> </ul> <p>Verify that the groundwater monitoring program includes sampling and analytical methods that are appropriate for ground-water sampling and that accurately measure hazardous constituents and other monitoring parameters in ground-water samples.</p> <p>Verify that groundwater samples are not field-filtered prior to laboratory analysis.</p> <p>Verify that the sampling procedures and frequency is protective of human health and the environment.</p> <p>Verify that groundwater elevations are measured in each well immediately prior to purging, each time ground water is sampled.</p> <p>Verify that the owner or operator determines the rate and direction of groundwater flow each time groundwater is sampled.</p> <p>Verify that groundwater elevations in wells that monitor the same waste management area are measured within a period of time short enough to avoid temporal variations in groundwater flow that could preclude accurate determination of groundwater flow rate and direction.</p> <p>Verify that the owner or operator establishes background groundwater quality in a hydraulically upgradient or background well(s) for each of the monitoring parameters or constituents required in the particular groundwater monitoring program.</p> <p>Verify that the owner or operator specifies in the operating record one of the following statistical methods to be used in evaluating groundwater monitoring data for each hazardous constituent:</p> <ul style="list-style-type: none"> <li>– a parametric analysis of variance (ANOVA) followed by multiple comparisons procedures to identify statistically significant evidence of contamination. The method must include estimation and testing of the contrasts between each compliance well's mean and the background mean levels for each constituent</li> <li>– ANOVA based on ranks followed by multiple comparisons procedures to identify statistically significant evidence of contamination. The method must</li> </ul>

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	<p>include estimation and testing of the contrasts between each compliance well's median and the background median levels for each constituent</p> <ul style="list-style-type: none"> <li>– a tolerance or prediction interval procedure in which an interval for each constituent is established from the distribution of the background data, and the level of each constituent in each compliance well is compared to the upper tolerance or prediction limit</li> <li>– a control chart approach that gives control limits for each constituent</li> <li>– another statistical test method that meets the performance standards.</li> </ul> <p>Verify that the owner or operator places a justification for an alternative statistical test method in the operating record and notifies the State Director of the use of this alternative test.</p> <p>Verify that any alternative statistical method complies with the performance standards outlined in the text of the regulation.</p> <p>Verify that the owner or operator determines whether or not there is a statistically significant increase over background values for each parameter or constituent required in the particular groundwater monitoring program that applies to the unit.</p> <p>Verify that, in determining whether a statistically significant increase has occurred, the owner or operator compares the groundwater quality of each parameter or constituent at each designated monitoring well to the background value of that constituent.</p> <p>Verify that, within a reasonable period of time after completing sampling and analysis, the owner or operator determines whether there has been a statistically significant increase over background at each monitoring well.</p> <p>(NOTE: The criteria in 40 CFR 257.5 through 257.30 are adopted to ensure that nonmunicipal nonhazardous waste disposal units that receive VSQG waste do not present risks to human health and the environment taking into account the practicable capability of such units in accordance with section 4010(c) of RCRA. Facilities and practices failing to satisfy the criteria in 40 CFR 257.5 through 257.30 result in open dumping.)</p> <p>(NOTE: These criteria also provide guidelines for the disposal of sewage sludge on the land when the sewage sludge is not used or disposed through a practice regulated in 40 CFR 503.)</p> <p>(NOTE: These criteria apply to all solid waste disposal facilities and practices with the following exceptions:</p> <ul style="list-style-type: none"> <li>– the criteria do not apply to agricultural wastes, including manures and crop residues, returned to the soil as fertilizers or soil conditioners</li> <li>– the criteria do not apply to overburden resulting from mining operations intended for return to the mine site</li> </ul>

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<p><b>SO.30.18.US.</b> Nonmunicipal nonhazardous waste disposal units that receives VSQG hazardous waste must have a detection monitoring program (40 CFR 257.1, 257.5(a), 257.21(a) through 257.21(e), and 257.24)) [Added April 2004; Revised January 2017].</p>	<ul style="list-style-type: none"> <li>– the criteria do not apply to the land application of domestic sewage or treated domestic sewage</li> <li>– the criteria do not apply to the location and operation of septic tanks. The criteria do, however, apply to the disposal of septic tank pumpings</li> <li>– the criteria do not apply to solid or dissolved materials in irrigation return flows</li> <li>– the criteria do not apply to industrial discharges which are point sources subject to permits under section 402 of the CWA, as amended</li> <li>– the criteria do not apply to source, special nuclear or byproduct material as defined by the AEA, as amended (68 Stat. 923)</li> <li>– the criteria do not apply to hazardous waste disposal facilities that are subject to regulation under subtitle C of RCRA</li> <li>– the criteria do not apply to disposal of solid waste by underground well injection subject to the regulations (40 CFR part 146) for the Underground Injection Control Program (UICP) under the SDWA, as amended, 42 U.S.C. 3007 et seq</li> <li>– the criteria of this part do not apply to municipal solid waste landfill units, which are subject to the revised criteria contained in 40 CFR 258</li> <li>– the criteria do not apply to the use or disposal sewage sludge on the land when the sewage sludge is used or disposed in accordance with 40 CFR 503.)</li> </ul> <p>(NOTE: These requirements in this section apply to owners/operators of any nonmunicipal nonhazardous waste disposal unit that receives VSQG hazardous waste. Nonmunicipal nonhazardous waste disposal units that meet the requirements of this checklist may receive VSQG wastes. Any owner/operator of a nonmunicipal nonhazardous waste disposal unit that receives VSQG hazardous waste continues to be subject to the requirements in 40 CFR 257.3-2, 257.3-3, 257.3-5, 257.3-6, 257.3-7, 257.3-8(a), 257.3-8(b), and 257.3-8(d) [See checklist items SO.30.7.US through SO.30.14.US].)</p> <p>Verify that the facility has a detection monitoring program at all ground-water monitoring wells defined under 40 CFR 257.22(a)(1) and 257.22(a)(2) (see checklist item SO.30.16.US) and at a minimum the program includes the monitoring for the constituents listed in appendix I of 40 CFR 258 (see Appendix 9-4).</p> <p>(NOTE: The Director of an approved State may delete any of the Appendix 9-4 monitoring parameters for a unit if it can be shown that the removed constituents are not reasonably expected to be contained in or derived from the waste contained in the unit. The Director of an approved State may establish an alternative list of indicator parameters for a unit if the alternative parameters provide a reliable indication of releases from the unit to the ground water.)</p> <p>Verify that the monitoring frequency for all constituents listed in Appendix 9-4, or in the Director-approved alternative list is at least semiannual during the active life of the unit plus 30 yr.</p>

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	<p>Verify that a minimum of four independent samples from each well (background and downgradient) are collected and analyzed for the Appendix 9-4 constituents or the Director-approved alternative list during the first semiannual sampling event.</p> <p>Verify that at least one sample from each well (background and downgradient) is collected and analyzed during subsequent semiannual sampling events.</p> <p>(NOTE: The Director of an approved State may specify an appropriate alternative frequency for repeated sampling and analysis.)</p> <p>Verify that, if the owner or operator determines that there is a statistically significant increase over background for one or more of the constituents listed in Appendix 9-4 or in the Director-approved alternative list at any monitoring well at the boundary, the owner or operator:</p> <ul style="list-style-type: none"> <li>– places a notice, within 14 days of this finding, in the operating record indicating which constituents have shown statistically significant changes from background levels and notifies the State Director that this notice was placed in the operating record</li> <li>– establishes an assessment monitoring program meeting the requirements of 40 CFR 257.25 (see checklist item SO.30.19.US) within 90 days.</li> </ul> <p>(NOTE: The owner/operator may demonstrate that a source other than the unit caused the contamination or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in ground-water quality. A report documenting this demonstration must be certified by a qualified groundwater scientist or approved by the Director of an approved State and be placed in the operating record. If a successful demonstration is made and documented, the owner or operator may continue detection monitoring as specified in this checklist item. If, after 90 days, a successful demonstration is not made, the owner or operator must initiate an assessment monitoring program as required in 40 CFR 257.25 [see checklist item SO.30.19.US].).</p> <p>(NOTE: The criteria in 40 CFR 257.5 through 257.30 are adopted to ensure that nonmunicipal nonhazardous waste disposal units that receive VSQG waste do not present risks to human health and the environment taking into account the practicable capability of such units in accordance with section 4010(c) of RCRA. Facilities and practices failing to satisfy the criteria in 40 CFR 257.5 through 257.30 result in open dumping.)</p> <p>(NOTE: These criteria also provide guidelines for the disposal of sewage sludge on the land when the sewage sludge is not used or disposed through a practice regulated in 40 CFR 503.)</p> <p>(NOTE: These criteria apply to all solid waste disposal facilities and practices with the following exceptions:</p>

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<p><b>SO.30.19.US.</b> Nonmunicipal nonhazardous waste disposal units that receives VSQG hazardous waste must have an assessment monitoring program (40 CFR 257.1, 257.5(a), 257.21(a) through 257.21(e), and 257.25)) [Added April 2004; Revised January 2017].</p>	<ul style="list-style-type: none"> <li>– the criteria do not apply to agricultural wastes, including manures and crop residues, returned to the soil as fertilizers or soil conditioners</li> <li>– the criteria do not apply to overburden resulting from mining operations intended for return to the mine site</li> <li>– the criteria do not apply to the land application of domestic sewage or treated domestic sewage</li> <li>– the criteria do not apply to the location and operation of septic tanks. The criteria do, however, apply to the disposal of septic tank pumpings</li> <li>– the criteria do not apply to solid or dissolved materials in irrigation return flows</li> <li>– the criteria do not apply to industrial discharges which are point sources subject to permits under section 402 of the CWA, as amended</li> <li>– the criteria do not apply to source, special nuclear or byproduct material as defined by the AEA, as amended (68 Stat. 923)</li> <li>– the criteria do not apply to hazardous waste disposal facilities that are subject to regulation under subtitle C of RCRA</li> <li>– the criteria do not apply to disposal of solid waste by underground well injection subject to the regulations (40 CFR part 146) for the Underground Injection Control Program (UICP) under the SDWA, as amended, 42 U.S.C. 3007 et seq</li> <li>– the criteria of this part do not apply to municipal solid waste landfill units, which are subject to the revised criteria contained in 40 CFR 258</li> <li>– the criteria do not apply to the use or disposal sewage sludge on the land when the sewage sludge is used or disposed in accordance with 40 CFR 503.)</li> </ul> <p>(NOTE: These requirements in this section apply to owners/operators of any nonmunicipal nonhazardous waste disposal unit that receives VSQG hazardous waste. Nonmunicipal nonhazardous waste disposal units that meet the requirements of this checklist may receive VSQG wastes. Any owner/operator of a nonmunicipal nonhazardous waste disposal unit that receives VSQG hazardous waste continues to be subject to the requirements in 40 CFR 257.3-2, 257.3-3, 257.3-5, 257.3-6, 257.3-7, 257.3-8(a), and 257.3-8(b), and 257.3-8 (d) [See checklist items SO.30.7.US through SO.30.14.US].)</p> <p>Verify that assessment monitoring is done whenever a statistically significant increase over background has been detected for one or more of the constituents listed in Appendix 9-4 or in the Director-approved alternative list.</p> <p>Verify that, within 90 days of triggering an assessment monitoring program, and annually thereafter, the owner or operator samples and analyzes the groundwater for all constituents identified in Appendix 9-5.</p> <p>Verify that a minimum of one sample from each downgradient well is collected and analyzed during each sampling event.</p> <p>Verify that, for any constituent detected in the downgradient wells as the result of the complete Appendix 9-5 analysis, a minimum of four independent samples from</p>

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	<p>each well (background and downgradient) is collected and analyzed to establish background for the new constituents.</p> <p>(NOTE: The Director of an approved State may specify an appropriate subset of wells to be sampled and analyzed. The Director of an approved State may delete any of the Appendix 9-5 monitoring parameters for a unit if it can be shown that the removed constituents are not reasonably expected to be in or derived from the waste contained in the unit. The Director of an approved State may specify an appropriate alternate frequency for repeated sampling and analysis.)</p> <p>Verify that, after obtaining the results from the required initial or subsequent sampling events, the owner or operator:</p> <ul style="list-style-type: none"> <li>– places a notice in the operating record that identifies the Appendix 9-5 constituents that have been detected and notifies the State Director that this notice has been placed in the operating record within 14 days</li> <li>– resamples all designated wells and conduct analyses for all constituents in Appendix 9-4 or in the Director-approved alternative list, and for those constituents in Appendix 9-5 that are detected and record their concentrations in the facility operating record within 90 days and on at least a semiannual basis thereafter.</li> </ul> <p>Verify that at least one sample from each well (background and downgradient) is collected and analyzed during these sampling events.</p> <p>(NOTE: The Director of an approved State may:</p> <ul style="list-style-type: none"> <li>– specify an alternative monitoring frequency during sampling</li> <li>– establish background concentrations for any constituents detected</li> <li>– establish ground-water protection standards for all constituents detected.)</li> </ul> <p>Verify that, if the concentrations of all Appendix 9-5 constituents are shown to be at or below background values for two consecutive sampling events, the owner or operator notifies the State Director of this finding and may return to detection monitoring.</p> <p>Verify that, if the concentrations of any Appendix 9-5 constituents are above background values, but all concentrations are below the established groundwater protection standard, the owner or operator continues assessment monitoring.</p> <p>Verify that, if one or more Appendix 9-5 constituents are detected at statistically significant levels above the established groundwater protection standard, the owner or operator, within 14 days of this finding, places a notice in the operating record identifying the Appendix 9-5 constituents that have exceeded the ground-water protection standard and notifies the State Director and all appropriate local government officials that the notice has been placed in the operating record.</p> <p>Verify that the owner or operator also:</p>

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	<ul style="list-style-type: none"> <li>– characterizes the nature and extent of the release by installing additional monitoring wells as necessary</li> <li>– installs at least one additional monitoring well at the facility boundary in the direction of contaminant migration and samples this well</li> <li>– notifies all persons who own land or reside on land that directly overlies any part of the plume of contamination, if contaminants have migrated offsite as indicated by sampling of wells</li> <li>– initiates an assessment of corrective measures within 90 days or demonstrates that a source other than the nonmunicipal nonhazardous waste disposal unit caused the contamination, or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality.</li> </ul> <p>Verify that a report documenting the demonstration that a source other than the nonmunicipal nonhazardous waste disposal unit caused the contamination, or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality is certified by a qualified groundwater scientist or approved by the Director of an approved State and placed in the operating record.</p> <p>(NOTE: If a successful demonstration is made, the owner or operator must continue monitoring in accordance with the assessment monitoring program and may return to detection monitoring if the Appendix 9-5 constituents are at or below background.)</p> <p>Verify that the owner or operator establishes a groundwater protection standard for each Appendix 9-5 constituent detected in the groundwater.</p> <p>Verify that the ground-water protection standard is:</p> <ul style="list-style-type: none"> <li>– for constituents for which a maximum contaminant level (MCL) has been promulgated under section 1412 of the SDWA (codified) under 40 CFR 141, the MCL for that constituent</li> <li>– for constituents for which MCLs have not been promulgated, the background concentration for the constituent established from wells</li> <li>– for constituents for which the background level is higher than the MCL or health based levels, the background concentration.</li> </ul> <p>(NOTE: The Director of an approved State may establish an alternative groundwater protection standard for constituents for which MCLs have not been established. These ground-water protection standards shall be appropriate health based levels.)</p> <p>(NOTE: The criteria in 40 CFR 257.5 through 257.30 are adopted to ensure that nonmunicipal nonhazardous waste disposal units that receive VSQG waste do not present risks to human health and the environment taking into account the</p>

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<p><b>SO.30.20.US.</b> Nonmunicipal nonhazardous waste disposal units that receives VSQG hazardous waste must have an assessment of corrective measures and select a remedy if constituents have been detected at inappropriate levels (40 CFR 257.1, 257.5(a), 257.21(a) through 257.21(e), 257.26, and 257.27)) <b>[Added</b></p>	<p>practicable capability of such units in accordance with section 4010(c) of RCRA. Facilities and practices failing to satisfy the criteria in 40 CFR 257.5 through 257.30 result in open dumping.)</p> <p>(NOTE: These criteria also provide guidelines for the disposal of sewage sludge on the land when the sewage sludge is not used or disposed through a practice regulated in 40 CFR 503.)</p> <p>(NOTE: These criteria apply to all solid waste disposal facilities and practices with the following exceptions:</p> <ul style="list-style-type: none"> <li>– the criteria do not apply to agricultural wastes, including manures and crop residues, returned to the soil as fertilizers or soil conditioners</li> <li>– the criteria do not apply to overburden resulting from mining operations intended for return to the mine site</li> <li>– the criteria do not apply to the land application of domestic sewage or treated domestic sewage</li> <li>– the criteria do not apply to the location and operation of septic tanks. The criteria do, however, apply to the disposal of septic tank pumpings</li> <li>– the criteria do not apply to solid or dissolved materials in irrigation return flows</li> <li>– the criteria do not apply to industrial discharges which are point sources subject to permits under section 402 of the CWA, as amended</li> <li>– the criteria do not apply to source, special nuclear or byproduct material as defined by the AEA, as amended (68 Stat. 923)</li> <li>– the criteria do not apply to hazardous waste disposal facilities that are subject to regulation under subtitle C of RCRA</li> <li>– the criteria do not apply to disposal of solid waste by underground well injection subject to the regulations (40 CFR part 146) for the Underground Injection Control Program (UICP) under the SDWA, as amended, 42 U.S.C. 3007 et seq</li> <li>– the criteria of this part do not apply to municipal solid waste landfill units, which are subject to the revised criteria contained in 40 CFR 258</li> <li>– the criteria do not apply to the use or disposal sewage sludge on the land when the sewage sludge is used or disposed in accordance with 40 CFR 503.)</li> </ul> <p>(NOTE: These requirements in this section apply to owners/operators of any nonmunicipal nonhazardous waste disposal unit that receives VSQG hazardous waste. Nonmunicipal nonhazardous waste disposal units that meet the requirements of this checklist may receive VSQG wastes. Any owner/operator of a nonmunicipal nonhazardous waste disposal unit that receives VSQG hazardous waste continues to be subject to the requirements in 40 CFR 257.3-2, 257.3-3, 257.3-5, 257.3-6, 257.3-7, 257.3-8(a), and 257.3-8(b), and 257.3-8 (d) [See checklist items SO.30.7.US through SO.30.14.US].)</p> <p>Verify that, within 90 days of finding that any of the constituents listed in Appendix 9-5 have been detected at a statistically significant level exceeding the groundwater</p>

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<b>April 2004; Revised January 2017].</b>	<p>protection standards, the owner or operator initiates an assessment of corrective measures.</p> <p>Verify that the assessment is completed within a reasonable period of time.</p> <p>Verify that the owner or operator continues to monitor in accordance with the assessment monitoring program as specified in 40 CFR 257.25 (see checklist item SO.30.19.US).</p> <p>Verify that the assessment includes an analysis of the effectiveness of potential corrective measures in meeting all of the requirements and objectives of the remedy, addressing at least the following:</p> <ul style="list-style-type: none"> <li>– the performance, reliability, ease of implementation, and potential impacts of appropriate potential remedies, including safety impacts, cross-media impacts, and control of exposure to any residual contamination</li> <li>– the time required to begin and complete the remedy</li> <li>– the costs of remedy implementation</li> <li>– the institutional requirements such as State or local permit requirements or other environmental or public health requirements that may substantially affect implementation of the remedy(s).</li> </ul> <p>Verify that the owner or operator discusses the results of the corrective measures assessment, prior to the selection of remedy, in a public meeting with interested and affected parties.</p> <p>Verify that the owner or operator selects a remedy which:</p> <ul style="list-style-type: none"> <li>– is protective of human health and the environment</li> <li>– attains the groundwater protection standard</li> <li>– controls the source(s) of releases so as to reduce or eliminate, to the maximum extent practicable, further releases of Appendix 9-5 constituents into the environment that may pose a threat to human health or the environment</li> <li>– complies with standards for management of wastes as specified in 40 CFR 257.28(d) (see checklist item SO.30.21.US).</li> </ul> <p>Verify that the owner or operator notifies the State Director, within 14 days of selecting a remedy, that a report describing the selected remedy has been placed in the operating record and how it meets the standards for selection.</p> <p>Verify that the owner or operator specifies as part of the selected remedy a schedule(s) for initiating and completing remedial activities.</p> <p>Verify that the schedule requires the initiation of remedial activities within a reasonable period of time, taking into consideration the following factors:</p> <ul style="list-style-type: none"> <li>– extent and nature of contamination</li> </ul>

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	<ul style="list-style-type: none"> <li>– practical capabilities of remedial technologies in achieving compliance with ground-water protection standards and other objectives of the remedy</li> <li>– availability of treatment or disposal capacity for wastes managed during implementation of the remedy</li> <li>– desirability of utilizing technologies that are not currently available, but which may offer significant advantages over already available technologies in terms of effectiveness, reliability, safety, or ability to achieve remedial objectives</li> <li>– potential risks to human health and the environment from exposure to contamination prior to completion of the remedy</li> <li>– resource value of the aquifer including: <ul style="list-style-type: none"> <li>– current and future uses</li> <li>– proximity and withdrawal rate of users</li> <li>– ground-water quantity and quality</li> <li>– the potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituent</li> <li>– the hydrogeologic characteristic of the unit and surrounding land</li> <li>– ground-water removal and treatment costs</li> <li>– the cost and availability of alternative water supplies</li> </ul> </li> <li>– practicable capability of the owner or operator</li> <li>– other relevant factors.</li> </ul> <p>(NOTE: The Director of an approved State may determine that remediation of a release of an Appendix 9-5 constituent from the unit is not necessary if the owner or operator demonstrates to the Director of the approved state that one of the following is true:</p> <ul style="list-style-type: none"> <li>– the groundwater is additionally contaminated by substances that have originated from a source other than the unit and those substances are present in concentrations such that cleanup of the release from the unit would provide no significant reduction in risk to actual or potential receptors</li> <li>– the constituent(s) is present in ground water that: <ul style="list-style-type: none"> <li>– is not currently or reasonably expected to be a source of drinking water</li> <li>– is not hydraulically connected with waters to which the hazardous constituents are migrating or are likely to migrate in a concentration(s) that would exceed the ground-water protection standards</li> </ul> </li> <li>– remediation of the release(s) is technically impracticable</li> <li>– remediation results in unacceptable cross-media impacts.)</li> </ul> <p>(NOTE: The criteria in 40 CFR 257.5 through 257.30 are adopted to ensure that nonmunicipal nonhazardous waste disposal units that receive VSQG waste do not present risks to human health and the environment taking into account the practicable capability of such units in accordance with section 4010(c) of RCRA. Facilities and practices failing to satisfy the criteria in 40 CFR 257.5 through 257.30 result in open dumping.)</p>

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<p><b>SO.30.21.US.</b> Nonmunicipal nonhazardous waste disposal units that receive VSQG hazardous waste must implement the corrective action program (40 CFR 257.1, 257.5(a), 257.21(a) through 257.21(e), and 257.28)) [Added April 2004; Revised January 2017].</p>	<p>(NOTE: These criteria also provide guidelines for the disposal of sewage sludge on the land when the sewage sludge is not used or disposed through a practice regulated in 40 CFR 503.)</p> <p>(NOTE: These requirements in this section apply to owners/operators of any nonmunicipal nonhazardous waste disposal unit that receives VSQG hazardous waste. Nonmunicipal nonhazardous waste disposal units that meet the requirements of this checklist may receive VSQG wastes. Any owner/operator of a nonmunicipal nonhazardous waste disposal unit that receives VSQG hazardous waste continues to be subject to the requirements in 40 CFR 257.3-2, 257.3-3, 257.3-5, 257.3-6, 257.3-7, 257.3-8(a), 257.3-8(b), and 257.3-8(d) [See checklist items SO.30.7.US through SO.30.14.US].)</p> <p>Verify that, based on the previously established schedule for initiation and completion of remedial activities, the owner/operator:</p> <ul style="list-style-type: none"> <li>– establishes and implements a corrective action ground-water monitoring program that: <ul style="list-style-type: none"> <li>– at a minimum, meets the requirements of an assessment monitoring program</li> <li>– indicates the effectiveness of the corrective action remedy</li> <li>– demonstrates compliance with ground-water protection standard</li> </ul> </li> <li>– implements the selected corrective action remedy</li> <li>– takes any interim measures necessary to ensure the protection of human health and the environment.</li> </ul> <p>Verify that the following factors are considered by an owner or operator in determining whether interim measures are necessary:</p> <ul style="list-style-type: none"> <li>– time required to develop and implement a final remedy</li> <li>– actual or potential exposure of nearby populations or environmental receptors to hazardous constituents</li> <li>– actual or potential contamination of drinking water supplies or sensitive ecosystems</li> <li>– further degradation of the groundwater that may occur if remedial action is not initiated expeditiously</li> <li>– weather conditions that may cause hazardous constituents to migrate or be released</li> <li>– risks of fire or explosion, or potential for exposure to hazardous constituents as a result of an accident or failure of a container or handling system</li> <li>– other situations that may pose threats to human health and the environment.</li> </ul> <p>(NOTE: An owner or operator may determine, based on information developed after implementation of the remedy has begun or other information, that compliance with requirements are not being achieved through the remedy selected. In such cases, the owner or operator must implement other methods or techniques that could</p>

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	<p>practicably achieve compliance with the requirements, unless the owner or operator:</p> <ul style="list-style-type: none"> <li>– obtains certification of a qualified ground-water scientist or approval by the Director of an approved State that compliance with requirements cannot be practically achieved with any currently available methods</li> <li>– implements alternate measures to control exposure of humans or the environment to residual contamination, as necessary to protect human health and the environment</li> <li>– implements alternate measures for control of the sources of contamination, or for removal or decontamination of equipment, units, devices, or structures that are: <ul style="list-style-type: none"> <li>– technically practicable</li> <li>– consistent with the overall objective of the remedy</li> </ul> </li> <li>– notifies the State Director within 14 days that a report justifying the alternative measures prior to implementing the alternative measures has been placed in the operating record.)</li> </ul> <p>Verify that all solid wastes that are managed pursuant to a remedy or an interim measure shall be managed in a manner:</p> <ul style="list-style-type: none"> <li>– that is protective of human health and the environment</li> <li>– that complies with applicable RCRA requirements.</li> </ul> <p>(NOTE: Remedies are considered complete when:</p> <ul style="list-style-type: none"> <li>– the owner or operator complies with the ground-water protection standards at all points within the plume of contamination that lie beyond the ground-water monitoring well system</li> <li>– compliance with the ground-water protection standards has been achieved by demonstrating that concentrations of Appendix 9-5 constituents have not exceeded the groundwater protection standard(s) for a period of 3 consecutive years using the statistical procedures and performance standards in 40 CFR 257.23(g) and 257.23(h)</li> <li>– all actions required to complete the remedy have been satisfied.</li> </ul> <p>Verify that, upon completion of the remedy, the owner or operator notifies the State Director within 14 days that a certification that the remedy has been completed in compliance with the requirements of 40 CFR 257.28(e) has been placed in the operating record.</p> <p>Verify that the certification is signed by the owner or operator and by a qualified groundwater scientist or approved by the Director of an approved State.</p> <p>(NOTE: The criteria in 40 CFR 257.5 through 257.30 are adopted to ensure that non-municipal non-hazardous waste disposal units that receive VSQG waste do not present risks to human health and the environment taking into account the practicable capability of such units in accordance with section 4010(c) of RCRA.</p>

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<p><b>SO.30.22.US.</b> Nonmunicipal nonhazardous waste disposal units that receive VSQG hazardous waste must meet certain recordkeeping requirements (40 CFR 257.1, 257.5(a), 257.21(a) through 257.21(e), and 257.30)) [Added April 2004; Revised January 2017].</p>	<p>Facilities and practices failing to satisfy the criteria in 40 CFR 257.5 through 257.30 result in open dumping.)</p> <p>(NOTE: These criteria also provide guidelines for the disposal of sewage sludge on the land when the sewage sludge is not used or disposed through a practice regulated in 40 CFR 503.)</p> <p>(NOTE: These criteria apply to all solid waste disposal facilities and practices with the following exceptions:</p> <ul style="list-style-type: none"> <li>– the criteria do not apply to agricultural wastes, including manures and crop residues, returned to the soil as fertilizers or soil conditioners</li> <li>– the criteria do not apply to overburden resulting from mining operations intended for return to the mine site</li> <li>– the criteria do not apply to the land application of domestic sewage or treated domestic sewage</li> <li>– the criteria do not apply to the location and operation of septic tanks. The criteria do, however, apply to the disposal of septic tank pumpings</li> <li>– the criteria do not apply to solid or dissolved materials in irrigation return flows</li> <li>– the criteria do not apply to industrial discharges which are point sources subject to permits under section 402 of the CWA, as amended</li> <li>– the criteria do not apply to source, special nuclear or byproduct material as defined by the AEA, as amended (68 Stat. 923)</li> <li>– the criteria do not apply to hazardous waste disposal facilities that are subject to regulation under subtitle C of RCRA</li> <li>– the criteria do not apply to disposal of solid waste by underground well injection subject to the regulations (40 CFR part 146) for the Underground Injection Control Program (UICP) under the SDWA, as amended, 42 U.S.C. 3007 et seq</li> <li>– the criteria of this part do not apply to municipal solid waste landfill units, which are subject to the revised criteria contained in 40 CFR 258</li> <li>– the criteria do not apply to the use or disposal sewage sludge on the land when the sewage sludge is used or disposed in accordance with 40 CFR 503.)</li> </ul> <p>(NOTE: These requirements in this section apply to owners/operators of any nonmunicipal nonhazardous waste disposal unit that receives VSQG hazardous waste. Nonmunicipal nonhazardous waste disposal units that meet the requirements of this checklist may receive VSQG wastes. Any owner/operator of a nonmunicipal nonhazardous waste disposal unit that receives VSQG hazardous waste continues to be subject to the requirements in 40 CFR 257.3-2, 257.3-3, 257.3-5, 257.3-6, 257.3-7, 257.3-8(a), and 257.3-8(b), and 257.3-8 (d) [See checklist items SO.30.7.US through SO.30.14.US].)</p> <p>Verify that the owner/operator of a nonmunicipal nonhazardous waste disposal unit records and retains, near the facility in an operating record or in an alternative location approved by the Director of an approved State, the following information as it becomes available:</p>

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	<ul style="list-style-type: none"> <li>– any location restriction demonstration required under 40 CFR 257.7 through 257.12 (see checklist item SO.30.15.US)</li> <li>– any demonstration, certification, finding, monitoring, testing, or analytical data required in 40 CFR 257.21 through 257.28 (see checklist items SO.30.16.US through SO.30.22.US).</li> </ul> <p>Verify that the owner/operator notifies the State Director when the records listed above have been placed or added to the operating record, and all information contained in the operating record is furnished upon request to the State Director or be made available at all reasonable times for inspection by the State Director.</p> <p>(NOTE: The criteria in 40 CFR 257.5 through 257.30 are adopted to ensure that non-municipal non-hazardous waste disposal units that receive VSQG waste do not present risks to human health and the environment taking into account the practicable capability of such units in accordance with section 4010(c) of RCRA. Facilities and practices failing to satisfy the criteria in 40 CFR 257.5 through 257.30 result in open dumping.)</p> <p>(NOTE: These criteria also provide guidelines for the disposal of sewage sludge on the land when the sewage sludge is not used or disposed through a practice regulated in 40 CFR 503.)</p> <p>(NOTE: These criteria apply to all solid waste disposal facilities and practices with the following exceptions:</p> <ul style="list-style-type: none"> <li>– the criteria do not apply to agricultural wastes, including manures and crop residues, returned to the soil as fertilizers or soil conditioners</li> <li>– the criteria do not apply to overburden resulting from mining operations intended for return to the mine site</li> <li>– the criteria do not apply to the land application of domestic sewage or treated domestic sewage</li> <li>– the criteria do not apply to the location and operation of septic tanks. The criteria do, however, apply to the disposal of septic tank pumpings</li> <li>– the criteria do not apply to solid or dissolved materials in irrigation return flows</li> <li>– the criteria do not apply to industrial discharges which are point sources subject to permits under section 402 of the CWA, as amended</li> <li>– the criteria do not apply to source, special nuclear or byproduct material as defined by the AEA, as amended (68 Stat. 923)</li> <li>– the criteria do not apply to hazardous waste disposal facilities that are subject to regulation under subtitle C of RCRA</li> <li>– the criteria do not apply to disposal of solid waste by underground well injection subject to the regulations (40 CFR part 146) for the Underground Injection Control Program (UICP) under the SDWA, as amended, 42 U.S.C. 3007 et seq</li> <li>– the criteria of this part do not apply to municipal solid waste landfill units, which are subject to the revised criteria contained in 40 CFR 258</li> </ul>

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	– the criteria do not apply to the use or disposal sewage sludge on the land when the sewage sludge is used or disposed in accordance with 40 CFR 503.)

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<p align="center"><b>REGULATORY REQUIREMENTS:</b></p>	<p align="center"><b>REVIEWER CHECKS: December 2018</b></p>
<p><b>SO.45</b></p> <p><b>SITE CRITERIA FOR NEW LANDFILLS OTHER THAN MSWLFs</b></p> <p><b>SO.45.1.US.</b> Checklist item deleted. <b>[Deleted May 1996].</b></p> <p><b>SO.45.2.US.</b> Checklist item deleted. <b>[Deleted May 1996].</b></p> <p><b>SO.45.3.US.</b> Checklist item deleted. <b>[Deleted May 1996].</b></p>	<p>(NOTE: This checklist item has been removed due to the deletion of 40 CFR 241 by the USEPA as published in the April 26, 1996 Federal Register.)</p> <p>(NOTE: This checklist item has been removed due to the deletion of 40 CFR 241 by the USEPA as published in the April 26, 1996 Federal Register.)</p> <p>(NOTE: This checklist item has been removed due to the deletion of 40 CFR 241 by the USEPA as published in the April 26, 1996 Federal Register.)</p>



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<p><b>MSWLFs</b></p> <p><b>SO.55</b> <b>Location Restrictions</b></p> <p><b>SO.55.1.US.</b> Specific limitations must be met regarding the location of new, existing, or lateral expansions of MSWLFs in relation to airports (40 CFR 258.10 and 258.16) <b>[Revised March 2000; Revised July 2002; Revised January 2003; Revised January 2004].</b></p> <p><b>SO.55.2.US.</b> Specific limitations must be met regarding the location of new, existing, and lateral expansions of MSWLFs in 100 yr floodplains (40 CFR</p>	<p>(NOTE: This checklist item applies to the location of new, existing, or lateral expansions of MSWLFs within 10,000 ft [3,048 m] of any airport runway end used by turbojet aircraft or within 5,000 ft [1,524 m] of any airport runway end used by only piston-type aircraft)</p> <p>(NOTE: In the 8 October 2002 Federal Register, page 62647, the USEPA withdrew the direct final rule for Municipal Solid Waste Landfill Location Restrictions for Airport Safety. They were published 11 July 2002 [67 FR 45915]. The changes were removed from this checklist item January 2003.)</p> <p>Verify that it has been demonstrated that the MSWLF is designed and operated so as to not pose a bird hazard to aircraft.</p> <p>Verify that the FAA and the affected airport have been notified as to the presence of a new MSWLF or a lateral expansion within a 5-mi radius of any airport runway.</p> <p>(NOTE: A prohibition on locating a new MSWLF near certain airports was enacted in section 503 of the <i>Wendell H. Ford Aviation Investment and Reform Act for the 21st Century</i> (Ford Act), Pub. L. 106-181 [49 U.S.C. 44718 note]. Section 503 prohibits the “construction or establishment” of new MSWLFs after 5 April 2000 within 6 mi of certain smaller public airports. The FAA administers the Ford Act and has issued guidance in FAA Advisory Circular 150/5200-34, dated 26 August 2000. For further information, please contact the FAA.)</p> <p>Verify that the demonstration has been placed in the operating record and the State Director has been notified that it has been placed in the operating record.</p> <p>Verify that existing MSWLF units that cannot make this demonstration are closed by 9 October 1996, unless a maximum 2-yr delay is approved by the State Director.</p> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p> <p>Verify that it has been demonstrated that the MSWLF will not restrict the flow of the 100-yr flood, reduce the temporary water storage capacity of the floodplain, or result in a washout of solid waste so as to pose a hazard to human health and the environment.</p> <p>Verify that existing MSWLF units that cannot make this demonstration are closed by 9 October 1996, unless the State Director approves a delay.</p>

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<p>258.11(a) and 258.16) [Revised March 2000].</p> <p><b>SO.55.3.US.</b> Limitations regarding the location of new MSWLFs and lateral expansions in wetland are required to be met (40 CFR 258.12(a)(1) through 258.12(a)(3) and 258.16) [Revised March 2000].</p>	<p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p> <p>Verify that if there are plans to place a MSWLF or a lateral expansion in a wetlands, it has been demonstrated to the State Director that the construction of the MSWLF will not:</p> <ul style="list-style-type: none"> <li>– cause or contribute to violations of any applicable state water quality standard</li> <li>– violate any applicable toxic effluent standard or prohibition</li> <li>– jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of a critical habitat protected under the Endangered Species Act</li> <li>– violate any requirement under the <i>Marine Protection, Research, and Sanctuaries Act</i> of 1973.</li> </ul> <p>Verify that it has been demonstrated that the integrity of the MSWLF will not cause or contribute to significant degradation of wetlands.</p> <p>Verify that the MSWLF has the ability to protect ecological resources by addressing the following factors:</p> <ul style="list-style-type: none"> <li>– erosion, stability, and migration potential of native wetland soils, muds and deposits used to support the MSWLF unit</li> <li>– erosion, stability, and migration potential of dredged and fill materials used to support the MSWLF unit</li> <li>– the volume and chemical nature of the wastes managed in the MSWLF</li> <li>– impacts on fish, wildlife, and other aquatic resources and their habitat from release of the solid waste</li> <li>– the potential effects of catastrophic release of waste to the wetland and the resulting impacts on the environment</li> <li>– any additional factors, as necessary, to demonstrate that ecological resources in the wetland are sufficiently protected.</li> </ul> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p>
<p><b>SO.55.4.US.</b> Specific limitations must be met regarding the location of new MSWLFs and lateral expansions in fault areas that have had displacement in Holocene time (40 CFR</p>	<p>Verify that if there are plans to construct a MSWLF or lateral expansions within 200 ft (60 m) of a fault, it has demonstrated to the State Director that an alternative setback distance of less than 200 ft (60 m) will prevent damage to the structural integrity of the MSWLF unit and will be protective of human health and the environment.</p>

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<p>258.13(a) and 258.16) [Reviewed March 2000].</p> <p><b>SO.55.5.US.</b> Specific limitations must be met regarding the placement of new MSWLFs and lateral expansions in seismic impact zones (40 CFR 258.14(a) and 258.16) [Revised March 2000].</p> <p><b>SO.55.6.US.</b> Specific limitations must be met regarding the location of new, existing, or lateral expansion of MSWLFs in unstable areas (40 CFR 258.15(a) and 258.16) [Revised March 2000].</p>	<p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p> <p>Verify that if there are plans to construct a MSWLF or lateral expansion in a seismic impact zone, it has demonstrated to the State Director that all containment structures, including liners, leachate collection systems, and surface water control systems, are designed to resist the maximum horizontal acceleration in lithified earth material for the site.</p> <p>Verify that the demonstration has been placed in the operating record and the State Director has been notified that it has been placed in the operating record.</p> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p> <p>Verify that if there are plans to construct a MSWLF or lateral expansion in an unstable area, it has been demonstrated to the State Director that engineering measures have been incorporated into the MSWLF unit's design to ensure that the integrity of the structural components will not be disrupted.</p> <p>Verify that the following criteria, at a minimum, are considered in judging whether or not an area is unstable:</p> <ul style="list-style-type: none"> <li>– onsite or local soil conditions that may result in significant differential settling</li> <li>– onsite or local geologic or geomorphic features</li> <li>– onsite or local human-made features or event (both surface and subsurface).</li> </ul> <p>Verify that the demonstration has been placed in the operating record and the State Director has been notified that it has been placed in the operating record.</p> <p>Verify that existing MSWLF units that cannot make this demonstration are closed by 9 October 1996, unless the State Director approves a delay.</p> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p>



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<p><b>MSWLFs</b></p> <p><b>SO.60 Design Criteria</b></p> <p><b>SO.60.1.US.</b> New MSWLFs and lateral expansions are required to meet specific design criteria (40 CFR 258.1(f)(1), 258.1(f)(3), and 258.40(a)) <b>[Revised October 1996; Reviewed March 2000]</b>.</p> <p><b>SO.60.2.US.</b> Run-on/runoff control systems at MSWLFs are required to meet specific design requirements (40 CFR 258.26) <b>[Reviewed March 2000]</b>.</p>	<p>Verify that the MSWLF is of an approved design that ensures that the concentration values listed in Appendix 9-3 are not exceeded in the uppermost aquifer at the relevant point of compliance.</p> <p>Verify that the MSWLF has a composite liner and a leachate collection system that is designed and constructed to maintain less than a 30 cm depth of leachate over the liner.</p> <p>(NOTE: The design must be approved by the implementing authority (state or USEPA).)</p> <p>(NOTE: Owners or operators of new MSWLF units, existing MSWLF units, and lateral expansions that dispose of less than 20 tons of municipal solid waste daily, based on an annual average, are exempt from these requirements as long as there is not groundwater contamination and the unit serves one of the following:</p> <ul style="list-style-type: none"> <li>– a community that experiences an annual interruption of at least 3 consecutive months of surface transportation that prevents access to a regional waste management facility</li> <li>– a community that has no practicable waste management alternative and the landfill unit is located in an area that annually receives less than or equal to 25 in. of precipitation.)</li> </ul> <p>(NOTE: See checklist items SO.60.3.US. and SO.60.4.US. for requirements pertaining to exempted MSWLFs.)</p> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p> <p>Verify that the run-on control system is designed and maintained to prevent flow onto the active portion of the landfill during the peak discharge from a 25-yr storm.</p> <p>Verify that the runoff control system from the active portion of the landfill is designed and maintained to collect and control at least the water volume resulting from a 24-h, 25-yr storm.</p> <p>Verify the runoff does not cause a discharge of pollutants into waters of the United States, including wetlands, that causes noncompliance with the CWA or NPDES requirements.</p> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR</p>

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<p><b>SO.60.3.US.</b> MSWLFs that are otherwise exempted from design requirements must comply with design requirements when groundwater contamination is present (40 CFR 258.1(f)(3)) [Added October 1996; Reviewed March 2000].</p>	<p>258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p> <p>Determine if groundwater contamination is present at the exempted facility.</p> <p>Verify that, if contamination is present, the design requirements in 40 CFR 258.40 (see checklist item SO.60.1.US.) are met.</p> <p>(NOTE: New MSWLF units, existing MSWLF units, and lateral expansions that dispose of less than 20 tons of municipal solid waste daily, based on an annual average, are exempt from these requirements as long as there is not groundwater contamination and the unit serves one of the following:</p> <ul style="list-style-type: none"> <li>– a community that experiences an annual interruption of at least 3 consecutive months of surface transportation that prevents access to a regional waste management facility</li> <li>– a community that has no practicable waste management alternative and the landfill unit is located in an area that annually receives less than or equal to 25 in. of precipitation.)</li> </ul> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p>
<p><b>SO.60.4.US.</b> Owners/operators of MSWLFs that are exempted from design requirements must place information in the operating record supporting this exemption (40 CFR 258.1(f)(2)) [Added May 1997; Reviewed March 2000].</p>	<p>Verify that owners/operators of MSWLFs that are exempted from design requirements have placed information in the operating record supporting this exemption.</p> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p>

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<p><b>MSWLFs</b></p> <p><b>SO.65</b> <b>Operating Criteria</b></p> <p><b>SO.65.1.US.</b> MSWLFs are subject to requirements pertaining to procedures for excluding hazardous wastes from the landfills (40 CFR 258.20(a)) <b>[Reviewed March 2000]</b>.</p> <p><b>SO.65.2.US.</b> MSWLFs are subject to requirements pertaining to cover materials (40 CFR 258.21) <b>[Reviewed March 2000]</b>.</p> <p><b>SO.65.3.US.</b> MSWLFs are subject to requirements pertaining to the control of disease vectors (40 CFR 258.22(a)) <b>[Reviewed March 2000]</b>.</p> <p><b>SO.65.4.US.</b> MSWLFs are subject to specific requirements pertaining to the production and monitoring of</p>	<p>Verify that the MSWLF has a program for detecting and preventing the disposal of regulated hazardous wastes, as defined in 40 CFR 261, and polychlorinated biphenyls (PCB) wastes that includes the following:</p> <ul style="list-style-type: none"> <li>– random inspections of incoming loads, unless other steps are taken to ensure incoming loads do not contain hazardous wastes or PCBs wastes</li> <li>– records of any inspections</li> <li>– training of personnel to recognize hazardous wastes and PCB wastes</li> <li>– notification of State Director of authorized states or the USEPA regional administrator if a regulated hazardous waste or PCB waste is discovered.</li> </ul> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p> <p>Verify that all MSWLF units have solid waste covered with 6 in. of earthen material, or another approved material at an alternative thickness, at the end of each operating day or more frequently, if necessary, in order to control disease vectors, fires, odors, blowing litter, and scavenging.</p> <p>(NOTE: The appropriate authority must approve alternative cover material and thickness. The appropriate authority under particular extreme climatic conditions may grant a temporary waiver.)</p> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p> <p>Verify that, at the MSWLF, there is prevention or control of onsite populations of disease vectors using techniques appropriate for the protection of human health and the environment.</p> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p> <p>Verify that, at the MSWLF, the concentration of methane gas generated by the MSWLF does not exceed 25 percent of the lower explosive limit for methane in facility structures (excluding gas control or recovery system components).</p>

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<p>methane gases (40 CFR 258.23(a), 258.23(b), 258.23(e)) [Revised December 1997; Reviewed March 2000].</p> <p><b>SO.65.5.US.</b> MSWLFs are subject to notification criteria pertaining to excessive methane gas releases (40 CFR 258.23(c)) [Reviewed March 2000].</p> <p><b>SO.65.6.US.</b> MSWLFs are required to control emissions (40 CFR 258.24) [Reviewed March 2000].</p>	<p>Verify the concentration of methane gas at the MSWLF property boundary does not exceed the lower explosive limit for methane.</p> <p>Verify that the MSWLF implements a routine methane monitoring program of a type and frequency that is based on the following factors:</p> <ul style="list-style-type: none"> <li>– soil conditions</li> <li>– hydrogeological conditions surrounding the MSWLF</li> <li>– hydraulic conditions surrounding the MSWLF</li> <li>– locations of MSWLF structures and property boundaries.</li> </ul> <p>Verify that monitoring occurs quarterly at a minimum.</p> <p>(NOTE: The Director of an approved state may establish alternate monitoring frequencies.)</p> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p> <p>Verify that, if methane gas monitoring detects levels of gas exceeding the allowed limits, the following measures are taken:</p> <ul style="list-style-type: none"> <li>– all necessary steps are taken to ensure protection of human health</li> <li>– the State Director is notified, of the protective measures</li> <li>– within 7 days of detection, the level of methane gas detected and the steps taken to protect human health is noted in the operating record</li> <li>– within 60 days of detection, a remediation plan for the methane gas release is placed in the operating record and the State Director is notified that the plan has been implemented.</li> </ul> <p>(NOTE: The Director of an approved state may establish alternative schedules for demonstrating compliance with these requirements.)</p> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p> <p>Verify that there is no open burning of solid waste, except for the infrequent burning of agricultural wastes, silvicultural wastes, landclearing debris, diseased trees, or debris from emergency cleanup.</p> <p>Verify that none of the MSWLF units violate any applicable requirements developed under a State Implementation Plan (SIP) approved by USEPA under section 110 of the Clean Air Act, as amended.</p>

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<p><b>SO.65.7.US.</b> MSWLFs are subject to access limitations (40 CFR 258.25) [<b>Reviewed March 2000</b>].</p>	<p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p> <p>Verify that public access to the MSWLF is controlled and unauthorized vehicular traffic and illegal dumping of wastes is prevented through the use of artificial barriers, natural barriers, or both.</p> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p>
<p><b>SO.65.8.US.</b> MSWLFs are subject to surface water control requirements (40 CFR 258.27) [<b>Reviewed March 2000</b>].</p>	<p>Verify that the MSWLF does not cause a discharge of pollutants into waters of the United States, including wetlands, that causes noncompliance with the CWA or NPDES requirements.</p> <p>(NOTE: This includes discharges of a nonpoint source of pollution that violates any approved area-wide or state-wide water quality management plan.)</p> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p>
<p><b>SO.65.9.US.</b> The disposal of liquids at MSWLFs is restricted (40 CFR 258.28) [<b>Reviewed March 2000; Revised July 2005</b>].</p>	<p>Verify that bulk or non containerized liquid waste is not placed in MSWLF unless:</p> <ul style="list-style-type: none"> <li>– the waste is household waste other than septic waste;</li> <li>– the waste is leachate or gas condensate derived from the MSWLF unit and the MSWLF unit, whether it is a new or existing MSWLF, or lateral expansion, is designed with a composite liner and leachate collection system as described in 40 CFR 258.40(a)(2) [see checklist item SO.60.1.US] (NOTE: The demonstration must be placed in the operating record and the State Director notified that it has been placed in the operating record)</li> <li>– the MSWLF unit is a Project XL MSWLF and meets the applicable requirements of 40 CFR 258.41 (NOTE: Documentation of the landfill design must be placed in the operating record and the State Director notified that it has been placed in the operating record).</li> </ul> <p>Verify that containers holding liquid waste are not placed in a MSWLF unit unless:</p> <ul style="list-style-type: none"> <li>– the container is a small container similar in size to that normally found in household waste</li> <li>– the container is designed to hold liquids for use other than storage</li> <li>– the waste is household waste.</li> </ul>

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	<p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p> <p>(NOTE: For purposes of this checklist item, “Liquid Waste” means any waste material that is determined to contain “free liquids” as defined by Method 9095B [Paint Filter Liquids Test], included in “Test Methods for Evaluating Solid Waste, Physical/Chemical Methods” [EPA Publication SW-846] which is incorporated by reference. A suffix of “B” in the method number indicates revision two [the method has been revised twice]. Method 9095B is dated Nov. 2004. This incorporation by reference was approved by the Director of the Federal Register pursuant to 5 U.S.C. 552(a) and 1 CFR 51. This material is incorporated as it exists on the date of approval and a notice of any change in this material will be published in the Federal Register. A copy may be inspected at the Library, U.S. EPA, 1200 Pennsylvania Ave., NW. (3403T), Washington, DC 20460, libraryhq@epa.gov; or at the National Archives and Records Administration [NARA]. For the availability of this material at NARA, call 202 741-6030, or:</p> <ul style="list-style-type: none"> <li>– <a href="http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html">http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html</a></li> <li>– <a href="http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html">http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html</a>.)</li> </ul> <p>(NOTE: Gas condensate means the liquid generated as a result of gas recovery process(es) at the MSWLF unit.)</p>
<b>SO.65.10.US.</b> Checklist item moved [Reviewed March 2000; Moved April 2003].	Checklist item moved to SO.85.1.US to maintain organizational consistency with State manuals.
<b>SO.65.11.US.</b> Checklist item moved [Reviewed March 2000; Moved April 2003].	Checklist item moved to SO.85.2.US to maintain organizational consistency with State manuals.

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<p><b>MSWLF</b></p> <p><b>SO.67 Emissions</b></p> <p><b>SO.67.1.US.</b> Checklist item moved [Revised June 1998; Reviewed March 2000; Moved April 2003].</p> <p><b>SO.67.2.US.</b> MSWLF with a design capacity <math>\geq</math> 2.5 million Mg by mass or 2.5 million m<sup>3</sup> by volume are required to calculate NMOC emissions and report them (40 CFR 60.750, 60.752(b)(1) and 60.757(b)) [Revised June 1998; Reviewed March 2000].</p>	<p>Checklist item moved to SO.85.3.US to maintain organizational consistency with State manuals.</p> <p>Verify that if the calculated NMOC emission rate is &lt; 50 Mg/yr, an annual report is submitted to the Administrator.</p> <p>Verify that the annual report contains an annual or 5-yr estimate of the NMOC emission rate and is submitted no later than:</p> <ul style="list-style-type: none"> <li>– 10 June 1996 for landfills that commenced construction, modification, or reconstruction on or after 30 May 1991, but before 12 March 1999</li> <li>– 90 days after the date of commenced construction, modification, or reconstruction for landfills that commenced construction, modification, or reconstruction one or after 12 March 1996.</li> </ul> <p>(NOTE: The initial report may be submitted with the initial design capacity report.)</p> <p>Verify that the NMOC emission rate is recalculated annually.</p> <p>Verify that the rate report includes all the data, calculations, sample reports, and measurements used to estimate the annual or 5-yr emissions.</p> <p>(NOTE: MSWLFs are exempt from the requirements of this checklist item after the installation of a collection and control system in compliance with 40 CFR 60.752(b)(2) (see checklist items SO.67.4.US, SO.67.5.US, and SO.85.4.US.) as long as the collection and control system is in operation and in compliance.)</p> <p>(NOTE: These requirements apply to MSWLFs that started construction, reconstruction, and modification on or after 30 May 1991. For the purpose of these requirements, physical or operational changes made to an existing MSWLF in order to comply with the State Plan are not considered construction, reconstruction, or modification. Activities required by or conducted pursuant to a CERCLA, RCRA, or State remedial action are not considered construction, reconstruction, or modification.)</p> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p>

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<p><b>SO.67.3.US.</b> Checklist item moved [Added March 1996; Reviewed March 2000; Moved April 2003].</p> <p><b>SO.67.4.US.</b> If the NMOC emissions rate is equal to or greater than 50 Mg/yr, a collection and control system must be installed which meets specific parameters (40 CFR 60.750, 60.752(b)(2)(ii), and 60.752(b)(2)(iii)) [Revised June 1998; Reviewed March 2000; Revised July 2000].</p>	<p>Checklist item moved to SO.85.4.US to maintain organizational consistency with State manuals.</p> <p>Verify that either a passive or active collection and control system is installed within 30 mo after the first annual report in which the emission rate <math>\geq</math> 50 Mg/yr unless Tier 2 or Tier 3 sampling demonstrated the emission rate is &lt; 50 Mg/yr.</p> <p>Verify that an active collection system meets the following:</p> <ul style="list-style-type: none"> <li>– it is designed to handle the maximum expected gas flow rate from the entire area of the landfill that warrants control over the intended use period of the gas control or treatment system equipment</li> <li>– it collects gas from each area, cell, or group of cells in the landfill in which the initial solid waste has been placed for a period of: <ul style="list-style-type: none"> <li>– 5 yr or more if active</li> <li>– 2 yr or more if closed or at final grade</li> </ul> </li> <li>– it collects gas at a sufficient extraction rate</li> <li>– it is designed to minimize offsite migration of subsurface gas.</li> </ul> <p>Verify that a passive collection system:</p> <ul style="list-style-type: none"> <li>– is designed to handle the maximum expected gas flow rate from the entire area of the landfill that warrants control over the intended use period of the gas control or treatment system equipment</li> <li>– collects gas from each area, cell, or group of cells in the landfill in which the initial solid waste has been placed for a period of: <ul style="list-style-type: none"> <li>– 5 yr or more if active</li> <li>– 2 yr or more if closed or at final grade</li> </ul> </li> <li>– is designed to minimize offsite migration of subsurface gas</li> <li>– is installed with liners on the bottom and all sides in all areas in which gas is to be collected.</li> </ul> <p>Verify that all the collected gas is routed to a control system that:</p> <ul style="list-style-type: none"> <li>– is an open flare</li> <li>– is a control system designed and operated to reduce NMOC by 98 weight percent or when an enclosed combustion device is used, to either reduce NMOC by 98 weight percent or reduce the outlet NMOC concentration to less than 20 ppmv, dry basis as hexane at 3 percent O<sub>2</sub>, such that: <ul style="list-style-type: none"> <li>– if a boiler or process heater is used as the control device, the landfill gas stream is introduced into the flame zone</li> <li>– the control device is operated within the parameter ranges established during the initial or most recent performance test</li> </ul> </li> <li>– routes the collected gas to a treatment system that processes the collected gas for subsequent sale or use.</li> </ul>

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<p><b>SO.67.5.US.</b> Under certain conditions the collection and control system may be capped or removed (40 CFR 60.750 and 60.752(b)(2)(iv)) [<b>Added March 1996; Reviewed March 2000</b>].</p>	<p>(NOTE: These requirements apply to MSWLFs that started construction, reconstruction, and modification on or after 30 May 1991. For the purpose of these requirements, physical or operational changes made to an existing MSWLF in order to comply with the State Plan are not considered construction, reconstruction, or modification. Activities require by or conducted pursuant to a CERCLA, RCRA, or State remedial action are not considered construction, reconstruction, or modification.)</p> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p> <p>Verify that collection and control systems are capped or removed from service only if all of the following are met:</p> <ul style="list-style-type: none"> <li>– the landfill will no longer accept solid waste and it is to be permanently closed</li> <li>– the collection and control system have been in operation a minimum of 15 yr</li> <li>– the calculated NMOC gas produced by the landfill is less than 50 Mg/yr on three successive test dates that are no less than 90 days apart and no more than 180 days apart.</li> </ul> <p>(NOTE: These requirements apply to MSWLFs that started construction, reconstruction, and modification on or after 30 May 1991. For the purpose of these requirements, physical or operational changes made to an existing MSWLF in order to comply with the State Plan are not considered construction, reconstruction, or modification. Activities require by or conducted pursuant to a CERCLA, RCRA, or State remedial action are not considered construction, reconstruction, or modification.)</p> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p>
<p><b>SO.67.6.US.</b> Monitoring must be done according to specific parameters (40 CFR 60.750 and 60.756) [<b>Added March 1996; Reviewed March 2000; Revised July 2000</b>].</p>	<p>Verify that if the facility has an active collection system, there is a sampling port and a thermometer, other temperature measuring device at each wellhead and the following are done on a monthly basis:</p> <ul style="list-style-type: none"> <li>– measure the gauge pressure in the gas collection header</li> <li>– monitor nitrogen or O<sub>2</sub> concentration in the landfill gas</li> <li>– monitor temperature of the landfill gas.</li> </ul> <p>Verify that facilities using an enclosed combustor calibrate, maintain, and operate the following equipment according to the manufacturers' specifications:</p>

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<p><b>SO.67.7.US.</b> Checklist item moved [Citation Revised</p>	<ul style="list-style-type: none"> <li>– a temperature monitoring device equipped with a continuous recorder and having an accuracy of +/- 1 percent of the temperature being measured expressed in degrees Celsius or +/- 5 degrees C, whichever is greater (this device is not required for boilers or process heaters with design heat input capacity equal to or greater than 44 MW)</li> <li>– a gas flow rate measuring device that provides a measurement of gas flow to or bypass of the control device by either:               <ul style="list-style-type: none"> <li>– installing, calibrating, and maintaining a gas flow rate measuring device that records the flow to the control device at least every 15 min</li> <li>– securing the bypass line valve in the closed position with a car seal or a lock and key type configuration.</li> </ul> </li> </ul> <p>Verify that, if an open flare is being used, the following equipment is installed, calibrated, and operated according to manufacturer's specifications:</p> <ul style="list-style-type: none"> <li>– a heat sensing device, such as an ultraviolet beam sensor or thermocouple, at the pilot light or the flame itself to indicate the continuous presence of a flame</li> <li>– a device that records flow to or bypass of the flame by either:               <ul style="list-style-type: none"> <li>– installing, calibrating, and maintaining a gas flow rate measuring device that records the flow to the control device at least every 15 min</li> <li>– securing the bypass line valve in the closed position with a car seal or a lock and key type configuration.</li> </ul> </li> </ul> <p>Verify that a visual inspection of the car seal or closure mechanism on a bypass line valve is done at least once a month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.</p> <p>Verify that if compliance is demonstrated by using a device other than an open flame or enclosed combustor, approval has been received from the Administrator.</p> <p>(NOTE: These requirements apply to MSWLFs that started construction, reconstruction, or modification on or after 30 May 1991. For the purpose of these requirements, physical or operational changes made to an existing MSWLF in order to comply with the State Plan are not considered construction, reconstruction, or modification. Activities require by or conducted pursuant to a CERCLA, RCRA, or State remedial action are not considered construction, reconstruction, or modification.)</p> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p> <p>Checklist item moved to SO.85.5.US to maintain organizational consistency with State manuals.</p>

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<p><b>June 1998; Reviewed March 2000; Moved April 2003].</b></p> <p><b>SO.67.8.US.</b> Checklist item moved [Citation Revised June 1998; Reviewed March 2000; Moved April 2003].</p> <p><b>SO.67.9.US.</b> Collection and control systems are required to meet operational and control standards (40 CFR 60.750 and 60.753) [Added July 2000].</p>	<p>Checklist item moved to SO.85.6.US to maintain organizational consistency with State manuals.</p> <p>Verify that the collection system is operated with negative pressure at each wellhead except under the following conditions:</p> <ul style="list-style-type: none"> <li>– a fire or increased well temperature</li> <li>– use of a geomembrane or synthetic cover</li> <li>– a decommissioned well.</li> </ul> <p>Verify that instances of positive pressure that occur as efforts to avoid a fire are recorded and the records submitted with the annual report.</p> <p>Verify that an active collection system:</p> <ul style="list-style-type: none"> <li>– is designed to handle the maximum expected gas flow rate from the entire area of the landfill that warrants control over the intended use period of the gas control or treatment system equipment</li> <li>– collects gas from each area, cell, or group of cells in the landfill in which the initial solid waste has been placed for a period of: <ul style="list-style-type: none"> <li>– 5 yr or more if active</li> <li>– 2 yr or more if closed or at final grade</li> </ul> </li> <li>– collects gas at a sufficient extraction rate</li> <li>– is designed to minimize offsite migration of subsurface gas.</li> </ul> <p>Verify that a passive collection system:</p> <ul style="list-style-type: none"> <li>– is designed to handle the maximum expected gas flow rate from the entire area of the landfill that warrants control over the intended use period of the gas control or treatment system equipment</li> <li>– collects gas from each area, cell, or group of cells in the landfill in which the initial solid waste has been placed for a period of: <ul style="list-style-type: none"> <li>– 5 yr or more if active</li> <li>– 2 yr or more if closed or at final grade</li> </ul> </li> <li>– is designed to minimized offsite migration of subsurface gas</li> <li>– is installed with liners on the bottom and all sides in all areas in which gas is to be collected.</li> </ul> <p>Verify that each interior wellhead in the collection system is operated with a landfill gas temperature less than 55 degrees C and with either a nitrogen level less than 20 percent or an O2 level less than 5 percent.</p>

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	<p>(NOTE: A higher operating temperature, nitrogen, or O<sub>2</sub> value may be established at a particular well if there is supporting data that the elevated parameter does not cause fires or significantly inhibit anaerobic decomposition by killing methanogens.)</p> <p>Verify that the collection system is operated so that the methane concentration is 500 ppm above background at the surface of the landfill.</p> <p>(NOTE: To determine if the methane level is exceeded, surface testing shall be done around the perimeter of the collection area along a pattern that traverses the landfill at 30 m intervals and where visual observation indicates elevated concentrations of landfill gas such as distressed vegetation and cracks or seeps in the cover.)</p> <p>Verify that all the collected gas is routed to a control system that:</p> <ul style="list-style-type: none"> <li>– is an open flare</li> <li>– is a control system designed and operated to reduce NMOC by 98 weight percent or when an enclosed combustion device is used, to either reduce NMOC by 98 weight percent or reduce the outlet NMOC concentration to less than 20 ppmv, dry basis as hexane at 3 percent O<sub>2</sub>, such that: <ul style="list-style-type: none"> <li>– if a boiler or process heater is used as the control device, the landfill gas stream is introduced into the flame zone</li> <li>– the control device is operated within the parameter ranges established during the initial or most recent performance test</li> </ul> </li> <li>– routes the collected gas to a treatment system that processes the collected gas for subsequent sale or use.</li> </ul> <p>Verify that, if the collection or control system is inoperable, the gas mover system is shut down and all valves in the collection and control system contributing to venting of the gas to the atmosphere are closed within 1 h.</p> <p>Verify that the control or treatment system is operating at all times the collected gas is routed to the system.</p> <p>Verify that, if monitoring demonstrates operational requirements are not met, corrective actions are taken.</p> <p>(NOTE: These requirements apply to MSWLFs that started construction, reconstruction, or modification on or after 30 May 1991. For the purpose of these requirements, physical or operational changes made to an existing MSWLF in order to comply with the State Plan are not considered construction, reconstruction, or modification. Activities required by or conducted pursuant to a CERCLA, RCRA, or State remedial action are not considered construction, reconstruction, or modification.)</p> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR</p>

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<p><b>SO.67.10.US.</b> Owners or operators of a MSW landfill that has accepted waste since 8 November 1987 or has additional capacity for waste deposition must meet certain requirements to control air emissions (40 CFR 63.1935, 63.1940, 63.1955(a)) [<b>Added April 2003</b>].</p>	<p>258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p> <p>(NOTE: This checklist item applies to owners or operators of a MSW landfill that has accepted waste since 8 November 1987 or has additional capacity for waste deposition and meets any one of the following criteria:</p> <ul style="list-style-type: none"> <li>– the MSW landfill is a major source as defined in 40 CFR 63.2</li> <li>– the MSW landfill is collocated with a major source</li> <li>– the MSW landfill is an area source landfill that has a design capacity equal to or greater than 2.5 million megagrams (Mg) and 2.5 million m<sup>3</sup> and has estimated uncontrolled emissions equal to or greater than 50 megagrams per year (Mg/yr) NMOC as calculated according to 40 CFR 60.754(a) [see text], the Federal plan, or an USEPA approved and effective State or tribal plan that applies to the landfill.)</li> </ul> <p>This checklist item also applies to owner or operators of a MSWLF that has accepted waste since 8 November 1987 or has additional capacity for waste deposition, including a bioreactor, and that meets any one of the following criteria:</p> <ul style="list-style-type: none"> <li>– the MSW landfill is a major source as defined in 40 CFR 63.2</li> <li>– the MSW landfill is collocated with a major source</li> <li>– the MSW landfill is an area source landfill that has a design capacity equal to or greater than 2.5 million Mg and 2.5 million m<sup>3</sup> and that is not permanently closed as of 16 January 2003.)</li> </ul> <p>(NOTE: The affected source includes the entire disposal facility in a contiguous geographic space where household waste is placed in or on land, including any portion of the MSW landfill operated as a bioreactor. A new affected source is an affected source that commenced construction or reconstruction after 7 November 2000. An affected source is reconstructed if it meets the definition of reconstruction. An affected source is existing if it is not new.)</p> <p>(See Appendix 9-2a for compliance dates.)</p> <p>Verify that the MSW landfill complies with one of the following:</p> <ul style="list-style-type: none"> <li>– the requirements of 40 CFR 60, subpart WWW (see checklist item SO.67.1.US through SO.67.9.US and SO.85.1.US through SO.85.6.US)</li> <li>– the requirements of the Federal plan or USEPA approved and effective State plan or tribal plan that implements 40 CFR 60, subpart Cc (40 CFR 60.30c through 60.36c)</li> </ul> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p>

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<p><b>REGULATORY REQUIREMENTS:</b></p>	<p><b>REVIEWER CHECKS: December 2018</b></p>
<p><b>SO.67.11.US.</b> Owners or operators of a MSW landfill that has accepted waste since 8 November 1987 or has additional capacity for waste deposition which are required to have a collection and control system must meet certain requirements (40 CFR 63.1935, 63.1940, 63.1955(b), and 63.1955(c)) <b>[Added April 2003]</b>.</p>	<p>(NOTE: This checklist item applies to owners or operators of a MSW landfill that has accepted waste since 8 November 1987 or has additional capacity for waste deposition and meets any one of the following criteria:</p> <ul style="list-style-type: none"> <li>– the MSW landfill is a major source as defined in 40 CFR 63.2</li> <li>– the MSW landfill is collocated with a major source</li> <li>– the MSW landfill is an area source landfill that has a design capacity equal to or greater than 2.5 million megagrams (Mg) and 2.5 million m<sup>3</sup> and has estimated uncontrolled emissions equal to or greater than 50 megagrams per year (Mg/yr) NMOC as calculated according to 40 CFR 60.754(a) [see text], the Federal plan, or an USEPA approved and effective State or tribal plan that applies to the landfill.)</li> </ul> <p>This checklist item also applies to owner or operators of a MSWLF that has accepted waste since 8 November 1987 or has additional capacity for waste deposition, including a bioreactor, and that meets any one of the following criteria:</p> <ul style="list-style-type: none"> <li>– the MSW landfill is a major source as defined in 40 CFR 63.2</li> <li>– the MSW landfill is collocated with a major source</li> <li>– the MSW landfill is an area source landfill that has a design capacity equal to or greater than 2.5 million Mg and 2.5 million m<sup>3</sup> and that is not permanently closed as of 16 January 2003.)</li> </ul> <p>(NOTE: The affected source includes the entire disposal facility in a contiguous geographic space where household waste is placed in or on land, including any portion of the MSWLF operated as a bioreactor. A new affected source is an affected source that commenced construction or reconstruction after 7 November 2000. An affected source is reconstructed if it meets the definition of reconstruction. An affected source is existing if it is not new.)</p> <p>Verify that, if the owner or operator of the MSWLF is required by 40 CFR 60.752(b)(2) (see checklist items SO.67.4.US, SO.67.5.US, and SO.85.4.US.), the Federal plan, or an USEPA approved and effective State or tribal plan to install a collection and control system, the MSW landfill complies with the requirements in 40 CFR 63.1960 through 63.1985 (see checklist items SO.67.10.US through SO.67.13.US, SO.85.7.US and SO.85.8.US) and with the general provisions specified in Table 1 of 40 CFR 63, Subpart AAAA [see text].</p> <p>(NOTE: For approval of collection and control systems that include any alternatives to the operational standards, test methods, procedures, compliance measures, monitoring, recordkeeping or reporting provisions, the MSW landfill must follow the procedures in 40 CFR 60.752(b)(2) (see checklist items SO.67.4.US, SO.67.5.US, and SO.85.4.US.). If alternatives have already been approved under 40 CFR 60, subpart WWW or the Federal plan, or USEPA approved and effective State or tribal plan, these alternatives can be used to comply with HAP requirements for MSW landfills, except that:</p> <ul style="list-style-type: none"> <li>– all affected sources must comply with the SSM requirements (see checklist item SO.85.7.US)</li> </ul>

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<p><b>REGULATORY REQUIREMENTS:</b></p>	<p><b>REVIEWER CHECKS: December 2018</b></p>
<p><b>SO.67.12.US.</b> Owners or operators of a bioreactor that is located at a MSW landfill that is not permanently closed and has a design capacity equal to or greater than 2.5 million Mg and 2.5 million m3 must meet certain requirements (40 CFR 63.1935, 63.1940, and 63.1955(d)) [Added April 2003].</p>	<p>– all affected sources must submit compliance reports every 6 mo (see checklist item 60.85.8.US), including information on all deviations that occurred during the 6-mo reporting period.</p> <p>Verify that deviations for continuous emission monitors or numerical continuous parameter monitors are determined using a 3 h monitoring block average.</p> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p> <p>(NOTE: This checklist item applies to owners or operators of a MSW landfill that has accepted waste since 8 November 1987 or has additional capacity for waste deposition and meets any one of the following criteria:</p> <ul style="list-style-type: none"> <li>– the MSW landfill is a major source as defined in 40 CFR 63.2</li> <li>– the MSW landfill is collocated with a major source</li> <li>– the MSW landfill is an area source landfill that has a design capacity equal to or greater than 2.5 million megagrams (Mg) and 2.5 million m3 and has estimated uncontrolled emissions equal to or greater than 50 megagrams per year (Mg/yr) NMOC as calculated according to 40 CFR 60.754(a) (see text), the Federal plan, or an USEPA approved and effective State or tribal plan that applies to the landfill.)</li> </ul> <p>This checklist item also applies to owner or operators of a MSWLF that has accepted waste since 8 November 1987 or has additional capacity for waste deposition, including a bioreactor, and that meets any one of the following criteria:</p> <ul style="list-style-type: none"> <li>– the MSW landfill is a major source as defined in 40 CFR 63.2</li> <li>– the MSW landfill is collocated with a major source</li> <li>– the MSW landfill is an area source landfill that has a design capacity equal to or greater than 2.5 million Mg and 2.5 million m3 and that is not permanently closed as of 16 January 2003.)</li> </ul> <p>(NOTE: The affected source includes the entire disposal facility in a contiguous geographic space where household waste is placed in or on land, including any portion of the MSWLF operated as a bioreactor. A new affected source is an affected source that commenced construction or reconstruction after 7 November 2000. An affected source is reconstructed if it meets the definition of reconstruction. An affected source is existing if it is not new.)</p> <p>Verify that, if the facility owns or operates a bioreactor that is located at a MSW landfill that is not permanently closed and has a design capacity equal to or greater than 2.5 million Mg and 2.5 million m3 then the facility meets the requirements of 40 CFR 63.1955(a) (see checklist items SO.67.10.US through SO.67.12.US) and:</p> <ul style="list-style-type: none"> <li>– comply with the general provisions specified in Table 1 Table 1 of 40 CFR 63, Subpart AAAA [see text] and 40 CFR 63.1960 through 63.1985 (see</li> </ul>

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	<p>checklist items SO.85.7.US and SO.86.8.US) starting on the date the facility is required to install the gas collection and control system</p> <ul style="list-style-type: none"> <li>– extend the collection and control system into each new cell or area of the bioreactor prior to initiating liquids addition in that area, instead of the schedule in 40 CFR 60.752(b)(2)(ii)(A)(2) (see checklist item SO.67.4.US)</li> </ul> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p>

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<p align="center"><b>REGULATORY REQUIREMENTS:</b></p>	<p align="center"><b>REVIEWER CHECKS: December 2018</b></p>
<p><b>MSWLF</b></p> <p><b>SO.70 Groundwater Monitoring Criteria</b></p> <p><b>SO.70.1.US.</b> MSWLFs are required to comply with groundwater monitoring schedules (40 CFR 258.50(c) and 258.50(e)) <b>[Revised October 1996; Reviewed March 2000]</b>.</p> <p><b>SO.70.2.US.</b> Groundwater monitoring systems at MSWLFs are subject to requirements (40 CFR</p>	<p>Verify that groundwater monitoring complies with the following schedule:</p> <ul style="list-style-type: none"> <li>– existing MSWLFs and lateral expansions less than 1 mi from a drinking water intake (surface or subsurface) were in compliance with these requirements by 9 October 1994</li> <li>– existing MSWLFs and lateral expansions greater than 1 mi but less than 2 mi from a drinking water intake (surface or subsurface) were in compliance with these groundwater monitoring requirements by 9 October 1995</li> <li>– existing MSWLFs and lateral expansions greater than 2 mi from a drinking water intake (surface or subsurface) were in compliance with these groundwater monitoring requirements by 9 October 1996</li> <li>– new MSWLFs are in compliance with the groundwater monitoring requirements before waste can be place in the unit.</li> </ul> <p>(NOTE: The Director of an approved state may approve of alternate schedules.)</p> <p>(NOTE: Owners or operators of new MSWLF units, existing MSWLF units, and lateral expansions that dispose of less than 20 tons of municipal solid waste daily, based on an annual average, are exempt from the requirements for 40 CFR 258.50 through 258.59 as long as there is not groundwater contamination and the unit serves one of the following:</p> <ul style="list-style-type: none"> <li>– a community that experiences an annual interruption of at least 3 consecutive months of surface transportation that prevents access to a regional waste management facility</li> <li>– a community that has no practicable waste management alternative and the landfill unit is located in an area that annually receives less than or equal to 25 in. of precipitation.)</li> </ul> <p>Verify that MSWLFs that are otherwise exempted but which have evidence of groundwater contamination comply with groundwater monitoring requirements by 9 October 1997.</p> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p> <p>Verify that the groundwater monitoring system complies with the following requirements:</p>

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<p>258.51(a), 258.51(c), and 258.51(d)(2)) [Revised May 1997; Reviewed March 2000].</p>	<ul style="list-style-type: none"> <li>– it consists of a sufficient number of wells, installed at appropriate locations and depths, to yield groundwater samples from the uppermost aquifer</li> <li>– it represents the quality of background groundwater that has not been affected by leakage from a MSWLF</li> <li>– it represents the quality of groundwater passing the relevant point of compliance specified by the State Director or at the waste management unit boundary</li> <li>– monitoring wells are cased in a manner that maintains the integrity of the monitoring well bore hole</li> <li>– it is certified by a qualified groundwater scientist or approved by the State Director (within 14 days of this certification, the owner or operator has notified the State Director that certification has been placed in the operating record).</li> </ul> <p>(NOTE: When physical obstacles preclude installation of groundwater monitoring wells at the relevant point of compliance at existing units, the downgradient monitoring system may be installed at the closest practicable distance hydraulically down gradient from the relevant point of compliance specified by the State Director.)</p> <p>Verify that the state has been notified that the design, installation, development, and decommission of any monitoring wells, piezometers and other measurement, sampling, and analytical devices documentation has been placed in the operating record.</p> <p>Verify that the monitoring wells and measurement, sampling, and analytical devices are operated and maintained so that they perform to design specifications throughout the life of the monitoring program.</p> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p>
<p><b>SO.70.3.US.</b> Groundwater sampling and analysis at MSWLFs is subject to requirements (40 CFR 258.53(a) and 258.53(c) through 258.53(g)) [Reviewed March 2000].</p>	<p>Verify that groundwater monitoring sampling and analysis procedures are designed to ensure monitoring results provide an accurate representation of groundwater quality at the background and downgradient well.</p> <p>Verify that the sampling procedures and frequency are protective of human health and the environment.</p> <p>Verify that groundwater elevations are measured in each well immediately prior to purging, and that it has been determined the rate and direction of groundwater flow each time groundwater is sampled.</p> <p>Verify that groundwater elevations in wells that monitor the same waste management area are measured within a period of time short enough to avoid</p>

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<p><b>SO.70.4.US.</b> Detection monitoring at MSWLFs is subject to specific requirements (40 CFR 258.54(a) and 258.54(b)) [Reviewed March 2000].</p>	<p>temporal variation in groundwater flow that could preclude accurate determination of groundwater flow rate and direction.</p> <p>Verify that a background groundwater quality has been established in a hydraulically upgradient or background well for each of the monitoring parameters or constituents required by its monitoring program.</p> <p>Verify that the number of samples collected to establish groundwater quality data is consistent with the approved statistical procedures.</p> <p>Verify that the operating plan specifies one of the following statistical methods to be used in evaluating groundwater monitoring data for each hazardous constituent:</p> <ul style="list-style-type: none"> <li>– an analysis of variance</li> <li>– a tolerance or prediction interval procedure</li> <li>– a control chart approach</li> <li>– an equivalent statistical test method.</li> </ul> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p> <p>Verify that, at a minimum, a detection monitoring program includes the constituents listed in Appendix 9-4.</p> <p>Verify that monitoring occurs at least semiannually during the active life of the MSWLF (including closure) and during the postclosure period.</p> <p>Verify that a minimum of four independent samples from each well (background and downgradient) are collected and analyzed for the constituents listed in Appendix 9-4 during the first semiannual sampling event.</p> <p>Verify that at least one sample from each well (background and downgradient) is collected and analyzed during subsequent semiannual sampling events.</p> <p>(NOTE: The Director of an approved state may delete some constituents and establish an alternate test.)</p> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p>
<p><b>SO.70.5.US.</b> MSWLFs are subject to requirements pertaining to the detection of groundwater contamination</p>	<p>Verify that in the event that there is a statistically significant increase over background for one or more of the constituents listed in Appendix 9-4, the following steps are taken:</p>

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<p>(40 CFR 258.54(c)) [Reviewed March 2000].</p> <p><b>SO.70.6.US.</b> MSWLFs are subject to requirements pertaining to assessment monitoring programs (40 CFR 258.55(a) through 258.55(c)) [Reviewed March 2000].</p> <p><b>SO.70.7.US.</b> MSWLFs are subject to notification requirements pertaining to assessment monitoring (40</p>	<ul style="list-style-type: none"> <li>– within 14 days of the finding, a notice is placed in the operating record indicating which constituents have shown statistically significant changes from background levels</li> <li>– the State Director is notified that the finding has been placed in the operating record</li> <li>– within 90 days an assessment monitoring program is established.</li> </ul> <p>(NOTE: The facility may demonstrate that a source other than the MSWLF caused the contamination or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. This demonstration report must be certified by a qualified groundwater scientist or approved by the State Director and be placed in the operating record.)</p> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p> <p>Verify that an assessment monitoring program is established whenever a statistically significant increase over background has been detected for one or more of the constituents listed in Appendix 9-4.</p> <p>Verify that within 90 days of establishing an assessment monitoring program, and annually thereafter, the groundwater is sampled and analyzed for all constituents identified in Appendix 9-5.</p> <p>Verify that a minimum of one sample from each downgradient well is collected and analyzed during each sampling event.</p> <p>Verify that, for any constituent detected in the downgradient wells as a result of the complete Appendix 9-5 analysis, a minimum of four independent samples from each well (background and downgradient) is collected and analyzed to establish background for the constituents.</p> <p>(NOTE: The Director of an approved state may specify an appropriate alternate frequency for repeated sampling and analysis for the full set of constituents during the active life (including closure) and post closure care of the unit.)</p> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p> <p>Verify that after obtaining the results from the initial or subsequent sampling events required, the following steps are taken:</p> <ul style="list-style-type: none"> <li>– within 14 days a notice is place in the operating record identifying the Appendix 9-5 constituents that have been detected</li> </ul>

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<p>CFR 258.55(d) and 258.55(e)) [Reviewed March 2000].</p>	<ul style="list-style-type: none"> <li>– the State Director is notified that the notice has been placed in the record</li> <li>– within 90 days, and on at least a semiannual basis thereafter, the background and downgradient monitoring wells are resampled and analyses conducted for all constituents in Appendix 9-4 and for those constituents in Appendix 9-5 that are detected in the assessment monitoring program</li> <li>– the results of these analyses are placed in the operating record.</li> <li>– at least one sample from each well (background and downgradient) is collected and analyzed during these sampling events.</li> </ul> <p>(NOTE: The Director of an approved state may specify an alternate monitoring frequency.)</p> <p>Verify that if the concentrations of all Appendix 9-5 constituents are shown to be at or below background values, using an approved statistical procedure, for two consecutive sampling events, the State Director is notified of the finding and detection monitoring is reinstituted.</p> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p>
<p><b>SO.70.8.US.</b> MSWLFs are subject to notification requirements pertaining to noncompliance with the groundwater protection standard (40 CFR 258.55(g)) [Reviewed March 2000].</p>	<p>Verify that if during detection monitoring one or more Appendix 9-5 constituents are detected at statistically significant levels above the groundwater protection standards specified according to the following, the State Director and all appropriate local government officials are notified and a notice is placed in the operating record:</p> <ul style="list-style-type: none"> <li>– for constituents that have a maximum contamination level (MCL) listed in the <i>Safe Drinking Water Act</i> (SDWA), use the MCL for that constituent</li> <li>– for constituents that are not included in the SDWA, use the background level established for that constituent in the detection monitoring program</li> <li>– for constituents for which the background level is higher than the MCL identified in the SDWA, use the background concentration.</li> </ul> <p>Verify that the following steps are also taken:</p> <ul style="list-style-type: none"> <li>– the nature and extent of the release is investigated by the installation of additional monitoring wells</li> <li>– at least one additional monitoring well is installed at the MSWLF boundary in the direction of contamination migration</li> <li>– notification of all persons who own land or reside on land that directly overlies any part of the plume of contamination that has migrated offsite</li> <li>– initiation of an assessment of corrective measures within 90 days.</li> </ul> <p>(NOTE: The facility may demonstrate that a source other than the MSWLF caused the contamination or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater</p>

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<p><b>SO.70.9.US.</b> MSWLFs are subject to criteria for assessing potential groundwater remediation actions (40 CFR 258.56) [Reviewed March 2000].</p>	<p>quality. This demonstration report must be certified by a qualified groundwater scientist or approved by the State Director and be placed in the operating record.)</p> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p> <p>Verify that within 90 days of finding Appendix 9-5 constituents at significant levels exceeding the groundwater protection standards, an assessment of potential remedial actions is made and includes the following:</p> <ul style="list-style-type: none"> <li>– analysis of effectiveness of potential corrective measures in meeting all the requirements and objectives of the remedy, such as: <ul style="list-style-type: none"> <li>– the performance, reliability, ease of implementation, and potential impacts of potential remedies</li> <li>– the time required to begin and complete the remedy</li> <li>– the cost of the remedy implementation</li> <li>– state and local requirements affecting remediation</li> </ul> </li> <li>– discussion of corrective measures with the public or interested parties.</li> </ul> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p>
<p><b>SO.70.10.US.</b> The selection of remedial measures for groundwater contamination is subject to specific criteria (40 CFR 258.57(a) through 258.57(c)) [Revised March 2000].</p>	<p>Verify that corrective measures are selected according to the following criteria:</p> <ul style="list-style-type: none"> <li>– they are protective of human health and the environment</li> <li>– they attain the groundwater protection standard as specified under 40 CFR 258.55(h) or (i)</li> <li>– they control the source(s) of releases so as to reduce or eliminate further releases of constituents (see Appendix 9-5) into the environment</li> <li>– they comply with the standards for management of wastes as specified in 40 CFR 258.58(d)</li> </ul> <p>Verify that the following evaluation factors are considered when selecting a remedy to meet the standards of 40 CFR 258.57(b):</p> <ul style="list-style-type: none"> <li>– long and short-term effectiveness and protectiveness of the potential remedy along with the degree of certainty that the remedy will prove successful based on the following: <ul style="list-style-type: none"> <li>– magnitude of reduction of existing risks</li> <li>– magnitude of residual risks in terms of further releases of wastes following remediation</li> </ul> </li> <li>– type and degree of long-term management (including monitoring operation and maintenance)</li> </ul>

<p align="center"><b>COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT U.S. TEAM GUIDE</b></p>	
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<p><b>SO.70.11.US.</b> Groundwater activities are required to meet specific scheduling requirements (40 CFR 258.57(d)) [Revised March 2000].</p>	<ul style="list-style-type: none"> <li>– short term risks to community, workers, or the environment during implementation</li> <li>– time period until full protection is achieved</li> <li>– potential for exposure of humans and environmental receptors to remaining wastes</li> <li>– long-term reliability of the engineering and institutional controls, and</li> <li>– potential need for replacement of the remedy</li> <li>– the effectiveness of the remedy in controlling the source to reduce further releases based on consideration of the following factors:               <ul style="list-style-type: none"> <li>– the extent to which the containment practices will reduce further releases</li> <li>– the extent to which treatment technologies may be used</li> <li>– the ease or difficulty of implementing a potential remedy based on the following factors:                   <ul style="list-style-type: none"> <li>– the degree of difficulty associated with constructing the technology</li> <li>– the expected operational reliability of the technologies</li> <li>– the need to coordinate with and obtain necessary approvals and permits</li> <li>– the availability of necessary equipment and specialists, and</li> <li>– the available capacity of needed treatment, storage and disposal services</li> </ul> </li> </ul> </li> <li>– the practical capability of the owner or operator, including a consideration of technical and economic capability</li> <li>– the degree to which community concerns are addressed by a potential remedy(s).</li> </ul> <p>Verify that the State Director is notified within 14 days of selecting a remedy, and that the selection and the reason for its selection are noted in the operating record.</p> <p>Verify that remedial activities take place within a reasonable time period</p> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p> <p>Verify that the initiation of remedial activities occurs within a reasonable period of time depending on:</p> <ul style="list-style-type: none"> <li>– extent and nature of contamination</li> <li>– practical capabilities of remedial technologies</li> <li>– availability of treatment or disposal capacity for wastes managed during the implementation period</li> <li>– desirability of utilizing technologies not currently available, but that may offer significant advantages over existing methods</li> <li>– potential risks to human health and the environment</li> <li>– resource value of the aquifer involved</li> <li>– practicable capability of the MSWLF</li> <li>– other relevant factors.</li> </ul>

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<p><b>SO.70.12.US.</b> Corrective action programs are required to be implemented according to specific parameters (40 CFR 258.58) [<b>Revised March 2000</b>].</p>	<p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p> <p>Verify that, based on the established schedule for initiation and completion of activities, the facility:</p> <ul style="list-style-type: none"> <li>– establishes and implements a corrective action groundwater monitoring program that: <ul style="list-style-type: none"> <li>– at a minimum meets the assessment monitoring requirements of 40 CFR 258.55 (see checklist items SO.70.7.US. through SO.70.9.US.)</li> <li>– indicates the effectiveness of the selected corrective action remedy</li> <li>– demonstrates compliance with groundwater protection standards</li> </ul> </li> <li>– implements selected corrective action program</li> <li>– takes any interim measure necessary to ensure the protection of human health and the environment.</li> </ul> <p>Verify that the following factors are considered in determining whether interim measures are necessary:</p> <ul style="list-style-type: none"> <li>– time required to develop and implement a final remedy</li> <li>– actual or potential exposure of nearby populations or environmental receptors</li> <li>– actual or potential contamination of drinking water supplies or sensitive ecosystems</li> <li>– further degradation of the ground-water that may occur if the remedial action is not initiated expeditiously</li> <li>– weather conditions</li> <li>– risks of fire or explosions, or potential for exposure to hazardous constituents as a result of an accident or failure of a container or handling system, and</li> <li>– other situations that may pose threats to human health or the environment.</li> </ul> <p>Verify that if it is determined that compliance is not being achieved with the selected remedy, another method or technique is selected that can practicably achieve compliance.</p> <p>Verify that if compliance cannot be practicably achieved with currently available methods, the following occurs:</p> <ul style="list-style-type: none"> <li>– certification of a qualified groundwater scientist or approval of a State Director of an approved state substantiating this claim is obtained</li> <li>– alternate measures are implemented to control exposure of humans or the environment to residual contamination as necessary to protect human health and the environment</li> </ul>

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	<ul style="list-style-type: none"> <li>– measures are implemented for control of the sources of contamination, or for removal of decontamination of equipment, units, devices, or structures that are:               <ul style="list-style-type: none"> <li>– technically practicable</li> <li>– consistent with the overall objective of the remedy</li> </ul> </li> <li>– the State Director is notified within 14 days that a report justifying the alternative measures prior to implementation has been placed in the operating record.</li> </ul> <p>Verify that all solid wastes managed in relation to a remedy or an interim measure are managed as follows:</p> <ul style="list-style-type: none"> <li>– in a manner that is protective of human health and the environment</li> <li>– in a manner that complies with applicable RCRA requirements.</li> </ul> <p>(NOTE: Selected remedies shall be considered complete when:</p> <ul style="list-style-type: none"> <li>– the owner or operator complies with the established ground-water protection standards at all points within the plume of contamination that lie beyond the ground-water monitoring well system</li> <li>– compliance with the ground-water protection standards has been achieved by demonstrating that concentrations of the constituents listed in Appendix F of this document have not exceeded the ground-water protection standards for a period of three consecutive years using the statistical procedures and performance standards in 40 CFR 258.53(g) and 258.53(h)</li> <li>– all actions required to complete the remedy have been satisfied.</li> </ul> <p>(NOTE: The Director of an approved state may specify an alternative length of time during which the owner or operator must demonstrate that concentrations of constituents listed in Appendix 9-5 have not exceeded the groundwater protection standards taking into consideration:</p> <ul style="list-style-type: none"> <li>– extent and concentration of the releases</li> <li>– behavior characteristics of the hazardous constituents in the ground-water</li> <li>– accuracy of monitoring or modeling techniques, including any seasonal, meteorological, or other environmental variabilities that may affect the accuracy</li> <li>– characteristics of the groundwater. )</li> </ul> <p>Verify that, upon completion of the remedy, the owner or operator notifies the State Director within 14 days that a certification that the remedy has been completed in compliance with the requirements of 40 CFR 258.58(e) has been placed in the operating record.</p> <p>Verify that the certification is signed by the owner or operator and by a qualified ground-water scientist or approved by the Director of an approved state.</p> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR</p>

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	258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)

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<p><b>REGULATORY REQUIREMENTS:</b></p>	<p><b>REVIEWER CHECKS: December 2018</b></p>
<p><b>MSWLF</b></p> <p><b>SO.75 Closure Criteria</b></p> <p><b>SO.75.1.US.</b> MSWLFs are subject to specific final cover design requirements (40 CFR 258.60(a) and 258.60(b)) [Reviewed March 2000].</p> <p><b>SO.75.2.US.</b> MSWLFs are subject to specific closure plan requirements (40 CFR 258.60(c)) [Reviewed March 2000].</p> <p><b>SO.75.3.US.</b> MSWLFs are subject to specific closure notification requirements (40</p>	<p>Determine if there are plans to close a MSWLF.</p> <p>Verify that the final cover is designed to minimize infiltration and erosion according to the following criteria:</p> <ul style="list-style-type: none"> <li>– it has a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present, or a permeability no greater than <math>1 \times 10^{-4}</math> cm/s, whichever is less</li> <li>– it minimizes infiltrations through the closed MSWLF by use of an infiltration layer that contains a minimum 18 in. of earthen material</li> <li>– it minimizes erosion of the final cover by the use of an erosion layer that contains a minimum 6 in. of earthen material that is capable of sustaining native plant growth.</li> </ul> <p>(NOTE: The Director of an approved state may approve alternate final cover design.)</p> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p> <p>Verify that a written closure plan has been prepared that includes the following information:</p> <ul style="list-style-type: none"> <li>– a description of the final cover, and methods and procedures to be used to install the cover</li> <li>– an estimate of the largest area of the MSWLF unit ever requiring a final cover any time during its active life</li> <li>– an estimate of the maximum inventory of wastes ever onsite over its active life</li> <li>– a schedule for completing all activities necessary to satisfy closure requirements.</li> </ul> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p> <p>Verify that the State Director has been notified of the intent to close the MSWLF.</p>

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<p>CFR 258.60(d)) <b>[Reviewed March 2000]</b>.</p> <p><b>SO.75.4.US.</b> MSWLFs are subject to specific closure criteria (40 CFR 258.60(f) and 258.60(g)) <b>[Reviewed March 2000]</b>.</p> <p><b>SO.75.5.US.</b> MSWLFs are subject to specific post-closure notification requirements (40 CFR 258.60(h)) <b>[Reviewed March 2000]</b>.</p>	<p>Verify that the notice of intent to close has been placed in the operating record.</p> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p> <p>Verify that closure activities begin no later than 30 days after the date the MSWLF receives the final receipt of waste, or no later than 1 yr after the most recent receipt of waste if the unit has remaining capacity.</p> <p>Verify that closure activities of each MSWLF unit are completed within 180 days following the beginning of closure.</p> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p> <p>Verify that the State Director is notified that a certification signed by an independent registered professional engineer has been completed and placed in the operating record.</p> <p>Verify that a notation is recorded on the deed to the landfill facility property, (or equivalent instrument examined in a title search), that the property has been used as a landfill, and its use is restricted.</p> <p>Verify that the notation is placed in the operating record, and the State Director is notified of its placement.</p> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p>

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<p align="center"><b>REGULATORY REQUIREMENTS:</b></p>	<p align="center"><b>REVIEWER CHECKS: December 2018</b></p>
<p><b>MSWLF</b></p> <p><b>SO.80. Postclosure Care Requirements</b></p> <p><b>SO.80.1.US.</b> MSWLFs are subject to specific post closure care requirements (40 CFR 258.61(a)) <b>[Reviewed March 2000]</b>.</p> <p><b>SO.80.2.US.</b> MSWLFs are subject to specific post-closure plan criteria (40 CFR 258.61(c) and 258.61(d)) <b>[Reviewed March 2000]</b>.</p> <p><b>SO.80.3.US.</b> MSWLFs are subject to specific post-closure certification requirements (40 CFR 258.61(e)) <b>[Reviewed March 2000]</b>.</p>	<p>Verify that postclosure care of a MSWLF is conducted in the following manner for 30 yr:</p> <ul style="list-style-type: none"> <li>– maintains the integrity and effectiveness of any final cover, including making repairs to the cover as necessary to correct the effects of settlement, subsidence, erosion, or other events, and to prevent run-on and runoff from eroding or otherwise damaging the final cover</li> <li>– maintains and operates the leachate collection system</li> <li>– monitors the groundwater and maintains the groundwater monitoring system</li> <li>– maintains and operates the gas monitoring system.</li> </ul> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p> <p>Verify that a postclosure plan has been prepared that includes the following information:</p> <ul style="list-style-type: none"> <li>– a description of the monitoring and maintenance activities</li> <li>– the name, address, and telephone number of the person or office to contact about the facility during the postclosure period</li> <li>– a description of the planned uses of the property during the postclosure period.</li> </ul> <p>Verify that the postclosure plan has been placed in the operating record and the State Director has been notified of its placement.</p> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p> <p>Verify that following completion of the postclosure care period, a certification signed by an independent registered professional engineer is completed, placed in the operating record, and the State Director is notified of its placement.</p> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p>

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<p align="center"><b>REGULATORY REQUIREMENTS:</b></p>	<p align="center"><b>REVIEWER CHECKS: December 2018</b></p>
<p><b>MSWLF</b></p> <p><b>SO.85 Documentation</b></p> <p><b>SO.85.1.US.</b> MSWLFs are required to maintain records (40 CFR 258.29(a) and 258.29(c)) <b>[Reviewed March 2000; Moved April 2003].</b></p> <p><b>SO.85.2.US.</b> MSWLF records are subject to inspection by certain authorities (40 CFR 258.29(b)) <b>[Reviewed March 2000; Moved April 2003].</b></p> <p><b>SO.85.3.US.</b> MSWLFs with a design capacity of less than 2.5 million Mg by mass or 2.5 million m<sup>3</sup> by volume are required to submit an initial design capacity report (40 CFR 60.750, 60.752(a) and 60.757(a)) <b>[Revised June</b></p>	<p>Verify that the following records are retained in an operating record near the MSWLF or at an approved alternate location:</p> <ul style="list-style-type: none"> <li>– any location restriction demonstration</li> <li>– inspection records, training procedures, and notification procedures</li> <li>– gas monitoring results from monitoring and any remediation plans</li> <li>– any MSWLF unit design documentation for placement of leachate or gas condensate in MSWLF</li> <li>– any demonstration, certification, finding, monitoring, testing, or related analytical data</li> <li>– closure and postclosure care plans and any monitoring, testing, or related analytical data</li> <li>– any information demonstrating compliance with small community exemption.</li> </ul> <p>Verify that the State Director is notified when the above listed documents have been placed in or added to the operating record.</p> <p>(NOTE: The State Director of an approved state can set alternative schedules for recordkeeping and notification requirements.)</p> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p> <p>Verify that all information in the operating record is furnished upon request from the State Director and is available at all times for inspection by the State Director.</p> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p> <p>Verify that an initial design capacity report has been submitted:</p> <ul style="list-style-type: none"> <li>– no later than 10 June 1996 for landfills that commenced construction, modification, or reconstruction on or after 30 May 1991 but before 12 March 1996</li> <li>– 90 days after the date of commenced construction, modification, or reconstruction for landfills that commences construction, modification, or reconstruction on or after 12 March 1996.</li> </ul>

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<p><b>1998; Reviewed March 2000; Moved April 2003].</b></p>	<p>Verify that the report contains the following information:</p> <ul style="list-style-type: none"> <li>– a map or plot of the landfill providing the size and location of the landfill, and identifying all areas where solid waste may be landfilled according to the permit</li> <li>– the maximum design capacity of the landfill (if specified in the permit, a copy of the permit may be submitted)</li> <li>– if done, the calculation and relevant parameters used to determine maximum design capacity.</li> </ul> <p>Verify that an amended design capacity report is submitted within 90 days of an increase in the maximum design capacity to or above 2.5 million Mg or 2.5 million m<sup>3</sup>.</p> <p>(NOTE: These requirements apply to MSWLFs that started construction, reconstruction, or modification on or after 30 May 1991. For the purpose of these requirements, physical or operational changes made to an existing MSWLF in order to comply with the State Plan are not considered construction, reconstruction, or modification. Activities required by or conducted pursuant to a CERCLA, RCRA, or State remedial action are not considered construction, reconstruction, or modification.)</p> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p>
<p><b>SO.85.4.US.</b> If the NMOC emissions rate is equal to or greater than 50 Mg/yr, a collection and control system design plan must be submitted which meets specific parameters (40 CFR 60.750, 60.752(b)(2)(i) and 60.757(c)) [Added March 1996; Reviewed March 2000; Moved April 2003].</p>	<p>Verify that the collection and control system design plan is submitted to the Administrator within 1 yr of the first NMOC emissions rate report documenting an emission rate equal to or greater than 50 Mg/yr.</p> <p>Verify that the plan includes any alternatives to the operational standards, test methods, procedures, compliance measures, monitoring, recordkeeping, or reporting provisions of these regulations.</p> <p>(NOTE: This is not required if the NMOC emission rate is recalculated after Tier 2 or Tier 3 NMOC sampling and analysis results in a rate less than 50 Mg/yr. In that case, annual NMOC reporting resumes.)</p> <p>Verify that the revised NMOC emission rate report with the Tier 2 recalculated emission rate based on NMOC sampling and analysis is submitted within 180 days of the first calculated exceedance of 50 Mg/yr.</p> <p>Verify that the revised NMOC emission rate report with the Tier 3 recalculated emission rate based on NMOC sampling and analysis is submitted within 1 yr of the first calculated exceedance of 50 Mg/yr.</p>

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<p><b>SO.85.5.US.</b> Several reports are required to be submitted pertaining to the operation and/or closure of the MSWLF (40 CFR 60.750, 60.757(d) through 60.757(g)) [Citation Revised June 1998; Reviewed March 2000; Moved April 2003].</p>	<p>(NOTE: These requirements apply to MSWLFs that started construction, reconstruction, or modification on or after 30 May 1991. For the purpose of these requirements, physical or operational changes made to an existing MSWLF in order to comply with the State Plan are not considered construction, reconstruction, or modification. Activities require by or conducted pursuant to a CERCLA, RCRA, or State remedial action are not considered construction, reconstruction, or modification.)</p> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p> <p>Determine if the MSWLF has stopped accepting waste.</p> <p>Verify that a closure report was submitted to the Administrator within 30 days of the last waste being accepted.</p> <p>(NOTE: If a closure report has been submitted, no additional wastes may be placed into the landfill without filing a notification or modification.)</p> <p>Verify that an equipment removal report is submitted to the Administrator 30 days prior to removal or cessation of operation of the control equipment and the reports contains the following:</p> <ul style="list-style-type: none"> <li>– a copy of the closure report</li> <li>– a copy of the initial performance test report demonstrating that the 15 yr minimum control period has expired</li> <li>– dated copies of three successive NMOC emission rate reports demonstrating that the landfill is no longer producing 50 Mg/yr or greater of NMOC.</li> </ul> <p>Verify that, when an active collection system is used, annuals reports of the following recorded information are submitted to the Administrator:</p> <ul style="list-style-type: none"> <li>– value and length of time for exceedance of applicable monitored parameters</li> <li>– description and duration of all periods when the gas stream is diverted from the control device through a bypass line or the indication of bypass flow</li> <li>– description and duration of all periods when the control device was not operating for a period exceeding 1 h and length of time the control devices was not operating</li> <li>– all periods when the collection system was not operating in excess of 5 days</li> <li>– the location of each exceedance of the 500 ppm methane concentration and the concentration recorded at each location for which an exceedance was noted in the previous month</li> <li>– the date of installation and the location of each well or collection system expansion.</li> </ul>

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<b>SO.85.6.US.</b> Certain records pertaining to emissions must be kept at MSWLFs with a design capacity of less than 2.5 million Mg by mass or 2.5 million m <sup>3</sup> by volume (40 CFR 60.750 and 60.758) [Revised June 1998; Reviewed March 2000; Revised July 2000; Moved April 2003].	<p>Verify that the following information is included in initial performance test reports:</p> <ul style="list-style-type: none"> <li>– a diagram of the collection system showing collection system positioning, including all wells, horizontal collectors, surface collectors, or other gas extraction devices, the locations of any areas excluded from collection and the proposed sites for the future collection system expansion</li> <li>– the data upon which the sufficient density of wells, horizontal collectors, surface collectors, or other gas extraction devices and the gas mover equipment sizing are based</li> <li>– the documentation of the presence of asbestos or nondegradable material for each area from which collection wells have been excluded based on the presence of asbestos or nondegradable materials</li> <li>– the sum of the gas generation flow rates for all areas from which collection wells have been excluded based on nonproductivity and the calculations of gas generation flow rate for each excluded area</li> <li>– the provisions for increasing gas mover equipped capacity with increased gas generation flow rate, if the present gas mover equipment is inadequate to move the maximum flow rate expected over the life of the landfill</li> <li>– the provisions for the control of offsite migration.</li> </ul> <p>(NOTE: These requirements apply to MSWLFs that started construction, reconstruction, or modification on or after 30 May 1991. For the purpose of these requirements, physical or operational changes made to an existing MSWLF in order to comply with the State Plan are not considered construction, reconstruction, or modification. Activities require by or conducted pursuant to a CERCLA, RCRA, or State remedial action are not considered construction, reconstruction, or modification.)</p> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p>
	<p>Verify that the following records are kept onsite for at least 5 yr and are up to date and readily accessible:</p> <ul style="list-style-type: none"> <li>– maximum design capacity</li> <li>– current amount of solid waste in place</li> <li>– year by year waste acceptance rate.</li> </ul> <p>(NOTE: The above records may be kept offsite if they are retrievable within 4 h. Either paper or electronic formats are acceptable.)</p> <p>Verify that up-to-date and readily accessible records of the following information are kept for the life of the control equipment as measured during the initial performance test or compliance determination:</p>

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	<ul style="list-style-type: none"> <li>– demonstration of compliance by the collection system for:               <ul style="list-style-type: none"> <li>– the maximum expected gas generation flow rate</li> <li>– the density of wells, horizontal collectors, surface collectors, or other gas extraction devices</li> </ul> </li> <li>– demonstration of compliance with control system requirements through use of an enclosed combustion device other than a boiler or process heater with a design heat input capacity equal to or greater than 44 megawatts:               <ul style="list-style-type: none"> <li>– the average combustion temperature measured every 15 min and averaged over the same time period of the performance test</li> <li>– the percent reduction of NMOC achieved by the control device</li> </ul> </li> <li>– demonstration of compliance by the use of a boiler or process heater of any size including a description of the location at which the collected gas vent stream is introduced into the boiler or process heater over the same time period of the performance testing</li> <li>– demonstration of compliance by the use of an open flame including:               <ul style="list-style-type: none"> <li>– all visible emission readings, best content determination, flow rate or bypass flow rate measurements, and exit velocity determinations made during the performance test</li> <li>– continuous records of the flare pilot flame or flare flame monitoring and record of all periods of operations during which the pilot flame on the flare fame is absent.</li> </ul> </li> </ul> <p>Verify that, for controlled landfills, the following records are kept for 5 yr:</p> <ul style="list-style-type: none"> <li>– continuous records of the equipment operating parameters</li> <li>– periods of operation during which the parameter boundaries established during the most recent performance test are exceeded.</li> </ul> <p>(NOTE: The following are exceedances which are to be recorded:</p> <ul style="list-style-type: none"> <li>– for enclosed combustors, except for boilers and process heaters with design heat input capacity of 44 MW (150 MBtu/h) or greater, all 3-h periods of operation during which the average combustion temperature was more than 28 degrees C below the average combustion temperature during the most recent performance test at which compliance was determined</li> <li>– for boilers or process heaters, whenever there is a change in the location at which the vent stream is introduced into the flame zone.)</li> </ul> <p>Verify that the following are kept for 5 yr:</p> <ul style="list-style-type: none"> <li>– continuous records of the indication of flow to the control device of the indication of bypass flow</li> <li>– records of monthly inspections of car seals or lock and key configurations used to seal bypass lines.</li> </ul> <p>Verify that, if a boiler or process heater with a design heat input capacity of 44 MW or greater is used, up-to-date, readily accessible records of all periods of operation are maintained.</p>

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<p><b>SO.85.7.US.</b> Owners or operators of a MSW landfill that has accepted waste since 8</p>	<p>Verify that, if an open flame or flare pilot flame is used, up to date, readily accessible continuous records of the flame or flare pilot flame monitoring and records of all periods of operation in which the flame or flare pilot flame is absent are maintained.</p> <p>Verify that, for the life of the collection system, a plot map showing each existing and planned collector in the system and providing a unique identification location label for each collector is maintained.</p> <p>Verify that up-to-date, readily accessible records of the installation date and location of all newly installed collectors is maintained.</p> <p>Verify that readily accessible documentation is available of the nature, date of deposition, amount, and location of asbestos containing or nondegradable waste excluded from collection as well as any unproductive areas excluded from collection.</p> <p>Verify that, for at least 5 yr, up-to-date, readily accessible records are kept of all collection and control system exceedances of the operational standards, the reading the subsequent month, whether or not the second reading is an exceedance, and the location of each exceedance.</p> <p>Verify that landfill owners or operators who convert design capacity from volume to mass or mass to volume to demonstrate that landfill design capacity is less than 2.5 million Mg or 2.5 million ft<sup>3</sup>, keep readily accessible, onsite records of the annual recalculation of site-specific density, design capacity, and the supporting documentation.</p> <p>(NOTE: Offsite records may be maintained if they are retrievable within 4 h. Either paper copy or electronic formats are acceptable.)</p> <p>(NOTE: These requirements apply to MSWLFs that started construction, reconstruction, or modification on or after 30 May 1991. For the purpose of these requirements, physical or operational changes made to an existing MSWLF in order to comply with the State Plan are not considered construction, reconstruction, or modification. Activities require by or conducted pursuant to a CERCLA, RCRA, or State remedial action are not considered construction, reconstruction, or modification.)</p> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p> <p>Verify that the owner or operator of a MSW landfill that has accepted waste since 8 November 1987 which is not in compliance with operating conditions for control systems develops and implements a written SSM plan that describes in detail:</p>

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<p>November 1987 which is not in compliance with operating conditions for control systems is required to develop and implement a startup, shutdown, and malfunction (SSM) plan (40 CFR 63.1935, 63.1940, and 63.1960) [Added April 2003].</p>	<ul style="list-style-type: none"> <li>– procedures for operating and maintaining the source during periods of startup, shutdown, and malfunction</li> <li>– a program of corrective action for malfunctioning process</li> <li>– air pollution control and monitoring equipment used to comply with the relevant standard.</li> </ul> <p>(NOTE: The purpose of the SSM plan is to:</p> <ul style="list-style-type: none"> <li>– ensure that, at all times, the owner or operator operates and maintains affected sources, including associated air pollution control and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions to the levels required by the relevant standards</li> <li>– ensure that owners or operators are prepared to correct malfunctions as soon as practicable after their occurrence in order to minimize excess emissions of hazardous air pollutants</li> <li>– reduce the reporting burden associated with periods of startup, shutdown, and malfunction (including corrective action taken to restore malfunctioning process and air pollution control equipment to its normal or usual manner of operation).)</li> </ul> <p>Verify that a copy of the SSM plan is maintained onsite.</p> <p>(NOTE: This checklist item applies to owners or operators of a MSW landfill that has accepted waste since 8 November 1987 or has additional capacity for waste deposition and meets any one of the following criteria:</p> <ul style="list-style-type: none"> <li>– the MSW landfill is a major source as defined in 40 CFR 63.2</li> <li>– the MSW landfill is collocated with a major source</li> <li>– the MSW landfill is an area source landfill that has a design capacity equal to or greater than 2.5 million megagrams (Mg) and 2.5 million m<sup>3</sup> and has estimated uncontrolled emissions equal to or greater than 50 megagrams per year (Mg/yr) NMOC as calculated according to 40 CFR 60.754(a) [see text], the Federal plan, or an USEPA approved and effective State or tribal plan that applies to the landfill.)</li> </ul> <p>This checklist item also applies to owner or operators of a MSWLF that has accepted waste since 8 November 1987 or has additional capacity for waste deposition, including a bioreactor, and that meets any one of the following criteria:</p> <ul style="list-style-type: none"> <li>– the MSW landfill is a major source as defined in 40 CFR 63.2</li> <li>– the MSW landfill is collocated with a major source</li> <li>– the MSW landfill is an area source landfill that has a design capacity equal to or greater than 2.5 million Mg and 2.5 million m<sup>3</sup> and that is not permanently closed as of 16 January 2003.)</li> </ul> <p>(NOTE: The affected source includes the entire disposal facility in a contiguous geographic space where household waste is placed in or on land, including any portion of the MSW landfill operated as a bioreactor. A new affected source is an affected source that commenced construction or reconstruction after 7 November</p>

<p style="text-align: center;"><b>COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT U.S. TEAM GUIDE</b></p>	
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<p><b>SO.85.8.US.</b> Owners or operators of a MSW landfill that has accepted waste since 8 November 1987 but are not in compliance with operating conditions for control systems are required to develop and implement a startup, shutdown, and malfunction (SSM) plan (40 CFR 63.1935, 63.1940, and 63.1980) [Added April 2003].</p>	<p>2000. An affected source is reconstructed if it meets the definition of reconstruction. An affected source is existing if it is not new.)</p> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p> <p>Verify that records and reports are kept in one of the following ways:</p> <ul style="list-style-type: none"> <li>– as specified in 40 CFR 60, subpart WWW (see checklist item SO.</li> <li>– in the Federal plan, USEPA approved State plan or tribal plan that implements 40 CFR 60, subpart Cc.</li> </ul> <p>(NOTE: There is one exception, the annual report described in 40 CFR 60.757(f) (see checklist item SO.85.5.US) must be submitted every 6 mo.)</p> <p>Verify that records and reports are kept as specified in the general provisions of 40 CFR 60 and as shown in Table 1 of 40 CFR 63, Subpart AAAA [see text].</p> <p>Verify that, for bioreactors at new affected sources, the initial semiannual compliance report and performance test results are submitted within 180 days after the date the facility is to begin operating the gas collection and control system.</p> <p>Verify that, for bioreactors at existing affected sources, the initial semiannual compliance report and performance test results are submitted within 180 days after the compliance date unless there is a previously submitted a compliance report for the bioreactor required by 40 CFR 60, subpart WWW, the Federal plan, or an USEPA approved and effective State plan or tribal plan.</p> <p>Verify that, for bioreactors that are located at existing affected sources, but do not initiate liquids addition until later than the compliance, the initial semiannual compliance report and performance tests results described in 40 CFR 60.757(f) (see checklist item SO.85.5.US) are submitted within 180 days after the date the facility is required to begin operating the gas collection and control system (see Appendix 9-2a for compliance dates).</p> <p>(NOTE: If a semiannual compliance report is required for a bioreactor as well as a semiannual compliance report for a conventional portion of the same landfill, submittal of a subsequent semiannual compliance report for the bioreactor may be delayed as follows so that the reports may be submitted on the same schedule:</p> <ul style="list-style-type: none"> <li>– after submittal of the initial semiannual compliance report and performance test results for the bioreactor, the submittal of the subsequent semiannual compliance report for the bioreactor may be delayed until the date the initial or subsequent semiannual compliance report is due for the conventional portion of the landfill</li> </ul>

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	<p>– submittal of the subsequent semiannual compliance report may be delayed by no more than 12 mo after the due date for submitting the initial semiannual compliance report and performance test results described in 40 CFR 60.757(f) (see checklist item SO.85.5.US) for the bioreactor (NOTE: The report shall cover the time period since the previous semiannual report for the bioreactor, which would be a period of at least 6 mo and no more than 12 mo.)</p> <p>– after the delayed semiannual report, all subsequent semiannual reports for the bioreactor must be submitted every 6 mo on the same date the semiannual report for the conventional portion of the landfill is due.)</p> <p>Verify that, if any liquids other than leachate are added in a controlled fashion to the waste mass and do not comply with the bioreactor requirements in 40 CFR 63.1947 (see Appendix 9-2a), 63.1955(c) (see checklist item SO.67.11.US) and 63.1980(c) through 63.1980(f) (see checklist item SO.85.8.US), a record is kept of calculations showing that the percent moisture by weight expected in the waste mass to which liquid is added is less than 40 percent.</p> <p>(NOTE: This calculation must consider the waste mass, moisture content of the incoming waste, mass of water added to the waste including leachate recirculation and other liquids addition and precipitation, and the mass of water removed through leachate or other water losses. Moisture level sampling or mass balances calculations can be used. Document the calculations and the basis of any assumptions. Keep the record of the calculations until ceasing liquids addition.)</p> <p>Verify that, if moisture content is calculated to establish the date the bioreactor is required to begin operating the collection and control system, a record is kept of the calculations for 5 yr.</p> <p>Verify that, within 90 days after the bioreactor achieves 40 percent moisture content, the following are reported:</p> <ul style="list-style-type: none"> <li>– the results of the calculation</li> <li>– the date the bioreactor achieved 40 percent moisture content by weight</li> <li>– the date planned to begin collection and control system operation.</li> </ul> <p>(NOTE: This checklist item applies to owners or operators of a MSW landfill that has accepted waste since 8 November 1987 or has additional capacity for waste deposition and meets any one of the following criteria:</p> <ul style="list-style-type: none"> <li>– the MSW landfill is a major source as defined in 40 CFR 63.2</li> <li>– the MSW landfill is collocated with a major source</li> <li>– the MSW landfill is an area source landfill that has a design capacity equal to or greater than 2.5 million megagrams (Mg) and 2.5 million m<sup>3</sup> and has estimated uncontrolled emissions equal to or greater than 50 megagrams per year (Mg/yr) NMOC as calculated according to 40 CFR 60.754(a) [see text], the Federal plan, or an USEPA approved and effective State or tribal plan that applies to the landfill.)</li> </ul>

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	<p>This checklist item also applies to owner or operators of a MSWLF that has accepted waste since 8 November 1987 or has additional capacity for waste deposition, including a bioreactor, and that meets any one of the following criteria:</p> <ul style="list-style-type: none"> <li>– the MSW landfill is a major source as defined in 40 CFR 63.2</li> <li>– the MSW landfill is collocated with a major source</li> <li>– the MSW landfill is an area source landfill that has a design capacity equal to or greater than 2.5 million Mg and 2.5 million m<sup>3</sup> and that is not permanently closed as of 16 January 2003.)</li> </ul> <p>(NOTE: The affected source includes the entire disposal facility in a contiguous geographic space where household waste is placed in or on land, including any portion of the MSW landfill operated as a bioreactor. A new affected source is an affected source that commenced construction or reconstruction after 7 November 2000. An affected source is reconstructed if it meets the definition of reconstruction. An affected source is existing if it is not new.)</p> <p>(NOTE: See Appendix 9-2 for a list of MSWLFs that are exempt from meeting the standards found in 40 CFR 258, except for the standards for final cover in 40 CFR 258.60(a), see checklist item SO.75.1.US. See Appendix 9-1 for a list of compliance dates for nonexempt MSWLFs.)</p>

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<b>SO.90.</b>  <b>THERMAL PROCESSING FACILITIES</b>  <b>SO.90.1.US.</b> Checklist item deleted [Deleted March 2000].  <b>SO.90.2.US.</b> Checklist item deleted [Deleted March 2000].  <b>SO.90.3.US.</b> Checklist item deleted [Deleted March 2000].  <b>SO.90.4.US.</b> Checklist item deleted [Deleted March 2000].  <b>SO.90.5.US.</b> Owners/ operators of thermal processing facilities are required to consider certain parameters for site selection (40 CFR 240.100(a), 240.202- 1) [Revised March 2000].  <b>SO.90.6.US.</b> Owners/ operators of thermal processing facilities are required to have a plan for the design of new facilities or modifications (40 CFR 240.100(a), 240.203-1) [Revised March 2000].	<p>This checklist item was deleted as a result of USEPA review of this document.</p> <p>This checklist item was deleted as a result of USEPA review of this document.</p> <p>This checklist item was deleted as a result of USEPA review of this document.</p> <p>This checklist item was deleted as a result of USEPA review of this document.</p> <p>Verify that site selection and utilization is consistent with public health and welfare, and air and water quality standards and adaptable to appropriate land-use plans.</p> <p>(NOTE: The prescribed guidelines are applicable to thermal processing facilities designed to process or which are processing 50 tons or more per day of municipal-type solid wastes. The application of this capacity criterion will be interpreted to mean any facility designed to process or actually processing 50/24 tons or more per hour. However, the guidelines do not apply to hazardous, agricultural, and mining wastes because of the lack of sufficient information upon which to base recommended procedures.)</p> <p>Verify that a plan for the design of new facilities or modifications to existing facilities is prepared or approved by a professional engineer.</p> <p>Verify that a list of major considerations and the rationale for the decision on each consideration is approved by the responsible regulatory agency prior to authorization for construction.</p> <p>Verify that the information remains available for review.</p> <p>(NOTE: The prescribed guidelines are applicable to thermal processing facilities designed to process or which are processing 50 tons or more per day of municipal-type solid wastes. The application of this capacity criterion will be interpreted to mean any facility designed to process or actually processing 50/24 tons or more per hour. However, the guidelines do not apply to hazardous, agricultural, and mining</p>

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<p><b>SO.90.7.US.</b> Owners/operators of thermal processing facilities are required to meet certain requirements for air and water quality (40 CFR 240.100(a), 240.204-1, and 240.205-1) <b>[Revised March 2000].</b></p>	<p>wastes because of the lack of sufficient information upon which to base recommended procedures.)</p> <p>Verify that all waters discharged from the facility are sufficiently treated to meet the most stringent of applicable water quality standards, established in accordance with or effective under the provisions of the Federal Water Pollution Control Act, as amended.</p> <p>Verify that emissions do not exceed applicable existing emission standards established by the USEPA (as published in 40 CFR 52, 60, 61 and 76) under the authority of the CAA, as amended, or state or local emission standards effective under that Act, if the latter are more stringent.</p> <p>(NOTE: The prescribed guidelines are applicable to thermal processing facilities designed to process or which are processing 50 tons or more per day of municipal-type solid wastes. The application of this capacity criterion will be interpreted to mean any facility designed to process or actually processing 50/24 tons or more per hour. However, the guidelines do not apply to hazardous, agricultural, and mining wastes because of the lack of sufficient information upon which to base recommended procedures.)</p>
<p><b>SO.90.8.US.</b> Checklist item deleted <b>[Deleted March 2000].</b></p>	<p>This checklist item was deleted as a result of USEPA review of this document.</p>
<p><b>SO.90.9.US.</b> Owners/operators of thermal processing facilities are required to meet certain operational requirements (40 CFR 240.100(a), 240.206-1, 240.207-1, 240.209-1, 240.210-1, and 240.211-1).</p>	<p>Verify that conditions are maintained that are unfavorable for the harboring, feeding, and breeding of vectors.</p> <p>Verify that the incinerator facility is designed and operated at all times in an aesthetically acceptable manner.</p> <p>Verify that incinerators are designed, operated, and maintained in a manner to protect the health and safety of personnel associated with the operation of the facility.</p> <p>(NOTE: Pertinent provisions of the Occupational Safety and Health Act of 1970 (Pub. L. 91-596) and regulations promulgated thereunder shall apply.)</p> <p>Verify that the thermal processing facility is operated and maintained in a manner that assures it will meet the design requirements.</p> <p>Verify that an operations manual describing the various tasks to be performed, operating procedures, and safety precautions for various areas of the facility is developed and is readily available for reference by plant personnel.</p> <p>Verify that the owner/operator of the thermal processing facility provides records and monitoring data as required by the responsible agency.</p>

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<p><b>SO.90.10.US.</b> Checklist item deleted [Deleted March 2000].</p> <p><b>SO.90.11.US.</b> Owners/operators of thermal processing facilities are required to meet certain requirements for the disposal of residue and other solid waste products (40 CFR 240.100(a), 240.100(c), and 240.208-1) [Revised March 2000].</p> <p><b>SO.90.12.US.</b> Checklist item deleted [Deleted March 2000].</p> <p><b>SO.90.13.US.</b> Checklist item deleted [Deleted March 2000].</p> <p><b>SO.90.14.US.</b> Checklist item deleted [Deleted March 2000].</p> <p><b>SO.90.15.US.</b> Owners and operators of thermal processing facilities should follow recommended design procedures (MP) [Added March 2000].</p>	<p>(NOTE: The prescribed guidelines are applicable to thermal processing facilities designed to process or which are processing 50 tons or more per day of municipal-type solid wastes. The application of this capacity criterion will be interpreted to mean any facility designed to process or actually processing 50/24 tons or more per hour. However, the guidelines do not apply to hazardous, agricultural, and mining wastes because of the lack of sufficient information upon which to base recommended procedures [Added March 2000].)</p> <p>This checklist item was deleted as a result of USEPA review of this document.</p> <p>Verify that residue and other solid waste products resulting from a thermal process are disposed of in an environmentally acceptable manner.</p> <p>(NOTE: Where land disposal is employed, practices must be in conformance with the USEPA's Guidelines for the Land Disposal of Solid Wastes.)</p> <p>(NOTE: The prescribed guidelines are applicable to thermal processing facilities designed to process or which are processing 50 tons or more per day of municipal-type solid wastes. The application of this capacity criterion will be interpreted to mean any facility designed to process or actually processing 50/24 tons or more per hour. However, the guidelines do not apply to hazardous, agricultural, and mining wastes because of the lack of sufficient information upon which to base recommended procedures.)</p> <p>This checklist item was deleted as a result of USEPA review of this document.</p> <p>This checklist item was deleted as a result of USEPA review of this document.</p> <p>This checklist item was deleted as a result of USEPA review of this document.</p> <p>(NOTE: The prescribed guidelines are applicable to thermal processing facilities designed to process or which are processing 50 tons or more per day of municipal-type solid wastes. The application of this capacity criterion will be interpreted to mean any facility designed to process or actually processing 50/24 tons or more per hour. However, the guidelines do not apply to hazardous, agricultural, and mining wastes because of the lack of sufficient information upon which to base recommended procedures.)</p>

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	<p>(NOTE: These recommended procedures are based on the texts of 40 CFR 240.200-2, 240.201-2, 240.202-2, 240.203-2, 240.204-2, 240.205-2, 240.206-2, 240.208-2, 240.209-2, 240.211-2.)</p> <p>Verify that, if the facility is designed to handle special wastes, special areas are provided where appropriate for storage while they await processing.</p> <p>(NOTE: In addition to the residential and commercial wastes normally processed at municipal-scale incinerators, certain special wastes might be considered for processing. These include: Certain bulky wastes (e.g., combustible demolition and construction debris, tree stumps, large timbers, furniture, and major appliances), digested and dewatered sludges from waste water treatment facilities, raw sewage sludges, and septic tank pumpings.)</p> <p>Verify that provisions for storing, handling, and removing hazardous or excluded wastes inadvertently left at the facility are considered in design.</p> <p>(NOTE: Examples of wastes that should be considered for exclusion from the facility include: Hazardous wastes, very large carcasses, automobile bodies, dewatered sludges from water treatment plants, and industrial process wastes.)</p> <p>Verify that, whenever possible, thermal processing facilities are located in areas zoned for industrial use and having adequate utilities to serve the facility.</p> <p>Verify that the site is accessible by permanent roads leading from the public road system.</p> <p>Verify that environmental factors, climatological conditions, and socioeconomic factors should be given full consideration as site selection criteria.</p> <p>Verify that the types, amounts (by weight and volume), and characteristics of all solid wastes expected to be processed are determined by survey and analysis.</p> <p>Verify that the gross calorific value of the solid wastes to be processed is determined to serve as a basis for design.</p> <p>Verify that resource recovery in the form of heat utilization or direct recovery of materials is considered in the design.</p> <p>Verify that the facility is designed to be compatible with the surrounding area, easy to maintain, and consistent with the land use of the area.</p> <p>Verify that employee convenience facilities and plant maintenance facilities are provided and adequate lighting provided throughout the facility.</p> <p>Verify that the corrosive and erosive action of once-through and recirculated process waters is controlled either by treating them or by using materials capable of withstanding the adverse effects of the waters.</p>

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	<p>Verify that facility design capacity considers such items as waste quantity and characteristics, variations in waste generation, equipment downtime, and availability of alternate storage, processing, or disposal capability.</p> <p>Verify that facility systems and subsystems are designed to assure standby capability in the event of breakdown.</p> <p>Verify that provision for standby water and power is also considered.</p> <p>Verify that instrumentation is provided to determine such factors as:</p> <ul style="list-style-type: none"> <li>– the weight of incoming and outgoing materials (the same scale system may be used for both)</li> <li>– total combustion airflow rates</li> <li>– underfire and overfire airflows and the quantitative distribution of each</li> <li>– selected temperatures and pressures in the furnace, along gas passages, in the particulate collection device, and in the stack</li> <li>– electrical power and water consumption of critical units</li> <li>– rate of operation.</li> </ul> <p>Verify that the smoke density, the concentration of carbon monoxide, or the concentration of hydrocarbons in the stack gases is monitored and measurement of the pH is considered for effluent waters.</p> <p>Verify that continuously recording instrumentation is used as much as possible.</p> <p>Verify that audible signals are provided to alert operating personnel of critical operating unit malfunctions.</p> <p>Verify that sampling capability is designed into the facility so that each process stream can be sampled, and the utilities required to do so are close at hand.</p> <p>Verify that the sampling sites are so designed that personnel can sample safely without interfering with normal plant operations.</p> <p>Verify that a laboratory is included in the design, or provision is made for laboratory analyses to be performed by an outside source acceptable to the responsible regulatory agency.</p> <p>Verify that effluent waters are not discharged indiscriminately and consideration is given to onsite treatment of process and wastewaters before discharge.</p> <p>Verify that recirculation of process waters is considered.</p> <p>Verify that air emissions requirements are met by using appropriate air pollution control technology.</p>

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<p><b>SO.90.16.US.</b> Owners and operators of thermal processing facilities should follow recommended operational procedures (MP) [Added March 2000].</p>	<p>Verify that all emissions, including dust from vents, are controlled.</p> <p>Verify that thermal processing facilities are designed for ease of cleaning and areas favorable for breeding of vectors are avoided.</p> <p>Verify that the facility should be designed so that it is physically attractive and the tipping, residue discharge, and waste salvage areas are screened from public view, and the grounds landscaped.</p> <p>Verify that thermal processing facilities are designed so as to allow for removal from the site of residue or other solids in a manner that protects the environment.</p> <p>Verify that attention is given to the safety of operators and vehicles through the provision of safety devices.</p> <p>Verify that fire control equipment is provided.</p> <p>Verify that methods and/or equipment for removal of an injured person from the storage pit are available.</p> <p>Verify that continuously recording instrumentation is used as much as possible.</p> <p>(NOTE: These recommended procedures are based on the texts of 40 CFR, 240.200-3, 240.201-3, 240.204-3, 240.205-3, 240.206-3, 240.208-3, 240.209-3, 240.210-3, 240.211-3.)</p> <p>Verify that storage areas for special wastes are clearly marked.</p> <p>Verify that facility personnel are thoroughly trained in any unusual handling required by acceptance of special wastes.</p> <p>Verify that regular users of the facility are given a list of excluded materials and the list is also displayed prominently at the facility entrance.</p> <p>Verify that, if a regular user persists in making unacceptable deliveries, he is barred from the installation and reported to the responsible regulatory agency.</p> <p>Verify that the operating plan specifies the procedures and precautions to be taken if unacceptable wastes are delivered to the facility or are improperly left there.</p> <p>(NOTE: Operating personnel should be thoroughly trained in such procedures.)</p> <p>Verify that, when monitoring instrumentation indicates excessive discharge contamination, appropriate adjustments is made to lower the concentrations to acceptable levels.</p>

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	<p>Verify that, in the event of an accidental spill, the local regulatory agency is notified immediately.</p> <p>Verify that, when monitoring instrumentation indicates excessive emissions, appropriate adjustments are made to lower the emission to acceptable levels.</p> <p>Verify that a housekeeping schedule is established and maintained.</p> <p>Verify that, as a minimum, the housekeeping schedule provides for cleaning the tipping and residue areas as spillages occur, emptying the solid waste storage area at least weekly, and routinely cleaning the remainder of the facility.</p> <p>Verify that solid waste and residue are not allowed to accumulate at the facility for more than one week.</p> <p>Verify that a routine housekeeping and litter removal schedule is established and implemented so that the facility regularly presents a neat and clean appearance.</p> <p>Verify that solid wastes that cannot be processed by the facility are removed from the facility at least weekly.</p> <p>(NOTE: Open burning or open dumping of this material should be prohibited.)</p> <p>Verify that the furnace operator visually observes the quality of the bottom ash at least twice per shift and record in the operating log the estimated percentage of unburned combustibles.</p> <p>Verify that, if residue or fly ash is collected in a wet condition, it is drained of free moisture.</p> <p>Verify that transportation of residue and fly ash is by means that prevent the loads from shifting, falling, leaking, or blowing from the container.</p> <p>Verify that detailed procedures are developed for operation during such emergency situations as power failure, air or water supply failure, equipment breakdowns, and fire and that these procedures are posted in prominent locations, implemented by the staff as required, and upgraded and revised periodically.</p> <p>Verify that approved respirators or self-contained breathing apparatus are available at convenient locations and their use is reviewed periodically with facility personnel.</p> <p>(NOTE: Information on respirators or self-contained breathing apparatus can be obtained from the Appalachian Laboratory for Occupational Respiratory Disease, National Institute for Occupational Safety and Health, Morgantown, W. Va.)</p> <p>Verify that training in first aid practices and emergency procedures is given to all personnel.</p>

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	<p>Verify that personal safety devices such as hard hats, gloves, safety glasses, and footwear are provided for facility employees.</p> <p>Verify that, if a regular user or employee persistently poses a safety hazard, he is barred from the facility and reported to the responsible agency.</p> <p>Verify that the facility supervisor is experienced in the operation of the type of facility designed or, in the case of an innovated design; be adequately trained by responsible personnel in the operation of the facility.</p> <p>Verify that alternate and standby disposal and operating procedures are established for implementation during emergencies, air pollution episodes, and shutdown periods.</p> <p>Verify that, upon completion of facility construction, provision is made for instruction of the staff in proper operation and maintenance procedures.</p> <p>Verify that a routine maintenance schedule is established and followed.</p> <p>Verify that as-built engineering drawings of the facility are provided at the conclusion of construction of the facility.</p> <p>(NOTE: As-built engineering drawings should be updated to show modifications by the owner as changes are made. These drawing should be readily available and, a schematic showing the relationships of the various subsystems should also be available.)</p> <p>Verify that key operational procedures are prominently posted.</p> <p>Verify that equipment manuals, catalogs, spare parts lists, and spare parts are readily available at the facility.</p> <p>Verify that training opportunities for facility operating personnel are provided.</p> <p>Verify that extensive monitoring and recordkeeping is practiced during the first 12 to 18 mo of operation of a new or renovated facility, during periods of high air pollution, and during periods of upset conditions at the facility.</p> <p>(NOTE: During other periods of more normal operation of the facility, less extensive monitoring and record keeping may be practiced if approved by the responsible agency.)</p> <p>Verify that operating records are kept in a daily log and include as a minimum:</p> <ul style="list-style-type: none"> <li>– the total weight and volume (truck capacities may be used for volume determination) of solid waste received during each shift, including the number</li> </ul>

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	<p>of loads received, the ownership or specific identity of delivery vehicles, the source and nature of the solid wastes accepted</p> <ul style="list-style-type: none"> <li>– furnace and combustion chamber temperatures recorded at least every 60 min and as changes are made, including explanations for prolonged, abnormally high and low temperatures</li> <li>– rate of operation, such as grate speed</li> <li>– overfire and underfire air volumes and pressure and distribution recorded at least every 60 min and as changes are made</li> <li>– weights of bottom ash, grate siftings, and fly ash, individually or combined, recorded at intervals appropriate to normal facility operation</li> <li>– estimated percentages of unburned material in the bottom ash</li> <li>– water used on each shift for bottom ash quenching and scrubber operation (NOTE: Representative samples of process waters should be collected and analyzed as recommended by the responsible regulatory agency.)</li> <li>– power produced and utilized each shift (NOTE: If steam is produced, quality, production totals and consumption rates should be recorded.)</li> <li>– auxiliary fuel used each shift</li> <li>– gross calorific value of daily representative samples of bottom ash, grate siftings, and fly ash. (Sampling time should be varied so that all shifts are monitored on a weekly basis.)</li> <li>– emission measurements and laboratory analyses required by the responsible regulatory agency</li> <li>– complete records of monitoring instruments</li> <li>– problems encountered and methods of solution.</li> </ul> <p>Verify that an annual report is prepared which includes at least the following information:</p> <ul style="list-style-type: none"> <li>– minimum, average, and maximum daily volume and weight of waste received and processed, summarized on a monthly basis</li> <li>– a summary of the laboratory analyses including at least monthly averages</li> <li>– number and qualifications of personnel in each job category; total man hours per week; number of state certified or licensed personnel; staffing deficiencies; and serious injuries, their cause and preventive measures instituted</li> <li>– an identification and brief discussion of major operational problems and solutions</li> <li>– adequacy of operation and performance with regard to environmental requirements, the general level of housekeeping and maintenance, testing and reporting proficiency, and recommendations for corrective actions</li> <li>– a copy of all significant correspondence, reports, inspection reports, and any other communications from enforcement agencies.</li> </ul> <p>Verify that methodology for evaluating the facility's performance is developed and evaluation procedures recommended by the USEPA are used whenever possible.</p>

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<p><b>SO.95.</b></p> <p><b>RESOURCE RECOVERY FACILITIES</b></p> <p><b>SO.95.1.US.</b> Checklist item deleted [<b>Deleted February 1997</b>].</p> <p><b>SO.95.2.US.</b> Checklist item deleted [<b>Deleted February 1997</b>].</p>	<p>(NOTE: This checklist item has been removed due to the deletion of 40 CFR 245 by the USEPA as published in the 31 December 1996 Federal Register.)</p> <p>(NOTE: This checklist item has been removed due to the deletion of 40 CFR 245 by the USEPA as published in the 31 December 1996 Federal Register.)</p>



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<p><b>SO.100.</b></p> <p><b>DISPOSAL OF REFUSE FROM OUTSIDE THE UNITED STATES</b></p> <p><b>SO.100.1.US.</b> Garbage from outside the United States which is on or unloaded from vessels or aircraft arriving in the United States and certain territories and possessions is subject to inspection and disposal requirements to prevent dissemination of pests and diseases (7 CFR 330.401) <b>[Revised July 2006]</b>.</p>	<p>(NOTE: This checklist item applies to garbage generated onboard any means of conveyance during international or interstate movements as provided in this section and includes food scraps, table refuse, galley refuse, food wrappers or packaging materials, and other waste material from stores, food preparation areas, passengers' or crews' quarters, dining rooms, or any other areas on the means of conveyance. This checklist item also applies to meals and other food that was available for consumption by passengers and crew on an aircraft but was not consumed.)</p> <p>(NOTE: Not all garbage generated onboard a means of conveyance is regulated for the purposes of this checklist item.)</p> <p>Verify that regulated garbage is not disposed of, placed on, or removed from a means of conveyance except in accordance with this checklist item.</p> <p>(NOTE: Regulated garbage is subject to general surveillance for compliance by inspectors and to disposal measures authorized by the Plant Protection Act and the Animal Health Protection Act to prevent the introduction and dissemination of pests and diseases of plants and livestock.)</p> <p>Verify that all regulated garbage is contained in tight, covered, leak-proof receptacles during storage on board a means of conveyance while in the territorial waters, or while otherwise within the territory of the United States.</p> <p>Verify that all such receptacles are contained inside the guard rail if on a watercraft.</p> <p>Verify that regulated garbage is not unloaded from such means of conveyance in the United States unless such regulated garbage is removed in tight, covered, leak-proof receptacles under the direction of an inspector to an approved facility for incineration, sterilization, or grinding into an approved sewage system, under direct supervision by such an inspector, or such regulated garbage is removed for other handling in such manner and under such supervision as may, upon request in specific cases, be approved by the Administrator as adequate to prevent the introduction and dissemination of plant pests and animal diseases and sufficient to ensure compliance with applicable laws for environmental protection.</p> <p>(NOTE: A cruise ship may dispose of regulated garbage in landfills at Alaskan ports only, if and only if the cruise ship does not have prohibited or restricted meat or animal products on board at the time it enters Alaskan waters for the cruise season, and only if the cruise ship, except for incidental travel through international waters necessary to navigate safely between ports, remains in Canadian and U.S. waters off</p>

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	<p>the west coast of North America, and calls only at continental U.S. and Canadian ports during the entire cruise season.)</p> <p>Verify that application for approval of a facility or sewage system is made in writing by the authorized representative of any carrier or by the official having jurisdiction over the port or place of arrival of the means of conveyance to the Administrator, Animal and Plant Health Inspection Service, U.S. Department of Agriculture, Washington, DC 20250.</p> <p>Verify that the application is endorsed by the operator of the facility or sewage system.</p> <p>Verify that garbage that is commingled with regulated garbage is treated as regulated garbage.</p> <p>(NOTE: Garbage on or removed from a means of conveyance is regulated garbage, if, when the garbage is on or removed from the means of conveyance, the means of conveyance has been in any port outside the United States and Canada within the previous 2-yr period, with two exceptions:</p> <ul style="list-style-type: none"> <li>– garbage on or removed from an aircraft is exempt from the requirements in this checklist item if the following conditions are met when the garbage is on or removed from the aircraft: <ul style="list-style-type: none"> <li>– the aircraft had previously been cleared of all garbage and of all meats and meat products, whatever the country of origin, except meats that are shelf-stable; all fresh and condensed milk and cream from countries designated in 9 CFR 94.1 as those in which foot-and-mouth disease exists; all fresh fruits and vegetables; and all eggs; and the items previously cleared from the aircraft as prescribed by this paragraph have been disposed of according to the procedures for disposing of regulated garbage, as previously specified in this checklist item</li> <li>– after the garbage and stores were removed, the aircraft has not been in a non-Canadian foreign port</li> </ul> </li> <li>– garbage on or removed in the United States from a means of conveyance other than an aircraft is exempt from requirements in this checklist item if the following conditions are met when the garbage is on or removed from the means of conveyance: <ul style="list-style-type: none"> <li>– the means of conveyance is accompanied by a certificate from an inspector stating the following: <ul style="list-style-type: none"> <li>– that the means of conveyance had previously been cleared of all garbage and of all meats and meat products, whatever the country of origin, except meats that are shelf-stable; all fresh and condensed milk and cream from countries designated in 9 CFR 94.1 as those in which foot-and-mouth disease exists; all fresh fruits and vegetables; and all eggs; and the items previously cleared from the means of conveyance as prescribed by this paragraph have been disposed of according to the procedures for disposing of regulated garbage</li> </ul> </li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– that the means of conveyance had then been cleaned and disinfected in the presence of the inspector</li> <li>– since being cleaned and disinfected, the means of conveyance has not been in a non-Canadian foreign port.)</li> </ul> <p>(NOTE: Garbage on or removed from a means of conveyance is regulated garbage, if at the time the garbage is on or removed from the means of conveyance, the means of conveyance has moved during the previous 1-yr period, either directly or indirectly, to the continental United States from any territory or possession or from Hawaii, to any territory or possession from any other territory or possession or from Hawaii, or to Hawaii from any territory or possession, with two exceptions:</p> <ul style="list-style-type: none"> <li>– garbage on or removed from an aircraft is exempt from requirements in this checklist item if the following two conditions are met when the garbage is on or removed from the aircraft: <ul style="list-style-type: none"> <li>– the aircraft had been previously cleared of all garbage and all fresh fruits and vegetables, and the items previously cleared from the aircraft as prescribed by this paragraph have been disposed of according to the required procedures for disposing of regulated garbage</li> <li>– after the garbage and stores were removed, the aircraft has not moved to the continental United States from any territory or possession or from Hawaii; to any territory or possession from any other territory or possession or from Hawaii; or to Hawaii from any territory or possession</li> </ul> </li> <li>– garbage on or removed from a means of conveyance other than an aircraft is exempt from requirements of this checklist item if the following two conditions are met when the garbage is on or removed from the means of conveyance: <ul style="list-style-type: none"> <li>– the means of conveyance is accompanied by a certificate from an inspector stating that the means of conveyance had been cleared of all garbage and all fresh fruits and vegetables; and the items previously cleared from the means of conveyance as prescribed by this paragraph have been disposed of according to the required procedures for disposing of regulated garbage,</li> <li>– after being cleared of the garbage and stores, the means of conveyance has not moved to the continental United States from any territory or possession or from Hawaii; to any territory or possession from any other territory or possession or from Hawaii; or to Hawaii from any territory or possession.)</li> </ul> </li> </ul> <p>(NOTE: The Plant Protection and Quarantine Programs and Veterinary Services, Animal, and Plant Health Inspection Service, will cooperate with other Federal, State, and local agencies responsible for enforcing other statutes and regulations governing disposal of the regulated garbage to the end that such disposal shall be adequate to prevent the dissemination of plant pests and livestock or poultry diseases and comply with applicable laws for environmental protection. The inspectors, in maintaining surveillance over regulated garbage movements and disposal, shall coordinate their activities with the activities of representatives of the Environmental</p>

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<p><b>SO.100.2.US.</b> Garbage generated onboard a conveyance during international or interstate movement must be managed according to specific condition (7 CFR 330.401) [Added July 2006].</p>	<p>Protection Agency and other Federal, State, and local agencies also having jurisdiction over such regulated garbage.)</p> <p>(NOTE: This checklist item applies to garbage generated onboard any means of conveyance during international or interstate movements as provided in this section and includes food scraps, table refuse, galley refuse, food wrappers or packaging materials, and other waste material from stores, food preparation areas, passengers' or crews' quarters, dining rooms, or any other areas on the means of conveyance. This section also applies to meals and other foods that were available for consumption by passengers and crew on an aircraft but were not consumed.)</p> <p>Verify that regulated garbage is subject to general surveillance for compliance by inspectors and to disposal measures authorized by the Plant Protection Act and the Animal Health Protection Act to prevent the introduction and dissemination of pests and diseases of plants and livestock.</p> <p>Verify that all regulated garbage is contained in tight, covered, leak-proof receptacles during storage on board a means of conveyance while in the territorial waters, or while otherwise within the territory of the United States.</p> <p>Verify that all receptacles are contained inside the guard rail if on a watercraft.</p> <p>Verify that regulated garbage is not unloaded from such means of conveyance in the United States unless the regulated garbage is removed in tight, covered, leak-proof receptacles under the direction of an inspector to an approved facility for incineration, sterilization, or grinding into an approved sewage system, under direct supervision by such an inspector, or the regulated garbage is removed for other handling in such manner and under supervision as may, upon request in specific cases, be approved by the Administrator as adequate to prevent the introduction and dissemination of plant pests and animal diseases and sufficient to ensure compliance with applicable laws for environmental protection.</p> <p>(NOTE: A cruise ship may dispose of regulated garbage in landfills at Alaskan ports only, if and only if the cruise ship does not have prohibited or restricted meat or animal products on board at the time it enters Alaskan waters for the cruise season, and only if the cruise ship, except for incidental travel through international waters necessary to navigate safely between ports, remains in Canadian and U.S. waters off the west coast of North America, and calls only at continental U.S. and Canadian ports during the entire cruise season.)</p> <p>Verify that application for approval of a facility or sewage system is made in writing by the authorized representative of any carrier or by the official having jurisdiction over the port or place of arrival of the means of conveyance to the Administrator, Animal and Plant Health Inspection Service, U.S. Department of Agriculture, Washington, DC 20250.</p> <p>Verify that the application is endorsed by the operator of the facility or sewage system.</p>

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	<p>(NOTE: Not all garbage generated onboard a means of conveyance is regulated for the purposes of this checklist item. Garbage that is commingled with regulated garbage is also regulated garbage. Garbage on or removed from a means of conveyance is regulated garbage, if, when the garbage is on or removed from the means of conveyance, the means of conveyance has been in any port outside the United States and Canada within the previous 2-yr period. There are, however, two exceptions to this provision:</p> <ul style="list-style-type: none"> <li>– garbage on or removed from an aircraft is exempt from requirements previously stated in this checklist item if the following conditions are met when the garbage is on or removed from the aircraft: <ul style="list-style-type: none"> <li>– the aircraft had previously been cleared of all garbage and of all meats and meat products, whatever the country of origin, except meats that are shelf-stable; all fresh and condensed milk and cream from countries designated in 9 CFR 94.1 as those in which foot-and-mouth disease exists; all fresh fruits and vegetables; and all eggs; and the items previously cleared from the aircraft as prescribed by this paragraph have been disposed of according to the procedures for disposing of regulated garbage, as previously specified</li> <li>– after the garbage and stores were removed, the aircraft has not been in a non-Canadian foreign port</li> </ul> </li> <li>– garbage on or removed in the United States from a means of conveyance other than an aircraft is exempt from previously stated requirements if the following conditions are met when the garbage is on or removed from the means of conveyance: <ul style="list-style-type: none"> <li>– the means of conveyance is accompanied by a certificate from an inspector stating the following: <ul style="list-style-type: none"> <li>– that the means of conveyance had previously been cleared of all garbage and of all meats and meat products, whatever the country of origin, except meats that are shelf-stable; all fresh and condensed milk and cream from countries designated in 9 CFR 94.1 as those in which foot-and-mouth disease exists; all fresh fruits and vegetables; and all eggs; and the items previously cleared from the means of conveyance as prescribed by this paragraph have been disposed of according to the procedures for disposing of regulated garbage</li> <li>– that the means of conveyance had then been cleaned and disinfected in the presence of the inspector</li> </ul> </li> <li>– since being cleaned and disinfected, the means of conveyance has not been in a non-Canadian foreign port.)</li> </ul> </li> </ul> <p>(NOTE: Garbage on or removed from a means of conveyance is regulated garbage, if at the time the garbage is on or removed from the means of conveyance, the means of conveyance has moved during the previous 1-yr period, either directly or indirectly, to the continental United States from any territory or possession or from Hawaii, to any territory or possession from any other territory or possession or from Hawaii, or to Hawaii from any territory or possession. There are, however, two exceptions to this provision:</p>

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<p><b>SO.100.3.US.</b> Garbage from Hawaii may be moved to the continental United States under certain conditions (7 CFR 330.401(a) and 330.402) [Added July 2006].</p>	<ul style="list-style-type: none"> <li>– garbage on or removed from an aircraft is exempt from requirements previously stated if the following two conditions are met when the garbage is on or removed from the aircraft:               <ul style="list-style-type: none"> <li>– the aircraft had been previously cleared of all garbage and all fresh fruits and vegetables, and the items previously cleared from the aircraft have been disposed of according to the procedures for disposing of regulated garbage</li> <li>– after the garbage and stores were removed, the aircraft has not moved to the continental United States from any territory or possession or from Hawaii; to any territory or possession from any other territory or possession or from Hawaii; or to Hawaii from any territory or possession</li> </ul> </li> <li>– garbage on or removed from a means of conveyance other than an aircraft is exempt from the previously stated requirements if the following two conditions are met when the garbage is on or removed from the means of conveyance:               <ul style="list-style-type: none"> <li>– the means of conveyance is accompanied by a certificate from an inspector stating that the means of conveyance had been cleared of all garbage and all fresh fruits and vegetables; and the items previously cleared from the means of conveyance as prescribed by this paragraph have been disposed of according to the procedures</li> <li>– after being cleared of the garbage and stores, the means of conveyance has not moved to the continental United States from any territory or possession or from Hawaii; to any territory or possession from any other territory or possession or from Hawaii; or to Hawaii from any territory or possession.)</li> </ul> </li> </ul> <p>(NOTE: The Plant Protection and Quarantine Programs and Veterinary Services, Animal, and Plant Health Inspection Service, will cooperate with other Federal, State, and local agencies responsible for enforcing other statutes and regulations governing disposal of the regulated garbage to the end that such disposal shall be adequate to prevent the dissemination of plant pests and livestock or poultry diseases and comply with applicable laws for environmental protection. The inspectors, in maintaining surveillance over regulated garbage movements and disposal, shall coordinate their activities with the activities of representatives of the Environmental Protection Agency and other Federal, State, and local agencies also having jurisdiction over such regulated garbage.)</p> <p>Verify that there are no interstate movements of garbage from Hawaii and U.S. territories and possessions to other States. Hawaii, Puerto Rico, American Samoa, the Commonwealth of the Northern Mariana Islands, the Federated States of Micronesia, Guam, the U.S. Virgin Islands, Republic of the Marshall Islands, and the Republic of Palau.</p> <p>(NOTE: The movement of garbage from the above locations to any other State is prohibited except as provided in this checklist item in order to prevent the introduction and spread of exotic plant pests and diseases.)</p>

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	<p>Verify that there is no importation of garbage from any foreign country except Canada.</p> <p>(NOTE: The requirements pertaining to garbage from Hawaii applies to garbage generated in households, commercial establishments, institutions, and businesses prior to interstate movement from Hawaii, and includes used paper, discarded cans and bottles, and food scraps. Such garbage includes, and is commonly known as, municipal solid waste. Industrial process wastes, mining wastes, sewage sludge, incinerator ash, or other wastes from Hawaii that the Administrator determines do not pose risks of introducing animal or plant pests or diseases into the continental United States are not regulated under this section.)</p> <p>Verify that there is no interstate movement from Hawaii to the continental United States of agricultural wastes and yard waste (other than incidental amounts (less than 3 percent) that may be present in municipal solid waste despite reasonable efforts to maintain source separation).</p> <p>Verify that garbage generated onboard any means of conveyance during interstate movement from Hawaii is managed under 7 CFR 330.401 (see checklist item SO.100.2.US).</p> <p>Verify that, during the interstate movement of garbage generated in Hawaii to the continental United States:</p> <ul style="list-style-type: none"> <li>– the garbage is processed, packaged, safeguarded, and disposed of using a methodology that the Administrator has determined is adequate to prevent the introduction or dissemination of plant pests into non-infested areas of the United States</li> <li>– the garbage is moved under a compliance agreement in accordance with 7 CFR 330.403. APHIS will only enter into a compliance agreement when the Administrator is satisfied that the Agency has first satisfied all its obligations under the NEPA and all applicable Federal and State statutes to fully assess the impacts associated with the movement of garbage under the compliance agreement</li> <li>– all such garbage moved interstate from Hawaii to any of the continental United States is moved in compliance with all applicable laws for environmental protection.</li> </ul>



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<p><b>MEDICAL WASTE</b></p> <p><b>SO.110. Containers/ Labeling/Storage Areas</b></p> <p><b>SO.110.1.US.</b> Contaminated reusable sharps must be placed in containers that meet specific requirements as soon as possible after use until properly reprocessed (29 CFR 1910.1030(d)(2)(viii) and 1910.1030(d)(4)(ii)(E)).</p> <p><b>SO.110.2.US.</b> Specimens of blood or other potentially infectious material are required to be placed in a container that prevents leakage during collection, handling, processing, storage, transport, or shipping and specific labeling and handling requirements followed (29 CFR 1910.1030(d)(2)(xiii)).</p> <p><b>SO.110.3.US.</b> Contaminated sharps are to be discarded immediately in containers meeting specific requirements (29 CFR 1910.1030(d)(4)(iii)(A)).</p>	<p>Verify that contaminated reusable sharps are placed in containers that are:</p> <ul style="list-style-type: none"> <li>– puncture resistant</li> <li>– labeled or color coded</li> <li>– leakproof on the sides and bottom.</li> </ul> <p>Verify that reusable sharps that are contaminated with blood or other potentially infectious materials are not stored or processed in a manner that requires employees to reach by hand into the containers.</p> <p>Verify that containers are:</p> <ul style="list-style-type: none"> <li>– labeled and color coded</li> <li>– closed prior to being stored, transported or shipped.</li> </ul> <p>(NOTE: When universal precautions are utilized in the handling of all specimens, the labeling/color coding of specimens is not necessary if the containers are recognizable as containing specimens.)</p> <p>Verify that if outside contamination of the primary container occurs it is placed in a second container.</p> <p>Verify that if the specimens could puncture the primary container, the primary container is placed in a secondary container that is puncture resistant.</p> <p>Verify that contaminated sharps are placed in containers that are:</p> <ul style="list-style-type: none"> <li>– closeable</li> <li>– puncture resistant</li> <li>– leakproof on sides and bottoms</li> <li>– labeled or color coded.</li> </ul> <p>Verify that during use, containers for contaminated sharps are:</p> <ul style="list-style-type: none"> <li>– easily accessible</li> <li>– maintained upright throughout use</li> <li>– replaced routinely and not be allowed to overfill.</li> </ul>

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<p><b>SO.110.4.US.</b> Regulated wastes other than sharps (see definitions) are required to be handled and placed in containers that meet specific standards (29 CFR 1910.1030(d)(4)(iii)(B)).</p>	<p>Verify that, when the containers of contaminated sharps are being moved from the area of use, the containers:</p> <ul style="list-style-type: none"> <li>– are closed</li> <li>– placed in a secondary container that meets the following criteria if leakage is possible: <ul style="list-style-type: none"> <li>– closeable</li> <li>– constructed to contain all contents and prevent leakage of fluids</li> <li>– labeled or color coded.</li> </ul> </li> </ul> <p>Verify that reusable containers are not opened, emptied, or cleaned manually or handled in any other manner that would expose employees to risk of cuts or abrasions.</p> <p>(NOTE: Self-sheathing needles, after use, shall be disposed of in sharps containers.)</p> <p>Verify that regulated wastes are placed in containers that are:</p> <ul style="list-style-type: none"> <li>– closeable</li> <li>– constructed to contain all contents and prevent leakage of fluids</li> <li>– labeled or color coded</li> <li>– closed prior to removal.</li> </ul> <p>(NOTE: Regulated wastes that have been decontaminated need not be labeled or color-coded.)</p> <p>Verify that if outside contamination of the regulated waste occurs, it is placed in a secondary container that meets the following criteria:</p> <ul style="list-style-type: none"> <li>– closeable</li> <li>– constructed to contain all contents and prevent leakage of fluids</li> <li>– labeled or color coded.</li> </ul>
<p><b>SO.110.5.US.</b> All bins, pails, cans, and similar receptacles intended for reuse, that have the likelihood of becoming contaminated with blood or other potentially infectious materials are required to be inspected and decontaminated on a regularly scheduled basis</p>	<p>Verify that receptacles with the potential for contamination are regularly inspected and decontaminated.</p>

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<p>(29 CFR 1910.1030(d)(4)(ii)(C)).</p> <p><b>SO.110.6.US.</b> Labels affixed to containers of regulated wastes, refrigerators and freezers containing blood or other potentially infectious materials, and other containers used to store, transport, or ship blood or other potentially infectious materials must meet specific standards (29 CFR 1910.1030(g)(1)(i)).</p>	<p>Verify that the labels:</p> <ul style="list-style-type: none"> <li>– include the biohazard symbol</li> <li>– are fluorescent orange or orange-red or predominantly so, with lettering and symbols in contrasting color</li> <li>– are affixed as closely as possible to the container by adhesive or wire to prevent loss or removal.</li> </ul> <p>(NOTE: Red bags or containers may be used as a substitute for labels.)</p> <p>(NOTE: The following are exempt from labeling requirements:</p> <ul style="list-style-type: none"> <li>– containers of blood, blood components, or blood products that are labeled as to their contents and have been released for transfusion or other clinical use</li> <li>– individual containers of blood or other potentially infectious materials that are placed in a labeled container during storage, transport, shipment, or disposal.)</li> </ul> <p>(NOTE: Regulated waste that has been decontaminated need not be labeled and color coded.)</p>





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	<ul style="list-style-type: none"> <li>– a leakproof secondary packaging such that if multiple fragile primary receptacles are placed in a single secondary packaging, they are either wrapped individually or separated to prevent contact between them</li> <li>– a rigid outer packaging of adequate strength for its capacity, mass and intended use including, drums (1A1, 1A2, 1B1, 1B2, 1N1, 1N2, 1H1, 1H2, 1D, 1G); boxes (4A, 4B, 4N, 4C1, 4C2, 4D, 4F, 4G, 4H1, 4H2); or jerricans (3A1, 3A2, 3B1, 3B2, 3H1, 3H2)</li> <li>– the outer packaging measures not less than 100 mm (3.9 in) at its smallest overall external dimension</li> <li>– for a liquid infectious substance, an absorbent material is placed between the primary receptacle and the secondary packaging and the absorbent material is sufficient to absorb the entire contents of all primary receptacles</li> <li>– an itemized list of contents enclosed between the secondary packaging and the outer packaging</li> <li>– the primary receptacle or secondary packaging used for infectious substances is capable of withstanding, without leakage, an internal pressure producing a pressure differential of not less than 95 kPa (0.95 bar, 14 psi)</li> <li>– the primary receptacle or secondary packaging used for infectious substances is capable of withstanding without leakage temperatures in the range of -40 °C to +55 °C (-40 °F to +131 °F).</li> </ul> <p>Verify that Category A infectious substances are packaged according to the following requirements, depending on the physical state and other characteristics of the material:</p> <ul style="list-style-type: none"> <li>– for infectious substances are shipped at ambient temperatures or higher <ul style="list-style-type: none"> <li>– primary receptacles are made of glass, metal, or plastic</li> <li>– positive means of ensuring a leakproof seal is provided, such as heat seal, skirted stopper, or metal crimp seal</li> <li>– if screw caps are used, they are secured by positive means, such as with adhesive tape, paraffin sealing tape, or manufactured locking closure</li> <li>– lyophilized substances may be transported in primary receptacles that are flame-sealed with glass ampoules or rubber-stoppered glass vials fitted with metal seals</li> </ul> </li> <li>– for infectious substances shipped refrigerated or frozen (ice, pre-frozen packs, dry ice: <ul style="list-style-type: none"> <li>– ice, dry ice, or other refrigerant is placed around the secondary packagings or in an overpack with one or more complete packages marked in accordance with 49 CFR 178.503</li> <li>– interior supports are provided to secure the secondary packagings in the original position after the ice or dry ice has dissipated</li> <li>– if ice is used, the outer packaging or overpack is leakproof</li> <li>– if dry ice is used, the outer packaging or overpack permits the release of carbon dioxide gas and otherwise meet the provisions in 49 CFR 173.217</li> <li>– the primary receptacle and the secondary packaging maintain their integrity at the temperature of the refrigerant used, as well as the</li> </ul> </li> </ul>

<p align="center"><b>COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT U.S. TEAM GUIDE</b></p>	
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<p><b>SO.115.3.US.</b> Regulated medical waste packaging for transport must meet specific requirements (49 CFR 173.197) [Added January 2003; Revised July 2006; Revised October 2013].</p>	<p>temperatures and pressures of transport by aircraft to which they could be subjected if refrigeration were lost</p> <ul style="list-style-type: none"> <li>– for infectious substances shipped in liquid nitrogen: <ul style="list-style-type: none"> <li>– the primary receptacle and the secondary packaging maintain their integrity at the temperature of the liquid nitrogen as well as the temperatures and pressures of transport by aircraft to which they could be subjected if refrigeration were lost</li> <li>– refrigerated liquid nitrogen packagings are metal vacuum insulated vessels or flasks vented to the atmosphere to prevent any increase in pressure within the packaging</li> <li>– there is no use of safety relief valves, check valves, frangible discs, or similar devices in the vent lines</li> <li>– fill and discharge openings are protected against the entry of foreign materials that might cause an increase in the internal pressure</li> <li>– the package orientation markings specified in 49 CFR 172.312(a) are marked on the packaging</li> <li>– the packaging is designed to prevent the release of any refrigerated liquid nitrogen irrespective of the packaging orientation.</li> </ul> </li> </ul> <p>Verify that live animals are not used to transport infectious substances unless such substances cannot be sent by any other means.</p> <p>(NOTE: An animal containing or contaminated with an infectious substance must be transported under terms and conditions approved by the Associate Administrator for Hazardous Materials Safety.)</p> <p>Verify that body parts, organs or whole bodies meeting the definition of Division 6.2 material is packaged as follows:</p> <ul style="list-style-type: none"> <li>– in Division 6.2 packaging</li> <li>– in packaging meeting the requirements of 49 CFR 173.197.</li> </ul> <p>Verify that non-bulk packagings, Large Packagings, and non-specification bulk outer packagings used for the transportation of regulated medical waste or clinical waste or (bio) medical waste are rigid containers meeting the provisions of 49 CFR 173.21 through 173.40.</p> <p>Verify that, except as provided in 49 CFR 173.134(c), non-bulk packagings for regulated medical waste or clinical waste or (bio) medical waste are UN standard packagings conforming to the requirements of 49 CFR 178 at the Packing Group II performance level.</p> <p>Verify that a non-bulk packaging used as a sharps container is puncture-resistant for sharps and sharps with residual fluid as demonstrated by conducting the performance tests in 49 CFR 178, subpart M on packagings containing materials representative of the sharps and fluids (such as sterile sharps) intended to be transported in the packagings.</p>

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	<p>Verify that sharps containers are securely closed to prevent leaks or punctures in conformance with the instructions provided by the packaging manufacturer.</p> <p>(NOTE: Large Packaging constructed, tested, and marked in accordance with the requirements of 49 CFR 178, subparts P and Q and conforming to other requirements outlined in this checklist item for Large Packaging may be used for the transportation of regulated medical waste, provided the waste is contained in conforming inner packaging.)</p> <p>Verify that each Large Packaging:</p> <ul style="list-style-type: none"> <li>– is capable of meeting the vibration test specified in 49 CFR 178.819</li> <li>– meets the periodic design requalification requirements for intermediate bulk containers in 49 CFR 178.801(e)</li> <li>– meets the proof of compliance requirements of 49 CFR 178.801(j)</li> <li>– meets record retention requirements of 49 CFR 178.801(l).</li> </ul> <p>Verify that inner packagings used for liquids are rigid.</p> <p>(NOTE: Only the following Large Packagings are authorized for the transportation of liquid or solid regulated medical waste:</p> <ul style="list-style-type: none"> <li>– metal: 50A, 50B, or 50N</li> <li>– rigid plastic: 50H.)</li> </ul> <p>Verify that each Large Packaging used to transport liquid regulated medical waste contains absorbent material in sufficient quantity and appropriate location to absorb the entire amount of liquid present in the event of an unintentional release of contents.</p> <p>Verify that each Large Packaging design intended for the transportation of sharps containers is:</p> <ul style="list-style-type: none"> <li>– puncture resistant and capable of retaining liquids</li> <li>– tested and certified as meeting the performance tests specified for intermediate bulk containers intended for the transportation of liquids in subpart O of 49 CFR 178.</li> </ul> <p>Verify that, when transporting regulated medical waste in wheeled carts or bulk outer packaging (BOPs):</p> <ul style="list-style-type: none"> <li>– regulated medical waste in each cart or BOP is contained in conforming non-bulk inner packagings</li> <li>– each cart or BOP has smooth, non-porous interior surfaces free of cracks, crevices, and other defects that could damage plastic film inner packagings or impede disinfection operations</li> </ul>

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	<ul style="list-style-type: none"> <li>–each cart or BOP is used exclusively for the transportation of regulated medical waste</li> <li>–prior to reuse, each cart or BOP is disinfected by any means effective for neutralizing the infectious substance the packaging previously contained.</li> </ul> <p>(NOTE: The following may not be transported in a cart or BOP:</p> <ul style="list-style-type: none"> <li>–Division 6 Untreated concentrated stock cultures of infectious substances containing Category A materials</li> <li>–6.1 toxic waste or Class 7 radioactive waste, with the exception of chemotherapeutic waste.)</li> </ul> <p>Verify that, if Division 6.1 or Class 7 chemotherapeutic waste; untreated concentrated stock cultures of infectious substances containing Category B infectious substances; unabsorbed liquids; and sharps containers are transported in a Cart or BOP, the waste is packaged in rigid non-bulk packagings.</p> <p>Verify that wheeled carts used as an outer packaging for the transportation of regulated medical waste conforms to the following requirements:</p> <ul style="list-style-type: none"> <li>–the cart consists of a solid, one-piece body with a nominal volume not exceeding 1,655 L (437 gal)</li> <li>–the cart is constructed of metal, rigid plastic, or fiberglass fitted with a lid to prevent leakage during transport</li> <li>–each cart is capable of meeting the requirements of 49 CFR 178.810 (drop test) at the Packing Group II performance level</li> <li>–inner packagings are placed into a cart and restrained in such a manner as to minimize the risk of breakage.</li> </ul> <p>Verify that BOPs used as an outer packaging for regulated medical waste conforms to the following requirements:</p> <ul style="list-style-type: none"> <li>–each BOP is constructed of metal or fiberglass and have a capacity of at least 3.5 cubic m (123.6 cubic ft) and not more than 45 cubic m (1,590 cubic ft)</li> <li>–each BOP has bottom and side joints of fully welded or seamless construction and a rigid, weatherproof top to prevent the intrusion of water (e.g., rain or snow)</li> <li>–each opening in a BOP is fitted with a closure to prevent the intrusion of water or the release of any liquid during all loading, unloading, and transportation operations</li> <li>–in the upright position, each BOP is leakproof and able to contain a liquid quantity of at least 300 L (79.2 gal) with closures open</li> <li>–inner packagings are placed in a BOP in such a manner as to minimize the risk of breakage</li> <li>–rigid inner packagings are not placed in the same BOP with plastic film bag inner packagings unless separated from each other by rigid barriers or dividers to prevent damage to the packagings caused by load shifting during normal conditions of transportation.</li> </ul>

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	<p>Verify that, Division 6.1 or Class 7 chemotherapeutic waste, untreated concentrated stock cultures of infectious substances containing Category B infectious substances, unabsorbed liquids, and sharps are transported in a BOP only if:</p> <ul style="list-style-type: none"> <li>– the inner packagings are placed in a BOP in such a manner as to minimize the risk of breakage</li> <li>– rigid inner packagings is not placed</li> <li>– in the same BOP with plastic film bag inner packagings unless separated from each other by rigid barriers or dividers to prevent damage to the packagings caused by load shifting during normal conditions of transportation.</li> </ul> <p>Verify that inner packagings are durably marked or tagged with the name and location (city and state) of the offeror, except when the entire contents of the Large Packaging, Cart, or BOP originates at a single location and is delivered to a single location.</p> <p>Verify that, when using a plastic film bag as an inner packaging for solid regulated medical waste transported in a Cart, Large Packaging, or BOP, the following parameters are met:</p> <ul style="list-style-type: none"> <li>– waste material containing absorbed liquid is packaged as a solid in a plastic film bag only if the bag contains sufficient absorbent material to absorb and retain all liquid during transportation</li> <li>– the film bag does not exceed a volume of 175 L (46 gal)</li> <li>– the film bag is marked and certified by its manufacturer as having passed the tests prescribed for tear resistance in ASTM D 1922, “Standard Test Method for Propagation Tear Resistance of Plastic Film and Thin Sheeting by Pendulum Method” (IBR, 49 CFR 171.7) and for impact resistance in ASTM D 1709, “Standard Test Methods for Impact Resistance of Plastic Film by the Free-Falling Dart Method” (IBR, 49 CFR 171.7)</li> <li>– the film bag meets an impact resistance of 165 grams and a tearing resistance of 480 grams in both the parallel and perpendicular planes with respect to the length of the bag</li> <li>– the plastic film bag is closed with a minimum of entrapped air to prevent leakage in transportation</li> <li>– the bag is capable of being held in an inverted position with the closed end at the bottom for a period of 5 min without leakage</li> <li>– when used as an inner packaging for Carts or BOPs, a plastic film bag does not weigh more than 10 kg (22 lbs.) when filled.</li> </ul> <p>Verify that liquid regulated medical waste or clinical waste or (bio) medical waste transported in a Large Packaging, Cart, or BOP is packaged in a rigid inner packaging conforming to the provisions of 40 CFR 173.21 through 173.40.</p> <p>(NOTE: Liquid materials are not authorized for transportation in inner packagings having a capacity greater than 19 L (5 gal).)</p>

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<p><b>SO.115.4.US.</b> Category B infectious substances offered for transportation or being transported must meet certain packaging requirements (49 CFR 173.199) [Added January 2003; Revised July 2006; Revised October 2013].</p>	<p>Verify that sharps transported in a Large Packaging, Cart, or BOP are packaged in a puncture-resistant inner packaging (sharps container).</p> <p>Verify that each sharps container is securely closed to prevent leaks or punctures in conformance with instructions provided by the packaging manufacturer.</p> <p>Verify that each sharps container exceeding 76 L (20 gal) in volume is capable of passing the performance tests in 49 CFR 178, subpart M, at the Packing Group II performance level.</p> <p>Verify that a sharps container is not reused unless it conforms to the following criteria:</p> <ul style="list-style-type: none"> <li>– it is specifically approved and certified by the U.S. Food and Drug Administration as a medical device for reuse.</li> <li>– it is permanently marked for reuse</li> <li>– it is disinfected prior to reuse by any means effective for the infectious substance the container previously contained.</li> <li>– it has a capacity greater than 7.57 L (2 gal) and not greater than 151.42 L (40 gal) in volume.</li> </ul> <p>(NOTE: A Category B infectious substance is one that that is not in a form generally capable of causing permanent disability or life-threatening or fatal disease in otherwise healthy humans or animals when exposure to it occurs. This includes Category B infectious substances transported for diagnostic or investigational purposes.)</p> <p>(NOTE: Category B infectious substances are excepted from all other requirements of 49 CFR 173, subpart E when offered for transportation or transported in accordance with this checklist item. But, Category B infectious substances offered for transportation or transported under the provisions 49 CFR 173.199 are subject to the incident reporting requirements in 49 CFR 171.15 [see checklist item HM.50.6.US] and 171.16 [see checklist item HM.50.7.US] and to the requirements in 49 CFR 175.75(b) of this subchapter concerning cargo location.)</p> <p>Verify that a Category B infectious substance is packaged in a triple packaging consisting of a primary receptacle, a secondary packaging, and a rigid outer packaging.</p> <p>Verify that primary receptacles of a Category B infectious substance are packed in secondary packaging in such a way that, under normal conditions of transport, they cannot break, be punctured, or leak their contents into the secondary packaging.</p> <p>Verify that secondary packagings for Category B infectious substances are secured in rigid outer packagings with suitable cushioning material such that any leakage of</p>

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	<p>the contents will not impair the protective properties of the cushioning material or the outer packaging.</p> <p>Verify that the completed package for Category B infectious substances is designed, constructed, maintained, filled, its contents limited, and closed so that under conditions normally encountered in transportation, including removal from a pallet or overpack for subsequent handling, there will be no release of hazardous material into the environment.</p> <p>(NOTE: Package effectiveness must not be substantially reduced for minimum and maximum temperatures, changes in humidity and pressure, and shocks, loadings and vibrations normally encountered during transportation. The packaging must be capable of successfully passing the drop tests in 49 CFR 178.609(d) and (h) at a drop height of at least 1.2 m (3.9 ft). Following the drop tests, there must be no leakage from the primary receptacle, which must remain protected by absorbent material, when required, in the secondary packaging. At least one surface of the outer packaging must have a minimum dimension of 100 mm by 100 mm (3.9 in.)</p> <p>Verify that the diamond UN3373 mark is displayed on the outer packaging on a background of contrasting color.</p> <p>(NOTE: For the marking, the width of the line must be at least 2 mm (0.08 inches) and the letters and numbers must be at least 6 mm (0.24 in) high. The size of the mark must be such that no side of the diamond is less than 50 mm (1.97 inches) in length.)</p> <p>Verify that the proper shipping name “Biological substances, Category B” is marked on the outer packaging adjacent to the diamond-shaped mark in letters that are at least 6 mm (0.24 in) high.</p> <p>Verify that, when packages are placed in an overpack, the required package markings required are either clearly visible or reproduced on the outside of the overpack.</p> <p>Verify that the written documentation (i.e., bill of lading) or outer packaging includes the name and telephone number of a person who is either knowledgeable about the material being shipped and has comprehensive emergency response and incident mitigation information for the material, or has immediate access to a person who possesses such knowledge and information.</p> <p>Verify that, for transportation by aircraft, each package, overpack, pallet, or unit load device containing a Category B infectious substance is inspected for leakage when it is unloaded from the aircraft.</p> <p>Verify that if evidence of leakage of a Category B infectious substance is found, the cargo compartment in which the package, overpack, pallet, or unit load device was</p>

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	<p>transported is disinfected by any means that will make the material released ineffective at transmitting disease.</p> <p>Verify that packaging containing inner packagings of Category B infectious substances does not contain other hazardous materials except:</p> <ul style="list-style-type: none"> <li>– authorized refrigerants, such as dry ice or liquid nitrogen</li> <li>– anticoagulants used to stabilize blood or plasma</li> <li>– small quantities of Class 3, Class 8, Class 9, or other materials in Packing Groups II and III used to stabilize or prevent degradation of the sample, provided the quantity of such materials does not exceed 30 mL (1 ounce) or 30 g (1 ounce) in each inner packaging.</li> </ul> <p>(NOTE: Clear instructions on filling and closing a packaging used to transport a Category B infectious substance must be provided by the packaging manufacturer and subsequent distributors to the consignor or person who prepares the package to enable the package to be correctly prepared for transport. A copy or electronic image of these instructions must be retained by the manufacturer and subsequent distributors for at least one year from the date of issuance, and made available for inspection by a Federal or state government representative upon request. Packagings must be filled and closed in accordance with the information provided by the packaging manufacturer or subsequent distributor.)</p> <p>Verify that Liquid Category B infectious substances are packaged in conformance with the following provisions:</p> <ul style="list-style-type: none"> <li>– the primary receptacle is leakproof</li> <li>– absorbent material is placed between the primary receptacle and secondary packaging</li> <li>– if several fragile primary receptacles are placed in a single secondary packaging, they are either individually wrapped or separated to prevent contact between them</li> <li>– the absorbent material is of sufficient quantity to absorb the entire contents of the primary receptacles and not compromise the integrity of the cushioning material or the outer packaging</li> <li>– the secondary packaging is leakproof</li> <li>– for shipments by aircraft, the primary receptacle or the secondary packaging is capable of withstanding without leakage an internal pressure producing a pressure differential of not less than 95 kPa (0.95 bar, 14 psi)</li> <li>– for shipments by aircraft, the maximum quantity contained in each primary receptacle, including any material used to stabilize or prevent degradation of the sample, may not exceed 1 L (34 ounces), and the maximum quantity contained in each outer packaging, including any material used to stabilize or prevent degradation of the samples, may not exceed 4 L (1 gallon).</li> </ul>

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	<p>(NOTE: For Liquid Category B infectious substances, the outer packaging limitation does not include ice, dry ice, or liquid nitrogen when used to maintain the integrity of the material.)</p> <p>Verify that Solid Category B infectious substances are packaged in a triple packaging, consisting of a primary receptacle, secondary packaging, and outer packaging, and meeting the following parameters:</p> <ul style="list-style-type: none"> <li>– the primary receptacle is siftproof</li> <li>– if several fragile primary receptacles are placed in a single secondary packaging, they are either individually wrapped or separated to prevent contact between them</li> <li>– the secondary packaging are siftproof</li> <li>– if residual liquid may be present in the primary receptacle during transportation, then the material is transported in accordance with requirements for Liquid Category B infectious substances</li> <li>– a solid material that may become liquid during transportation is transported in accordance with the requirements for Liquid Category B infectious substances</li> <li>– except for packages containing body parts, organs, or whole bodies, for shipment by aircraft, the outer packaging does not contain more than 4 kg (8.8 lbs), including any material used to stabilize or prevent degradation of the samples.</li> </ul> <p>(NOTE: For Solid Category B infectious substances, the outer packaging limitation does not include ice, dry ice, or liquid nitrogen when used to maintain the integrity of the material.)</p> <p>Verify that, when used, ice or dry ice is placed outside the secondary packaging or in an overpack and interior supports are provided to secure the secondary packagings in the original position.</p> <p>Verify that, if ice is used, the outside packaging is leakproof or have a leakproof liner.</p> <p>Verify that, if dry ice is used, the outside packaging permits the release of carbon dioxide gas and otherwise meet the provisions in 49 CFR 173.217.</p> <p>Verify that the primary receptacle and secondary packaging maintain their integrity at the temperature of the refrigerant used, as well as the temperatures and pressures of transport by aircraft they could be subjected to if refrigeration were lost, and sufficient absorbent material must be provided to absorb all liquid, including melted ice.</p> <p>Verify that, when applicable, the package is marked “Carbon dioxide, solid” or “Dry ice” and an indication that the material being refrigerated is used for diagnostic treatment purposes (e.g., frozen medical specimens).</p>

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	Verify that each person who offers or transports a Category B infectious substance under the provisions of this checklist item knows the requirements of this checklist item.

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<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS: December 2018</b>
<p><b>SO.130.</b></p> <p><b>SOLID WASTE FROM SHIPS</b></p> <p><b>SO.130.1.US.</b> The control and discharge of garbage must be done according to specific parameters (33 CFR 151.51(a), 151.51(b), 151.66, 151.67, 151.69, 151.75, and 151.77) [Revised October 2013].</p>	<p>(NOTE: This checklist item applies to each ship that:</p> <ul style="list-style-type: none"> <li>– is of United States registry or nationality, or one operated under the authority of the United States, including recreational vessels defined in 46 U.S.C. 2101(25) and uninspected vessels defined in 46 U.S.C. 2101(43), wherever located</li> <li>– is operated under the authority of a country other than the United States while in the navigable waters or the Exclusive Economic Zone of the United States.</li> </ul> <p>This checklist item does not apply to:</p> <ul style="list-style-type: none"> <li>– a warship, naval auxiliary, or other ship owned or operated by a country when engaged in noncommercial service</li> <li>– any other ship specifically excluded by MARPOL.)</li> </ul> <p>Verify that, except as detailed for specific types of ships in specific locations (see text of 33 CFR 151.66(c) and 151.66(d)), no garbage is discharged into the navigable waters of the United States.</p> <p>(NOTE: Cleaning agents or additives contained in deck and external surfaces wash water may be discharged only if these substances are not harmful to the marine environment.)</p> <p>Verify that no plastic or garbage mixed with plastic is discharged into the navigable waters of the United States; including synthetic ropes, fishing nets, and plastic garbage bags.</p> <p>Verify that all garbage containing plastic is discharged ashore or incinerated.</p> <p>Verify that the following allowed discharges of garbage are only conducted while the ship is en route and as far as practicable from the nearest land, but never less than:</p> <ul style="list-style-type: none"> <li>– 12 nautical miles for food wastes, except that, such food wastes may be discharged outside of 3 nautical miles from nearest land after they have been processed with a grinder or comminuter</li> <li>– 12 nautical miles for cargo residues that cannot be recovered using commonly available methods for unloading if the discharged cargo residues are not harmful to the marine environment</li> <li>– 100 nautical miles and the maximum water depth possible for animal carcasses and the discharge is conducted in accordance with the applicable International Maritime Organization guidelines.</li> </ul> <p>Verify that mixtures of garbage having different discharge requirements are:</p>

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<p><b>SO.130.2.US.</b> Certain ships are required to have Garbage Management Plans (33 CFR 151.51(b), 151.51(d) and 151.57) [Added October 2013].</p>	<ul style="list-style-type: none"> <li>– retained on board for later disposal ashore</li> <li>– discharged in accordance with the more stringent requirement prescribed earlier in this checklist item.</li> </ul> <p>Verify that each grinder or comminuter used to discharge garbage in a compliant manner is capable of processing garbage so that it passes through a screen with openings no greater than 25 millimeters (one inch).</p> <p>(NOTE: These requirements do not apply to the following:</p> <ul style="list-style-type: none"> <li>– discharges of garbage from a ship necessary for the purpose of securing the safety of a ship and those on board or saving life at sea</li> <li>– the accidental loss of garbage resulting from damage to a ship or its equipment, provided that all reasonable precautions have been taken before and after the occurrence of the damage, to prevent or minimize the accidental loss</li> <li>– the accidental loss of fishing gear from a ship, provided all reasonable precautions have been taken to prevent such loss</li> <li>– the discharge of fishing gear from a ship for the protection of the marine environment or for the safety of that ship or its crew</li> <li>– the en route requirements do not apply to the discharge of food wastes when it is clear the retention on board of these food wastes present an imminent health risk to the people on board.)</li> </ul> <p>(NOTE: The requirement for Garbage Management Plans applies to:</p> <ul style="list-style-type: none"> <li>– a manned oceangoing ship (other than a fixed or floating drilling rig or other platform) of 40 feet or more in length that is documented under the laws of the United States or numbered by a state and that either is engaged in commerce or is equipped with a galley and berthing</li> <li>– a manned fixed or floating drilling rig or other platform subject to the jurisdiction of the United States</li> <li>– a manned ship of 100 gross tons or more that is operated under the authority of a country other than the United States while in the navigable waters or the Exclusive Economic Zone of the United States.)</li> </ul> <p>(NOTE: This checklist item does not apply to:</p> <ul style="list-style-type: none"> <li>– a warship, naval auxiliary, or other ship owned or operated by a country when engaged in noncommercial service</li> <li>– any other ship specifically excluded by MARPOL.)</li> </ul> <p>Verify that the master or person in charge of a ship ensures that the ship is not operated unless a garbage management plan is on the ship and that each person handling garbage follows the plan.</p> <p>Verify that the garbage management plan is in writing and:</p>

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<p><b>SO.130.3.US.</b> Certain ships are required to maintain records of garbage discharge or disposal operations (33 CFR 151.51(b), 151.51(c), and 151.55) [Added October 2013].</p>	<ul style="list-style-type: none"> <li>– provides for the discharge of garbage by means that meet Annex V of MARPOL, the Act, and 33 CFR 151.51 through 151.77</li> <li>– describe procedures for minimizing, collecting, processing, storing, and discharging garbage</li> <li>– designates the person who is in charge of carrying out the plan.</li> </ul> <p>(NOTE: This checklist item does not apply to:</p> <ul style="list-style-type: none"> <li>– a warship, naval auxiliary, or other ship owned or operated by a country when engaged in noncommercial service</li> <li>– any other ship specifically excluded by MARPOL.)</li> </ul> <p>(NOTE: This checklist item applies to:</p> <ul style="list-style-type: none"> <li>– a manned oceangoing ship (other than a fixed or floating drilling rig or other platform) of 400 gross tons and above that is documented under the laws of the United States or numbered by a State</li> <li>– a manned oceangoing ship (other than a fixed or floating drilling rig or other platform) of 400 gross tons and above that is operated under the authority of a country other than the United States while in the navigable waters or the Exclusive Economic Zone of the United States</li> <li>– a manned fixed or floating drilling rig or other platform subject to the jurisdiction of the United States</li> <li>– a manned ship that is certified to carry 15 or more persons engaged in international voyages.)</li> </ul> <p>(NOTE: This checklist item does not apply to:</p> <ul style="list-style-type: none"> <li>– a warship, naval auxiliary, or other ship owned or operated by a country when engaged in noncommercial service</li> <li>– any other ship specifically excluded by MARPOL.)</li> </ul> <p>Verify that the master or person in charge of a ship maintains a written record is on the ship of each of the following garbage discharge or disposal operations:</p> <ul style="list-style-type: none"> <li>– discharge to a reception facility or to another ship</li> <li>– incineration on the ship</li> <li>– discharge into the sea</li> <li>– exceptional discharges.</li> </ul> <p>Verify that when garbage is discharged to a reception facility or to another ship, the record contains the following information:</p> <ul style="list-style-type: none"> <li>– the date and time of the discharge</li> <li>– if the operation was conducted at a port, the name of the port</li> <li>– if the operation was not conducted at a port, the latitude and longitude of the location where the operation was conducted, and if the operation involved off-loading to another ship, the name and official number of the receiving ship</li> </ul>

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	<ul style="list-style-type: none"> <li>– the categories of garbage involved</li> <li>– the estimated amount of each category of garbage discharged, described by volume in cubic meters.</li> </ul> <p>Verify that, when garbage is incinerated on the ship, the record contains the following information:</p> <ul style="list-style-type: none"> <li>– the date and time of the starting and stopping of the incineration</li> <li>– the latitude and longitude of the ship at the starting and stopping of the incineration</li> <li>– the categories of the garbage involved</li> <li>– the estimated amount of each category of garbage involved, described by volume in cubic meters.</li> </ul> <p>Verify that, when garbage which is allowed into the sea is discharged overboard, the record contains the following information:</p> <ul style="list-style-type: none"> <li>– the date and time of the discharge</li> <li>– the latitude and longitude of the ship</li> <li>– the categories of the garbage involved</li> <li>– the estimated amount of each category of garbage involved, described by volume in cubic meters.</li> </ul> <p>(NOTE: For the purposes of recordkeeping, the categories of garbage are</p> <ul style="list-style-type: none"> <li>– plastics</li> <li>– food wastes</li> <li>– domestic wastes</li> <li>– cooking oil</li> <li>– incinerator ashes</li> <li>– operational wastes</li> <li>– cargo residues</li> <li>– animal carcasses</li> <li>– fishing gear.</li> </ul> <p>Verify that the required records are prepared at the time of the operation, certified as correct by the master or person in charge of the ship, maintained on the ship for 2 years following the operation, and made available for inspection by the Coast Guard.</p>



<p align="center"><b>COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT U.S. TEAM GUIDE</b></p>	
<p align="center"><b>REGULATORY REQUIREMENTS:</b></p>	<p align="center"><b>REVIEWER CHECKS: December 2018</b></p>
<p><b>SO.200</b></p> <p><b>LAND APPLICATION OF SOLID WASTE</b></p> <p><b>SO.200.1.US.</b> Application of solid waste to land used for the production of food-chain crops (interim final) must not pose a reasonable probability of adverse effects on health or the environment (40 CFR 257.1, 257.3, 257.3-5(a), and 257.3-5(b)) [Added July 2008].</p>	<p>(NOTE: This was previously checklist item SO.30.11.US).</p> <p>Verify that a facility or practice concerning application of solid waste to within 1 m (3 ft) of the surface of land used for the production of food-chain crops does not exist or occur, unless in compliance with all of the following requirements:</p> <ul style="list-style-type: none"> <li>– the pH of the solid waste and soil mixture is 6.5 or greater at the time of each solid waste application, except for solid waste containing cadmium at concentrations of 2 mg/kg (dry weight) or less</li> <li>– the annual application of cadmium from solid waste does not exceed 0.5 kg/ha on land used for production of tobacco, leafy vegetables, or root crops grown for human consumption</li> <li>– for food-chain crops other than tobacco, leafy vegetables, or root crops grown for human consumption, the annual cadmium application rate does not exceed: <ul style="list-style-type: none"> <li>– 2.0 kg/ha prior to 30 June 1984</li> <li>– 1.25 kg/ha 1 July 1984 to 31 December 1986</li> <li>– 0.5 kg/ha after 1 January 1987</li> </ul> </li> <li>– the cumulative application of cadmium from solid waste does not exceed either of the following maximum cumulative application levels: <ul style="list-style-type: none"> <li>– when the background soil pH is less than 6.5 and the soil cation exchange capacity is less than 5 meq/100 g: 5 kg/ha</li> <li>– when the background soil pH is less than 6.5 and the soil cation exchange capacity is 5 to 15 meq/100 g: 5 kg/ha</li> <li>– when the background soil pH is less than 6.5 and the soil cation exchange capacity is more than 15 meq/100 g: 5 kg/ha</li> <li>– when the background soil pH is more than 6.5 and the soil cation exchange capacity is less than 5 meq/100 g: 5 kg/ha</li> <li>– when the background soil pH is more than 6.5 and the soil cation exchange capacity is 5 to meq/100 g: 10 kg/ha</li> <li>– when the background soil pH is more than 6.5 and the soil cation exchange capacity is more than 15 meq/100 g: 20 kg/ha</li> </ul> </li> <li>– for soils with a background pH of less than 6.5, the cumulative cadmium application rate does not exceed the levels below provided that the pH of the solid waste and soil mixture is adjusted to and maintained at 6.5 or greater whenever food-chain crops are grown: <ul style="list-style-type: none"> <li>– 5 ka/ha when the soil cation exchange capacity is less than 5 meq/100 g</li> <li>– 10 ka/ha when the soil cation exchange is 5 to 15 meq/100 g</li> <li>– 20 ka/ha when the soil cation exchange is more than 15 meq/100 g.</li> </ul> </li> </ul> <p>(NOTE: As an alternative to the above standards, the following may be met:</p> <ul style="list-style-type: none"> <li>– the only food-chain crop produced is animal feed</li> </ul>

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	<ul style="list-style-type: none"> <li>– the pH of the solid waste and soil mixture is 6.5 or greater at the time of solid waste application or at the time the crop is planted, whichever occurs later, and this pH level is maintained whenever food-chain crops are grown</li> <li>– there is a facility operating plan which demonstrates how the animal feed will be distributed to preclude ingestion by humans and the facility operating plan describes the measures to be taken to safeguard against possible health hazards from cadmium entering the food chain, which may result from alternative land uses</li> <li>– future property owners are notified by a stipulation in the land record or property deed which states that the property has received solid waste at high cadmium application rates and that food-chain crops should not be grown, due to a possible health hazard.</li> </ul> <p>Verify that solid waste containing concentrations of PCBs equal to or greater than 10 mg/kg (dry weight) is incorporated into the soil when applied to land used for producing animal feed, including pasture crops for animals raised for milk.</p> <p>(NOTE: Incorporation of the solid waste into the soil is not required if it is assured that the PCB content is less than 0.2 mg/kg (actual weight) in animal feed or less than 1.5 mg/kg [fat basis] in milk.)</p> <p>(NOTE: The criteria in 40 CFR 257.1 through 257.4 are for determining which solid waste disposal facilities and practices pose a reasonable probability of adverse effects on health or the environment under sections 1008(a)(3) and 4004(a) of RCRA. Facilities and practices failing to satisfy the criteria in 40 CFR 257.1 through 257.4 result in open dumping.)</p> <p>(NOTE: These criteria also provide guidelines for the disposal of sewage sludge on the land when the sewage sludge is not used or disposed through a practice regulated in 40 CFR 503.)</p> <p>(NOTE: These criteria apply to all solid waste disposal facilities and practices with the following exceptions:</p> <ul style="list-style-type: none"> <li>– the criteria do not apply to agricultural wastes, including manures and crop residues, returned to the soil as fertilizers or soil conditioners</li> <li>– the criteria do not apply to overburden resulting from mining operations intended for return to the mine site</li> <li>– the criteria do not apply to the land application of domestic sewage or treated domestic sewage</li> <li>– the criteria do not apply to the location and operation of septic tanks. The criteria do, however, apply to the disposal of septic tank pumpings</li> <li>– the criteria do not apply to solid or dissolved materials in irrigation return flows</li> <li>– the criteria do not apply to industrial discharges which are point sources subject to permits under section 402 of the CWA, as amended</li> <li>– the criteria do not apply to source, special nuclear or byproduct material as defined by the AEA, as amended (68 Stat. 923)</li> </ul>

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<b>REGULATORY REQUIREMENTS:</b>	<b>REVIEWER CHECKS: December 2018</b>
	<ul style="list-style-type: none"> <li>– the criteria do not apply to hazardous waste disposal facilities which are subject to regulation under subtitle C of RCRA</li> <li>– the criteria do not apply to disposal of solid waste by underground well injection subject to the regulations (40 CFR part 146) for the Underground Injection Control Program (UICP) under the SDWA, as amended, 42 U.S.C. 3007 et seq</li> <li>– the criteria of this part do not apply to municipal solid waste landfill units, which are subject to the revised criteria contained in 40 CFR 258</li> <li>– the criteria do not apply to the use or disposal sewage sludge on the land when the sewage sludge is used or disposed in accordance with 40 CFR 503.)</li> </ul>



## **Appendix 9-1**

### **Compliance Dates for MSWLFs and 40 CFR 258 (40 CFR 258.1(e)) [Reviewed March 2000]**

In general compliance with 40 CFR 258 is required by 9 October 1993. The following is a list of MSWLFs which have had their compliance deadline with 40 CFR 258 extended.

1. 9 April 1994 for existing MSWLF units or a lateral expansion of an existing MSWLF that meets the following conditions:
  - a. the MSWLF unit disposed of 100 tons per day or less of solid waste during a representative period prior to 9 October 1993
  - b. the unit does not dispose of more than an average of 100 TPD of solid waste each month between 9 October 1993 and 9 April 1994
  - c. the MSWLF is located in a state that has submitted an application for permit program approved by the USEPA by 9 October 1993, is located in the State of Iowa, or is located on Indian Lands or Indian Country
  - d. the MSWLF is not on the National Priorities List (NPL).
2. The compliance date has been extended for existing MSWLF unit or lateral expansion if an existing MSWLF units receiving flood-related waste from the Federally-designated areas within the major disasters declared for the states of Iowa, Illinois, Minnesota, Wisconsin, Missouri, Nebraska, Kansas, North Dakota, and South Dakota by the President during the summer of 1993:
  - a. Until 9 April 1994 if the state in which the MSWLF is located has determined that the MSWLF unit is needed to receive flood-related wastes from a Federally designated disaster area.
  - b. Until 9 October 1994 if the MSWLF has an extension and the state in which the MSWLF is located has determined that the MSWLF unit is needed to receive flood-related wastes from a Federally designated disaster area.
3. 9 October 1995 for new MSWLF units, existing MSWLF units, and lateral expansions that dispose of less than 20 tons of municipal solid waste daily, based on an annual average.



**Appendix 9-1a**

**Open Dumping**

**(40 CFR 257.1 through 257.3-8)**

**[Reviewed March 2000; Deleted April 2004]**



## **Appendix 9-2**

### **MSWLF Units Exempt From Compliance With 40 CFR 258 (40 CFR 258.1(c) and 258.1(d)) [Reviewed March 2000]**

1. MSWLFs that did not receive waste after 9 October 1991.
2. Existing MSWLF units or a lateral expansion of an existing MSWLF that received waste after 9 October 1991 but stopped receiving waste before 9 April 1994 that meets the following conditions:
  - a. the MSWLF unit disposed of 100 tons per day or less of solid waste during a representative period prior to 9 October 1993
  - b. the unit does not dispose of more than an average of 100 TPD of solid waste each month between 9 October 1993 and 9 April 1994
  - c. the MSWLF is in a state that has submitted an application for permit program approved by the USEPA by 9 October 1993, is in the State of Iowa, or is on Indian Lands or Indian Country
  - d. the MSWLF is not on the National Priorities List (NPL).

(NOTE: If these units have not installed a final cover according to the standards in 40 CFR 258.60(a) by 9 October 1994, the unit is required to meet all the requirements found in 40 CFR 258.)

3. Existing MSWLF units or lateral expansions if an existing MSWLF unit is receiving flood-related waste from the Federally-designated areas within the major disasters declared for the states of Iowa, Illinois, Minnesota, Wisconsin, Missouri, Nebraska, Kansas, North Dakota, and South Dakota by the President during the summer of 1993 and receive waste after 9 October 1991 but stops receiving waste before the date designated by the state.

(NOTE: If these units have not installed a final cover according to the standards in 40 CFR 258.60(a) within 1 yr of the date designated by the state, the unit is required to meet all the requirements in 40 CFR 258.)

4. New MSWLF units, existing MSWLF units and lateral expansions that dispose of less than 20 tons of municipal solid waste daily, based on an annual average that receive waste after 9 October 1991 but stopped receiving waste before 9 October 1997.

(NOTE: If these units have not installed a final cover according to the standards in 40 CFR 258.60(a) by 9 October 1998, the unit is required to meet all the requirements of 40 CFR 258.)

5. MSWLF units that receive waste after 9 October 1991 but stop receiving wastes before 9 October 1993.

(NOTE: If these units have not installed a final cover according to the standards in 40 CFR 258.60(a) by 9 October 1994, the unit is required to meet all the requirements of 40 CFR 258.)



## Appendix 9-2a

### MSW Landfill Compliance Dates (40 CFR 63.1945, 63.1947, 63.1950, 63.1952) [Added April 2003]

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Compliance Date for 40 CFR 63.1930 through 63.1990 (SO.67.10.US through SO.67.12.US, SO.85.7.US and SO.85.8.US)	New MSW Landfills
16 January 2003 or at the time operation begins, whichever is last.	A new affected source.
The date the landfill is required to install a collection and control system	A new affected source and is a major source or is collocated with a major source, you must comply with the requirements in 40 CFR 63.1955(b) and 63.1960 through 63.1980
The date the landfill is required to install a collection and control system by 40 CFR 60.752(b)(2) of subpart WWW.	A new affected source and is an area source meeting the criteria in 40 CFR 63.1935(a)(3), you must comply with the requirements of 40 CFR 63.1955(b) and 63.1960 through 63.1980

Compliance Date for 40 CFR 63.1930 through 63.1990 (SO.67.10.US through SO.67.12.US, SO.85.7.US and SO.85.8.US)	Existing MSW Landfills
16 January 2004	An existing affected source
The date the landfill is required to install a collection and control system by 40 CFR 60.752(b)(2) of subpart WWW, the Federal plan, or USEPA approved and effective State or tribal plan that applies to your landfill or by 13 January 2004, whichever occurs later.	An existing affected source and is a major source or is collocated with a major source, you must comply with the requirements in 40 CFR 63.1955(b) and 63.1960 through 63.1980
The date the landfill is required to install a collection and control system by 40 CFR 60.752(b)(2) of subpart WWW, the Federal plan, or USEPA approved and effective State or tribal plan that applies to your landfill or by 16 January 2004, whichever occurs later.	An existing affected source and is an area source meeting the criteria in 40 CFR 63.1935(a)(3), you must comply with the requirements in 40 CFR 63.1955(b) and 63.1960 through 63.1980

<b>MSW Landfill Type</b>	<b>Compliance Date (Applies to owners or operators of a bioreactor located at a landfill that is not permanently closed as of 16 January 2003 with a design capacity equal to or greater than 2.5 million Mg and 2.5 million m3)</b>
A new affected source.	<p>Install the gas collection and control system for the bioreactor before initiating liquids addition.</p> <p>Begin operating the gas collection and control system within 180 days after initiating liquids addition or within 180 days after achieving a moisture content of 40 percent by weight, whichever is later. If you choose to begin gas collection and control system operation 180 days after achieving a 40 percent moisture content instead of 180 days after liquids addition, use the procedures in 40 CFR 63.1980(g) and (h) to determine when the bioreactor moisture content reaches 40 percent.</p>
Existing affected Source	<p>Install and begin operating the gas collection and control system for the bioreactor by 17 January 2006 or by the date the bioreactor is required to install a gas collection and control system under 40 CFR 60, subpart WWW, the Federal plan, or USEPA approved and effective State plan or tribal plan that applies to your landfill, whichever is later.</p>
Existing affected source and which does not initiate liquids addition to the bioreactor until later than 17 January 2006,	<p>Install the gas collection and control system for the bioreactor before initiating liquids addition.</p> <p>Begin operating the gas collection and control system within 180 days after initiating liquids addition or within 180 days after achieving a moisture content of 40 percent by weight, whichever is later. If the facility chooses to begin gas collection and control system operation 180 days after achieving a 40 percent moisture content instead of 180 days after liquids addition, use the procedures in 40 CFR 63.1980(g) and (h) to determine when the bioreactor moisture content reaches 40 percent.</p>

(NOTE: Compliance with 40 CFR 63, Subpart AAAAA is no longer required when the MSW landfill is no longer required to apply controls as specified in 40 CFR 60.752(b)(2)(v) or the Federal plan or USEPA approved and effective State plan or tribal plan that implements 40 CFR 60, subpart Cc, whichever applies to the landfill.)

(NOTE: Compliance with 40 CFR 63, Subpart AAAAA is no longer required for the bioreactor when owning or operating a landfill that includes a bioreactor if either of the following are met:

1. the affected source meets the control system removal criteria in 40 CFR 60.752(b)(2)(v) or the bioreactor meets the criteria for a nonproductive area of the landfill in 40 CFR
2. the bioreactor portion of the landfill is a closed landfill, The addition of liquids to the bioreactor has ceased, and liquids have not been added to the bioreactor for at least 1 year.

(NOTE: Compliance with the bioreactor control removal provisions constitutes compliance with 40 CFR 60, subpart WWW or the Federal plan, whichever applies to the bioreactor.)

### Appendix 9-3

**Design Criteria Concentration Values  
(40 CFR 258.40)  
[Reviewed March 2000]**

<b>Chemical</b>	<b>MCL (mg/L)</b>
Arsenic	0.05
Barium	1.0
Benzene	0.005
Cadmium	0.01
Carbon tetrachloride	0.005
Chromium (hexavalent)	0.05
2,4-Dichlorophenoxy acetic acid	0.1
1,4-Dichlorobenzene	0.075
1,2-Dichloroethane	0.005
1,1-Dichloroethylene	0.007
Endrin	0.0002
Fluoride	4.0
Lindane	0.004
Lead	0.05
Mercury	0.002
Methoxychlor	0.1
Nitrate	10.0
Selenium	0.01
Silver	0.05
Toxaphene	0.005
1,1,1-Trichloromethane	0.2
Trichloroethylene	0.005
2,4,5-Trichlorophenoxy acetic acid	0.01
Vinyl Chloride	0.002



## Appendix 9-4

### Constituents for Detection Monitoring<sup>1</sup> (40 CFR 258, Appendix I) [Revised March 2000; Revised July 2005]

Common name <sup>2</sup>	CAS RN <sup>3</sup>
<b>Inorganic Constituents</b>	
(1) Antimony	(Total)
(2) Arsenic	(Total)
(3) Barium	(Total)
(4) Beryllium	(Total)
(5) Cadmium	(Total)
(6) Chromium	(Total)
(7) Cobalt	(Total)
(8) Copper	(Total)
(9) Lead	(Total)
(10) Nickel	(Total)
(11) Selenium	(Total)
(12) Silver	(Total)
(13) Thallium	(Total)
(14) Vanadium	(Total)
(15) Zinc	(Total)
<b>Organic Constituents</b>	
(16) Acetone	67-64-1
(17) Acrylonitrile	107-13-1
(18) Benzene	71-43-2
(19) Bromochloromethane	74-97-5
(20) Bromodichloromethane	75-27-4
(21) Bromoform; Tribromomethane	75-25-2
(22) Carbon disulfide	75-15-0
(23) Carbon tetrachloride	56-23-5
(24) Chlorobenzene	108-90-7
(25) Chloroethane; Ethyl chloride	75-00-3
(26) Chloroform; Trichloromethane	67-66-3
(27) Dibromochloromethane; Chlorodibromomethane	124-48-1
(28) 1,2-Dibromo-3-chloropropane; DBCP	96-12-8
(29) 1,2-Dibromoethane; Ethylene dibromide; EDB	106-93-4
(30) o-Dichlorobenzene; 1,2-Dichlorobenzene	95-50-1
(31) p-Dichlorobenzene; 1,4-Dichlorobenzene	106-46-7
(32) trans-1,4-Dichloro-2-butene	110-57-6
(33) 1,1-Dichloroethane; Ethylidene chloride	75-34-3
(34) 1,2-Dichloroethane; Ethylene dichloride	107-06-2
(35) 1,1-Dichloroethylene; 1-1-Dichloroethene; Vinylidene chloride	75-35-4
(36) cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	156-59-2
(37) trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene	156-60-5
(38) 1,2-Dichloropropane; Propylene dichloride	78-87-5
(39) cis-1,3-Dichloropropene	10061-01-5
(40) trans-1,3-Dichloropropene	10061-02-6
(41) Ethylbenzene	100-41-4
(42) 2-Hexanone; Methyl butyl ketone	591-78-6
(43) Methyl bromide; Bromomethane	74-83-9

Common name <sup>2</sup>	CAS RN <sup>3</sup>
(44) Methyl chloride; Chloromethane	74-87-3
(45) Methylene bromide Dibromomethane	74-95-3
(46) Methylene chloride; Dichloromethane	75-09-2
(47) Methyl ethyl ketone; MEK; 2-Butanone	78-93-3
(48) Methyl iodide; Iodomethane	74-88-4
(49) 4-Methyl-2-pentanone; Methyl isobutyl isobutyl ketone	108-10-1
(50) Styrene	100-42-5
(51) 1,1,1,2-Tetrachloroethane	630-20-6
(52) 1,1,2,2-Tetrachloroethane	79-34-5
(53) Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	127-18-4
(54) Toluene	108-88-3
(55) 1,1,1-Trichloroethane; Methylchloroform	71-55-6
(56) 1,1,2-Trichloroethane	79-00-5
(57) Trichloroethylene; Trichloroethene	79-01-6
(58) Trichlorofluoromethane; CFC-11	75-69-4
(59) 1,2,3-Trichloropropane	96-18-4
(60) Vinyl acetate	108-05-4
(61) Vinyl chloride	75-01-4
(62) Xylenes	1330-20-7

<sup>1</sup>This list contains 47 volatile organics for which possible analytical procedures provided in USEPA Report SW-846, *Test Methods for Evaluating Solid Waste*, third edition, November 1986, as revised December 1987, includes Method 8260; and 15 metals for which SW-846 provides either Method 6010 or a method from the 7000 series of methods.

<sup>2</sup> Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

<sup>3</sup> Chemical Abstracts Service registry number. Where "Total" is entered, all species in the groundwater that contain this element are included.

## Appendix 9-5

### List of Hazardous Inorganic and Organic Constituents (40 CFR 258, Appendix II) [Revised July 2005]

Common Name <sup>1</sup>	CAS RN <sup>2</sup>	Chemical abstracts service index name <sup>3</sup>
Acenaphthene	83-32-9	Acenaphthylene, 1,2-dihydro-
Acenaphthylene	208-96-8	Acenaphthylene
Acetone	67-64-1	2-Propanone
Acetonitrile; Methyl cyanide	75-05-8	Acetonitrile
Acetophenone	98-86-2	Ethanone, 1-phenyl-
2-Acetylaminofluorene; 2-AAF	53-96-3	Acetamide, N-9H-fluoren-2-yl-
Acrolein	107-02-8	2-Propenal
Acrylonitrile	107-13-1	2-Propenenitrile
Aldrin	309-00-2	1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10- hexachloro- 1,4,4a,5,8,8a-hexahydro- (1,4,4a,5,8,8a)
Allyl chloride	107-05-1	1-Propene, 3-chloro-
4-Aminobiphenyl	92-67-1	[1,1'-Biphenyl]- 4-amine
Anthracene	120-12-7	Anthracene
Antimony	(Total)	Antimony
Arsenic	(Total)	Arsenic
Barium	(Total)	Barium
Benzene	71-43-2	Benzene
Benzo[a]anthracene; Benzanthracene	56-55-3	Benz[a]anthracene
Benzo[b]fluoranthene	205-99-2	Benz[e]acephenanthrylene
Benzo[k]fluoranthene	207-08-9	Benzo[k]fluoranthene
Benzo[ghi]perylene	191-24-2	Benzo[ghi]perylene
Benzo[a]pyrene	50-32-8	Benzo[a]pyrene
Benzyl alcohol	100-51-5	Benzenemethanol
Beryllium	(Total)	Beryllium

Common Name <sup>1</sup>	CAS RN <sup>2</sup>	Chemical abstracts service index name <sup>3</sup>
alpha-BHC	319-84-6	Cyclohexane, 1,2,3,4,5,6-hexachloro,(1[alpha],2[alpha],3[beta],4[alpha],5[beta],6[beta])-
beta-BHC	319-85-7	Cyclohexane,1,2,3,4,5,6-hexachloro,(1[alpha],2[beta],3[alpha],4[beta],5[alpha],6[beta])-
delta-BHC	319-86-8	Cyclohexane,1,2,3,4,5,6-hexachloro,(1[alpha],2[alpha],3[alpha],4[beta],5[alpha],6[beta])-
gamma-BHC; Lindane	58-89-9	Cyclohexane,1,2,3,4,5,6-hexachloro,(1[alpha],2[alpha],3[beta],4[alpha],5[alpha],6[beta])-
Bis(2-chloroethoxy)methane	111-91-1	Ethane, 1,1'- [methylenebis(oxy)]bis [2-chloro-
Bis(2-chloroethyl)ether; Dichloroethyl ether	111-44-4	Ethane, 1,1'-oxybis[2-chloro-
Bis-(2-chlor-1-methyl) ether; 2, 2-Dichlorodiisopropyl ether; DCIP, See note 6	108-60-1	Propane, 2,2'-oxybis[1-chloro-
Bis(2-ethylhexyl) phthalate	117-81-7	1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl)ester
Bromochloromethane; Chlorobromomethane	74-97-5	Methane, bromochloro-
Bromodichloromethane; Dibromochloromethane	75-27-4	Methane, bromodichloro-
Bromoform; Tribromomethane	75-25-2	Methane, tribromo-
4-Bromophenyl phenyl ether	101-55-3	Benzene, 1-bromo-4-phenoxy-
Butyl benzyl phthalate; Benzyl butyl phthalate	85-68-7	1,2, Benzenedicarboxylic acid, butyl phenylmethyl ester
Cadmium	(Total)	Cadmium
Carbon disulfide	75-15-0	Carbon Disulfide
Carbon tetrachloride	56-23-5	Methane, tetrachloro-
Chlordane	See NOTE 5	4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-
p-Chloroaniline	106-47-8	Benzenamine, 4-chloro-
Chlorobenzene	108-90-7	Benzene, chloro-
Chlorobenzilate	510-15-6	Benzeneacetic acid, 4-chloro-(4-chlorophenyl)- -hydroxy-, ethyl ester.
p-Chloro-m-cresol; 4-Chloro-3-methylphenol	59-50-7	Phenol, 4-chloro-3-Methyl-
Chloroethane; Ethyl chloride	75-00-3	Ethane, chloro-

Common Name <sup>1</sup>	CAS RN <sup>2</sup>	Chemical abstracts service index name <sup>3</sup>
Chloroform; Trichloromethane	67-66-3	Methane, trichloro-
2-Chloronaphthalene	91-58-7	Naphthalene, 2-chloro-
2-Chlorophenol	95-57-8	Phenol, 2-chloro-
4-Chlorophenyl phenyl ether	7005-72-3	Benzene, 1-chloro-4-phenoxy-
Chloroprene	126-99-8	1,3-Butadiene, 2- chloro-
Chromium	(Total)	Chromium
Chrysene	218-01-9	Chrysene
Cobalt	218-01-9	Cobalt
Copper	(Total)	Copper
m-Cresol; 3-methylphenol	108-39-4	Phenol, 3-methyl-
o-Cresol; 2-methylphenol	95-48-7	Phenol, 2-methyl-
p-Cresol; 4-methylphenol	106-44-5	Phenol, 4-methyl-
Cyanide	57-12-5	Cyanide
2,4-D; 2,4-Dichlorophenoxyacetic acid	94-75-7	Acetic acid, (2,4-dichlorophenoxy)-
4,4-DDD	72-54-8	Benzene 1,1'-(2,2-dichloroethylidene) bis[4-chloro-
4,4-DDE	72-55-9	Benzene, 1,1'-(dichloroethenylidene) bis[4-chloro-
4,4-DDT	50-29-3	Benzene, 1,1'-(2,2,2-trichloroethylidene) bis[4-chloro-
Diallate	2303-16-4	Carbamothioic acid, bis(1-methylethyl)-, S- (2,3-dichloro-2-propenyl) ester.
aDibenz[a,h]anthracene	53-70-3	Dibenz[a,h]anthracene
Dibenzofuran	132-64-9	Dibenzofuran
Dibromochloromethane; Chlorodibromomethane	124-48-1	Methane, dibromochloro-
1,2-Dibromo-3-chloropropane; DBCP	96-12-8	Propane, 1,2-dibromo-3-chloro-
1,2-Dibromoethane; Ethylene dibromide; EDB	106-93-4	Ethane, 1,2-dibromo-
Di-n-butyl phthalate	84-74-2	2-Benzenedicarboxylic acid, dibutyl ester
o-Dichlorobenzene; 1,2-Dichlorobenzene	95-50-1	Benzene, 1,2-dichloro-

Common Name <sup>1</sup>	CAS RN <sup>2</sup>	Chemical abstracts service index name <sup>3</sup>
m-Dichlorobenzene; 1,3-Dichlorobenzene	541-73-1	Benzene, 1,3-dichloro-
p-Dichlorobenzene; 1,4-Dichlorobenzene	106-46-7	Benzene, 1,4-dichloro-
3,3-Dichlorobenzidine	91-94-1	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dichloro-
trans-1,4-Dichloro-2-butene	110-57-6	2-Butene, 1,4-dichloro, (E)-
Dichlorodifluoromethane; CFC 12;	75-71-8	Methane, dichlorodifluoro-
1,1-Dichloroethane chloride	75-34-3	Ethane, 1,1-dichloro-
1,2-Dichloroethane; Ethylene dichloride	107-06-2	Ethane, 1,2-dichloro-
1,1-Dichloroethylene; 1,1-Dichloroethane	75-35-4	Ethene, 1,1-dichloro-
Vinylidene chloride cis-1,2- Dichloroethylene; cis-1,2-Dichloroethene.	156-59-2	Ethene, 1,2-dichloro-(Z)-
trans-1,2-Dichloroethylene trans-1,2-Dichloroethene	156-60-5	Ethene, 1,2-dichloro-, (E)-
2,4-Dichlorophenol	120-83-2	Phenol, 2,4-dichloro-
2,6-Dichlorophenol	87-65-0	Phenol, 2,6-dichloro-
1,2-Dichloropropane; Propylene dichloride	78-87-5	Propane, 1,2-dichloro-
1,3-Dichloropropane; Trimethylene dichloride	142-28-9	Propane, 1,3- Trimethylene dichloro-
2,2-Dichloropropane; Isopropylidene chloride	594-20-7	Propane, 2,2- dichloro-
1,1-Dichloropropene	563-58-6	1-Propene, 1,1-dichloro-
cis-1,3-Dichloropropene	10061-01-5	1-Propene, 1,3-dichloro-, (Z)-
trans-1,3-Dichloropropene	10061-02-6	1-Propene, 1,3-dichloro-, (E)-
Dieldrin	60-57-1	2,7:3,6-Dimethanonaphth [2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1a[alpha],2[beta],2a[alpha],3[beta],6[beta],6a[alpha],7[beta],7a[alpha])-
Diethyl phthalate	84-66-2	1,2-Benzenedicarboxylic acid, diethyl ester
0,0-Diethyl 0-2-pyrazinyl phosphorothioate; Thionazin	297-97-2	Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester.
Dimethoate	60-51-5	Phosphorodithioic acid, O,O-dimethyl S-[2-(methylamino)-2-oxoethyl] ester
p-(Dimethylamino)azobenzene	60-11-7	Benzenamine, N,N-dimethyl-4-(phenylazo)-

Common Name <sup>1</sup>	CAS RN <sup>2</sup>	Chemical abstracts service index name <sup>3</sup>
7,12-Dimethylbenz[a]anthracene	57-97-6	Benz[a]anthracene,7,12-dimethyl-
3,3-Dimethylbenzidine	119-93-7	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethyl-
alpha, alpha- Dimethylphenethylamine	122-09-8	Benzeneethanamine,[alpha],[alpha]-dimethyl
2,4-Dimethylphenol; m-Xylenol	105-67-9	Phenol, 2,4-dimethyl-
Dimethyl phthalate	131-11-3	1,2-Benzenedicarboxylic acid, dimethyl ester
m-Dinitrobenzene	99-65-0	Benzene, 1,3-dinitro-
4,6-Dinitro-o-cresol 4,6-Dinitro-2-methylphenol	534-52-1	Phenol, 2-methyl-4,6- Dinitro-
2,4-Dinitrophenol	51-28-5	Phenol, 2,4-dinitro-
2,4-Dinitrotoluene	121-14-2	Benzene, 1-methyl-2,4-dinitro-
2,6-Dinitrotoluene	606-20-2	Benzene, 2-methyl-1,3-dinitro-
Dinoseb; DNBP; 2-sec-Butyl-4,6-dinitrophenol	88-85-7	Phenol, 2-(1-methylpropyl)-4,6-dinitro-
Di-n-octyl phthalate	117-84-0	1,2-Benzenedicarboxylic acid, dioctyl ester
Diphenylamine	122-39-4	Benzenamine, N-phenyl-
Disulfoton	298-04-4	Phosphorodithioic acid, O,O-diethyl S- [2- (ethylthio)ethyl] ester
Endosulfan I	959-98-8	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10 hexachloro- 1,5,5a,6,9,9a-hexahydro-, 3-oxide,
Endosulfan II	33213-65-9	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro- 1,5,5a,6,9,9a-hexahydro-, 3-oxide, (3[alpha],5a[alpha] 6[beta],9[beta], 9a[alpha])-
Endodulfan sulfate	1031-07-8	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro- 1,5,5a,6,9,9a-hexahydro-, 3,3-dioxide
Endrin	72-20-8	2,7:3,6-Dimethanonaphth[2,3-b]oxirene,3,4,5,6,9,9-hexachloro- 1a,2,2a,3,6,6a,7,7a-octahydro-, (1a[alpha], 2[beta],2a[beta], 3[alpha],6[alpha], 6a[beta],7[beta],7a [alpha])-
Endrin aldehyde	7421-93-4	1,2,4-Methenocyclopenta[cd]pentalene- 5-

Common Name <sup>1</sup>	CAS RN <sup>2</sup>	Chemical abstracts service index name <sup>3</sup>
		carboxaldehyde,2,2a,3,3,4,7-hexachlorodecahydro-(1[alpha],2[beta],2a[beta],4[beta],4a[beta],5[beta],6a[beta],6b[beta],7R*)-
Ethylbenzene	100-41-4	Benzene, ethyl-
Ethyl methacrylate	97-63-2	2-Propenoic acid, 2-methyl-, ethyl ester
Ethyl methanesulfonate	62-50-0	Methanesulfonic acid, ethyl ester
Famphur	52-85-7	Phosphorothioic acid, O-[4-[(dimethylamino)sulfonyl]phenyl]-O,O-dimethyl ester
Fluoranthene	206-44-0	Fluoranthene
Fluorene	86-73-7	9H-Fluorene
Heptachlor	76-44-8	4,7-Methano-1H-indene,1,4,5,6,7,8,8-heptachloro-
Heptachlor epoxide	1024-57-3	3a,4,7,7a-tetrahydro-2,5-Methano-2H-indeno[1,2-b]oxirene,2,3,4,5,6,7,7-heptachloro-1a,1b,5,5a,6,6a,-hexahydro,(1a[alpha],1b[beta],2[alpha],5[alpha],5a[beta],6[beta],6a[alpha])
Hexachlorobenzene	118-74-1	Benzene, hexachloro-
Hexachlorobutadiene	87-68-3	1,3-Butadiene, 1,1,2,3,4,5, hexachloro
Hexachlorocyclopentadiene	77-47-4	1,3, Cyclopentadiene,1,2,3,4,5,5-hexachloro-
Hexachloroethane	67-72-1	Ethane, hexachloro-
Hexachloropropene	188-71-7	1-Propene, 1,1,2,3,3,3-hexachloro
2-Hexanone; Methyl butyl ketone	591-78-6	2-Hexanone
Indenol(1,2,3-cd)pyrene	193-39-5	Indeno[1,2,3-cd]pyrene
Isobutyl alcohol	78-83-1	1-Propanol, 2-methyl-
Isodrin	465-73-6	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a hexahydro-(1[alpha],4[alpha],4a[beta],5[beta],8[beta],8a[beta])-
Isophorone	78-59-1	2-Cyclohexen-1-one, 3,5,5-trimethyl-
Isosafrole	120-58-1	1,3-Benzodioxole, 5- (1-propenyl)-

Common Name <sup>1</sup>	CAS RN <sup>2</sup>	Chemical abstracts service index name <sup>3</sup>
Kepone	143-50-0	1,3,4-Metheno-2H-cyclobuta-[cd]pentalen-2-one, 1,1a,3,3a,4,5,5,5a,5b,6-decachlorooctahydro-
Lead	(Total)	Lead
Mercury	(Total)	Mercury
Methacrylonitrile	126-98-7	2-Propenenitrile, 2-methyl-
Methapyrilene	91-80-5	1,2-Ethanediamine, N,N-dimethyl-N'-2-pyridinyl-N'-(2-thienylmethyl)-
Methoxychlor	72-43-5	Benzene, 1,1'-(2,2,2-trichloroethylidene)bis [4-methoxy-
Methyl bromide; Bromomethane	74-83-9	Methane, bromo-
Methyl chloride; Chloromethane	74-87-3	Methane, chloro-
3-Methylcholanthrene	56-49-5	Benz[j]aceanthrylene 1,2-dihydro-3-methyl-
Methyl ethyl ketone; MEK; 2-Butanone	78-93-3	2-Butanone
Methyl iodide; Iodomethane	74-88-4	Methane, iodo-
Methyl methacrylate	80-62-6	2-Propenoic acid, 2-methyl-, methyl ester
Methyl methanesulfonate	66-27-3	Methanesulfonic acid, methyl ester
2-Methylnaphthalene	91-57-6	Naphthalene, 2-methyl-
Methyl parathion; Parathion methyl	298-00-0	Phosphorothioic acid, O,O-dimethyl
4-Methyl-2-pentanone; Methyl isobutyl ketone	108-10-1	2-Pentanone, 4- methyl-
Methylene bromide; Dibromomethane	74-95-3	Methane, dibromo-
Methylene chloride; Dichloromethane	75-09-2	Methane, dichloro-
Naphthalene	91-20-3	Naphthalene
1,4-Naphthoquinone	130-15-4	1,4-Naphthalenedione
1-Naphthylamine	134-32-7	1-Naphthalenamine
2-Naphthylamine	91-59-8	2-Naphthalenamine
Nickel	(Total)	Nickel
o-Nitroaniline; 2-Nitroaniline	88-74-4	Benzenamine, 2-nitro-
m-Nitroaniline; 3-Nitroaniline	99-09-2	Benzenamine, 3-nitro-

Common Name <sup>1</sup>	CAS RN <sup>2</sup>	Chemical abstracts service index name <sup>3</sup>
p-Nitroaniline; 4-Nitroaniline	100-01-6	Benzenamine, 4-nitro-
Nitrobenzene	98-95-3	Benzene, nitro-
o-Nitrophenol; 2-Nitrophenol	88-75-5	Phenol, 2-nitro-
p-Nitrophenol; 4-Nitrophenol	100-02-7	Phenol, 4-nitro-
N-Nitrosodi-n-butylamine	924-16-3	1-Butanamine, N-butyl-N-nitroso-
N-Nitrosodiethylamine	55-18-5	Ethanamine, N-ethyl-N-nitroso-
N-Nitrosodimethylamine	62-75-9	Methanamine, N-methyl-N-nitroso-
N-Nitrosodiphenylamine	86-30-6	Benzenamine, N-nitroso-N-phenyl-
N-Nitrosodipropylamine; dipropylamine;	621-64-7	1-Propanamine, N-nitroso-N-propyl-
N-Nitrosomethylethalamine	10595-95-6	Ethanamine, N-methyl-N-nitroso-
N-Nitrosopiperidine	100-75-4	Piperidine, 1-nitroso-
N-Nitrosopyrrolidine	930-55-2	Pyrrolidine, 1-nitroso-
5-Nitro-o-toluidine	99-55-8	Benzenamine, 2-methyl-5-nitro-
Parathion	56-38-2	Phosphorothioic acid, O,O-diethyl-O- (4-nitrophenyl) ester
Pentachlorobenzene	608-93-5	Benzene, pentachloro-
Pentachloronitrobenzene	82-68-8	Benzene, pentachloronitro-
Pentachlorophenol	87-86-5	Phenol, pentachloro-
Phenacetin	62-44-2	Acetamide, N-(4-ethoxyphenyl)
Phenanthrene	85-01-8	Phenanthrene
Phenol	108-95-2	Phenol
p-Phenylenediamine	106-50-3	1,4-Benzenediamine
Phorate	298-02-2	Phosphorodithioic acid, O,O-diethyl S- [(ethylthio)methyl] ester
Polychlorinated biphenyls (PCBs); Aroclors	see NOTE 6	1'-Biphenyl, chloro derivatives
Pronamide	23950-58-5	Benzamide, 3,5-dichloro-N-(1,1-dimethyl-2-propynyl)-
Propionitrile; Ethyl cyanide	107-12-0	Propanenitrile
Pyrene	129-00-0	Pyrene
Safrole	94-59-7	1,3-Benzodioxole, 5-(2-propenyl)-

Common Name <sup>1</sup>	CAS RN <sup>2</sup>	Chemical abstracts service index name <sup>3</sup>
Selenium	(Total)	Selenium
Silver	(Total)	Silver
Silvex; 2,4,5-TP	93-72-1	Propanoic acid, 2- (2,4,5-trichlorophenoxy)-
Styrene	100-42-5	Benzene, ethenyl-
Sulfide	18496-25-8	Sulfide
2,4,5-T; 2,4,5-Trichlorophenoxyacetic acid	93-76-5	Acetic acid, (2,4,5-trichlorophenoxy)-
2,3,7,8-TCDD; 2,3,7,8- Tetrachlorodibenzo- p-dioxin	1746-01-6	Dibenzo[b,e][1,4]dioxin, 2,3,7,8-tetrachloro-
1,2,4,5-Tetrachlorobenzene	95-94-3	Benzene, 1,2,4,5-tetrachloro-
1,1,1,2-Tetrachloroethane	630-20-6	Ethane, 1,1,1,2-tetrachloro-
1,1,2,2-Tetrachloroethane	79-34-5	Ethane, 1,1,2,2-tetrachloro-
Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	127-18-4	Ethene, tetrachloro-
2,3,4,6-Tetrachlorophenol	58-90-2	Phenol, 2,3,4,6-tetrachloro-
Thallium	(Total)	Thallium
Tin	(Total)	Tin
Toluene	108-88-3	Benzene, methyl-
o-Toluidine	95-53-4	Benzenamine, 2-methyl-
Toxaphene	See NOTE 7	Toxaphene
1,2,4-Trichlorobenzene	120-82-1	Benzene, 1,2,4-trichloro-
1,1,1-Trichloroethane; Methylchloroform	71-55-6	Ethane, 1,1,1- trichloro-
1,1,2-Trichloroethane	79-00-5	Ethane, 1,1,2-trichloro-
Trichloroethylene; Trichloroethene	79-01-6	Ethene, trichloro-
Trichlorofluoromethane; CFC-11	75-69-4	Methane, trichlorofluoro-
2,4,5-Trichlorophenol	95-95-4	Phenol, 2,4,5-trichloro-
2,4,6-Trichlorophenol	88-06-2	Phenol, 2,4,6-trichloro-
1,2,3-Trichloropropane	96-18-4	Propane, 1,2,3-trichloro-
0,0,0-Triethyl phosphorothioate	126-68-1	Phosphorothioic acid, O,O,O-triethyl ester
sym-Trinitrobenzene	99-35-4	Benzene, 1,3,5-trinitro-

Common Name <sup>1</sup>	CAS RN <sup>2</sup>	Chemical abstracts service index name <sup>3</sup>
Vanadium	(Total)	Vanadium
Vinyl acetate	108-05-4	Acetic acid, ethenyl ester
Vinyl chloride; Chloroethene	75-01-4	Ethene, chloro-
Xylene (total)	See NOTE 8	Benzene, dimethyl-
Zinc	(Total)	Zinc

NOTES:

<sup>1</sup>Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

<sup>2</sup>Chemical Abstracts Service registry number. Where “Total” is entered, all species in the ground water that contain this element are included.

<sup>3</sup>CAS index names are those used in the 9th Cumulative Index.

<sup>4</sup>This substance is often called bis(2-chloroisopropyl) ether, the name Chemical Abstracts Service applies to its noncommercial isomer, propane, 2,2”-oxybis[2-chloro-(CAS RN 39638-32-9).

<sup>5</sup>Chlordane: This entry includes alpha-chlordane (CAS RN 5103-71-9), beta-chlordane (CAS RN 5103-74-2), gamma-chlordane (CAS RN 5566-34-7), and constituents of chlordane (CAS RN 57-74-9 and CAS RN 12789-03-6).

<sup>6</sup>Polychlorinated biphenyls (CAS RN 1336-36-3); this category contains congener chemicals, including constituents of Aroclor-1016 (CAS RN 12674-11-2), Aroclor-1221 (CAS RN 11104-28-2), Aroclor-1232 (CAS RN 11141-16-5), Aroclor-1242 (CAS RN 53469-21-9), Aroclor-1248 (CAS RN 12672-29-6), Aroclor-1254 (CAS RN 11097-69-1), and Aroclor-1260 (CAS RN 11096-82-5).

<sup>7</sup>Toxaphene: This entry includes congener chemicals contained in technical toxaphene (CAS RN 8001-35-2), i.e., chlorinated camphene.

<sup>8</sup>Xylene: This entry includes o-xylene (CAS RN 96-47-6), m-xylene (CAS RN 108-38-3), p- xylene CAS RN 106-42-3), and unspecified xylenes (dimethylbenzenes) (CAS RN 1330-20-7).

## SECTION 10

### STORAGE TANK MANAGEMENT U.S. TEAM Guide, December 2018

#### A. Applicability

This section applies to facilities that utilize storage tanks, whether aboveground or underground, for the storage of hazardous materials, petroleum products, or hazardous waste. The section presents review action items for emissions from tanks, structural concerns, monitoring, and recordkeeping requirements.

Assessors are required to review state and local regulations and, if applicable, the appropriate Agency Supplement, to perform a comprehensive assessment.

Select portions of this section (i.e., Review of Federal Legislation, State and Local Regulations, Key Compliance Requirements, Key Terms and Definitions, Typical Records to Review, Typical Physical Features to Inspect, and the Checklist) have been reviewed by USEPA personnel from the Office of Enforcement and Compliance Assurance (OECA) and USEPA's Office of General Counsel. USEPA's comments and suggestions for changes have been incorporated in this version of the TEAM Guide. USEPA did not review all portions of this section. USEPA also did not review and comment on items pertaining to federal Executive Orders, DOT regulations, OSHA regulations or any other area outside of Title 40 of the Code of Federal Regulations. Portions which have been added or revised as a result of this review are identified as either being reviewed, revised or added in March 2000, for example **[Added March 2000]**.

#### B. Federal Legislation

- *The Resource Conservation and Recovery Act (RCRA)*, Subtitles I and C. Subtitle I, Public Law (PL) 99-49 (42 U.S. Code (USC) 6991-6991i), established the standards and procedures for underground storage tanks (UST). It required the U.S. Environmental Protection Agency (USEPA) to issue standards on leak detection, record maintenance, release reporting, corrective actions, tank upgrading, and replacement (42 USC 6991b(a)(c)). Subtitle C, PL 98-616 (42 USC 6921-6939b) establishes standards and procedures for the handling, storage, treatment, and disposal of hazardous waste.
- *The Clean Air Act (CAA) Amendments of 1990*. This act, PL 101-549 (42 USC 7401-7671q), is currently the effective, comprehensive Federal legislation that regulates the prevention and control of air pollution. See Section 1 titled Air Emissions Management for further information on the CAA.
- *The Oil Pollution Act of 1990*. This law, PL 301-308 (33 USC 2701-2761, et. al.), as amended, requires the prevention of oil pollution into navigable waters by tank vessels. This includes the preparation of a response plan, construction of oil carriers with double hulls, and inspection of spill response equipment.
- *The Federal Facilities Compliance Act (FFCA) of 1992*. This act provides for a waiver of sovereign immunity with respect to Federal, state, and local procedural and substantive requirements respecting control and abatement of solid or hazardous waste disposal and management. Currently a waiver in the FFCA exempts RCRA, Subtitle I from fines.
- *The Occupational Safety and Health Act (OSHA)*. This act, last amended in November 1990, 29 USC 651-678, is a Federal statute which governs the issues related to occupational safety and health. The purpose and policy of this act are to assure every working man and woman in the nation safe and healthful working condition and to preserve our human resources by, among other things, providing for the development and publication of occupational safety and health standards, providing for an effective enforcement program, and providing for appropriate reporting procedures with respect to occupational safety and health which procedures will help

achieve the objectives of this act and accurately describe the nature of the occupational safety and health (29 USC 651(b)(9)(10)(12)).

- EO 12088, *Federal Compliance with Pollution Standards*. This EO, dated 13 October 1978, requires Federally owned and operated facilities to comply with applicable Federal, state, and local pollution control standards. It makes the head of each executive agency responsible for ensuring that the agencies, facilities, programs, and activities the Agency funds meet applicable Federal, state, and local environmental requirements for correcting situations that are not in compliance with such requirements. In addition, the EO requires that each agency ensure that sufficient funds for environmental compliance are included in the agency budget. Sections 1-4, "Pollution Control Plan" was revoked by EO 13148 **[Revised October 2002]**.
- *Grant Guidelines To States For Implementing The Delivery Prohibition Provision Of The Energy Policy Act Of 2005*. This document, dated August 2006, was produced by the EPA Office of Underground Storage Tanks in consultation with states to provide guidance the delivery prohibition provision in Section 9012 of the *Solid Waste Disposal Act (SWDA)*, enacted by the *Underground Storage Tank Compliance Act*, part of the *Energy Policy Act of 2005* signed by President Bush on August 8, 2005. This document is published as EPA document number 510-R-06-003. These guidelines are effective 8 August 2007 **[Added July 2007]**.
- *Grant Guidelines To States For Implementing The Secondary Containment Provision Of The Energy Policy Act Of 2005*. This document, dated November 2006, was produced by the EPA Office of Underground Storage Tanks in consultation with states to provide guidance on UST secondary containment requirements to implement the secondary containment provision in Section 9003(i)(1) of the *Solid Waste Disposal Act (SWDA)*, enacted by the *Underground Storage Tank Compliance Act*, part of the *Energy Policy Act of 2005* signed by President Bush on August 8, 2005. This document is published as EPA document number 510-R-06-001. These guidelines are effective 8 February 2007 **[Added July 2007]**.
- *Grant Guidelines To States For Implementing The Financial Responsibility And Installer Certification Provision Of The Energy Policy Act Of 2005*. This document, dated January 2007, was produced by the EPA Office of Underground Storage Tanks in consultation with states to address the public record provision in Section 9002(d) of the *Solid Waste Disposal Act (SWDA)*, enacted by the *Underground Storage Tank Compliance Act*, part of the *Energy Policy Act of 2005* signed by President Bush on August 8, 2005. These guidelines describe the minimum requirements for public record that a state's underground storage tank program must meet in order for a state to comply with statutory requirements for Subtitle I funding. These guidelines include: developing and updating the public record; making the record available to the public; describing the minimum public record content; ensuring data quality; and demonstrating and ensuring compliance with these guidelines. This document is published as EPA document number 510-R-07-001. These guidelines are effective 1 October 2007 **[Added July 2007]**.
- *Grant Guidelines To States For Implementing The Public Record Provision Of The Energy Policy Act Of 2005*. This document, dated January 2007, was produced by the EPA Office of Underground Storage Tanks in consultation with states the financial responsibility and installer certification provision in Section 9003(i) of the *Solid Waste Disposal Act (SWDA)*, enacted by the *Underground Storage Tank Compliance Act*, part of the *Energy Policy Act of 2005* signed by President Bush on August 8, 2005. This document is published as EPA document number 510-R-07-002. These guidelines are effective 8 February 2007 **[Added July 2007]**.
- *Grant Guidelines To States For Implementing the Provision Of The Energy Policy Act Of 2005 Requiring States To Report on the Compliance of Government Underground Storage Tanks*. This document, dated April 2007, was produced by the EPA Office of Underground Storage Tanks in consultation with states to implement the provision in Section 9003(j)1 of the *Solid Waste Disposal Act (SWDA)*, enacted by the *Underground Storage Tank Compliance Act*, part of the *Energy Policy Act of 2005* signed by President Bush on August 8, 2005. This document is published as EPA document number 510-R-07-003. These guidelines are effective 8 August 2007 **[Added July 2007]**.
- *Grant Guidelines To States For Implementing Inspection Provisions Of The Energy Policy Act Of 2005*. This document, dated April 2007, provides guidance on what inspections of USTs are states expected to perform. This document was produced by the EPA Office of Underground Storage Tanks in consultation with states to provide

guidance on UST inspection requirements to implement Sections 9005(c)(1) and 9005(c)(2) of the *Solid Waste Disposal Act (SWDA)*, enacted by the *Underground Storage Tank Compliance Act*, part of the *Energy Policy Act of 2005* signed by President Bush on August 8, 2005. This document is published as EPA document number 510-R-07-004. These guidelines are effective 8 August 2007 [Added July 2007].

- *Strategy for An EPA/Tribal Partnership To Implement Section 1529 Of The Energy Policy Act Of 2005*. This strategy, dated August 2006, was developed in coordination with Indian tribes, as required by Section 9013 (a) of the *Solid Waste Disposal Act (SWDA)*, and recognizes the number and diversity of tribes and the need for flexibility in implementing the underground storage tank program to address unique tribal issues. This strategy therefore is intended to provide a basic framework that can be used as a foundation for discussing the unique underground storage tank program implementation issues of different tribal governments and provides a consistent method whereby the U.S. EPA and each tribe can continue to cooperatively work on these issues in the future. This document is published as EPA document number 510-R-06-005 [Added July 2007].

### C. State/Local Requirements

For information on regulations in specific states, see the State Supplements to TEAM Guide.

Since the primary mechanisms regulating air pollutant emissions are the state or air quality control region (AQCR) regulations, some states may be regulating emissions from storage vessels.

Aboveground storage tanks (AST) are often regulated in the state or local fire code if they are not addressed in environmental regulations.

EPA and the States have been working together to develop guidelines for the implementation of the *Underground Storage Tank Compliance Act*. These guidelines describe the minimum requirements that a state's UST program must contain in order for a state to comply with statutory requirements for Subtitle I funding. These guidelines include definitions, requirements, and examples. A state may choose to develop more stringent requirements than described in these guidelines [Revised July 2007].

See the *Key Compliance Definitions* section for terms that are defined by the UST Guidelines in addition to definitions found in 40 CFR 280.

States may choose to prohibit delivery, deposit, or acceptance of product to an individual underground storage tank or to every underground storage tank at a facility. The state must develop criteria and time frames for prohibiting the delivery, deposit, and acceptance of product.

### D. Key Compliance Requirements

- **Bulk Gasoline Terminals** - Bulk gasoline terminals with greater than 75,700 L [approx. 19,998 gal] gasoline throughput per day that deliver liquid product into tank trucks, and that started construction or modification after 17 December 1980 are required to ensure that vapor tightness documentation is available for each gasoline tank truck, and that the tank identification number is recorded as each gasoline tank truck is loaded (40 CFR 60.500 through 60.506).
- **Petroleum Storage Vessels** - Storage vessels for petroleum liquids with a storage capacity greater than 151,416 L (40,000 gal) but less than 246,052 L (65,000 gal), that started construction or modification after 8 March 1974 but before 19 May 1978, or with a capacity greater than 246,052 L (65,000 gal) that started construction or modification after 11 June 1973 but before 19 May 1978, are required to meet specific standards for emissions and monitoring. These standards vary depending upon whether the true vapor pressure of the petroleum liquid is greater or less than 11.1 psia. Storage vessels with a storage capacity greater than 151,416 L (40,000 gal) constructed after 18 May 1978 are required to ensure that the vessel has an external floating roof, or a fixed roof with an internal floating type cover, and a vapor recovery system (40 CFR 60.110 through 60.113 and 60.110a through 60.115a).

- Volatile Organic Liquid (VOL) Storage Vessels - Storage vessels for VOLs having a capacity of greater than or equal to 40 m<sup>3</sup> [approx. 10,567 gal] for which construction, reconstruction, or modification started after 23 July 1984 are required to meet specific inspection, documentation, and notification requirement standards. These include ensuring that certain inspections are made, notifying the USEPA in advance of performing gap measurements, and providing it certain records upon request (40 CFR 60.110b through 60.115b).
- Hazardous Waste Storage Tanks - Hazardous waste storage tank requirements are dependent upon the RCRA classification of the facility (e.g., SQG, LQG or TSDF). Refer to the section titled Hazardous Waste Management for more details on the definitions of these classifications. Tanks at all three types of facilities are required to meet basic requirements including (40 CFR 264.190 through 264.200, 40 CFR 265.190 through 265.200, 40 CFR 264.1085, 40 CFR 265.1085):
  1. a hazardous waste may not be placed into a tank if it will cause the tank or its secondary containment system to rupture, leak, corrode, or fail;
  2. special precautions are taken for ignitable, incompatible or reactive wastes;
  3. the tank is operated using appropriate controls and practices to prevent spills and overflows;
  4. periodic inspections are conducted to detect spills, corrosion, leaks, and operator error;
  5. at closure, all hazardous waste and residues must be removed from the tank, peripheral equipment and foundation structure.

Tank systems at LQG facilities and TSDFs that store hazardous waste with a high volatile organic concentration must meet emission standards specified under Subpart CC and BB of 40 CFR 264 and 265. These regulations also require generators to test the waste to determine the concentration of the waste, to satisfy tank and container emissions standards, and to inspect and monitor regulated units **[Revised March 2000]**.

- Flammable Liquid Storage Tanks - Storage tanks are to be built of steel except in certain circumstances. Outside aboveground tanks for flammable liquids are to meet requirements for distance between tanks, firefighting access, and containment. When flammable vapor may be present from storage tanks, heat sources will be kept from the tanks. Tanks are required to have been strength-tested before being used (29 CFR 1910.106(b)) **[Revised April 2012]**.

## E. Key Compliance Definitions

- *Aboveground Release* - any release to the surface of the land or to surface water. This includes, but is not limited to, releases from the aboveground portion of a UST system and aboveground releases associated with overfills and transfer operations as the regulated substance moves to or from a UST system (40 CFR 280.12) **[Reviewed March 2000]**.
- *Aboveground Storage Tank (AST)* - in relation to hazardous waste, a device that meets the definition of tank in 40 CFR 260.10 and that is situated in such a way that the entire surface area of the tank is completely above the plane of the adjacent surrounding surface and the entire surface area of the tank (including the tank bottom) is able to be visually inspected (40 CFR 260.10) **[Reviewed March 2000]**.
- *Aboveground Tank* - a tank used to store or process used oil that is not an underground storage tank as defined in 40 CFR 280.12 (40 CFR 279.1) **[Added March 2000]**.
- *Accidental Release* - any sudden or nonsudden release of petroleum from an underground storage tank that results in a need for corrective action and/or compensation for bodily injury or property damage neither expected nor intended by the tank owner or operator (40 CFR 280.92) **[Added March 2000]**.
- *Airport Hydrant Fuel Distribution System* - (also called airport hydrant system) an UST system which fuels aircraft and operates under high pressure with large diameter piping that typically terminates into one or more hydrants (fill stands). The airport hydrant system begins where fuel enters one or more tanks from an external source such as a pipeline, barge, rail car, or other motor fuel carrier (40 CFR 280.250) **[Added July 2015]**.

- *Ancillary Equipment* - any device including, but not limited to, such devices as pipings, fittings, flanges, valves, and pumps used to distribute, meter, or control the flow of regulated substances to and from the UST (40 CFR 280.12) **[Reviewed March 2000]**.
- *Atmospheric Tank* - a storage tank which has been designed to operate at pressures from atmospheric through 0.5 psig (29 CFR 1910.106(a)(2)).
- *Average Volatile Organic (VO) Concentration* - the mass-weighted average VO concentration of a hazardous waste (40 CFR 265.1081) **[Reviewed March 2000]**.
- *Barge* - any nonself-propelled vessel (46 CFR 90.10-3).
- *Belowground Release* - any release to the subsurface of the land and to groundwater. This includes, but is not limited to, releases from the below ground portion of a UST system and belowground releases associated with overfills and transfer operations as the regulated substance moves to or from an UST (40 CFR 280.12) **[Reviewed March 2000]**.
- *Beneath The Surface of The Ground* - beneath the ground surface or otherwise covered with earthen materials (40 CFR 280.12) **[Added March 2000]**.
- *Bodily Injury* - this shall have the meaning given to this term by applicable state law; however, this term shall not include those liabilities which, consistent with standard insurance industry practices, are excluded from coverage in liability insurance policies for bodily injury (40 CFR 280.92) **[Added March 2000]**.
- *Boiler* - an enclosed combustion device that extracts useful energy in the form of steam and is not an incinerator or a process heater (40 CFR 63.7957) **[Added April 2004]**.
- *Bulk Gasoline Plant* - any gasoline distribution facility that has a throughput less than or equal to 75,000 L [approx. 19,998 gal/day] (40 CFR 60.111b).
- *Bulk Gasoline Plant* - any gasoline storage and distribution facility that receives gasoline by pipeline, ship or barge, or cargo tank and has a gasoline throughput of less than 20,000 gal/day. Gasoline throughput shall be the maximum calculated design throughput as may be limited by compliance with an enforceable condition under Federal, State, or local law and discoverable by the Administrator and any other person (40 CFR 63.11100) **[Added April 2008]**.
- *Bulk Gasoline Terminal* - any gasoline facility which receives gasoline by pipeline, ship or barge, and has a gasoline throughput greater than 75,700 L/day. Gasoline throughput shall be the maximum calculated design throughput as may be limited by compliance with an enforceable condition under Federal, State or local law and discoverable by the Administrator and any other person (40 CFR 60.501 and 63.421) **[Revised April 2004]**.
- *Bulk Gasoline Terminal* - any gasoline storage and distribution facility that receives gasoline by pipeline, ship or barge, or cargo tank and has a gasoline throughput of 20,000 gal/day or greater. Gasoline throughput shall be the maximum calculated design throughput as may be limited by compliance with an enforceable condition under Federal, State, or local law and discoverable by the Administrator and any other person (40 CFR 63.11100) **[Added April 2008]**.
- *Cargo* - on tank vessels this means combustible liquid, flammable liquid, or liquefied flammable gas unless otherwise stated (46 CFR 30.10-5).
- *Cargo Areas* - on tank vessels, that part of a vessel which includes the cargo tanks and other tanks into which cargo or cargo vapors are intentionally introduced; holds containing these tanks; all intervening spaces within, between, below, or outboard of these tanks or holds; and the deck areas over the length and beam of the vessel above these tanks, holds, or spaces (46 CFR 30.10-5a).

- *Cargo Control Stations* - on tank vessels this means a location that is manned during cargo transfer operations for the purpose of directing or controlling the loading or unloading of cargo (46 CFR 30.10-5b).
- *Cathodic Protection* - a technique to prevent corrosion of a metal surface by making that surface the cathode of an electrochemical cell. For example, a tank system can be cathodically protected through the application of either galvanic anodes or impressed current (40 CFR 280.12) **[Reviewed March 2000]**.
- *Cathodic Protection Tester* - a person who can demonstrate understanding of the principles and measurements of all common types of cathodic protection systems as applied to buried or submerged metal piping and tank systems. At a minimum, such persons must have education and experience in soil resistivity, stray current, structure-to-soil potential, and component electrical isolation measurements of buried metal piping and tank systems (40 CFR 280.12) **[Reviewed March 2000]**.
- *Central Accumulation Area* - any on-site hazardous waste accumulation area with hazardous waste accumulating in units subject to either 40 CFR 262.16 (for small quantity generators) or 40 CFR 262.17 (for large quantity generators). A central accumulation area at an eligible academic entity that chooses to operate under 40 CFR part 262 subpart K is also subject to 40 CFR 262.211 when accumulating unwanted material and/or hazardous waste (40 CFR 260.10) **[Added January 2017]**.
- *CERCLA* - *Comprehensive Environmental Response Compensation and Liability Act* of 1980 as amended (40 CFR 280.12) **[Reviewed March 2000]**.
- *Certificated* - for tank vessels, this applies to a vessel covered by a certificate of inspection issued by the Coast Guard; when applied to personnel employed on tank vessels, the term refers to a certificate of ability issued by the Coast Guard (46 CFR 30.10-7).
- *Class A Operator* - the individual who has primary responsibility to operate and maintain the UST system in accordance with applicable requirements established by the implementing agency. The Class A operator typically manages resources and personnel, such as establishing work assignments, to achieve and maintain compliance with regulatory requirements (40 CFR 280.12) **[Added July 2015]**.
- *Class B Operator* - the individual who has day-to-day responsibility for implementing applicable regulatory requirements established by the implementing agency. The Class B operator typically implements in-field aspects of operation, maintenance, and associated recordkeeping for the UST system (40 CFR 280.12) **[Added July 2015]**.
- *Class C Operator* - the individual responsible for initially addressing emergencies presented by a spill or release from an UST system. The Class C operator typically controls or monitors the dispensing or sale of regulated substances (40 CFR 280.12) **[Added July 2015]**.
- *Closure Device* - a cap, hatch, lid, plug, seal, valve, or other type of fitting that blocks an opening in a cover such that when the device is secured in the closed position it prevents or reduces air pollutant emissions to the atmosphere. Closure devices include devices that are detachable from the cover (e.g., a sampling port cap), manually operated (e.g., hinged access lid or hatch), or automatically operated (e.g., a spring loaded pressure relief valve) (40 CFR 265.1081) **[Reviewed March 2000]**.
- *Closed Vent System* - a system that is not open to the atmosphere and is composed of hard-piping, ductwork, connections, and, if necessary, fans, blowers, or other flow-inducing device that conveys gas or vapor from an emissions point to a control device (40 CFR 63.7957) **[Added April 2004]**.
- *Closure Device* - a cap, hatch, lid, plug, seal, valve, or other type of fitting that prevents or reduces air pollutant emissions to the atmosphere by blocking an opening in a cover when the device is secured in the closed position. Closure devices include devices that are detachable from the cover (e.g., a sampling port cap), manually operated (e.g., a hinged access lid or hatch), or automatically operated (e.g., a spring-loaded pressure relief valve) (40 CFR 63.7957) **[Added April 2004]**.

- *Compatible* - the ability of two or more substances to maintain their respective physical and chemical properties upon contact with one another for the design life of the tank system under conditions likely to be encountered in the UST (40 CFR 280.12) **[Reviewed March 2000]**.
- *Condensate* - hydrocarbon liquid separated from natural gas which condenses due to changes in the temperature and/or pressure and remains liquid at standard conditions (40 CFR 60.111(f) **[Added October 2003]**.
- *Connected Piping* - all underground piping including valves, elbows, joints, flanges, and flexible connectors attached to a tank system through which regulated substances flow. For the purpose of determining how much piping is connected to any individual UST system, the piping that joins two UST systems should be allocated equally between them (40 CFR 280.12) **[Reviewed March 2000]**.
- *Consumptive Use* - with respect to heating oil, means consumed on the premises (40 CFR 280.12) **[Reviewed March 2000]**.
- *Container* - a portable unit used to hold material. Examples of containers include, but are not limited to drums, dumpsters, roll-off boxes, bulk cargo containers commonly known as portable tanks or totes, cargo tank trucks, dump trucks, and rail cars. For the purpose of this subpart, a front-end loader, excavator, backhoe, or other type of self-propelled excavation equipment is not a container (40 CFR 63.7957) **[Added April 2004]**.
- *Containment Sump* - a liquid-tight container that protects the environment by containing leaks and spills of regulated substances from piping, dispensers, pumps and related components in the containment area. Containment sumps may be single walled or secondarily contained and located at the top of tank (tank top or submersible turbine pump sump), underneath the dispenser (under-dispenser containment sump), or at other points in the piping run (transition or intermediate sump) (40 CFR 280.12) **[Added July 2015]**.
- *Continuous Record* - documentation of data values measured at least once every 15 min and recorded at the frequency specified in this subpart (40 CFR 63.7957) **[Added April 2004]**.
- *Continuous Recorder* - a data recording device that either records an instantaneous data value at least once every 15 min or records 15-min or more frequent block averages (40 CFR 63.7957) **[Added April 2004]**.
- *Continuous Seal* - a seal that forms a continuous closure that completely covers the space between the edge of the floating roof and the wall of a tank (40 CFR 265.1081) **[Reviewed March 2000]**.
- *Continuous Vapor Processing System* - a vapor processing system that treats total organic compounds vapors collected from gasoline tank trucks on a demand basis without intermediate accumulation in a vapor holder (40 CFR 60.501 **[Added October 2003]**.
- *Control Device* - equipment used recovering, removing, oxidizing, or destroying organic vapors. Examples of such equipment include but are not limited to carbon adsorbers, condensers, vapor incinerators, flares, boilers, and process heaters (40 CFR 63.7957) **[Added April 2004]**.
- *Controlled Loading Rack, For The Purposes of 40 CFR 63.420* - a loading rack equipped with vapor collection and processing systems that reduce displaced vapor emissions to no more than 80 milligrams of total organic compounds per liter of gasoline loaded, as measured using the test methods and procedures in 40 CFR 60.503(a) through 60.503(c) (40 CFR 63.421) **[Added April 2004]**.
- *Corrosion Expert* - a person who, by reason of thorough knowledge of the physical sciences and the principles of engineering and mathematics acquired by a professional education and related practical experience, is qualified to engage in the practice of corrosion control on buried or submerged metal piping systems and metal tanks. Such a person must be accredited or certified as being qualified by the National Association of Corrosion Engineers or be a registered professional engineer who has certification or licensing that includes education and experience in corrosion control of buried or submerged metal piping systems and metal tanks (40 CFR 280.12) **[Reviewed March 2000]**.

- *Cover* - a device that provides a continuous barrier over the hazardous waste managed in a unit to prevent or reduce air pollutant emissions to the atmosphere. A cover may have openings (such as access hatches, sampling ports, gauge wells) that are necessary for operation, inspection, maintenance, and repair of the unit on which the cover is used. A cover may be a separate piece of equipment which can be detached and removed from the unit or a cover may be formed by structural features permanently integrated into the design of the unit (40 CFR 265.1081) **[Reviewed March 2000]**.
- *Cover* - a device that prevents or reduces air pollutant emissions to the atmosphere by forming a continuous barrier over the remediation material managed in a unit. A cover may have openings (such as access hatches, sampling ports, gauge wells) that are necessary for operation, inspection, maintenance, and repair of the unit on which the cover is used. A cover may be a separate piece of equipment which can be detached and removed from the unit (such as a tarp) or a cover may be formed by structural features permanently integrated into the design of the unit (40 CFR 63.7957) **[Added April 2004]**.
- *Custody Transfer* - the transfer of produced petroleum and/or condensate, after processing and/or treating in the producing operations, from storage tanks or automatic transfer facilities to pipelines or any other forms of transportation 40 CFR 60.111(g) **[Added October 2003]**.
- *Delivery Prohibition* - prohibiting the delivery, deposit, or acceptance of product to an underground storage tank that has been determined to be ineligible by EPA or a state implementing agency for such delivery, deposit, or acceptance. (NOTE: The term "state" does not exclude local government implementing agencies.) (*Grant Guidelines To States For Implementing The Delivery Prohibition Provision Of The Energy Policy Act Of 2005*) **[Added July 2007]**.
- *Deviation* - any instance in which an affected source subject to this subpart, or an owner or operator of such a source (40 CFR 63.7957) **[Added April 2004]**:
  1. Fails to meet any requirement or obligation established by this subpart, including but not limited to any emissions limitation (including any operating limit), or work practice standard;
  2. Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit; or
  3. Fails to meet any emissions limitation, (including any operating limit), or work practice standard in this subpart during startup, shutdown, or malfunction, regardless of whether or not such failure is permitted by this subpart.
- *Dielectric Material* - a material that does not conduct direct electrical current. Dielectric coatings are used to electrically isolate UST systems from the surrounding soils. Dielectric bushings are used to electrically isolate portions of the UST system (e.g., tank from piping) (40 CFR 280.12) **[Reviewed March 2000]**.
- *Director of the Implementing Agency* - the USEPA Regional Administrator, or, in the case of a state with a program approved under section 9004, the Director of the designated state or local agency responsible for carrying out an approved UST program (40 CFR 280.92) **[Added March 2000]**.
- *Dispenser* - equipment located aboveground that dispenses regulated substances from the UST system (40 CFR 280.12) **[Added July 2015]**.
- *Dispenser System* - the dispenser and the equipment necessary to connect the dispenser to the underground storage tank system (40 CFR 280.12) **[Added July 2015]**.
- *Do-It-Yourself (DIY) Used Oil Collection Center* - any site or facility that accepts, aggregates, and stores used oil collected only from household DIYs (40 CFR 279.1) **[Added March 2000]**.
- *Electrical Equipment* - underground equipment that contains dielectric fluid that is necessary for the operation of equipment such as transformers and buried electric cable (40 CFR 280.12) **[Reviewed March 2000]**.

- *Emissions Limitation* - any emissions limit, opacity limit, operating limit, or visible emissions limit (40 CFR 63.7957) [**Added April 2004**].
- *Emissions Point* - an individual tank, surface impoundment, container, oil-water, organic-water separator, transfer system, vent, or enclosure (40 CFR 63.7957) [**Added April 2004**].
- *Enclosure* - a structure that surrounds a tank or container, captures organic vapors emitted from the tank or container, and vents the captured vapors through a closed-vent system to a control device (40 CFR 63.7957 and 265.1081) [**Reviewed March 2000; Revised April 2004**].
- *Equipment* - each pump, pressure relief device, sampling connection system, valve, and connector used in remediation material service at a facility (40 CFR 63.7957) [**Added April 2004**].
- *Equipment* - each valve, pump, pressure relief device, sampling connection system, open-ended valve or line, and flange or other connector in the gasoline liquid transfer and vapor collection systems. This definition also includes the entire vapor processing system except the exhaust port(s) or stack(s) (40 CFR 63.421 and 63.11100) [**Added April 2004; Revised April 2008**].
- *Excavation Zone* - the volume containing the tank system and backfill material bounded by the ground surface, walls, and floor of the pit and trenches into which the UST system is placed at the time of installation (40 CFR 280.12) [**Reviewed March 2000**].
- *Excluded USTs* - these are USTs which are not required to meet the requirements found in 40 CFR 280 and include (40 CFR 280.10(b)) [**Reviewed March 2000; Revised July 2015**]:
  1. any UST system holding hazardous wastes listed or identified under Subtitle C of the *Solid Waste Disposal Act*, or a mixture of such hazardous waste and other regulated substances
  2. any wastewater treatment tank system that is part of a wastewater treatment facility regulated under Section 402 or 307(b) of the *Clean Water Act* (CWA)
  3. equipment or machinery that contains regulated substances for operational purposes such as hydraulic lift tanks and electrical equipment tanks
  4. any UST system whose capacity is 110 gal or less
  5. any UST system that contains a de minimis concentration of regulated substance
  6. any emergency spill or overflow containment UST system that is expeditiously emptied after use.

(NOTE: See also the definitions for Underground Storage Tank and Partially Excluded USTs.)

- *Exempted Hazardous Waste Management Unit* - in relation to air emissions standards, this is (40 CFR 264.1080(b) and 265.1080(b)) [**Revised December 1997; Revised March 2000**]:
  1. a waste management unit that holds hazardous waste placed in the unit before 6 December 1996, and in which no hazardous waste is added to the unit on or after 6 December 1996
  2. a container that has a design capacity less than or equal to 0.1 m<sup>3</sup>
  3. a tank in which an owner or operator has stopped adding hazardous waste and the owner or operator has begun implementing or completed closure pursuant to an approved closure plan
  4. a surface impoundment in which an owner or operator has stopped adding hazardous waste (except to implement an approved closure plan) and the owner or operator has begun implementing or completed closure pursuant to an approved closure plan
  5. a waste management unit that is used solely for the on-site treatment or storage of hazardous waste that is generated as the result of implementing remedial activities required under corrective action authorities of RCRA sections 3004(u), 3004(v), or 3008(h); CERCLA authorities; or similar federal or state authorities
  6. a waste management unit that is used solely for the management of radioactive mixed waste in accordance with all applicable regulations under the *Atomic Energy Act* and the *Nuclear Waste Policy Act*
  7. a hazardous waste management unit that the owner or operator certifies is equipped with and operating air emissions controls in accordance with regulations promulgated as a result of the CAA

8. a tank that has a process vent as defined in 40 CFR 264.1031.
- *Exempted Hazardous Waste Storage Tanks* - storage tanks are exempt from these air emission requirements if the waste management unit is one of the following (40 CFR 264.1082(c) and 265.1083(c)) [**Revised March 2000**]:
    1. tanks for which all hazardous wastes entering the unit has an average VO concentration at the point of waste origination is less than 500 ppmw. This determination is updated at least every 12 mo.
    2. tanks for which the organic content of all hazardous wastes entering the unit has been reduced by an organic destruction or removal process that achieves any of the following conditions:
      - a. a process that removes or destroys the organics to a level such that the average VO concentration of the hazardous waste at the point of waste treatment is less than the exit concentration limit established for the process
      - b. a process that removes or destroys the organics contained in the hazardous waste to such a level that the organic reduction efficiency for the process is equal to or greater than 95 percent, and the average VO concentration of the hazardous waste at the point of waste treatment is less than 100 ppmw
      - c. a process that removes or destroys the organics contained in the hazardous waste to such a level that the actual organic mass removal rate for the process is equal to or greater than the required organic mass removal rate established for the process
      - d. a biological process that destroys or degrades the organics contained in the hazardous waste such that either of the following is met:
        - i. the organic reduction efficiency for the process is equal to or greater than 95 percent and the organic biodegradation efficiency for the process is equal to or greater than 95 percent
        - ii. the total actual organic mass biodegradation rate for all hazardous waste treated by the process is equal to or greater than the required organic mass removal rate
      - e. a process that removes or destroys the organics contained in the hazardous waste and meets all the following conditions:
        - i. from the point of waste origination through the point where the hazardous waste enters the process, the hazardous waste is continuously managed in waste management units which use air emissions controls as applicable to the waste management unit
        - ii. from the point of waste origination through the point where the hazardous waste enters the process, any transfer of the hazardous waste is accomplished through continuous hard-piping or other closed system transfer that does not allow exposure of the waste to the atmosphere
        - iii. the average VO concentration of the hazardous waste at the point of waste treatment is less than the lowest average VO concentration at the point of waste origination determined for each of the individual hazardous waste streams entering the process or 500 ppmw, whichever value is lower
      - f. a process that removes or destroys the organics contained in the hazardous waste to a level such that the organic reduction efficiency for the process is equal to or greater than 95 percent and the owner or operator certifies that the average VO concentration at the point of waste origination for each of the individual waste streams entering the process is less than 10,000 ppmw
      - g. a hazardous waste incinerator for which the owner or operator has either been issued a final permit under 40 CFR 270 or has certified compliance with the requirements of 40 CFR 265, Subpart O
      - h. a boiler or industrial furnace for which the owner or operator has been issued a final permit under 40 CFR 270 or has certified compliance with the requirements of 40 CFR 266, Subpart H.
    3. a tank used for biological treatment of hazardous waste such that it degrades or destroys the organics contained in the hazardous waste such that either of the following conditions is met:
      - a. organic reduction efficiency for the process is equal to or greater than 95 percent and the organic biodegradation efficiency for the process is equal to or greater than 95 percent
      - b. the total actual organic mass biodegradation rate for all hazardous waste treated by the process is equal to or greater than the required organic mass removal rate
    4. tanks for which all hazardous waste placed in the unit either:
      - a. meets the numerical concentrations limits for organic hazardous constituents as specified in 40 CFR 280 has been treated by the treatment technology established by the USEPA in 40 CFR 268.42 or have been removed or destroyed by an equivalent method of treatment approved by USEPA under 40 CFR 268.42(b).

- *Existing Tank* - in relation to used oil, a tank that is used for the storage or processing of used oil and that is in operation, or for which installation has commenced on or prior to the effective date of the authorized used oil program for the state in which the tank is located. Installation will be considered to have commenced if the owner or operator has obtained all federal, state, and local approvals or permits necessary to begin installation of the tank and if either (1) A continuous on-site installation program has begun, or (2) The owner or operator has entered into contractual obligations (which cannot be canceled or modified without substantial loss) for installation of the tank to be completed within a reasonable time 40 CFR 279.1) [**Revised March 2000**].
- *Existing* – for purposes of the guidelines, existing means that an underground tank, piping, motor fuel dispensing system, facility, community water system, or potable drinking water well is in place when a new installation or replacement of an underground tank, piping, or motor fuel dispensing system begins (*Grant Guidelines To States For Implementing The Secondary Containment Provision Of The Energy Policy Act Of 2005*) [**Added July 2007**].
- *Existing Tank System* - a tank system used to contain an accumulation of regulated substances or for which installation has commenced on or before 22 December 1988. Installation is considered to have commenced if (40 CFR 280.12) [**Reviewed March 2000**]:
  1. the owner or operator has obtained all Federal, state, and local approvals or permits necessary to begin physical construction of the site or installation of the tank system
  2. either a continuous onsite physical construction or installation program has begun, or the owner or operator has entered into any contractual obligations which cannot be canceled or modified without substantial loss for physical construction at the site or installation of the tank system to be completed within a reasonable time.
- *Existing Vapor Processing System* - a vapor processing system [capable of achieving emissions to the atmosphere no greater than 80 milligrams of total organic compounds per liter of gasoline loaded], the construction or refurbishment of which was commenced before 17 December 1980, and which was not constructed or refurbished after that date (40 CFR 60.501) [**Added October 2003**].
- *External Floating Roof* - a pontoon or double-deck type floating roof that rests on the surface of a hazardous waste being managed in a tank that has no fixed roof (40 CFR 265.1081) [**Reviewed March 2000**].
- *External Floating Roof* - a pontoon-type or double-deck type cover that rests on the liquid surface in a tank with no fixed roof (40 CFR 63.7957) [**Added April 2004**].
- *Facility* - all contiguous or adjoining property that is under common control including properties that are separated only by a road or other public right-of-way. Common control includes properties that are owned, leased, or operated by the same entity, parent entity, subsidiary, or any combination thereof. A unit or group of units within a contiguous property that are not under common control (e.g., a wastewater treatment unit located at the facility but is owned by a different company) is a different facility (40 CFR 63.7957) [**Added April 2004**].
- *Farm Tank* - a tank located on a tract of land devoted to the production of crops or raising animals, including fish, and associated residences and improvements. A farm tank must be located on the farm property. Farm includes fish hatcheries, rangeland, and nurseries with growing operations (40 CFR 280.12) [**Reviewed March 2000**].
- *Field-constructed Tank* - a tank constructed in the field. For example, a tank constructed of concrete that is poured in the field, or a steel or fiberglass tank primarily fabricated in the field is considered field-constructed (40 CFR 280.250) [**Added July 2015**].
- *Fixed Roof* - a cover that is mounted on a unit in a stationary position and does not move with fluctuations in the level of the material managed in the unit (40 CFR 63.7957 and 265.1081) [**Reviewed March 2000; Revised April 2004**].
- *Flame Zone* - the portion of the combustion chamber in a boiler or process heater occupied by the flame envelope (40 CFR 63.7957) [**Added April 2004**].

- *Flammable Liquid* - any liquid having a flashpoint at or below 199.4 °F (93 °C). Flammable liquids are divided into four categories as follows (29 CFR 1910.106(a)(19)) **[Revised April 2012]**:
  1. Category 1 shall include liquids having flashpoints below 73.4 °F (23 °C) and having a boiling point at or below 95 °F (35 °C).
  2. Category 2 shall include liquids having flashpoints below 73.4 °F (23 °C) and having a boiling point above 95 °F (35 °C).
  3. Category 3 shall include liquids having flashpoints at or above 73.4 °F (23 °C) and at or below 140 °F (60 °C). When a Category 3 liquid with a flashpoint at or above 100 °F (37.8 °C) is heated for use to within 30 °F (16.7 °C) of its flashpoint, it shall be handled in accordance with the requirements for a Category 3 liquid with a flashpoint below 100 °F (37.8 °C).
  4. Category 4 shall include liquids having flashpoints above 140 °F (60 °C) and at or below 199.4 °F (93 °C). When a Category 4 flammable liquid is heated for use to within 30 °F (16.7 °C) of its flashpoint, it shall be handled in accordance with the requirements for a Category 3 liquid with a flashpoint at or above 100 °F (37.8 °C).
  5. When liquid with a flashpoint greater than 199.4 °F (93 °C) is heated for use to within 30 °F (16.7 °C) of its flashpoint, it shall be handled in accordance with the requirements for a Category 4 flammable liquid.
- *Flare* - a thermal oxidation system using an open (without enclosure) flame (40 CFR 60.501 and 63.11100) **[Added April 2004; Revised April 2008]**.
- *Floating Membrane Cover* - a cover consisting of a synthetic flexible membrane material that rests upon and is supported by the hazardous waste being managed in a surface impoundment (40 CFR 265.1081) **[Reviewed March 2000]**.
- *Floating Roof* - a cover consisting of a double deck, pontoon single deck, or internal floating cover which rests upon and is supported by the material being contained, and is equipped with a continuous seal (40 CFR 63.7957 and 265.1081) **[Reviewed March 2000; Revised April 2004]**.
- *Flow Indicator* - a device that indicates whether gas is flowing, or whether the valve position would allow gas to flow in a bypass line (40 CFR 63.7957) **[Added April 2004]**.
- *Flow-Through Process Tank* - a tank that forms an integral part of a production process through which there is a steady, variable, recurring, or intermittent flow of materials during the operation of the process. Flow-through process tanks do not include tanks used for the storage of material prior to their introduction into the production process or for the storage of finished products or byproducts from the production process (40 CFR 280.12) **[Reviewed March 2000]**.
- *Free-Product* - a regulated substance that is present as a nonaqueous phase liquid (e.g., liquid not dissolved in water) (40 CFR 280.12) **[Reviewed March 2000]**.
- *Gasoline* - any petroleum distillate or petroleum distillate/alcohol blend having a Reid vapor pressure of 27.6 kilopascals or greater which is used as a fuel for internal combustion engines (40 CFR 60.501) **[Added October 2003]**.
- *Gasoline Cargo Tank* - a delivery tank truck or railcar which is loading gasoline or which has loaded gasoline on the immediately previous load (40 CFR 63.421 and 63.11100) **[Added April 2004; Revised April 2008]**.
- *Gasoline Tank Truck* - a delivery tank truck used at bulk gasoline terminals which is loading gasoline or which has loaded gasoline on the immediately previous load (40 CFR 60.501) **[Added October 2003]**.
- *Gathering Lines* - any pipeline, equipment, facility, or building used in the transportation of oil or gas during oil or gas production or gathering operations (40 CFR 280.12) **[Reviewed March 2000; Revised July 2015]**.

- *Generator* - any person, by site, whose act or process produces hazardous waste identified or listed in 40 CFR 261, or whose act first causes a hazardous waste to become subject to regulation (40 CFR 260.10). (NOTE: This typically is used to refer to a facility producing hazardous waste in quantities greater than 1000 kg/mo [approx. 2205 lb/mo]) **[Reviewed March 2000]**.
- *Green Tag* - a document, device, tag, or other item identifying an underground storage tank or underground storage tank facility as eligible to receive product. Such item is generally affixed to the fill pipe or otherwise conspicuously displayed at the underground storage tank facility (*Grant Guidelines To States For Implementing The Delivery Prohibition Provision Of The Energy Policy Act Of 2005*) **[Added July 2007]**.
- *Hard-Piping* - pipe or tubing that is manufactured and properly installed according to relevant standards and good engineering practices (40 CFR 63.7957) **[Added April 2004]**.
- *Hazardous Substance UST System* - any UST system that contains a hazardous substance defined in section 101(14) of the *Comprehensive Environmental Response, Compensation, and Liability Act* of 1980 (but not including any substance regulated as a hazardous waste under subtitle C) or any mixture of such substances and petroleum, and which is not a petroleum UST system (40 CFR 280.12) **[Reviewed March 2000]**.
- *Hazardous Waste* - a solid waste identified as a characteristic or listed hazardous waste in 40 CFR 261.3 (40 CFR 260.10).
- *Heating Oil* - petroleum that is No. 1, No. 2, No. 4--light, No. 4--heavy, No. 5--light, No. 5--heavy, and No. 6 technical grades of fuel oil; other residual fuel oils (including Navy Special Fuel Oil and Bunker C); and other fuels when used as substitutes for one of these fuel oils. Heating oil is typically used in the operation of heating equipment, boilers, or furnaces (40 CFR 280.12) **[Reviewed March 2000; Revised July 2015]**.
- *Household Do-It-Yourselfer Used Oil* - oil that is derived from households, such as used oil generated by individuals who generate used oil through the maintenance of their personal vehicles (40 CFR 279.1) **[Added March 2000]**.
- *Household "Do-It-Yourselfer" Used Oil Generator* - an individual who generates household "do-it-yourselfer" used oil (40 CFR 279.1) **[Added March 2000]**.
- *Hydraulic Lift Tank* - a tank holding hydraulic fluid for a closed-loop mechanical system that uses compressed air or hydraulic fluid to operate lifts, elevators, and other similar devices (40 CFR 280.12) **[Reviewed March 2000]**.
- *Hydrocarbon* - any organic compound consisting predominantly of carbon and hydrogen (40 CFR 60.111(e)) **[Added October 2003]**.
- *IM 101 or 102 Portable Tank* - a portable tank constructed in accordance with 49 CFR 178.270 through 178.272 and approved under 73.32a (46 CFR 98.30-1(a)).
- *Implementing Agency* - USEPA, or, in the case of a state with a program approved under section 9004 (or pursuant to a memorandum of agreement with USEPA), the designated state or local agency responsible for carrying out an approved UST program (40 CFR 280.12) **[Added March 2000]**.
- *In Gasoline Service* - that a piece of equipment is used in a system that transfers gasoline or gasoline vapors. Limitation(s) on potential to emit means limitation(s) limiting a source's potential to emit as defined in 40 CFR 63.2 (40 CFR 63.421) **[Added April 2004]**.
- *In Gasoline Service* - that a piece of equipment is used in a system that transfers gasoline or gasoline vapors (40 CFR 63.11100) **[Added April 2008]**.

- *In-Ground Tank* - a device meeting the definition of tank in 40 CFR 260.10 whereby a portion of the tank is situated to any degree within the ground, thereby preventing visual inspection of the external surface of that tank that is in the ground (40 CFR 260.10) **[Reviewed March 2000]**.
- *Individual Drain System* - a stationary system used to convey wastewater streams or residuals to a remediation material management unit or to discharge or disposal. The term includes hard-piping, all drains and junction boxes, together with their associated sewer lines and other junction boxes (e.g., manholes, sumps, and lift stations) conveying wastewater streams or residuals. For the purpose of this subpart, an individual drain system is not a drain and collection system that is designed and operated for the sole purpose of collecting rainfall runoff (e.g., stormwater sewer system) and is segregated from all other individual drain systems (40 CFR 63.7957) **[Added April 2004]**.
- *Inland Oil Barge* - a tank barge carrying oil in bulk as cargo certificated by the Coast Guard under 46 CFR chapter I, subchapter D for river or canal service or lakes, bays, and sounds service (33 CFR 155.200).
- *Installation Of A New Motor Fuel Dispenser System* – the installation of a new motor fuel dispenser and the equipment necessary to connect the dispenser to the underground storage tank system. It does not mean the installation of a motor fuel dispenser installed separately from the equipment needed to connect the dispenser to the underground storage tank system. For purposes of these guidelines, the equipment necessary to connect the motor fuel dispenser to the underground storage tank system may include check valves, shear valves, unburied risers or flexible connectors, or other transitional components that are beneath the dispenser and connect the dispenser to the underground piping (*Grant Guidelines To States For Implementing The Secondary Containment Provision Of The Energy Policy Act Of 2005*) **[Added July 2007]**.
- *Intermittent Vapor Processing System* - a vapor processing system that employs an intermediate vapor holder to accumulate total organic compounds vapors collected from gasoline tank trucks, and treats the accumulated vapors only during automatically controlled cycles (40 CFR 60.501) **[Added October 2003]**.
- *Internal Floating Roof* - a cover that rests or floats on the material surface (but not necessarily in complete contact within) inside a tank that has a fixed roof (40 CFR 63.7957 and 265.1081) **[Reviewed March 2000; Revised April 2004]**.
- *Keel Laying Date* - the date upon which progressive construction identifiable with a specific vessel begins, including construction of the first module or prefabricated section of the hull that is identifiable with that vessel (46 CFR 30.10-37).
- *Large Quantity Generator* - a generator who generates any of the following amounts in a calendar month (40 CFR 260.10) **[Added January 2017]**:
  1. Greater than or equal to 1,000 kilograms (2200 lbs) of non-acute hazardous waste; or
  2. Greater than 1 kilogram (2.2 lbs) of acute hazardous waste listed in 40 CFR 261.31 or 40 CFR 261.33(e); or
  3. Greater than 100 kilograms (220 lbs) of any residue or contaminated soil, water, or other debris resulting from the cleanup of a spill, into or on any land or water, of any acute hazardous waste listed in 40 CFR 261.31 or 40 CFR 261.33(e).
- *Lightweight* - the displacement of a vessel in metric tons without cargo, oil fuel, lubricating oil, ballast water, fresh water, feedwater in tanks, consumable stores, and persons and their effects (46 CFR 30.10-38).
- *Liquid Trap* - sumps, well cellars, and other traps used in association with oil and gas production, gathering, and extracting operations (including gas production plants), for the purpose of collecting oil, water, and other liquids. These liquid traps may temporarily collect liquids for subsequent disposition or reinjection into a production or pipeline stream, or may collect and separate liquids from a gas stream (40 CFR 280.12) **[Reviewed March 2000]**.
- *Loading Rack* - the loading arms, pumps, meters, shutoff valves, relief valves, and other piping and valves necessary to fill delivery tank trucks (40 CFR 60.501) **[Added October 2003]**.

- *Local Government* - this shall have the meaning given this term by applicable state law and includes Indian tribes. The term is generally intended to include (40 CFR 280.92) **[Added March 2000]**:
  1. counties, municipalities, townships, separately chartered and operated special districts (including local government public transit systems and redevelopment authorities), and independent school districts authorized as governmental bodies by state charter or constitution; and
  2. special districts and independent school districts established by counties, municipalities, townships, and other general purpose governments to provide essential services.
- *Low Pressure Tank* - a storage tank which has been designed to operate at a pressure above 0.5 psig but not more than 15 psig (29 CFR 1910.106(a)(21)).
- *Maintenance* - the normal operational upkeep to prevent a UST system from releasing product (40 CFR 280.12) **[Reviewed March 2000]**.
- *Malfunction* - any sudden, infrequent, and not reasonably preventable failure or air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operations are not malfunctions (40 CFR 265.1081) **[Reviewed March 2000]**.
- *Management Practice (MP)* - practices that, although not mandated by law, are encouraged to promote safe operating procedures.
- *Marine Portable Tank (MPT)* - a liquid-carrying tank that has a capacity of 110 gal or more, is designed to be carried on a vessel, can be lifted full or empty onto and off a vessel, can be filled and discharged while on a vessel, is not permanently attached to the vessel, and was inspected by the Coast Guard on or before 30 September 1992 (46 CFR 64.5).
- *MARPOL 73/78* - the *International Convention for the Prevention of Pollution from Ships*, 1973 as amended by the Protocol of 1978 (33 CFR 151.05).
- *Maximum HAP Vapor Pressure* - the sum of the individual HAP equilibrium partial pressure exerted by remediation material at the temperature equal to either: the monthly average temperature as reported by the National Weather Service when the remediation material is stored or treated at ambient temperature; or the highest calendar-month average temperature of the remediation material when the remediation material is stored at temperatures above the ambient temperature or when the remediation material is stored or treated at temperatures below the ambient temperature. For the purpose of this subpart, maximum HAP vapor pressure is determined using the procedures specified in CFR 63.7944 (40 CFR 63.7957) **[Added April 2004]**.
- *Maximum Organic Vapor Pressure* - the sum of the individual organic constituent partial pressures exerted by the material contained in a tank, at the maximum vapor pressure causing conditions reasonably expected to occur in the tank (40 CFR 265.1081) **[Reviewed March 2000]**.
- *Maximum True Vapor Pressure* - the equilibrium partial pressure exerted by the volatile organic compounds (as defined in 40 CFR 51.100) in the stored VOL at the temperature equal to the highest calendar-month average of the VOL storage temperature for VOL's stored above or below the ambient temperature or at the local maximum monthly average temperature as reported by the National Weather Service for VOL's stored at the ambient temperature, as determined (40 CFR 60.111b) **[Revised April 2004]**.
- *Metallic Shoe Seal* - a continuous seal that is constructed of metal sheets which are held vertically against the well of the tank by springs, weighted levels, or other mechanisms and is connected to the floating roof by braces or other means. A flexible coated fabric spans the annular space between the metal sheet and the floating roof (40 CFR 265.1081) **[Reviewed March 2000]**.
- *Maximum True Vapor Pressure* - the equilibrium partial pressure exerted by the volatile organic compounds (as defined in 40 CFR 51.100) in the stored VOL at the temperature equal to the highest calendar-month average of

the VOL storage temperature for VOL's stored above or below the ambient temperature or at the local maximum monthly average temperature as reported by the National Weather Service for VOL's stored at the ambient temperature, as determined (40 CFR 60.111b) **[Added January 2004]**.

- *Monthly* - once per calendar month at regular intervals of no less than 28 days and no more than 35 days (40 CFR 63.11100) **[Added April 2008]**.
- *Motor Fuel* – petroleum or a petroleum-based substance that is motor gasoline, aviation gasoline, No. 1 or No. 2 diesel fuel, or any grade of gasohol and is typically used in the operation of a motor engine. (NOTE: This definition applies to blended petroleum motor fuels such as biodiesel and ethanol blends that contain more than a *de minimis* amount of petroleum or petroleum-based substance.) (*Grant Guidelines To States For Implementing The Secondary Containment Provision Of The Energy Policy Act Of 2005*) **[Added July 2007]**.
- *Motor Fuel* - a complex blend of hydrocarbons typically used in the operation of a motor engine, such as motor gasoline, aviation gasoline, No. 1 or No. 2 diesel fuel, or any blend containing one or more of these substances (for example: motor gasoline blended with alcohol). (40 CFR 280.12) **[Reviewed March 2000; Revised July 2015]**.
- *New Tank* - in relation to used oil, a tank that will be used to store or process used oil and for which installation has started after the effective date of the authorized used oil program for the state in which the tank is located (40 CFR 279.1) **[Reviewed March 2000]**.
- *New Tank System* - for USTs, a tank system that will be used to contain an accumulation of regulated substances and for which installation has commenced after 22 December 1988 (40 CFR 280.12) **[Reviewed March 2000]**.
- *New Tank System or New Component System* - in relation to hazardous waste, a tank system or component that will be used for the storage and treatment of hazardous waste and for which installation has commenced after 14 July 1986, except however, for purposes of 40 CFR 264.193(g)(2) and 265.193(g)(2), a new tank system is one for which construction commenced after 14 July 1986 (40 CFR 260.10) **[Reviewed March 2000]**.
- *No Detectable Organic Emissions* - no escape of organics to the atmosphere as determined using the procedure specified in 40 CFR 63.694(k) (40 CFR 63.7957) **[Added April 2004]**.
- *No Detectable Organic Emissions* - no escape of organics to the atmosphere as determined by using the procedures specified in 40 CFR 265.1084(d) (40 CFR 265.1081) **[Reviewed March 2000]**.
- *Non-acute Hazardous Waste* - all hazardous wastes that are not acute hazardous waste, as defined in 40 CFR 260.10 (40 CFR 260.10) **[Added January 2017]**.
- *Noncommercial Purposes with Respect to Motor Fuel* – with respect to motor fuel, means not for resale (40 CFR 280.12) **[Revised March 2000]**.
- *Occurrence* - an accident, including continuous or repeated exposure to conditions, which results in a release from an underground storage tank. NOTE: This definition is intended to assist in the understanding of these regulations and is not intended either to limit the meaning of “occurrence” in a way that conflicts with standard insurance usage or to prevent the use of other standard insurance terms in place of “occurrence” (40 CFR 280.92) **[Added March 2000]**.
- *Offshore Oil Barge* - a tank barge carrying oil in bulk as cargo, including dual-mode integrated tug- barges, certificated by the Coast Guard under 46 CFR chapter I, subchapter D, for navigation in waters outside the Boundary Lines, as defined in 46 CFR 7, in any ocean or the Gulf of Mexico; any tank barge in Great Lakes service; or any foreign flag tank barge (33 CFR 155.200).
- *Oil* - petroleum in any form including crude oil, fuel oil, sludge, oil refuse, and refined products (33 CFR 151.05).

- *Oil Fuel* - oil used as a fuel for machinery in the vessel in which it is carried (46 CFR 30.10-48).
- *Oil Tanker* - a self-propelled vessel carrying oil in bulk as cargo, including integrated tug-barges designed for push-mode operation (33 CFR 155.200).
- *On-Deck Spill* - a discharge of oil on the deck of a vessel during loading, unloading, transfer, or other shipboard operations. An on-deck spill could result from a leaking fitting, an overfill, a bad connection, or similar operational mishap. This is different from spills occurring as a result of a collision or grounding where the hull is punctured and a tank is ruptured, resulting in an uncontrolled discharge of oil into the marine environment (33 CFR 155.200).
- *On the Premises Where Stored* - with respect to heating oil means UST systems located on the same property where the stored heating oil is used (40 CFR 280.12) **[Reviewed March 2000; Revised July 2015]**.
- *Onground Tank* - in relation to hazardous waste, a device meeting the definition of tank in 40 CFR 260.10 and that is situated in such a way that the bottom of the tank is on the same level as the adjacent surrounding surface so that the external tank bottom cannot be visibly inspected (40 CFR 260.10) **[Reviewed March 2000]**.
- *Operational Life* - the period beginning when installation of the tank system has commenced until the time the tank system is properly closed under Subpart G of 40 CFR 280 (40 CFR 280.12) **[Added March 2000]**.
- *Operating Parameter Value* - a value for an operating or emission parameter of the vapor processing system (e.g., temperature) which, if maintained continuously by itself or in combination with one or more other operating parameter values, determines that an owner or operator has complied with the applicable emission standard. The operating parameter value is determined using the procedures outlined in 40 CFR 63.425(b) (40 CFR 63.421) **[Added April 2004]**.
- *Operating Parameter Value* - a value for an operating or emission parameter of the vapor processing system (e.g., temperature) which, if maintained continuously by itself or in combination with one or more other operating parameter values, determines that an owner or operator has complied with the applicable emission standard. The operating parameter value is determined using the procedures specified in 40 CFR 63.11092(b) (40 CFR 63.11100) **[Added April 2008]**.
- *Operating Parameter Value* - a minimum or maximum value established for a control device or treatment process parameter which, if achieved by itself or in combination with one or more other operating parameter values, determines that an owner or operator has complied with an applicable emissions limitation or standard (40 CFR 63.7957) **[Added April 2004]**.
- *Operator* - any person in control of or having responsibility for the daily operation of the UST system (40 CFR 280.12) **[Reviewed March 2000]**.
- *Organic-water separator* - a separator as defined for this subpart that is used to separate organics from water (40 CFR 63.7957) **[Added April 2004]**.
- *Overfill Release* - a release that occurs when a tank is filled beyond its capacity, resulting in a discharge of the regulated substance to the environment (40 CFR 280.12) **[Reviewed March 2000]**.
- *Owner* **[Added March 2000]**.
  1. In the case of an UST system in use on November 8, 1984, or brought into use after that date, any person who owns an UST system used for storage, use, or dispensing of regulated substances; and
  2. In the case of any UST system in use before November 8, 1984, but no longer in use on that date, any person who owned such UST immediately before the discontinuation of its use (40 CFR 280.12).

- *Owner or Operator* - when the owner or operator are separate parties, refers to the party that is obtaining or has obtained financial assurances (40 CFR 280.92) **[Added March 2000]**.
- *Oxygenated Gasoline* - the same as defined in 40 CFR 80.2(rr) (40 CFR 63.421) **[Added April 2004]**.
- *Partially Excluded Underground Storage Tanks (USTs)* – for the purposes of 40 CFR 280, the following USTs are exempt from Subparts B, C, D, E, G, J, and K (40 CFR 280.10(c)) **[Added July 2015]**:
  1. Wastewater treatment tank systems not covered in the definition of *Excluded USTs*;
  2. Aboveground storage tanks associated with:
    - a. Airport hydrant fuel distribution systems regulated under 40 CFR 280, Subpart K; and
    - b. UST systems with field constructed tanks regulated under 40 CFR 280, Subpart K;
  3. Any UST systems containing radioactive material that are regulated under the Atomic Energy Act of 1954 (42 U.S.C. 2011 and following); and
  4. Any UST system that is part of an emergency generator system at nuclear power generation facilities licensed by the Nuclear Regulatory Commission and subject to Nuclear Regulatory Commission requirements regarding design and quality criteria, including but not limited to 10 CFR 50.
- *Person* - an individual, trust, firm, joint stock company, Federal agency, corporation, state, municipality, commission, political subdivision of a state, or any interstate body. Person also includes a consortium, a joint venture, a commercial entity, and the U.S. Government (40 CFR 280.12) **[Reviewed March 2000]**.
- *Petroleum* - the crude oil removed from the earth and the oils derived from tar sands, shale, and coal (40 CFR 60.111(d)) **[Added October 2003]**.
- *Petroleum Liquids* - petroleum, condensate, and any finished or intermediate products manufactured in a petroleum refinery but does not mean Nos. 2 through 6 fuel oils as specified in ASTM D396-78, 89, 90, 92, 96, or 98, gas turbine fuel oils Nos. 2-GT through 4-GT as specified in ASTM D2880-78 or 96, or diesel fuel oils Nos. 2-D and 4-D as specified in ASTM D975-78, 96, or 98a. (These three methods are incorporated by reference—see 40 CFR 60.17.) (40 CFR 60.111(b)) **[Added October 2003]**.
- *Petroleum Marketing Facilities* - this include all facilities at which petroleum is produced or refined and all facilities from which petroleum is sold or transferred to other petroleum marketers or to the public (40 CFR 280.92) **[Added March 2000]**.
- *Petroleum Refinery* - each facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through distillation of petroleum or through redistillation, cracking, extracting, or reforming of unfinished petroleum derivatives (40 CFR 60.111(c)) **[Added October 2003]**.
- *Petroleum UST System* - a UST system that contains petroleum or a mixture of petroleum with de minimis quantities of other regulated substances. Such systems include those containing motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents, and used oils (40 CFR 280.12) **[Reviewed March 2000]**.
- *Pipe or Piping* - a hollow cylinder or tubular conduit that is constructed of nonearthen materials (40 CFR 280.12) **[Reviewed March 2000]**.
- *Piping* – for purposes of the secondary containment guidelines, piping is the hollow cylinder or the tubular conduit constructed of non-earthen materials that routinely contains and conveys regulated substances from the underground tank(s) to the dispenser(s) or other end-use equipment. Such piping includes any elbows, couplings, unions, valves, or other in-line fixtures that contain and convey regulated substances from the underground tank(s) to the dispenser(s). This definition does not include vent, vapor recovery, or fill lines (*Grant Guidelines To States For Implementing The Secondary Containment Provision Of The Energy Policy Act Of 2005*) **[Added July 2007]**.

- *Pipeline Breakout Station* - a facility along a pipeline containing storage vessels used to relieve surges or receive and store gasoline from the pipeline for reinjection and continued transportation by pipeline or to other facilities (40 CFR 63.421 and 63.11100) [**Added April 2004; Revised April 2008**].
- *Pipeline Breakout Station* - a facility along a pipeline containing storage vessels used to relieve surges or receive and store gasoline from the pipeline for re-injection and continued transportation by pipeline or to other facilities (40 CFR 63.11100) [**Added April 2008**].
- *Pipeline Facilities* - (including gathering lines) are new and existing pipe rights-of-way and any associated equipment, facilities, or buildings (40 CFR 280.12) [**Reviewed March 2000**].
- *Pipeline Pumping Station* - a facility along a pipeline containing pumps to maintain the desired pressure and flow of product through the pipeline and not containing storage vessels (40 CFR 63.11100) [**Added April 2008**].
- *Point-of-Extraction* - a point above ground where you can collect samples of a remediation material before or at the first point where organic constituents in the material have the potential to volatilize and be released to the atmosphere and before placing the material in a remediation material management unit or treatment process. For the purpose this subpart, the first point where the organic constituents in the remediation material have the potential to volatilize and be released to the atmosphere is not a fugitive emissions point due to an equipment leak from any of the following equipment components: pumps, compressors, valves, connectors, instrumentation systems, or safety devices (40 CFR 63.7957) [**Added April 2004**].
- *Point of Waste Treatment* - the point where a hazardous waste to be treated exists the treatment process, Any waste determination shall be made before the waste is conveyed, handled, or otherwise managed in a manner that allows the waste to volatilize to the atmosphere (40 CFR 265.1081) [**Reviewed March 2000**].
- *Portable Tank* - a closed container having a liquid capacity over 60 gal and not intended for fixed installation (29 CFR 1910.106(a)(25)).
- *Portable Tank* - see definitions for IM 101 Portable Tank, IM 102 Portable Tank, and Marine Portable Tank.
- *Potable Drinking Water Well* – any hole (dug, driven, drilled, or bored) that extends into the earth until it meets groundwater which (*Grant Guidelines To States For Implementing The Secondary Containment Provision Of The Energy Policy Act Of 2005*) [**Added July 2007**]:
  1. supplies water for a non-community public water system, or
  2. otherwise supplies water for household use (consisting of drinking, bathing, and cooking, or other similar uses).

Such wells may provide water to entities such as a single-family residence, group of residences, businesses, schools, parks, campgrounds, and other permanent or seasonal communities.
- *Pressure Vacuum Relief Valve* - any device or assembly of a mechanical, liquid, weight, or other type used for the automatic regulation of pressure or vacuum in enclosed spaces (46 CFR 30.10-55).
- *Pressure Vessel* - a storage tank or container designed to operate at pressures above 15 psig (29 CFR 1910.106(a)(29)).
- *Process Heater* - an enclosed combustion device that transfers heat released by burning fuel directly to process streams or to heat transfer liquids other than water (40 CFR 63.7957) [**Added April 2004**].
- *Process Tank* - a tank that is used within a process (including a solvent or raw material recovery process) to collect material discharged from a feedstock storage vessel or equipment within the process before the material is transferred to other equipment within the process, to a product or by-product storage vessel, or to a vessel used to store recovered solvent or raw material. In many process tanks, unit operations such as reactions and blending are

conducted. Other process tanks, such as surge control vessels and bottoms receivers, however, may not involve unit operations (40 CFR 60.111b) **[Added January 2004]**.

- *Process Vent* - any open-ended pipe, stack, duct, or other opening intended to allow the passage of gases, vapors, or fumes to the atmosphere and this passage is caused by mechanical means (such as compressors, vacuum-producing systems or fans) or by process-related means (such as volatilization produced by heating). For the purposes of this subpart, a process vent is neither a safety device (as defined in this section) nor a stack, duct or other opening used to exhaust combustion products from a boiler, furnace, heater, incinerator, or other combustion device (40 CFR 63.7957) **[Added April 2004]**.
- *Product Deliverer* - any person who delivers or deposits product into an underground storage tank. This term may include major oil companies, jobbers, petroleum transportation companies, or other product delivery entities. (NOTE: "Person" has the same definition used in 40 CFR 280.12, which includes an individual, trust, firm, joint stock company, consortium, joint venture, commercial entity, United States Government, federal agency, corporation, state, municipality, commission, political subdivision of a state, or any interstate body.) (*Grant Guidelines To States For Implementing The Delivery Prohibition Provision Of The Energy Policy Act Of 2005*) **[Added July 2007]**.
- *Radioactive Mixed Waste* - a material that contains both hazardous waste subject to RCRA and source, special nuclear, or by-product material subject to the Atomic Energy Act of 1954.
- *Red Tag* - a tag, device, or mechanism on the tank's fill pipes that clearly identifies an underground storage tank as ineligible for product delivery. The tag or device is easily visible to the product deliverer and clearly states and conveys that it is unlawful to deliver to, deposit into, or accept product into the ineligible underground storage tank. The tag, device, or mechanism is generally tamper resistant (*Grant Guidelines To States For Implementing The Delivery Prohibition Provision Of The Energy Policy Act Of 2005*) **[Added July 2007]**.
- *Reformulated Gasoline* - the same as defined in 40 CFR 80.2(ee) (40 CFR 63.421) **[Added April 2004]**.
- *Regulated Substance* - this includes (40 CFR 280.12) **[Reviewed March 2000]**:
  1. any substance defined in section 101(14) of the CERCLA of 1980 (but not including any substance regulated as a hazardous waste under subtitle C)
  2. petroleum, including crude oil or any fraction thereof that is liquid at standard conditions of temperature and pressure (60 °F [ approx. 16 °C] and 14.7 lb/psia).(NOTE: The term regulated substance includes, but is not limited to, petroleum and petroleum based substances comprised of a complex blend of hydrocarbons derived from crude oil through processes of separation, conversion, upgrading, and finishing, such as motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents, and used oils.)
- *Reid Vapor Pressure* - the absolute vapor pressure of volatile crude oil and volatile nonviscous petroleum liquids except liquefied petroleum gases as determined by the ASTM, Part 17, 1973, D- 323-72 (reapproved 1977) (40 CFR 60.111a).
- *Release* - any spilling, leaking, emitting, discharging, escaping, leaching, or disposing from a UST into groundwater, surface water, or subsurface soils (40 CFR 280.12) **[Reviewed March 2000]**.
- *Release Detection* - determining whether a release of a regulated substance has occurred from the UST system into the environment or into the interstitial space between the UST system and its secondary barrier or secondary containment around it (40 CFR 280.12) **[Reviewed March 2000]**.
- *Remediation Material* - Remediation material means a material that contains one or more of the HAP listed in Appendix 10-0c, and this material is one of the following (40 CFR 63.7957) **[Added April 2004]**:

1. A material found in naturally occurring media such as soil, groundwater, surface water, sediments, or a mixture of such materials with liquids, sludges, or solids which is inseparable by simple mechanical removal processes and is made up primarily of media. This material does not include debris as defined in 40 CFR 268.2.
  2. A material found in intact or substantially intact containers, tanks, storage piles, or other storage units that requires clean up because this material poses a reasonable potential threat to contaminating media. Examples of these materials include, but are not limited to, solvents, oils, paints, and other volatile or semi-volatile organic liquids found in buried drums, cans, or other containers; gasoline, fuel oil, or other fuels in leaking underground storage tanks; and solid materials containing volatile or semi-volatile organics in unused or abandoned piles. Remediation material is not a waste or residue generated by routine equipment maintenance activities performed at a facility such as, but not limited to, tank bottoms and sludges removed during tank cleanouts; sludges and sediments removed from active wastewater treatment tanks, surface impoundments, or lagoons; spent catalyst removed from process equipment; residues removed from air pollution control equipment; and debris removed during heat exchanger and pipeline cleanouts.
- *Remediation Material Management Unit* - a tank, container, surface impoundment, oil-water separator, organic-water separator, or transfer system used to remove, destroy, degrade, transform, immobilize, or otherwise manage remediation material (40 CFR 63.7957) **[Added April 2004]**.
  - *Remediation Material Service* - any time when a pump, compressor, agitator, pressure relief device, sampling connection system, open-ended valve or line, valve, connector, or instrumentation system contains or contacts remediation material (40 CFR 63.7957) **[Added April 2004]**.
  - *Repair* - to restore to proper operating condition a tank, pipe, spill prevention equipment, overfill prevention equipment, corrosion protection equipment, release detection equipment or other UST system component that has caused a release of product from the UST system or has failed to function properly (40 CFR 280.12) **[Reviewed March 2000; Revised July 2015]**.
  - *Replace* – this term applies to underground tanks and piping (*Grant Guidelines To States For Implementing The Secondary Containment Provision Of The Energy Policy Act Of 2005*) **[Added July 2007]**:
    1. Underground tank, “replace” means to remove an existing underground tank and install a new underground tank (NOTE: A new underground tank is a tank that meets the new tank standards in 40 CFR 280.20, whether or not the tank was ever used before.)
    2. Piping, “replace” means to remove and put back in an amount of piping connected to a single underground tank defined by the state to be a replacement. States may determine the amount of piping connected to a single underground tank that triggers replacement by piping length, percent of piping replaced, percent of piping replacement cost, or some combination of these. At a minimum, states must consider a piping replacement to have occurred when 100 percent of the piping, excluding connectors (such as flexible connectors), connected to a single underground tank is removed and put back in. States are encouraged to consider variations in underground storage tank system layout, such as those having extensive piping runs, when determining piping replacement criteria.
  - *Replaced* – For a tank, this is to remove a tank and install another tank. For piping, this is to remove 50 percent or more of piping and install other piping, excluding connectors, connected to a single tank. For tanks with multiple piping runs, this definition applies independently to each piping run (40 CFR 280.12) **[Added July 2015]**.
  - *Residential Tank* - a tank located on property used primarily for dwelling purposes (40 CFR 280.12) **[Reviewed March 2000]**.
  - *Responsible Official* - responsible official as defined in 40 CFR 70.2 (40 CFR 63.7957) **[Added April 2004]**.
  - *SARA - Superfund Amendments and Reauthorization Act* (40 CFR 280.12) **[Reviewed March 2000]**.

- *Safety Device* - a closure device such as a pressure relief valve, frangible disc, fusible plug, or any other type of device which functions to prevent physical damage or permanent deformation to equipment by venting gases or vapors during unsafe conditions resulting from an unplanned, accidental, or emergency event. For the purpose of this Subpart, a safety device is not used for routine venting of gases or vapors from the vapor headspace underneath a cover such as during filling of the unit or to adjust the pressure in this vapor headspace in response to normal daily diurnal ambient temperature fluctuations. A safety device is designed to remain in a closed position during normal operations and open only when the internal pressure, or another relevant parameter, exceeds the device threshold setting applicable to the equipment as determined by the owner or operator based on manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, combustible, explosive, reactive, or hazardous materials (40 CFR 63.7957) **[Added April 2004]**.
- *Secondary Containment or Secondarily Contained* - a release prevention and release detection system for a tank or piping. This system has an inner and outer barrier with an interstitial space that is monitored for leaks. This term includes containment sumps when used for interstitial monitoring of piping (40 CFR 280.12) **[Added July 2015]**.
- *Separator* - a remediation material management unit, generally a tank, used to separate oil or organics from water. A separator consists of not only the separation unit but also the forebay and other separator basins, skimmers, weirs, grit chambers, sludge hoppers, and bar screens that are located directly after the individual drain system and prior to any additional treatment units such as an air flotation unit clarifier or biological treatment unit. Examples of a separator include, but are not limited to, an API separator, parallel-plate interceptor, and corrugated-plate interceptor with the associated ancillary equipment (40 CFR 63.7957) **[Added April 2004]**.
- *Septic Tank* - a water-tight covered receptacle designed to receive or process, through liquid separation or biological digestion, the sewage discharged from a building sewer. The effluent from such receptacle is distributed through the soil and settled solids and scum from the tank are pumped out periodically and hauled to a treatment facility (40 CFR 280.12) **[Reviewed March 2000]**.
- *Ship* - a vessel of any type whatsoever, operating in the marine environment (33 CFR 151.05).
- *Single Seal System* - a floating roof having one continuous seal (40 CFR 265.1081) **[Reviewed March 2000]**.
- *Site Remediation* - one or more activities or processes used to remove, destroy, degrade, transform, immobilize, or otherwise manage remediation material. The monitoring or measuring of contamination levels in environmental media using wells or by sampling is not considered to be a site remediation (40 CFR 63.7957) **[Added April 2004]**.
- *Sludge* - sludge as defined in 40 CFR 260.10 of this chapter (40 CFR 63.7957) **[Added April 2004]**.
- *Small Quantity Generator (SQG)* - a generator that generates the following amounts in a calendar month (40 CFR 260.10) **[Revised January 2017]**:
  1. Greater than 100 kilograms (220 lbs) but less than 1,000 kilograms (2200 lbs) of non-acute hazardous waste; and
  2. Less than or equal to 1 kilogram (2.2 lbs) of acute hazardous waste listed in 40 CFR 261.31 or 40 CFR 261.33(e); and
  3. Less than or equal to 100 kilograms (220 lbs) of any residue or contaminated soil, water, or other debris resulting from the cleanup of a spill, into or on any land or water, of any acute hazardous waste listed in 40 CFR 261.31 or 40 CFR 261.33(e).
- *Soil* - unconsolidated earth material composing the superficial geologic strata (material overlying bedrock), consisting of clay, silt, sand, or gravel size particles (sizes as classified by the U.S. Soil Conservation Service), or a mixture of such materials with liquids, sludges, or solids which is inseparable by simple mechanical removal processes and is made up primarily of soil (40 CFR 63.7957) **[Added April 2004]**.

- *Stabilization Process* - any physical or chemical process used to either reduce the mobility of contaminants in media or eliminate free liquids as determined by Test Method 9095--Paint Filter Liquids Test in ``Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication No. SW-846, Third Edition, September 1986, as amended by Update I, November 15, 1992. (As an alternative, you may use any more recent, updated version of Method 9095 approved by the EPA). A stabilization process includes mixing remediation material with binders or other materials, and curing the resulting remediation material and binder mixture. Other synonymous terms used to refer to this process are fixation or solidification. A stabilization process does not include the adding of absorbent materials to the surface of remediation material, without mixing, agitation, or subsequent curing, to absorb free liquid (40 CFR 63.7957) **[Added April 2004]**.
- *Storage Vessel* - any tank, reservoir, or container used for the storage of petroleum liquids, but does not include (40 CFR 60.111(a)) **[Added October 2003]**:
  1. Pressure vessels which are designed to operate in excess of 15 psi gauge without emissions to the atmosphere except under emergency conditions,
  2. Subsurface caverns or porous rock reservoirs, or
  3. Underground tanks if the total volume of petroleum liquids added to and taken from a tank annually does not exceed twice the volume of the tank.
- *Storage Vessel* - each tank, reservoir, or container used for the storage of volatile organic liquids but does not include (40 CFR 60.111b) **[Added January 2004]**:
  1. Frames, housing, auxiliary supports, or other components that are not directly involved in the containment of liquids or vapors;
  2. Subsurface caverns or porous rock reservoirs; or
  3. Process tanks.
- *Stormwater or Wastewater Collection System* - piping, pumps, conduits, and any other equipment necessary to collect and transport the flow of surface water runoff resulting from precipitation, or domestic, commercial, or industrial wastewater to and from retention areas or any areas where treatment is designated to occur. The collection of stormwater and wastewater does not include treatment except where incidental to conveyance (40 CFR 280.12) **[Reviewed March 2000]**.
- *Submerged Filling* - for the purposes of this subpart, the filling of a gasoline cargo tank or a stationary storage tank through a submerged fill pipe whose discharge is no more than the applicable distance specified in 40 CFR 63.11086(a) from the bottom of the tank. Bottom filling of gasoline cargo tanks or storage tanks is included in this definition (40 CFR 63.11100) **[Added April 2008]**.
- *Surface Impoundment* - a natural topographic depression, manmade excavation, or diked area formed primarily of earthen materials (although it may be lined with manmade materials) that is not an injection well (40 CFR 280.12) **[Reviewed March 2000]**.
- *Tank* - a stationary device designed to contain an accumulation of regulated substances and constructed of nonearthen materials (e.g., concrete, steel, plastic) that provide structural support (40 CFR 280.12) **[Reviewed March 2000]**.
- *Tank* - in relation to hazardous waste, a stationary device designed to contain an accumulation of hazardous waste that is constructed primarily of nonearthen materials (e.g., wood, concrete, steel, plastic) which provide structural support (40 CFR 260.10) **[Reviewed March 2000]**.
- *Tank* - in relation to used oil, any stationary device, designed to contain an accumulation of used oil, which is constructed primarily of nonearthen materials, (e.g., wood, concrete, steel, plastic) which provides structural support (40 CFR 279.1). **[Reviewed March 2000]**.

- *Tank* - a stationary unit that is constructed primarily of nonearthen materials (such as wood, concrete, steel, fiberglass, or plastic) which provide structural support and is designed to hold an accumulation of liquids or other materials (40 CFR 63.7957) **[Added April 2004]**.
- *Tank System* - a hazardous waste storage or treatment tank and its associated ancillary equipment and containment system (40 CFR 260.10) **[Reviewed March 2000]**.
- *Temperature Monitoring Device* - a piece of equipment used to monitor temperature and having an accuracy of  $\pm 1$  percent of the temperature being monitored expressed in degrees Celsius ( $^{\circ}\text{C}$ ) or  $\pm 1.2$  degrees  $^{\circ}\text{C}$ , whichever value is greater (40 CFR 63.7957) **[Added April 2004]**.
- *Thermal Oxidation System* - a combustion device used to mix and ignite fuel, air pollutants, and air to provide a flame to heat and oxidize hazardous air pollutants. Auxiliary fuel may be used to heat air pollutants to combustion temperatures (40 CFR 60.501) **[Added April 2004]**.
- *Training Program* - any program that provides information to and evaluates the knowledge of a Class A, Class B, or Class C operator through testing, practical demonstration, or another approach acceptable to the implementing agency regarding requirements for UST systems that meet the requirements of subpart J of 40 CFR 280 (40 CFR 280.12) **[Added July 2015]**.
- *Transfer System* - a stationary system for which the predominant function is to convey liquids or solid materials from one point to another point within waste management operation or recovery operation. For the purpose of this subpart, the conveyance of material using a container (as defined of this subpart) or self-propelled vehicle (e.g., a front-end loader) is not a transfer system. Examples of a transfer system include but are not limited to a pipeline, an individual drain system, a gravity-operated conveyor (such as a chute), and a mechanically-powered conveyor (such as a belt or screw conveyor) (40 CFR 63.7957) **[Added April 2004]**.
- *Treatment Process* - a process in which remediation material is physically, chemically, thermally, or biologically treated to destroy, degrade, or remove hazardous air pollutants contained in the material. A treatment process can be composed of a single unit (e.g., a steam stripper) or a series of units (e.g., a wastewater treatment system). A treatment process can be used to treat one or more remediation material streams at the same time (40 CFR 63.7957) **[Added April 2004]**.
- *True Vapor Pressure* - the equilibrium partial pressure exerted by a petroleum liquid as determined in accordance with methods described in American Petroleum Institute (API) Bulletin 2517, *Evaporation Loss From Floating Roof Plants*, 1962 (40 CFR 60.111a).
- *Uncontrolled Loading Rack* - a loading rack used to load gasoline cargo tanks that is not a controlled loading rack. Vapor-tight gasoline cargo tank means a gasoline cargo tank which has demonstrated within the 12 preceding months that it meets the annual certification test requirements in 40 CFR 63.425(e), and which is subject at all times to the test requirements in 40 CFR 63.425(f), 63.425 (g), and 63.425 (h) (40 CFR 63.421) **[Added April 2004]**.
- *Under-dispenser Containment or UDC* - containment underneath a dispenser system designed to prevent leaks from the dispenser and piping within or above the UDC from reaching soil or groundwater (40 CFR 280.12) **[Added July 2015]**.
- *Underground Area* - an underground room such as a basement, cellar, shaft, or vault, providing enough space for physical inspection of the exterior of the tank situated on or above the surface of the floor (40 CFR 280.12) **[Reviewed March 2000]**.
- *Underground Release* - any below ground release (40 CFR 280.12) **[Reviewed March 2000]**.
- *Underground Storage Tank (UST)* - any one or a combination of tanks (including underground pipes connected thereto) that is used to contain an accumulation of regulated substances, and the volume of which (including the

volume of underground pipes connected thereto) is 10 percent or more beneath the surface of the ground. This term does not include any (40 CFR 280.12) **[Reviewed March 2000; Revised July 2015]**:

1. farm or residential tank of 1100 gal or less capacity used for storing motor fuel for noncommercial purposes
2. tank used for storing heating oil for consumptive use on the premises where stored
3. septic tanks
4. pipeline facility (including gathering lines):
  - a. Which is regulated under 49 U.S.C. chapter 601; or
  - b. Which is an intrastate pipeline facility regulated under state laws as provided in 49 U.S.C. chapter 601, and which is determined by the Secretary of Transportation to be connected to a pipeline, or to be operated or intended to be capable of operating at pipeline pressure or as an integral part of a pipeline;
5. surface impoundment, pit, pond, or lagoon
6. stormwater or waste water collection system
7. flow-through process tank
8. liquid trap or associated gathering lines directly related to oil or gas production and gathering operations
9. storage tank situated in an underground area (such as a basement, cellar, mineworking, drift, shaft, or tunnel) if the storage tank is situated upon or above the surface of the floor

(NOTE: The definition of UST does not include any pipes connected to any tank which is described in para (1) through (9) of this definition.)

(NOTE: See also the definitions for Excluded USTs and Partially Excluded USTs.)

- *Underground Tank* - in relation to hazardous waste, a device meeting the definition of tank in 40 CFR 260.10 whose entire surface area is totally below the surface and covered by the ground (40 CFR 260.10) **[Reviewed March 2000]**.
- *Unfit-for-Use Tank System* - a tank system that has been determined through an integrity assessment or other inspection to be no longer capable of storing or treating hazardous waste without posing a threat of release of hazardous waste to the environment (40 CFR 260.10) **[Reviewed March 2000]**.
- *Upgrade* - the addition or retrofit of some systems such as cathodic protection, lining, or spill and overfill controls to improve the ability of a UST system to prevent the release of product (40 CFR 280.12) **[Reviewed March 2000]**.
- *Used Oil* - any oil that has been refined from crude oil or any synthetic oil that has been used and as a result of such use is contaminated by physical or chemical impurities (40 CFR 279.1) **[Reviewed March 2000]**.
- *Used Oil Aggregation Point* - any site or facility that accepts, aggregates, and/or stores used oil collected only from other used oil generation sites owned or operated by the owner or operator of the aggregation point, from which used oil is transported to the aggregation point in shipments of no more than 55 gal. Used oil aggregation points may also accept used oil from household DIYs (40 CFR 279.1) **[Reviewed March 2000]**.
- *Used Oil Burner* - a facility where used oil not meeting the specification requirements is burned for energy recovery (40 CFR 279.1) **[Reviewed March 2000]**.
- *Used Oil Collection Center* - any site or facility that is registered/licensed/permitted/recognized by a state/county/municipal government to manage used oil and accepts/aggregates and stores used oil collected from used oil generators who bring used oil to the collection centers in shipments of no more than 55 gal. Used oil collection centers may accept used oil from household DIYs (40 CFR 279.1) **[Reviewed March 2000]**.
- *Used Oil Fuel Marketer* - any person who conducts either of the following activities (40 CFR 279.1) **[Reviewed March 2000]**:
  1. directs a shipment of off-specification used oil from their facility to a used oil burner

2. first claims that used oil that is to be burned for energy recovery meets used oil fuel specifications.
- *Used Oil Generator* - any person, by site, whose act or process produces used oil or whose act first causes used oil to become subject to regulation (40 CFR 279.1) [**Reviewed March 2000**].
  - *Used Oil Processor/Re-Refiner* - a facility that processes used oil (40 CFR 279.1) [**Reviewed March 2000**].
  - *Used Oil Transfer Facility* - any transportation-related facility, including loading docks, parking areas, storage areas, and other areas where shipments of used oil are held for more than 24 hours and not longer than 35 days during the normal course of transportation (40 CFR 279.2) [**Revised March 2000**].
  - *Used Oil Transporter* - any person who transports used oil, any persons who collects used oil from more than one generator and transports the collected oil, and owners and operators of used oil transfer facilities. Used oil transporters may consolidate or aggregate loads of used oil for purposes of transportation, but, with the following exception, may not process used oil. Transporters may conduct incidental processing operations that occur in the normal course of used oil transportation (e.g., settling and water separation), but that are not designed to produce or make more amenable for production of used oil derived products or used oil fuel (40 CFR 279.1) [**Reviewed March 2000**].
  - *UST System or Tank System* – an UST, connected underground piping, underground ancillary equipment, and containment system, if any (40 CFR 280.12) [**Reviewed March 2000; Revised July 2015**].
  - *Vapor Collection-Equipped Gasoline Cargo Tank* - a gasoline cargo tank that is outfitted with the equipment necessary to transfer vapors, displaced during the loading of gasoline into the cargo tank, to a vapor processor system (40 CFR 63.11100) [**Added April 2008**].
  - *Vapor Mounted Seal* - a continuous seal that is mounted such that there is a vapor space between the hazardous waste in the unit and the bottom of the seal (40 CFR 265.1081) [**Reviewed March 2000**].
  - *Vapor Recovery System* - a vapor gathering system capable of collecting all hydrocarbon vapors and gases discharged from the storage vessel and a vapor disposal system capable of processing such hydrocarbon vapors and gases so as to prevent their emission to the atmosphere (40 CFR 60.111(k)) [**Added October 2003**].
  - *Vapor-tight Gasoline Cargo Tank* - the same as the definition of the term “vapor-tight gasoline tank truck” in 40 CFR 60.501, except that for this subpart the term “gasoline tank truck” means “gasoline cargo tank,” as defined in this section (40 CFR 63.11100) [**Added April 2008**].
  - *Vessel Carrying Oil as Secondary Cargo* - a vessel carrying oil pursuant to a permit issued under 46 CFR 30.01-1, 46 CFR 70.05-30, or 46 CFR 90.05-35, or pursuant to an International Oil Pollution Prevention (IOPP) or Noxious Liquid Substance (NLS) certificate; or any uninspected vessel that carries oil as bulk cargo (33 CFR 155.200).
  - *Volatile Organic (VO) Concentration* - the fraction by weight of the volatile organic compounds in a hazardous waste expressed in terms of ppmw as determined by direct measurement or by knowledge of the waste in accordance with the requirements of 40 CFR 265.1084 (40 CFR 265.1081) [**Revised March 2000**].
  - *Volatile Organic Hazardous Air Pollutant (VOHAP) Concentration* - the fraction by weight of the HAP listed in Appendix 10-0c that are contained in the remediation material as measured using Method 305, 40 CFR 63, appendix A and expressed in terms of parts per million (ppm). As an alternative to using Method 305, 40 CFR 63, appendix A, you may determine the HAP concentration of the remediation material using any one of the other test methods specified in 40 CFR 63.694(b)(2)(ii). When a test method specified in CFR 63.694(b)(2)(ii) other than Method 305 in 40 CFR 63, appendix A is used to determine the speciated HAP concentration of the contaminated material, the individual compound concentration may be adjusted by the corresponding fm305 listed in Appendix 10-0c to determine a VOHAP concentration (40 CFR 63.7957) [**Added April 2004**].

- *Volatile Organic Liquid (VOL)* - any organic liquid which can emit volatile organic compounds into the atmosphere except those VOLs that emit only those compounds which the administrator has determined do not contribute appreciably to the formation of ozone. These compounds are identified in USEPA statements on ozone abatement policy for state implementation plan (SIP) revisions (40 CFR 60.111b(k)).
- *Volatile Organic Liquid (VOL)* - any organic liquid which can emit volatile organic compounds (as defined in 40 CFR 51.100) into the atmosphere (40 CFR 60.111b) [**Added January 2004**].
- *Volatile Organic Liquid (VOL)* - for the purposes of 40 CFR 63, Subpart R (63.420 through 63.429), gasoline (40 CFR 63.421) [**Added April 2004**].
- *Waste Stabilization Process* - any physical or chemical process used to either reduce the mobility of hazardous constituents in a hazardous waste or eliminate free liquids (40 CFR 265.1081) [**Reviewed March 2000**].
- *Wastewater Treatment Tank* - a tank that is designed to receive and treat influent wastewater through physical, chemical, or biological methods (40 CFR 280.12) [**Reviewed March 2000**].
- *Work Practice Standard* - any design, equipment, work practice, or operational standard, or combination thereof, that is promulgated pursuant to section 112(h) of the CAA (40 CFR 63.7957) [**Added April 2004**].

#### **F. Records To Research [Revised March 2000]**

- UST records regarding leak detection performance and maintenance including:
  - monitoring results over the last 12 mo
  - most recent tank tightness test(s)
  - manual tank gauging records
  - copies of performance claims provided by leak detection equipment manufacturers
  - records of recent maintenance, repair and calibration of on-site leak detection equipment
  - Records of required inspections and test of corrosion protection systems
  - Records of repairs or upgrades to UST systems
  - Site assessment results of closed USTs
  - Spill Prevention Control and Countermeasure (SPCC) Plans
  - Spill Response Plans
  - Results of AST integrity assessments, sampling, monitoring, inspection and repair work
  - Notification forms and registration records for all in-service, temporarily out-of-service, and permanently closed tanks
  - Records of all spills, leaks, and associated site assessment/cleanup activities
  - Official correspondence with state implementing agency
  - Registration records for all in-service, temporarily out-of-service, and permanently closed tanks

#### **G. Physical Features To Inspect [Revised March 2000]**

- Refueling facilities, including:
  - Belowground storage tanks and dikes
  - Venting
  - Fill pipe
  - Gauges
  - Vehicle maintenance areas
- Transfer terminal
- Bulk storage tank farms
- Secondary containment structures
- Tank peripheral piping, manifolds, filling and dispensing areas

- Dispenser pumps and check valves
- Tank sumps, manway areas
- Leak detection equipment
- Overflow alarms or other audible and visual alarms, sight gauges
- Fill ports, catchment basins
- Oil/water separators
- Cleanup equipment (e.g. absorbent materials, fuel recovery pumps, personal protective gear)

## H. Guidance for Storage Tank Management Checklist Users

	<b>REFER TO CHECKLIST ITEMS:</b>
All Facilities	ST.1.1.US.
Missing, Risk Management, and Positive Checklist Items	ST.2.1.US. through ST.2.3.US
Aboveground Storage Tanks (ASTs) (NOTE: Checklist items deleted with revision of 40 CFR 112 July 2002)	ST.5.1.US. through ST.5.5.US.
Emissions From Bulk Gasoline Terminals	ST.10.1.US. through ST.10.17.US
Emissions From POL Storage Vessels	ST.15.1.US. and ST.15.2.US.
Emissions From VOL Storage Vessels	ST.20.1.US. through ST.20.8.US.
Emissions from Remediation Site Tanks	ST.21.1.US through ST.21.8.US
Substandard USTs	ST.25.1.US.
UST Operators	ST.28.1.US
New or Upgraded USTs	ST.35.1.US. through ST.35.8.US.
Metallic USTs (NOTE: Checklist items deleted with revision of 40 CFR 112 July 2002)	ST.40.1.US.
UST Filling	ST.45.1.US. and ST.45.2.US.
UST Corrosion Protection	ST.50.1.US. and ST.50.2.US
UST Repairs	ST.55.1.US
Release Detection for USTs	
General	ST.60.1.US.through ST.60.4.US
Petroleum USTs	ST.65.1.US.
Hazardous Substance USTs	ST.70.1.US. and ST.70.2.US.
USTs Connected to Emergency Generators	ST.75.1.US.
UST Releases	ST.80.1.US. through ST.80.8.US.
Deferred UST Systems	ST.85.1.US.
UST Documentation	ST.90.1.US. and ST.90.2.US.
Change in Service or Closure of USTs	ST.95.1.US. through ST.95.8.US.
Hazardous Waste Storage Tanks	
Small Quantity Generators (SQGs)	ST.100.1.US. through ST.100.3.US.

Hazardous Waste Generators TSDFs	ST.105.1.US. through ST.105.20.US. ST.110.1.US. through ST.110.21.US.
Flammable Combustible Liquid Storage Tanks	ST.120.1.US. through ST.120.5.US.
Used Oil Storage Tanks	ST.125.1.US.
Generators	ST.130.1.US.
Collection Centers and Aggregation Points	ST.135.1.US.
Used Oil Burners	
Marine Portable Tanks	ST.140.1.US. and ST.140.2.US.
Storage Tanks on Cargo and Miscellaneous Vessels	ST.145.1.US.
Storage Tanks on Ships	ST.150.1.US. and ST.150.2.US.

(NOTE: ST.5.1.US through ST.95.7.US are not applicable to storage tanks used to accumulate and/or treat hazardous waste.)

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Appendix 10-0, *Calculations for 40 CFR 63, Subpart R Applicability*

Appendix 10-0a, *Compliance Schedule for Site Remediation Emission Limitations*

Appendix 10-0b, *Control Levels for Tanks Managing Remediation Material With a Maximum HAP Vapor Pressure Less Than 76.6 kPa*

Appendix 10-0c, *List of Hazardous Air Pollutants*

Appendix 10-0d, *Applicability Criteria, Emission Limits, and Management Practices for Storage Tanks and Loading Racks*

Appendix 10-1, *Deleted*

Appendix 10-2, *UST Systems With Field-Constructed Tanks and Airport Hydrant Fuel Distribution System: Leak Detection*

Appendix 10-3, *Release Detection Requirements for USTs and Underground Piping*

Appendix 10-3a, *Requirements for UST Operator Training*

Appendix 10-4, *Schedule for Implementation of Air Emission Standards*

Select portions of this section (i.e., Review of Federal Legislation, State and Local Regulations, Key Compliance Requirements, Key Terms and Definitions, Typical Records to Review, Typical Physical Features to Inspect, and the Checklist) have been reviewed by USEPA personnel from the Office of Enforcement and Compliance Assurance (OECA) and USEPA's Office of General Counsel. USEPA's comments and suggestions for changes have been incorporated in this version of the TEAM Guide. USEPA did not review all portions of this section. USEPA also did not review and comment on items pertaining to federal Executive Orders, DOT regulations, OSHA regulations or any other area outside of Title 40 of the Code of Federal Regulations. Portions which have been added or revised as a result of this review are identified as either being reviewed, revised or added in March 2000, for example **[Added March 2000]**.

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<b>ST.1</b>  <b>ALL FACILITIES</b>  <b>ST.1.1.US.</b> The current status of any ongoing or unresolved consent orders, compliance agreements, notice of violations (NOVs), inter-agency agreements, or equivalent state enforcement actions is required to be examined (a finding under this checklist item will have the enforcement action/identifying information as the citation).	Determine if noncompliance issues have been resolved by reviewing a copy of the previous report, consent orders, compliance agreements, NOVs, interagency agreements, or equivalent state enforcement actions.



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<p><b>ST.2</b></p> <p><b>MISSING, RISK MANAGEMENT AND POSITIVE CHECKLIST ITEMS</b></p> <p><b>ST.2.1.US.</b> Facilities are required to comply with all applicable Federal regulatory requirements not contained in this checklist (a finding under this check list item will have the citation of the applied regulation as a basis of finding).</p> <p><b>ST.2.2.US.</b> Risk management techniques should be promoted in environmental efforts (MP) [Added April 2002].</p> <p><b>ST.2.3.US.</b> Facilities should go above and beyond statutory and regulatory compliance (MP) [Added April 2002].</p>	<p>Determine if any new regulations have been issued since the finalization of TEAM.</p> <p>Determine if the facility has activities or facilities which are regulated, but not addressed in this checklist.</p> <p>Verify that the facility is in compliance with all applicable and newly issued regulations.</p> <p>Determine if risk management techniques are promoted in environmental efforts.</p> <p>Determine if the facility has gone above and beyond simply complying with environmental requirements.</p>



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<p><b>ST.5</b></p> <p><b>ABOVEGROUND STORAGE TANKS (AST)</b></p> <p><b>ST.5.1.US.</b> This checklist item has been deleted <b>[Deleted July 2002]</b>.</p> <p><b>ST.5.2.US.</b> This checklist item has been deleted <b>[Deleted July 2002]</b>.</p> <p><b>ST.5.3.US.</b> This checklist item has been deleted <b>[Deleted July 2002]</b>.</p> <p><b>ST.5.4.US.</b> This checklist item has been deleted <b>[Deleted July 2002]</b>.</p> <p><b>ST.5.5.US.</b> This checklist item has been deleted <b>[Deleted July 2002]</b>.</p>	<p>(NOTE: The July 2002 revision of 40 CFR 112 resulted in the deletion of this checklist item. Specifically, the revision of 40 CFR 112 has eliminated the concept of a bulk storage tank. Instead, the revised regulation is written in terms of bulk storage containers. In the “Section by Section Analysis,” the USEPA comments on page 47066 that the minimum size bulk storage container is 55 gal. On page 47072, they comment that a bulk storage container may be aboveground, partially buried, bunkered, or completely buried. Findings previously documented under ST.5.1.US may now be documented under checklist item PO.20.4.US)</p> <p>(NOTE: The July 2002 revision of 40 CFR 112 resulted in the deletion of this checklist item. Specifically, the revision of 40 CFR 112 has eliminated the concept of a bulk storage tank. Instead, the revised regulation is written in terms of bulk storage containers. In the “Section by Section Analysis,” the USEPA comments on page 47066 that the minimum size bulk storage container is 55 gal. On page 47072, they comment that a bulk storage container may be aboveground, partially buried, bunkered, or completely buried. Findings previously documented under ST.5.2.US may now be documented under checklist item PO.20.4.US)</p> <p>(NOTE: The July 2002 revision of 40 CFR 112 resulted in the deletion of this checklist item. Specifically, the revision of 40 CFR 112 has eliminated the concept of a bulk storage tank. Instead, the revised regulation is written in terms of bulk storage containers. In the “Section by Section Analysis,” the USEPA comments on page 47066 that the minimum size bulk storage container is 55 gal. On page 47072, they comment that a bulk storage container may be aboveground, partially buried, bunkered, or completely buried. Findings previously documented under ST.5.3.US may now be documented under checklist item PO.20.4.US)</p> <p>(NOTE: The July 2002 revision of 40 CFR 112 resulted in the deletion of this checklist item. Specifically, the revision of 40 CFR 112 has eliminated the concept of a bulk storage tank. Instead, the revised regulation is written in terms of bulk storage containers. In the “Section by Section Analysis,” the USEPA comments on page 47066 that the minimum size bulk storage container is 55 gal. On page 47072, they comment that a bulk storage container may be aboveground, partially buried, bunkered, or completely buried. Findings previously documented under ST.5.4.US may now be documented under checklist item PO.20.4.US)</p> <p>(NOTE: The July 2002 revision of 40 CFR 112 resulted in the deletion of this checklist item. Specifically, the revision of 40 CFR 112 has eliminated the concept of a bulk storage tank. Instead, the revised regulation is written in terms of bulk storage containers that include mobile or portable oil storage containers. In the “Section by Section Analysis,” the USEPA comments on page 47066 that the minimum size bulk storage container is 55 gal. On page 47072, they comment that a bulk storage container may be aboveground, partially buried, bunkered, or</p>

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	completely buried. Findings previously documented under ST.5.5.US may now be documented under checklist item PO.20.4.US)

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<b>ST.10</b>  <b>EMISSIONS FROM BULK GASOLINE TERMINALS</b>  <b>ST.10.1.US.</b> Affected facilities at bulk gasoline terminals which deliver liquid product into gasoline tank trucks, the construction or modification of which is commenced after 17 December 1980, must meet specific standards for VOC emissions (40 CFR 60.500 and 60.502) <b>[Revised April 2004]</b> .	<p>(NOTE: The “affected facility” to which this checklist item applies is the total at a bulk gasoline terminal of all the loading racks which deliver liquid product into gasoline tank trucks, the construction or modification of which started after 17 December 1980.)</p> <p>(NOTE: Any replacement of components of an existing facility, started before 18 August 1983 in order to comply with any emission standard adopted by a State or political subdivision thereof will not be considered a reconstruction.)</p> <p>(NOTE: The intent of these standards is to minimize the emissions of VOC through the application of best demonstrated technologies (BDT). The numerical emission limits in this standard are expressed in terms of total organic compounds. This emission limit reflects the performance of BDT.)</p> <p>Verify that each affected facility is equipped with a vapor collection system designed to collect the TOC vapors displaced from tank trucks during product loading.</p> <p>Verify that the emissions to the atmosphere from the vapor collection system due to the loading of liquid product into gasoline tank trucks do not exceed 35 milligrams of TOC per liter of gasoline loaded.</p> <p>(NOTE: For each affected facility equipped with an existing vapor processing system, the emissions to the atmosphere from the vapor collection system due to the loading of liquid product into gasoline tank trucks are not to exceed 80 milligrams of total organic compounds per liter of gasoline loaded.)</p> <p>Verify that each vapor collection system is designed to prevent any TOC vapors collected at one loading rack from passing to another loading rack.</p> <p>Verify that loadings of liquid product into gasoline tank trucks is limited to vapor-tight gasoline tank trucks using the following procedures:</p> <ul style="list-style-type: none"> <li>–the owner or operator obtains the vapor tightness documentation for each gasoline tank truck which is to be loaded at the affected facility</li> <li>–the owner or operator requires the tank identification number to be recorded as each gasoline tank truck is loaded at the affected facility.</li> <li>–the owner or operator cross-checks each tank identification number the file of tank vapor tightness documentation within 2 weeks after the corresponding tank is loaded, unless either of the following conditions is maintained:</li> </ul>

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	<ul style="list-style-type: none"> <li>– if less than an average of one gasoline tank truck per month over the last 26 weeks is loaded without vapor tightness documentation, then the documentation cross-check is performed each quarter</li> <li>– if less than an average of one gasoline tank truck per month over the last 52 weeks is loaded without vapor tightness documentation, then the documentation cross-check is performed semiannually</li> <li>– the terminal owner or operator notifies the owner or operator of each non-vapor-tight gasoline tank truck loaded at the affected facility within 1 week of the documentation cross-check</li> <li>– the terminal owner or operator takes steps assuring that the nonvapor-tight gasoline tank truck is not reloaded at the affected facility until vapor tightness documentation for that tank is obtained.</li> </ul> <p>(NOTE: If either the quarterly or semiannual cross-check reveals that these conditions were not maintained, the source must return to biweekly monitoring until such time as these conditions are again met.)</p> <p>(NOTE: Alternate procedures to those described in paragraphs (for limiting gasoline tank truck loadings may be used upon application to, and approval by, the Administrator.)</p> <p>Verify that the owner or operator acts to assure that loadings of gasoline tank trucks at the affected facility are made only into tanks equipped with vapor collection equipment that is compatible with the terminal's vapor collection system.</p> <p>Verify that the owner or operator acts to assure that the terminal's and the tank truck's vapor collection systems are connected during each loading of a gasoline tank truck at the affected facility.</p> <p>(NOTE: Examples of actions to accomplish this include training drivers in the hookup procedures and posting visible reminder signs at the affected loading racks.)</p> <p>Verify that the vapor collection and liquid loading equipment is designed and operated to prevent gauge pressure in the delivery tank from exceeding 4,500 pascals (450 mm of water) during product loading.</p> <p>Verify that no pressure-vacuum vent in the bulk gasoline terminal's vapor collection system begins to open at a system pressure less than 4,500 pascals (450 mm of water).</p> <p>Verify that, each calendar month, the vapor collection system, the vapor processing system, and each loading rack handling gasoline is inspected during the loading of gasoline tank trucks for TOC liquid or vapor leaks.</p> <p>(NOTE: For the monthly inspection, detection methods incorporating sight, sound, or smell are acceptable.)</p>

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<p><b>ST.10.2.US.</b> Affected facilities at bulk gasoline terminals which deliver liquid product into gasoline tank trucks, the construction or modification of which is commenced after 17 December 1980, must meet specific testing standards (40 CFR 60.500 and 60.503) [Added April 2004].</p>	<p>Verify that each detection of a leak is recorded and the source of the leak repaired within 15 calendar days after it is detected.</p> <p>(NOTE: The “affected facility” to which this checklist item applies is the total at a bulk gasoline terminal of all the loading racks which deliver liquid product into gasoline tank trucks, the construction or modification of which is started after 17 December 1980.)</p> <p>(NOTE: Any replacement of components of an existing facility, started before 18 August 1983 in order to comply with any emission standard adopted by a State or political subdivision thereof, will not be considered a reconstruction.)</p> <p>Verify that, when conducting required performance tests, the owner or operator uses the test methods in appendix A or other methods and procedures as specified.</p> <p>Verify that, immediately before the performance test required to determine compliance with the following, the owner or operator uses Method 21 to monitor for leakage of vapor all potential sources in the terminal's vapor collection system equipment while a gasoline tank truck is being loaded:</p> <ul style="list-style-type: none"> <li>– the emissions to the atmosphere from the vapor collection system due to the loading of liquid product into gasoline tank trucks are not to exceed 35 milligrams of TOC per liter of gasoline loaded</li> <li>– for each affected facility equipped with an existing vapor processing system, the emissions to the atmosphere from the vapor collection system due to the loading of liquid product into gasoline tank trucks are not to exceed 80 milligrams of TOC per liter of gasoline loaded</li> <li>– the vapor collection and liquid loading equipment shall be designed and operated to prevent gauge pressure in the delivery tank from exceeding 4,500 pascals (450 mm of water) during product loading.</li> </ul> <p>Verify that the owner or operator repairs all leaks with readings of 10,000 ppm (as methane) or greater before conducting the performance test.</p> <p>Verify that the owner or operator determines compliance with the standards for emissions to the atmosphere from the vapor collection system due to the loading of liquid product into gasoline tank trucks and the emissions to the atmosphere from the vapor collection system due to the loading of liquid product into gasoline tank trucks according to the following:</p> <ul style="list-style-type: none"> <li>– the performance test is 6 h long during which at least 300,000 L of gasoline is loaded</li> <li>– if it is not possible for the test to be 6 h long with at least 300,000 L of gasoline being loaded, the test is continued the same day until 300,000 L of gasoline is loaded or the test may be resumed the next day with another complete 6-h period.</li> </ul>

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	<ul style="list-style-type: none"> <li>– if the vapor processing system is intermittent in operation, the performance test begins at a reference vapor holder level and ends at the same reference point with the test including at least two startups and shutdowns of the vapor processor (NOTE: If this does not occur under automatically controlled operations, the system shall be manually controlled)</li> <li>– the emission rate of TOC is computed using the equation in 40 CFR 60.503(c)(3)</li> <li>– the performance test is conducted in intervals of 5 min and for each interval, readings from each measurement are recorded, and the volume exhausted and the corresponding average TOC concentration are determined (NOTE: The sampling system response time shall be considered in determining the average TOC concentration corresponding to the volume exhausted)</li> <li>– the following methods are used to determine the volume air-vapor mixture exhausted at each interval: <ul style="list-style-type: none"> <li>– Method 2B is used for combustion vapor processing systems</li> <li>– Method 2A is used for all other vapor processing systems</li> </ul> </li> <li>– Method 25A or 25B are used for determining the total organic compounds concentration at each interval and the calibration gas shall be either propane or butane (NOTE: The owner or operator may exclude the methane and ethane content in the exhaust vent by any method (e.g., Method 18) approved by the Administrator.)</li> <li>– to determine the volume of gasoline dispensed during the performance test period at all loading racks for which vapor emissions are controlled by the processing system being tested, terminal records or readings from gasoline dispensing meters at each loading rack shall be used.</li> </ul> <p>Verify that the owner or operator determines compliance with the standards for the design of the vapor collection and liquid loading equipment to prevent gauge pressure in the delivery tank from exceeding 4,500 pascals (450 mm of water) during product loading as follows:</p> <ul style="list-style-type: none"> <li>– a pressure measurement device (liquid manometer, magnehelic gauge, or equivalent instrument), capable of measuring up to 500 mm of water gauge pressure with +/- 2.5 mm of water precision, is calibrated and installed on the terminal's vapor collection system at a pressure tap located as close as possible to the connection with the gasoline tank truck</li> <li>– during the performance test, the pressure is recorded every 5 min while a gasoline truck is being loaded; the highest instantaneous pressure that occurs during each loading shall also be recorded (NOTE: Every loading position must be tested at least once during the performance test.)</li> </ul> <p>(NOTE: The performance test requirements do not apply to flares meeting the requirements in 40 CFR 60.18(b) through 60.18(f). The owner or operator shall demonstrate that the flare and associated vapor collection system is in compliance with the requirements in 40 CFR 60.18(b) through 60.18(f) and 60.503(a), 60.503(b), and 60.503(d). The owner or operator shall use alternative test methods</p>

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<p><b>ST.10.3.US.</b> Affected facilities at bulk gasoline terminals which deliver liquid product into gasoline tank trucks, the construction or modification of which is commenced after 17 December 1980, must meet specific reporting and recordkeeping standards (40 CFR 60.500 and 60.505) [Added April 2004].</p>	<p>and procedures in accordance for flares that do not meet the requirements in 40 CFR 60.18(b).)</p> <p>(NOTE: The “affected facility” to which this checklist item applies is the total at a bulk gasoline terminal of all the loading racks which deliver liquid product into gasoline tank trucks, the construction or modification of which is started after 17 December 1980.)</p> <p>(NOTE: Any replacement of components of an existing facility, started before 18 August 1983 in order to comply with any emission standard adopted by a State or political subdivision thereof will not be considered a reconstruction.)</p> <p>Verify that the tank truck vapor tightness documentation is kept on file at the terminal in a permanent form available for inspection.</p> <p>Verify that the documentation file for each gasoline tank truck is updated at least once per year to reflect current test results as determined by Method 27.</p> <p>Verify that the documentation file for each gasoline tank truck includes, as a minimum, the following information:</p> <ul style="list-style-type: none"> <li>– test title: Gasoline Delivery Tank Pressure Test--EPA Reference Method 27</li> <li>– tank owner and address</li> <li>– tank identification number</li> <li>– testing location.</li> <li>– date of test</li> <li>– tester name and signature</li> <li>– witnessing inspector, if any: name, signature, and affiliation.</li> <li>– test results: actual pressure change in 5 min, mm of water (average for 2 runs).</li> </ul> <p>Verify that the record of each monthly leak inspection is kept on file at the terminal for at least 2 yr.</p> <p>Verify that inspection records include, as a minimum, the following information:</p> <ul style="list-style-type: none"> <li>– date of inspection</li> <li>– findings (may indicate no leaks discovered; or location, nature, and severity of each leak)</li> <li>– leak determination method</li> <li>– corrective action (date each leak repaired; reasons for any repair interval in excess of 15 days)</li> <li>– inspector name and signature.</li> </ul> <p>Verify that the terminal owner or operator keeps documentation of all notifications on file at the terminal for at least 2 yr.</p>

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<p><b>ST.10.4.US.</b> Loading racks at bulk gasoline terminals and pipeline breakout stations subject to HAP limitation must meet specific standards (40 CFR 63.420(a), 63.420(b), 63.402(e), 63.420(g), and 63.422) <b>[Added April 2004]</b>.</p>	<p>(NOTE: As an alternative to keeping records at the terminal of each gasoline cargo tank test result, an owner or operator may comply with one of the following requirements:</p> <ul style="list-style-type: none"> <li>– an electronic copy of each record is instantly available at the terminal: <ul style="list-style-type: none"> <li>– the copy of each record is an exact duplicate image of the original paper record with certifying signatures</li> <li>– the permitting authority is notified in writing that each terminal using this alternative is in compliance with this option</li> </ul> </li> <li>– for facilities that utilize a terminal automation system to prevent gasoline cargo tanks that do not have valid cargo tank vapor tightness documentation from loading [e.g., via a card lock-out system], a copy of the documentation is made available [e.g., via facsimile] for inspection by permitting authority representatives during the course of a site visit, or within a mutually agreeable time frame: <ul style="list-style-type: none"> <li>– the copy of each record is an exact duplicate image of the original paper record with certifying signatures</li> <li>– the permitting authority is notified in writing that each terminal using this alternative is in compliance with this option.)</li> </ul> </li> </ul> <p>Verify that the owner or operator of an affected facility keeps records of all replacements or additions of components performed on an existing vapor processing system for at least 3 yr.</p> <p>(NOTE: The affected source to which this checklist item applies is the total at a bulk gasoline terminal of all the loading racks which deliver liquid product into gasoline tank trucks, the construction or modification of which is started after 17 December 1980.)</p> <p>(NOTE: This checklist item does not apply to the following bulk gasoline terminals:</p> <ul style="list-style-type: none"> <li>– for which the owner or operator has documented and recorded to the Administrator's satisfaction that the result, ET, of the equation in Appendix 10-0 is less than 1, and complies requirements in 40 CFR 63.420(c) through 63.420(f) [see checklist item ST.10.5.US]</li> <li>– for which the owner or operator has documented and recorded to the Administrator's satisfaction that the facility is not a major source, or is not located within a contiguous area and under common control of a facility that is a major source.)</li> </ul> <p>(NOTE: The affected source to which this checklist item applies is also each pipeline breakout station, except those pipeline breakout stations which meet one of the following:</p> <ul style="list-style-type: none"> <li>– for which the owner or operator has documented and recorded to the Administrator's satisfaction that the result, EP, of the equation in Appendix 10-0 is less than 1, and complies with requirements in 40 CFR 63.420(c) through 63.420(f) [see checklist item ST.10.5.US]</li> </ul>

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	<p>– for which the owner or operator has documented and recorded to the Administrator's satisfaction that the facility is not a major source, or is not located within a contiguous area and under common control of a facility that is a major source.)</p> <p>(NOTE: The applicability NOTES above are not to be used to determine applicability to bulk gasoline terminals or pipeline breakout stations that are either:</p> <ul style="list-style-type: none"> <li>– located within a contiguous area and under common control with another bulk gasoline terminal or pipeline breakout station</li> <li>– located within a contiguous area and under common control with other sources not specified above that emit or have the potential to emit a hazardous air pollutant.)</li> </ul> <p>Verify that each owner or operator of loading racks at a bulk gasoline terminal complies with the requirements in 40 CFR 60.502 (see checklist item ST.10.1.US) except for paragraphs 60.502(b), 60.502(c), and 60.502(j) of that section.</p> <p>(NOTE: When applying 40 CFR 60.502, the term “affected facility” means the loading racks that load gasoline cargo tanks at the bulk gasoline terminals.)</p> <p>Verify that emissions to the atmosphere from the vapor collection and processing systems due to the loading of gasoline cargo tanks does not exceed 10 milligrams of TOC per liter of gasoline loaded.</p> <p>Verify that each owner or operator of a bulk gasoline terminal subject to these loading rack requirements complies with 40 CFR 60.502(e) (see checklist item ST.10.1.US) as follows:</p> <ul style="list-style-type: none"> <li>– for the purposes of this section, the term “tank truck” as used in 40 CFR 60.502(e) means “cargo tank”</li> <li>– 40 CFR 60.502(e)(5) is changed to read “The terminal owner or operator shall take steps assuring that the nonvapor-tight gasoline cargo tank will not be reloaded at the facility until vapor tightness documentation is obtained for that gasoline cargo tank which documents that: <ul style="list-style-type: none"> <li>– the tank truck or railcar gasoline cargo tank meets the test requirements in 40 CFR 63.425(e), or the railcar gasoline cargo tank meets applicable test requirements in 40 CFR 63.425(i) (see checklist item ST.10.8.US)</li> <li>– for each gasoline cargo tank failing the test in 40 CFR 63.425(f) or 63.425(g) (see checklist item ST.10.8.US) at the facility, the cargo tank either: <ul style="list-style-type: none"> <li>– before repair work is performed on the cargo tank, meets the test requirements in 40 CFR 63.425(g) or 63.425(h) (see checklist item ST.10.8.US)</li> <li>– after repair work is performed on the cargo tank before or during the tests in 40 CFR. 63.425(g) or 63.425(h), subsequently passes the annual certification test described in 40 CFR 63.425(e) (see checklist item ST.10.8.US).</li> </ul> </li> </ul> </li> </ul>

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<p><b>ST.10.5.US.</b> A bulk gasoline terminal or pipeline breakout station exempted from HAP limitations must meet specific requirements (40 CFR 63.420(c) 63.420(d), 63.428(i), and 63.428(j)) [Added April 2004].</p>	<p>Verify that each owner or operator meet the requirements as expeditiously as practicable, but no later than 15 December 1997, at existing facilities and upon startup for new facilities.</p> <p>(NOTE: As an alternative to 40 CFR 60.502(h) and 60.502(i), the owner or operator may comply with the following:</p> <ul style="list-style-type: none"> <li>– the owner or operator designs and operate the vapor processing system, vapor collection system, and liquid loading equipment to prevent gauge pressure in the railcar gasoline cargo tank from exceeding the applicable test limits in 40 CFR 63.425(e) and 63.425(i) [see checklist item ST.10.8.US] during product loading and the level is not exceeded when measured by the procedures specified in 40 CFR 60.503(d) [see checklist item ST.10.2.US]</li> <li>– no pressure-vacuum vent in the bulk gasoline terminal's vapor processing system or vapor collection system begins to open at a system pressure less than the applicable test limits in 40 CFR 63.425(e) or 63.425(i) [see checklist item ST.10.8.US].)</li> </ul> <p>(NOTE: Each owner or operator of a bulk gasoline terminal or pipeline breakout station subject to the provisions of this subpart that is also subject to applicable provisions of 40 CFR 60, subpart Kb or XX shall comply only with the provisions in each subpart that contain the most stringent control requirements for that facility.)</p> <p>Verify that exempted bulk gasoline terminals or pipeline breakout stations for which the results, ET or EP, of the calculation in Appendix 10-0 has been documented and is less than 1.0 but greater than or equal to 0.50:</p> <ul style="list-style-type: none"> <li>– are operated such that none of the facility parameters used to calculate results in Appendix 10-0 and approved by the Administrator, is exceeded in any rolling 30-day period</li> <li>– document and report to the Administrator not later than 16 December 1996 for existing facilities, within 30 days for existing facilities subject to 40 CFR 63.420(c) after 16 December 1996, or at startup for new facilities the methods, procedures, and assumptions supporting the calculations for determining exemption</li> <li>– maintain records to document that the established facility parameters have not been exceeded</li> <li>– report annually to the Administrator that the facility parameters have not been exceeded</li> <li>– submit a report to request modification of any facility parameter to the Administrator for approval that documents any expected HAP emission change resulting from the change in parameter at any time following the notification approval by the Administrator of the facility parameters, and prior to any of the parameters being exceeded.</li> </ul>

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<p><b>ST.10.6.US.</b> Storage tanks at bulk gasoline terminals and pipeline breakout stations subject to HAP limitation must meet specific standards (40 CFR 63.420(a), 63.420(b), 63.402(e), 63.420(g), and 63.423) <b>[Added April 2004]</b>.</p>	<p>Verify that exempted bulk gasoline terminals or pipeline breakout stations for which the results, ET or EP, of the calculation in Appendix 10-0 has been documented and is less than 0.50:</p> <ul style="list-style-type: none"> <li>– are operated such that none of the facility parameters used to calculate results in Appendix 10-0 and approved by the Administrator, is exceeded in any rolling 30-day period</li> <li>– document and report to the Administrator not later than 16 December 1996 for existing facilities, within 30 days for existing facilities after 16 December 1996, or at startup for new facilities the use of the emission screening equations and the calculated value of ET or EP</li> <li>– maintain a record of the calculations, including methods, procedures, and assumptions supporting the calculations for determining criteria</li> <li>– submit a report to request modification of any facility parameter to the Administrator for approval that documents any expected HAP emission change resulting from the change in parameter at any time following the notification approval by the Administrator of the facility parameters, and prior to any of the parameters being exceeded.</li> </ul> <p>Verify that each owner or operator of a bulk gasoline terminal or pipeline breakout station equips each gasoline storage vessel with a design capacity greater than or equal to 75 m<sup>3</sup> according to the requirements in 40 CFR 60.112b(a)(1) through (4), except for the requirements in 40 CFR. 60.112b(a)(1)(iv) through (ix) and 60.112b(a)(2)(ii) (see checklist items ST.20.1.US and ST.20.4.US).</p> <p>Verify that each owner or operator equips each gasoline external floating roof storage vessel with a design capacity greater than or equal to 75 m<sup>3</sup> according to the requirements in 40 CFR 60.112b(a)(2)(ii) if such storage vessel does not currently meet the requirements above.</p> <p>Verify that each gasoline storage vessel at existing bulk gasoline terminals and pipeline breakout stations are in compliance with the requirements in this checklist item as expeditiously as practicable, but no later than 15 December 1997.</p> <p>Verify that, at new bulk gasoline terminals and pipeline breakout stations, compliance is achieved upon startup.</p> <p>(NOTE: The affected source to which this checklist item applies each bulk gasoline terminal, except those bulk gasoline terminals which meet one of the following:</p> <ul style="list-style-type: none"> <li>– for which the owner or operator has documented and recorded to the Administrator's satisfaction that the result, ET, of the equation in Appendix 10-0 is less than 1, and complies requirements in 40 CFR 63.420(c) through 63.420(f) [see checklist item ST.10.5.US]</li> <li>– for which the owner or operator has documented and recorded to the Administrator's satisfaction that the facility is not a major source, or is not</li> </ul>

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<p><b>ST.10.7.US.</b> Owners and operators at bulk gasoline terminals and pipeline breakout stations subject to HAP limitation must inspect for and manage equipment leaks (40 CFR 63.420(a), 63.420(b), 63.402(e), 63.420(g), and 63.424) [Added April 2004].</p>	<p>located within a contiguous area and under common control of a facility that is a major source.)</p> <p>(NOTE: The affected source to which this checklist item applies is also each pipeline breakout station, except those pipeline breakout stations which meet one of the following:</p> <ul style="list-style-type: none"> <li>– for which the owner or operator has documented and recorded to the Administrator's satisfaction that the result, EP, of the equation in Appendix 10-0 is less than 1, and complies with requirements in 40 CFR 63.420(c) through 63.420(f) [see checklist item ST.10.5.US]</li> <li>– For which the owner or operator has documented and recorded to the Administrator's satisfaction that the facility is not a major source, or is not located within a contiguous area and under common control of a facility that is a major source.</li> </ul> <p>(NOTE: The applicability NOTES above are not to be used to determine applicability to bulk gasoline terminals or pipeline breakout stations that are either:</p> <ul style="list-style-type: none"> <li>– located within a contiguous area and under common control with another bulk gasoline terminal or pipeline breakout station</li> <li>– located within a contiguous area and under common control with other sources not specified above that emit or have the potential to emit a hazardous air pollutant.)</li> </ul> <p>Verify that each owner or operator of a bulk gasoline terminal or pipeline breakout performs a monthly leak inspection of all equipment in gasoline service.</p> <p>(NOTE: For this inspection, detection methods incorporating sight, sound, and smell are acceptable.)</p> <p>Verify that each piece of equipment is inspected during the loading of a gasoline cargo tank.</p> <p>Verify that a log book is used and signed by the owner or operator at the completion of each inspection.</p> <p>Verify that a section of the log contains a list, summary description, or diagram(s) showing the location of all equipment in gasoline service at the facility.</p> <p>Verify that each detection of a liquid or vapor leak is recorded in the log book.</p> <p>Verify that, when a leak is detected, an initial attempt at repair is made as soon as practicable, but no later than 5 calendar days after the leak is detected.</p> <p>Verify that repair or replacement of leaking equipment is completed within 15 calendar days after detection of each leak.</p>

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	<p>(NOTE: Delay of repair of leaking equipment will be allowed upon a demonstration to the Administrator that repair within 15 days is not feasible. The owner or operator shall provide the reason(s) a delay is needed and the date by which each repair is expected to be completed.)</p> <p>(NOTE: As an alternative to compliance with the provisions in this checklist item, owners or operators may implement an instrument leak monitoring program that has been demonstrated to the Administrator as at least equivalent.)</p> <p>Verify that owners and operators do not allow gasoline to be handled in a manner that would result in vapor releases to the atmosphere for extended periods of time.</p> <p>Verify that the following measures are taken at a minimum:</p> <ul style="list-style-type: none"> <li>– minimize gasoline spills</li> <li>– clean up spills as expeditiously as practicable</li> <li>– cover all open gasoline containers with a gasketed seal when not in use</li> <li>– minimize gasoline sent to open waste collection systems that collect and transport gasoline to reclamation and recycling devices, such as oil/water separators.</li> </ul> <p>(NOTE: The affected source to which this checklist item applies each bulk gasoline terminal, except those bulk gasoline terminals which meet one of the following:</p> <ul style="list-style-type: none"> <li>– for which the owner or operator has documented and recorded to the Administrator's satisfaction that the result, ET, of the equation in Appendix 10-0 is less than 1, and complies requirements in 40 CFR 63.420(c) through 63.420(f) [see checklist item ST.10.5.US]</li> <li>– for which the owner or operator has documented and recorded to the Administrator's satisfaction that the facility is not a major source, or is not located within a contiguous area and under common control of a facility that is a major source.)</li> </ul> <p>(NOTE: The affected source to which this checklist item applies is also each pipeline breakout station, except those pipeline breakout stations which meet one of the following:</p> <ul style="list-style-type: none"> <li>– for which the owner or operator has documented and recorded to the Administrator's satisfaction that the result, EP, of the equation in Appendix 10-0 is less than 1, and complies with requirements in 40 CFR 63.420(c) through 63.420(f) [see checklist item ST.10.5.US]</li> <li>– for which the owner or operator has documented and recorded to the Administrator's satisfaction that the facility is not a major source, or is not located within a contiguous area and under common control of a facility that is a major source.</li> </ul> <p>(NOTE: The applicability NOTES above are not to be used to determine applicability to bulk gasoline terminals or pipeline breakout stations that are either:</p>

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<p><b>ST.10.8.US.</b> Owners and operators at bulk gasoline terminals and pipeline breakout stations subject to HAP limitation must conduct performance tests (40 CFR 63.420(a), 63.420(b), 63.402(e), 63.420(g), and 63.425) [Added April 2004].</p>	<ul style="list-style-type: none"> <li>– located within a contiguous area and under common control with another bulk gasoline terminal or pipeline breakout station</li> <li>– located within a contiguous area and under common control with other sources not specified above that emit or have the potential to emit a hazardous air pollutant.)</li> </ul> <p>Verify that each owner or operator subject to the emission standard in 40 CFR 63.422(b) or 40 CFR 60.112b(a)(3)(ii) conducts a performance test on the vapor processing and collection systems according to one of the following methods:</p> <ul style="list-style-type: none"> <li>– use the test methods and procedures in 40 CFR 60.503 (see checklist item ST.10.2.US), except a reading of 500 ppm shall be used to determine the level of leaks to be repaired under 40 CFR 60.503(b)</li> <li>– use alternative test methods and procedures in accordance with the alternative test method requirements.</li> </ul> <p>(NOTE: The performance test requirements of 40 CFR 60.503(c) do not apply to flares.)</p> <p>Verify that the owner or operator demonstrates that the flare and associated vapor collection system is in compliance with the requirements in 40 CFR 63.11(b) and 40 CFR 60.503(a), 60.503 (b), and 60.503(d), respectively (see checklist item ST.10.2.US).</p> <p>Verify that, for each performance test, the owner or operator determines a monitored operating parameter value for the vapor processing system using the following procedure:</p> <ul style="list-style-type: none"> <li>– during the performance test, continuously record the operating parameter under 40 CFR 63.427(a)</li> <li>– determine an operating parameter value based on the parameter data monitored during the performance test, supplemented by engineering assessments and the manufacturer's recommendations</li> <li>– provide for the Administrator's approval the rationale for the selected operating parameter value, and monitoring frequency and averaging time, including data and calculations used to develop the value and a description of why the value, monitoring frequency, and averaging time demonstrate continuous compliance with the emission standard in 40 CFR 63.422(b) or 40 CFR 60.112b(a)(3)(ii).</li> </ul> <p>Verify that for performance tests performed after the initial test, the owner or operator documents the reasons for any change in the operating parameter value since the previous performance test.</p> <p>Verify that the owner or operator of each gasoline storage vessel subject to the provisions of 40 CFR 63.423 (see checklist item ST.10.6.US) complies with 40 CFR 60.113b (see checklist item ST.20.6.US).</p>

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	<p>(NOTE: If a closed vent system and control device are used, as specified in 40 CFR 60.112b(a)(3) to comply with the requirements in 40 CFR 63.423, the owner or operator shall also comply with the requirements in paragraph (b) of this section.)</p> <p>Verify that the annual certification test for gasoline cargo tanks consists of the following test methods and procedures:</p> <ul style="list-style-type: none"> <li>– Method 27, appendix A, 40 CFR 60.</li> <li>– pressure test of the cargo tank's internal vapor valve</li> </ul> <p>Verify that the leak detection test is performed using Method 21, appendix A, 40 CFR 60, except omit section 4.3.2 of Method 21.</p> <p>Verify that a vapor-tight gasoline cargo tank has no leaks at any time when tested according to procedures.</p> <p>(NOTE: The leak definition shall be 21,000 ppm as propane. Use propane to calibrate the instrument, setting the span at the leak definition. The response time to 90 percent of the final stable reading shall be less than 8 seconds for the detector with the sampling line and probe attached.)</p> <p>Verify that, in addition to using the procedures in Method 21 for leak detection, also include the following procedures:</p> <ul style="list-style-type: none"> <li>– perform the test on each compartment during loading of that compartment or while the compartment is still under pressure</li> <li>– to eliminate a positive instrument drift, the dwell time for each leak detection does not exceed two times the instrument response time; purge the instrument with ambient air between each leak detection and the duration of the purge shall be in excess of two instrument response times</li> <li>– attempt to block the wind from the area being monitored. Record the highest detector reading and location for each leak.</li> </ul> <p>Verify that, for those cargo tanks with manifolded product lines, a nitrogen pressure decay field test is conducted on each compartment.</p> <p>Verify that the continuous performance pressure decay test is performed using Method 27, appendix A, 40 CFR 60.</p> <p>(NOTE: As an alternative for annual certification leakage testing of gasoline cargo tanks, the owner or operator may meet the following for railcar gasoline cargo tanks, provided the railcar tank is not a railcar gasoline cargo tank that collects gasoline vapors from a vapor balance system permitted under or required by a Federal, State, local, or tribal agency:</p> <ul style="list-style-type: none"> <li>– comply with the requirements of 49 CFR 173.31(d), 179.7, 180.509, and 180.511 for the testing of railcar gasoline cargo tanks</li> </ul>

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<p><b>ST.10.9.US.</b> Owners and operators at bulk gasoline terminals and pipeline breakout stations subject to HAP limitation must perform continuous monitoring (40</p>	<p>– the leakage pressure test procedure required under 49 CFR 180.509(j) and used to show no indication of leakage under 49 CFR 180.511(f) is ASTM E 515-95, BS EN 1593:1999, or another bubble leak test procedure meeting the requirements in 49 CFR 179.7, 180.505, and 180.509.</p> <p>(NOTE: A vapor balance system is a piping and collection system designed to collect gasoline vapors displaced from a storage vessel, barge, or other container being loaded, and routes the displaced gasoline vapors into the railcar gasoline cargo tank from which liquid gasoline is being unloaded.)</p> <p>(NOTE: The affected source to which this checklist item applies each bulk gasoline terminal, except those bulk gasoline terminals which meet one of the following:</p> <ul style="list-style-type: none"> <li>– for which the owner or operator has documented and recorded to the Administrator's satisfaction that the result, ET, of the equation in Appendix 10-0 is less than 1, and complies requirements in 40 CFR 63.420(c) through 63.420(f) [see checklist item ST.10.5.US]</li> <li>– for which the owner or operator has documented and recorded to the Administrator's satisfaction that the facility is not a major source, or is not located within a contiguous area and under common control of a facility that is a major source.)</li> </ul> <p>(NOTE: The affected source to which this checklist item applies is also each pipeline breakout station, except those pipeline breakout stations which meet one of the following:</p> <ul style="list-style-type: none"> <li>– for which the owner or operator has documented and recorded to the Administrator's satisfaction that the result, EP, of the equation in Appendix 10-0 is less than 1, and complies with requirements in 40 CFR 63.420(c) through 63.420(f) [see checklist item ST.10.5.US]</li> <li>– for which the owner or operator has documented and recorded to the Administrator's satisfaction that the facility is not a major source, or is not located within a contiguous area and under common control of a facility that is a major source.</li> </ul> <p>(NOTE: The applicability NOTES above are not to be used to determine applicability to bulk gasoline terminals or pipeline breakout stations that are either:</p> <ul style="list-style-type: none"> <li>– located within a contiguous area and under common control with another bulk gasoline terminal or pipeline breakout station</li> <li>– located within a contiguous area and under common control with other sources not specified above that emit or have the potential to emit a hazardous air pollutant.)</li> </ul> <p>Verify that each owner or operator of a bulk gasoline terminal installs, calibrates, certifies, operates, and maintains, according to the manufacturer's specifications, a continuous monitoring system (CMS) as follows:</p>

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CFR 63.420(a), 63.420(b), 63.402(e), 63.420(g), and 63.427) [Added April 2004].	<ul style="list-style-type: none"> <li>– where a carbon adsorption system is used, a continuous emission monitoring system (CEMS) capable of measuring organic compound concentration is installed in the exhaust air stream</li> <li>– where a refrigeration condenser system is used, a continuous parameter monitoring system (CPMS) capable of measuring temperature is installed immediately downstream from the outlet to the condenser section (NOTE: Alternatively, a CEMS capable of measuring organic compound concentration may be installed in the exhaust air stream)</li> <li>– where a thermal oxidation system other than a flare is used, a CPMS capable of measuring temperature is installed in the firebox or in the ductwork immediately downstream from the firebox in a position before any substantial heat exchange occurs</li> <li>– where a flare meeting the requirements in 40 CFR 63.11(b) is used, a heat-sensing device, such as an ultraviolet beam sensor or a thermocouple, is installed in proximity to the pilot light to indicate the presence of a flame.</li> </ul> <p>(NOTE: Monitoring an alternative operating parameter or a parameter of a vapor processing system other than those listed will be allowed upon demonstrating to the Administrator's satisfaction that the alternative parameter demonstrates continuous compliance with the emission standard in 40 CFR 63.422(b) or 40 CFR 60.112b(a)(3)(ii) [see checklist item ST.20.1.US and ST.20.4.US].)</p> <p>Verify that each owner or operator of a bulk gasoline terminal operates the vapor processing system in a manner not to exceed the operating parameter value for the parameter where a carbon adsorption system is used or where a refrigeration condenser system is used, or to go below the operating parameter value for where a thermal oxidation system other than a flare is used, and established using the procedures in 40 CFR 63.425(b) (see checklist item ST.10.8.US).</p> <p>(NOTE: In cases where an alternative parameter is approved, each owner or operator will operate the vapor processing system in a manner not to exceed or not to go below, as appropriate, the alternative operating parameter value. Operation of the vapor processing system in a manner exceeding or going below the operating parameter value, as specified above, shall constitute a violation of the emission standard in 40 CFR 63.422(b).)</p> <p>Verify that each owner or operator of gasoline storage vessels subject to the provisions of 40 CFR 63.423 (see checklist item ST.10.6.US) complies with the monitoring requirements in 40 CFR 60.116b (see checklist item ST.20.7.US), except records are kept for at least 5 yr.</p> <p>Verify that, if a closed vent system and control device are used, as specified in 40 CFR 60.112b(a)(3) (see checklist item ST.20.1.US and ST.20.4.US), to comply with the requirements in 40 CFR 63.423 (see checklist item ST.10.6.US), the owner or operator also complies with the requirements to maintain continuous monitoring systems.</p>

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<b>ST.10.10.US.</b> Owners and operators at bulk gasoline terminals and pipeline breakout stations subject to HAP limitation must follow reporting and recordkeeping requirements (40 CFR 63.420(a), 63.420(b), 63.402(e), 63.420(g), and 63.428(a) through 63.428(h)) [Added April 2004].	<p>Verify that each owner or operator of a bulk gasoline terminal keeps records of the test results for each gasoline cargo tank loading at the facility as follows:</p> <ul style="list-style-type: none"> <li>– annual certification testing and railcar bubble leak testing</li> <li>– continuous performance testing performed at any time at that facility.</li> </ul> <p>Verify that the documentation file is kept up-to-date for each gasoline cargo tank loading at the facility.</p> <p>Verify that the documentation for each test includes, as a minimum, the following information:</p> <ul style="list-style-type: none"> <li>– name of test</li> <li>– cargo tank owner's name and address</li> <li>– cargo tank identification number</li> <li>– test location and date</li> <li>– tester name and signature</li> <li>– witnessing inspector, if any: Name, signature, and affiliation</li> <li>– vapor tightness repair: Nature of repair work and when performed in relation to vapor tightness testing</li> <li>– test results: test pressure; pressure or vacuum change, mm of water; time period of test; number of leaks found with instrument; and leak definition.</li> </ul> <p>Verify that each owner or operator of a bulk gasoline terminal:</p> <ul style="list-style-type: none"> <li>– keeps an up-to-date, readily accessible record of the required continuous monitoring data, including:             <ul style="list-style-type: none"> <li>– the time intervals during which loadings of gasoline cargo tanks have occurred or, alternatively, a record of the operating parameter data only during such loadings</li> <li>– the date and time of day is indicated at reasonable intervals on this record.</li> </ul> </li> <li>– records and reports simultaneously with the notification of compliance status:             <ul style="list-style-type: none"> <li>– all data and calculations, engineering assessments, and manufacturer's recommendations used in determining the operating parameter value</li> <li>– the following information when using a flare:                 <ul style="list-style-type: none"> <li>– flare design (i.e., steam-assisted, air-assisted, or non-assisted)</li> <li>– all visible emissions readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the compliance determination</li> </ul> </li> </ul> </li> <li>– the reporting and recordkeeping requirements specified by the Administrator when an owner or operator requested approval to use a vapor processing system or monitor an operating parameter other than those specified in 40 CFR 63.427(a),</li> </ul>

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	<p>Verify that each owner or operator of storage vessels keep records and furnish reports as specified in 40 CFR 60.115b (see checklist item ST.20.8.US), except records are kept for at least 5 yr.</p> <p>Verify that each owner or operator complying with the provisions of 40 CFR. 63.424(a) through (d) (see checklist item ST.10.7.US) records the following information in the log book for each leak that is detected:</p> <ul style="list-style-type: none"> <li>– the equipment type and identification number</li> <li>– the nature of the leak (i.e., vapor or liquid) and the method of detection (i.e., sight, sound, or smell)</li> <li>– the date the leak was detected and the date of each attempt to repair the leak</li> <li>– repair methods applied in each attempt to repair the leak</li> <li>– “repair delayed” and the reason for the delay if the leak is not repaired within 15 calendar days after discovery of the leak</li> <li>– the expected date of successful repair of the leak if the leak is not repaired within 15 days</li> <li>– the date of successful repair of the leak.</li> </ul> <p>Verify that each owner or operator reports to the Administrator a description of the types, identification numbers, and locations of all equipment in gasoline service.</p> <p>(NOTE: For facilities electing to implement an instrument program under 40 CFR 63.424(f), the report shall contain a full description of the program.)</p> <p>Verify that in the case of an existing source or a new source that has an initial startup date before the effective date, the report is submitted with the notification of compliance status, unless an extension of compliance is granted.</p> <p>Verify that, if an extension of compliance is granted, the report is submitted on a date scheduled by the Administrator.</p> <p>Verify that, in the case of new sources that did not have an initial startup date before the effective date, the report is submitted with the application for approval of construction.</p> <p>Verify that each owner or operator of a bulk gasoline terminal or pipeline breakout station includes in a semiannual report to the Administrator the following information, as applicable:</p> <ul style="list-style-type: none"> <li>– each loading of a gasoline cargo tank for which vapor tightness documentation had not been previously obtained by the facility</li> <li>– required periodic reports</li> <li>– the number of equipment leaks not repaired within 5 days after detection.</li> </ul>

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	<p>Verify that each owner or operator of a bulk gasoline terminal or pipeline breakout station submits an excess emissions report to the Administrator whether or not a CMS is installed at the facility.</p> <p>(NOTE: The following occurrences are excess emissions events under this subpart, and the following information shall be included in the excess emissions report, as applicable:</p> <ul style="list-style-type: none"> <li>– each exceedance or failure to maintain, as appropriate, the monitored operating parameter value</li> <li>– the monitoring data for the days on which exceedances or failures to maintain have occurred, and a description and timing of the steps taken to repair or perform maintenance on the vapor collection and processing systems or the CMS</li> <li>– each instance of a nonvapor-tight gasoline cargo tank loading at the facility in which the owner or operator failed to take steps to assure that such cargo tank would not be reloaded at the facility before vapor tightness documentation for that cargo tank was obtained</li> <li>– each reloading of a nonvapor-tight gasoline cargo tank at the facility before vapor tightness documentation for that cargo tank is obtained by the facility</li> <li>– for each occurrence of an equipment leak for which no repair attempt was made within 5 days or for which repair was not completed within 15 days after detection: <ul style="list-style-type: none"> <li>– the date on which the leak was detected;</li> <li>– the date of each attempt to repair the leak;</li> <li>– the reasons for the delay of repair; and</li> <li>– the date of successful repair.</li> </ul> </li> </ul> <p>Verify that each owner or operator of a facility meeting the criteria in 40 CFR 63.420(c) performs these requirements, all of which will be available for public inspection:</p> <p>(NOTE: As an alternative to keeping records at the terminal of each gasoline cargo tank test result, an owner or operator may comply with the following requirements:</p> <ul style="list-style-type: none"> <li>– an electronic copy of each record is instantly available at the terminal. <ul style="list-style-type: none"> <li>– the copy of each record is an exact duplicate image of the original paper record with certifying signatures</li> <li>– the permitting authority is notified in writing that each terminal using this alternative is in compliance</li> </ul> </li> <li>– for facilities that utilize a terminal automation system to prevent gasoline cargo tanks that do not have valid cargo tank vapor tightness documentation from loading (e.g., via a card lock-out system), a copy of the documentation is made available (e.g., via facsimile) for inspection by permitting authority representatives during the course of a site visit, or within a mutually agreeable time frame: <ul style="list-style-type: none"> <li>– the copy of each record is an exact duplicate image of the original paper record with certifying signatures</li> </ul> </li> </ul>

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<p><b>ST.10.11.US.</b> Bulk gasoline tanks must meet specific emissions limitation (40 CFR 63.11081, 63.11082, 63.11083, and 63.11086) [Added January 2008].</p>	<p>– the permitting authority is notified in writing that each terminal using this alternative is in compliance.)</p> <p>(NOTE: This checklist item applies to owners or operators of each area source bulk gasoline terminal, pipeline breakout station, pipeline pumping station, and bulk gasoline plant as follows:</p> <ul style="list-style-type: none"> <li>– a bulk gasoline terminal that is not subject to the control requirements of 40 CFR 63, subpart R [Sections 63.422, 63.423, and 63.424; see checklist items ST.10.4.US, ST.10.6.US, and ST.10.7.US] or 40 CFR 63, subpart CC (Sections 63.646, 63.648, 63.649, and 63.650; <i>Emission Standards for HAPs from Petroleum Refineries</i>, see text]</li> <li>– a pipeline breakout station that is not subject to the control requirements of 40 CFR 63, subpart R [40 CFR 63.423 and 63.424; see checklist items ST.10.6.US and ST.10.7.US]</li> <li>– a pipeline pumping station</li> <li>– a bulk gasoline plant.</li> </ul> <p>Owners and operators of these affected sources are not required to meet the obligation to obtain a permit under 40 CFR 70 or 40 CFR 71 as a result of being subject to 40 CFR 63, Subpart BBBBBB [40 CFR 63.11080 – 63.11100; see checklist items ST.10.11.US through ST.10.17.US]. However, owners and operators are still subject to the requirement to apply for and obtain a permit under 40 CFR 70 or 40 CFR 71 if the facility meets one or more of the applicability criteria for such a permit.)</p> <p>(NOTE: The emission sources to which this checklist item applies are:</p> <ul style="list-style-type: none"> <li>– gasoline storage tanks, gasoline loading racks, vapor collection-equipped gasoline cargo tanks, and equipment components in vapor or liquid gasoline service that meet the criteria specified in Tables 1 through 3 to this subpart.</li> <li>– a new affected source if it commenced construction on the affected source after November 9, 2006, and the source meets the applicability criteria at the time it commenced operation.</li> <li>– a reconstructed source if it meets the criteria for reconstruction as defined in 40 CFR 63.2.</li> <li>– an existing affected source if it is not new or reconstructed.)</li> </ul> <p>(NOTE: According to 40 CFR 63.2, Reconstruction, means the replacement of components of an affected or a previously nonaffected source to such an extent that:</p> <ul style="list-style-type: none"> <li>– the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable new source; and</li> <li>– it is technologically and economically feasible for the reconstructed source to meet the relevant standard(s) established by the Administrator (or a State) pursuant to section 112 of the Act.</li> </ul> <p>Upon reconstruction, an affected source, or a stationary source that becomes an affected source, is subject to relevant standards for new sources, including compliance dates, irrespective of any change in emissions of HAPS from that source.)</p>

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	<p>(NOTE: If startup of the affected source is before 10 January 2008, compliance with the standards in this checklist item is required no later than 10 January 2008. If startup of the affected source is after 10 January 2008, compliance with the standards in this checklist item is required upon startup of the affected source. An existing affected source must be in compliance no later than 10 January 2011. An existing affected source that becomes subject to the control requirements because of an increase in the average daily throughput, as specified in option 1 of Table 2 in Appendix 10-0d, compliance with the standards must be no later than 3 yr after the affected source becomes subject to the control requirements.)</p> <p>Verify that owners and operators of bulk gasoline plants only load gasoline into storage tanks and cargo tanks by utilizing submerged filling as follows:</p> <ul style="list-style-type: none"> <li>– submerged fill pipes installed on or before 9 November 2006 are no more than 12 in from the bottom of the tank</li> <li>– submerged fill pipes installed after 9 November 2006, are no more than 6 in from the bottom of the tank.</li> </ul> <p>(NOTE: The following are not required to comply with the submerged fill pipe requirements:</p> <ul style="list-style-type: none"> <li>– gasoline storage tanks with a capacity of less than 250 gal</li> <li>– gasoline storage tanks that are subject to 40 CFR 63, subpart CCCCCC [see checklist items AE.55.8.US through AE.55.11.US in the Air Emissions Management Section].)</li> </ul> <p>Verify that a monthly leak inspection of all equipment in gasoline service is performed according to the requirements specified in 40 CFR 63.11089(a) through 63.11089(d) (see checklist item ST.10.14.US).</p> <p>Verify that gasoline is not handled in a manner that would result in vapor releases to the atmosphere for extended periods of time.</p> <p>Verify that the following management measures are taken, but are not limited to:</p> <ul style="list-style-type: none"> <li>– minimize gasoline spills</li> <li>– clean up spills as expeditiously as practicable</li> <li>– cover all open gasoline containers and all gasoline storage tank fill-pipes with a gasketed seal when not in use</li> <li>– minimize gasoline sent to open waste collection systems that collect and transport gasoline to reclamation and recycling devices, such as oil/water separators.</li> </ul> <p>Verify that the facility submits an Initial Notification that the facility is subject to these requirements by 9 May 2008.</p>

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<b>ST.10.12.US.</b> Gasoline storage tanks at bulk gasoline terminals, pipeline breakout stations, or pipeline pumping stations must meet specific emissions limitations, management practices, and monitoring requirements (40 CFR 63.11087 and 40 CFR 63.11092(e)) [Added April 2008].	<p>Verify that the Initial Notification contains the following information and is submitted to the applicable EPA Regional Office and delegated State Authority:</p> <ul style="list-style-type: none"> <li>– the name and address of the owner and the operator</li> <li>– the address (i.e., physical location) of the bulk plant</li> <li>– a statement that the notification is being submitted in response to this subpart and identifying the requirements that apply to the facility</li> <li>– a brief description of the bulk plant, including the number of storage tanks in gasoline service, the capacity of each storage tank in gasoline service, and the average monthly gasoline throughput at the affected source.</li> </ul> <p>Verify that the Notification of Compliance Status is signed by a responsible official who certifies its accuracy and indicates whether the source has complied with the requirements of this subpart.</p> <p>(NOTE: If the facility is in compliance with the requirements of this subpart at the time the Initial Notification is due, the Notification of Compliance Status may be submitted in lieu of the Initial Notification provided it contains the required information.)</p> <p>(NOTE: If prior to 10 January 2008, the facility is operating in compliance with an enforceable State, local, or tribal rule or permit that requires submerged fill the facility is not required to submit an Initial Notification or a Notification of Compliance Status.)</p> <p>(NOTE: See checklist item ST.10.11.US for applicability requirements.)</p> <p>Verify that the facility meets each emission limit and management practice in Table 1 of Appendix 10-0d that applies to the gasoline storage tanks at the facility.</p> <p>(NOTE: Storage vessels equipped with floating roofs and not meeting the requirements in Table 1 of Appendix 10-0d must be in compliance at the first degassing and cleaning activity after 10 January 2011 or by 10 January 2018, whichever is first. Other tanks must meet the applicable dates specified in 40 CFR 63.11083 [see checklist item ST.10.11.US].)</p> <p>(NOTE: If the facility's gasoline storage tank is subject to, and complies with, the control requirements of 40 CFR 60, Subpart Kb (see checklist items ST.20.4.US through ST.20.8.US), the storage tank will be deemed in compliance with this section and the facility must report this determination in the Notification of Compliance Status report.)</p> <p>Verify that, if the gasoline storage tank is equipped with an internal floating roof, inspections of the floating roof system must be performed:</p> <ul style="list-style-type: none"> <li>– according to the requirements of 40 CFR 60.113b(a) (see checklist item ST.20.6.US) if complying with option 2(b) in Table 1 of Appendix 10-0d</li> </ul>

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<p><b>ST.10.13.US.</b> Loading racks at bulk gasoline terminals, pipeline breakout stations, or pipeline pumping stations must meet specific emissions limitations, management practices, and monitoring requirements (40 CFR 63.11088, 63.11092(a) through 63.11092(d)) [Added April 2008].</p>	<p>– according to the requirements of 40 CFR 63.1063(c)(1) (see text) if complying with option 2(d) in Table 1 of Appendix 10-0d.</p> <p>Verify that, if the gasoline storage tank is equipped with an external floating roof, inspections of the floating roof system must be performed:</p> <p>– according to the requirements of 40 CFR 60.113b(b) (see checklist item ST.20.6.US) if complying with option 2(c) in Table 1 of Appendix 10-0d</p> <p>– according to the requirements of 40 CFR 63.1063(c)(2) (see text) if complying with option 2(d) in Table 1 of Appendix 10-0d.</p> <p>Verify that, if the gasoline storage tank is equipped with a closed vent system and control device, a performance test is conducted and a monitored operating parameter value determined in accordance with the requirements in 40 CFR 63.11092(a) through 63.11092(d) (see checklist item ST.10.13.US), except that the applicable level of control shall be a 95-percent reduction in inlet total organic compounds (TOC) levels rather than 80 mg/l of gasoline loaded.</p> <p>Verify that the facility meets each emission limit and management practice in Table 2 of Appendix 10-0d that applies to the gasoline loading rack at the facility. (NOTE: As an alternative for railcar cargo tanks to the requirements specified in Table 2 of Appendix 10-0d, the facility may comply with the requirements specified in 40 CFR 63.422(e) (see checklist item ST.10.4.US).)</p> <p>Verify that the owner or operator of the gasoline loading racks conduct a performance test on the vapor processing and collection systems according to one of the following:</p> <p>– use the test methods and procedures in 40 CFR 60.503 (see text of regulation), except a reading of 500 ppm is used to determine the level of leaks to be repaired</p> <p>– use alternative test methods and procedures in accordance with the alternative test method requirements in 40 CFR 63.7(f) (see text of regulation).</p> <p>(NOTE: If the facility is operating the gasoline loading rack in compliance with an enforceable State, local, or tribal rule or permit that requires the loading rack to meet an emission limit of 80 milligrams (mg), or less, per liter of gasoline loaded (mg/l), the facility may submit a statement by a responsible official of the facility certifying the compliance status of the loading rack in lieu of the required performance test on the vapor processing and collection system.)</p> <p>(NOTE: If the facility has conducted performance testing on the vapor processing and collection systems within 5 years prior to 10 January 2008, and the test is for the affected facility and is representative of current or anticipated operating processes and conditions, the facility may submit the results of the testing in lieu of the required performance test on the vapor processing and collection system,</p>

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	<p>provided the testing was conducted using the test methods and procedures in 40 CFR 60.503. Should the Administrator deem the prior test data unacceptable, the facility is still required to meet the requirement to conduct an initial performance test and submit previous test reports as soon as possible after 10 January 2008.)</p> <p>(NOTE: The performance test requirements do not apply to flares (see definitions) meeting the flare requirements in 40 CFR 63.11(b) [see text].)</p> <p>Verify that the owner or operator demonstrates that the flare and associated vapor collection system is in compliance with the requirements in 40 CFR 63.11(b) and 40 CFR 60.503(a), 60.503(b), and 60.503(d) (see checklist item ST.10.2.US).</p> <p>Verify that, for each performance test using the test methods and procedures in 40 CFR 60.503 (see checklist item ST.10.2.US), the owner or operator determines a monitored operating parameter value for the vapor processing system using the procedures specified in paragraphs 40 CFR 63.11092(b)(1) through 63.11092(b)(5) (see text).</p> <p>Verify that, for performance tests performed after the initial required test, the owner or operator documents the reasons for any change in the operating parameter value since the previous performance test.</p> <p>Verify that the vapor processing system is operated in a manner not to exceed or not to go below, as appropriate, the operating parameter value.</p> <p>Verify that, in cases where an alternative parameter is approved, each owner or operator operates the vapor processing system in a manner not to exceed or not to go below, as appropriate, the alternative operating parameter value.</p> <p>(NOTE: Operation of the vapor processing system in a manner exceeding or going below the operating parameter value, as appropriate, constitutes a violation of the emission standard.)</p> <p>(NOTE: Malfunctions that are discovered shall not constitute a violation of the emission standard if corrective actions as described in the monitoring and inspection plan are followed.)</p> <p>Verify that, in the discovery of a malfunction, the owner or operator:</p> <ul style="list-style-type: none"> <li>– initiates corrective action to determine the cause of the problem within 1 h</li> <li>– initiates corrective action to fix the problem within 24 h</li> <li>– completes all corrective actions needed to fix the problem as soon as practicable consistent with good air pollution control practices for minimizing emissions</li> <li>– minimize periods of start-up, shutdown, or malfunction</li> <li>– take any necessary corrective actions to restore normal operation and prevent the recurrence of the cause of the problem.</li> </ul>

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<p><b>ST.10.14.US.</b> Bulk gasoline terminals, bulk plants, pipeline breakout stations, or pipeline pumping stations must meet specific equipment leak inspection requirements (40 CFR 63.11089) [Added April 2008].</p>	<p>Verify that each owner or operator of a bulk gasoline terminal, bulk plant, pipeline breakout station, or pipeline pumping station performs a monthly leak inspection of all equipment in gasoline service.</p> <p>(NOTE: For this inspection, detection methods incorporating sight, sound, and smell are acceptable.)</p> <p>Verify that a log book is used and is signed by the owner or operator at the completion of each inspection.</p> <p>Verify that a section of the log book contains a list, summary description, or diagram(s) showing the location of all equipment in gasoline service at the facility. Verify that each detection of a liquid or vapor leak is recorded in the log book.</p> <p>Verify that, when a leak is detected, an initial attempt at repair is made as soon as practicable, but no later than 5 calendar days after the leak is detected.</p> <p>Verify that repair or replacement of leaking equipment is completed within 15 calendar days after detection of each leak.</p> <p>(NOTE: Delay of repair of leaking equipment will be allowed if the repair is not feasible within 15 days.)</p> <p>Verify that, if repair was not feasible in 15 days, the owner or operator provide the reason why and the date each repair was completed in the semiannual report (see checklist item ST.10.17.US).</p>
<p><b>ST.10.15.US.</b> Bulk gasoline terminals, pipeline breakout stations, or pipeline pumping stations must meet notification requirements (40 CFR 63.11093) [Added April 2008].</p>	<p>(NOTE: See checklist item ST.10.11.US for applicability statements.)</p> <p>Verify that each owner or operator of a bulk gasoline terminal, pipeline breakout station, or pipeline pumping station submits an Initial Notification.</p> <p>(NOTE: If the facility is in compliance with the requirements of this 40 CFR 63, Subpart BBBBBB [see checklist items ST.10.11.US through ST.10.17.US.] at the time the Initial Notification is due, the Notification of Compliance Status may be submitted instead of the Initial Notification.)</p> <p>Verify that each owner or operator of a bulk gasoline terminal, pipeline breakout station, or pipeline pumping station submits a Notification of Compliance Status specifying which of the compliance options included in Table 1 of Appendix 10-0d is used to achieve compliance.</p> <p>Verify that each owner or operator of an affected bulk gasoline terminal submits a Notification of Performance Test prior to initiating required testing.</p> <p>(NOTE: Each owner or operator of any affected source must submit additional notifications specified in 40 CFR 63.9, as applicable.)</p>

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<p><b>ST.10.16.US.</b> Owners/operators of bulk gasoline terminals, pipeline breakout stations, or pipeline pumping stations must meet recordkeeping requirements (40 CFR 63.11094) [Added April 2008].</p>	<p>Verify that each owner or operator of a bulk gasoline terminal or pipeline breakout station keeps records as specified in 40 CFR 60.115b if they are complying with options 2(a), 2(b), or 2(c) in Appendix 10-0d, Table 1, except records are kept for at least 5 yr.</p> <p>Verify that, if the facility is complying with the requirements of option 2(d) in Table 1 of Appendix 10-0d it keeps records as specified in 40 CFR 63.1065.</p> <p>Verify that each owner or operator of a bulk gasoline terminal keeps records of the test results for each gasoline cargo tank loading at the facility, including:</p> <ul style="list-style-type: none"> <li>– performing annual certification testing and periodic railcar bubble leak testing</li> <li>– keeping the documentation file shall be kept up-to-date for each</li> <li>– gasoline cargo tank loading at the facility</li> <li>– including the following documentation for each test, as a minimum: <ul style="list-style-type: none"> <li>– name of test: Annual Certification Test--Method 27 or Periodic Railcar Bubble Leak Test Procedure</li> <li>– cargo tank owner's name and address</li> <li>– cargo tank identification number</li> <li>– test location and date</li> <li>– tester name and signature</li> <li>– witnessing inspector, if any: Name, signature, and affiliation</li> <li>– vapor tightness repair: Nature of repair work and when performed in relation to vapor tightness testing</li> <li>– test results: Test pressure; pressure or vacuum change, mm of water; time period of test; number of leaks found with instrument; and leak definition</li> </ul> </li> <li>– records documenting that the facility has verified the vapor tightness testing according to the requirements of the Administrator if complying with the alternative requirements in 40 CFR 63.11088(b) (see checklist item ST.10.13.US).</li> </ul> <p>(NOTE: As an alternative to keeping records at the terminal of each gasoline cargo tank test result, an owner or operator may comply with one of the following requirements:</p> <ul style="list-style-type: none"> <li>– an electronic copy of each record is instantly available at the terminal: <ul style="list-style-type: none"> <li>– the copy of each record is an exact duplicate image of the original paper record with certifying signatures</li> <li>– the Administrator is notified in writing that each terminal using this alternative is in compliance with this option</li> </ul> </li> <li>– for facilities that use a terminal automation system to prevent gasoline cargo tanks that do not have valid cargo tank vapor tightness documentation from loading (e.g., via a card lock-out system), a copy of the documentation is made available (e.g., via facsimile) for inspection by the Administrator's delegated representatives during a site visit, or within a mutually agreeable time frame:</li> </ul>

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	<ul style="list-style-type: none"> <li>– the copy of each record is an exact duplicate image of the original paper record with certifying signatures</li> <li>– the Administrator is notified in writing that each terminal using this alternative is in compliance with this option.)</li> </ul> <p>Verify that each owner or operator subject to the equipment leak provisions of 40 CFR 63.11089 (see checklist item ST.10.14.US) prepares and maintains a record describing the types, identification numbers, and locations of all equipment in gasoline service.</p> <p>Verify that, for facilities electing to implement an instrument program under 40 CFR 63.11089 (see checklist item ST.10.14.US), the record contains a full description of the program.</p> <p>Verify that the following is recorded equipment leak inspections in the log book for each leak that is detected during equipment leak inspections:</p> <ul style="list-style-type: none"> <li>– the equipment type and identification number</li> <li>– the nature of the leak (i.e., vapor or liquid) and the method of detection (i.e., sight, sound, or smell)</li> <li>– the date the leak was detected and the date of each attempt to repair the leak</li> <li>– repair methods applied in each attempt to repair the leak</li> <li>– “Repair delayed” and the reason for the delay if the leak is repaired within 15 calendar days after discovery of the leak</li> <li>– the expected date of successful repair of the leak if the leak is not repaired within 15 days</li> <li>– the date of successful repair of the leak.</li> </ul> <p>Verify that each owner or operator of a bulk gasoline terminal:</p> <ul style="list-style-type: none"> <li>– keeps an up-to-date, readily accessible record of the required continuous monitoring data, including <ul style="list-style-type: none"> <li>– the time intervals during which loadings of gasoline cargo tanks have occurred or, alternatively, a record of the operating parameter data only during such loadings</li> <li>– date and time of day at reasonable intervals</li> </ul> </li> <li>– records and reports simultaneously with the Notification of Compliance Status: <ul style="list-style-type: none"> <li>– all data and calculations, engineering assessments, and manufacturer's recommendations used in determining the operating parameter value</li> <li>– when using a flare under provisions to comply with 40 CFR 63.11087(a) (see checklist item ST.10.12.US), the following information: flare design (i.e., steam-assisted, air-assisted, or non-assisted); and all visible emissions (VE) readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the required compliance determination</li> </ul> </li> </ul>

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<p><b>ST.10.17.US.</b> Owners/operators of bulk gasoline terminals, pipeline breakout stations, or pipeline pumping stations must meet reporting requirements (40 CFR 63.11095) [Added April 2008].</p>	<ul style="list-style-type: none"> <li>– keeps an up-to-date, readily accessible copy of the monitoring and inspection plan</li> <li>– keeps an up-to-date, readily accessible record of all system malfunctions</li> <li>– keeps a description of planned reporting and recordkeeping procedures if an owner or operator requests approval to use a vapor processing system or monitor an operating parameter other than those specified in 40 CFR 63.11092(b) (see checklist item ST.10.13.US).</li> </ul> <p>Verify that each owner or operator of a bulk terminal or a pipeline breakout station includes in a semiannual compliance report to the Administrator the following information, as applicable:</p> <ul style="list-style-type: none"> <li>– for storage vessels, if you are complying with options 2(a), 2(b), or 2(c) in Table 1 of Appendix 10-0d, the information specified in 40 CFR 60.115b(a), 60.115b(b), or 60.115b(c) (see checklist item ST.20.8.US), depending upon the control equipment installed</li> <li>– for storage vessels, if complying with option 2(d) in Table 1 of Appendix 10-0d, the information specified in 40 CFR 63.1066 (see text)</li> <li>– for loading racks, each loading of a gasoline cargo tank for which vapor tightness documentation had not been previously obtained by the facility</li> <li>– for equipment leak inspections, the number of equipment leaks not repaired within 15 days after detection.</li> </ul> <p>Verify that each owner or operator of an affected source subject to the control requirements submits an excess emissions report to the Administrator at the time the semiannual compliance report is submitted.</p> <p>Verify that the excess emissions report includes the following:</p> <ul style="list-style-type: none"> <li>– each instance of a non-vapor-tight gasoline cargo tank loading at the facility in which the owner or operator failed to take steps to assure that such cargo tank would not be reloaded at the facility before vapor tightness documentation for that cargo tank was obtained</li> <li>– each reloading of a non-vapor-tight gasoline cargo tank at the facility before vapor tightness documentation for that cargo tank is obtained by the facility in accordance with 40 CFR 63.11094(b) (see checklist item ST.10.16.US)</li> <li>– each exceedance or failure to maintain, as appropriate, the monitored operating parameter value determined under 40 CFR 63.11092(b) (see checklist item ST.10.13.US), including the monitoring data for the days on which exceedances or failures to maintain have occurred, and a description and timing of the steps taken to repair or perform maintenance on the vapor collection and processing systems or the CMS</li> <li>– each instance in which malfunctions discovered during the required monitoring and inspections were not resolved according to the necessary corrective actions described in the monitoring and inspection plan as well as a description of the malfunction and the timing of the steps taken to correct the malfunction</li> </ul>

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	<ul style="list-style-type: none"> <li>– for each occurrence of an equipment leak for which no repair attempt was made within 5 days or for which repair was not completed within 15 days after detection:               <ul style="list-style-type: none"> <li>– the date on which the leak was detected</li> <li>– the date of each attempt to repair the leak</li> <li>– the reasons for the delay of repair</li> <li>– the date of successful repair.</li> </ul> </li> </ul> <p>Verify that each owner or operator of a bulk gasoline plant or a pipeline pumping station submits a semiannual excess emissions report, including the following information, only for a 6-mo period during which an excess emission event has occurred:</p> <ul style="list-style-type: none"> <li>– for equipment leak inspections, the number of equipment leaks not repaired within 15 days after detection</li> <li>– for each occurrence of an equipment leak for which no repair attempt was made within 5 days or for which repair was not completed within 15 days after detection:               <ul style="list-style-type: none"> <li>– the date on which the leak was detected;</li> <li>– the date of each attempt to repair the leak;</li> <li>– the reasons for the delay of repair; and</li> <li>– the date of successful repair.</li> </ul> </li> </ul> <p>(NOTE: If no excess emission events have occurred during the previous 6-mo period, no report is required.)</p>

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<p><b>ST.15</b></p> <p><b>EMISSIONS FROM POL STORAGE VESSELS</b></p> <p><b>ST.15.1.US.</b> Storage vessels for petroleum liquids are required to meet specific standards for emissions and monitoring (40 CFR 60.110 through 60.113).</p> <p><b>ST.15.2.US.</b> Storage vessels for petroleum liquids with a storage capacity greater than 151,416 L (40,000 gal) constructed after 18 May 1978 are required to meet specific standards (40 CFR 60.110a through 60.115a) <b>[Revised April 2000]</b>.</p>	<p>(NOTE: These requirements only apply to storage vessels for petroleum liquids with a storage capacity greater than 151,416 L (40,000 gal), but less than 246,052 L (65,000 gal), that started construction or modification after 8 March 1974 but before 19 May 1978, or with a capacity greater than 246,052 L (65,000 gal) and started construction or modification after 11 June 1973 but before 19 May 1978.)</p> <p>Determine if there are any petroleum storage tanks meeting these parameters.</p> <p>Determine what the vapor pressure is of the petroleum liquids being stored.</p> <p>Verify that if the true vapor pressure of the petroleum stored is equal to or greater than 78 mm Hg (1.5 psia) but not greater than 570 mm Hg (11.1 psia) the storage vessel is equipped with a floating roof and a vapor recovery system or their equivalents.</p> <p>Verify that, if the true vapor pressure of the petroleum liquid being stored is greater than 570 mm Hg (11.1 psia), the storage vessel is equipped with a vapor pressure recovery system or its equivalent.</p> <p>Verify that, if proper vapor recovery and return or disposal systems are not in place, a record is maintained of the petroleum liquid stored, the period of storage, and the maximum true vapor pressure of the liquid during the storage period.</p> <p>(NOTE: Records are not required to be kept when storing petroleum liquids with a Reid vapor pressure of less than 6.9 kPa (1.0 psia).)</p> <p>Determine if there are any liquid petroleum storage vessels meeting these parameters.</p> <p>Determine the true vapor pressure of the liquids stored.</p> <p>Verify that vessels storing petroleum liquid with a true vapor pressure equal to or greater than 10.3 kPa (1.5 psia) but less than 76.6 kPa (11.1 psia) are equipped with one of the following:</p> <ul style="list-style-type: none"> <li>– an external floating roof meeting design requirements outlined in 40 CFR 60.112a</li> <li>– a fixed roof with an internal floating type cover equipped with a continuous closure device between the tank wall and edges</li> <li>– a vapor recovery system that collects all VOC vapors and gases discharged from the storage vessel and a vapor return or disposal system to process the VOC vapors and gases to reduce emissions by at least 95 percent by weight</li> <li>– an equivalent, approved system.</li> </ul>

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	<p>Verify that vessels storing petroleum liquids with a vapor pressure greater than 76.6 kPa (11.1 psia) are equipped with a vapor recovery system that collects all VOC vapors and gases and a vapor return or disposal system that is designed to process the VOC vapors to reduce emissions by at least 95 percent by weight.</p> <p>Verify that the following testing is done:</p> <ul style="list-style-type: none"> <li>– gap measurement for primary seals of external floating roofs are measured at least once every 5 yr</li> <li>– gap measurement for secondary seals of external floating roofs are measured at least once every year.</li> </ul> <p>Verify that the following records are kept:</p> <ul style="list-style-type: none"> <li>– records of gap measurement are to be kept for at least 2 yr following the date of measurement</li> <li>– the petroleum liquid stored, the period of storage, and the maximum true vapor pressure during the storage unless the storage vessel has a vapor recovery and return or disposal system.</li> </ul> <p>(NOTE: In the 14 January 2000 Federal Register, page 2336, the USEPA published a regulatory interpretation relating to slotted guidepoles. Slotted guidepoles are relatively simple devices for sampling the contents of a floating roof storage tank. Unless they are controlled, the slots, hollow core, and the space between the guidepole and the tank's roof are observable emission pathways that violate the “no visible gap” prohibition.)</p>

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<p><b>ST.20</b></p> <p><b>EMISSIONS FROM VOL STORAGE VESSELS</b></p> <p><b>ST.20.1.US.</b> Storage vessels for volatile organic liquids (VOL) having a capacity of greater than or equal to 151 m<sup>3</sup> for which construction, reconstruction, or modification was started after 23 July 1984 are required to meet specific equipment standards (40 CFR 60.110b(a) through 60.110b(d), 60.112b(a)) [Revised July 2011].</p>	<p>(NOTE: This checklist item does not apply to:</p> <ul style="list-style-type: none"> <li>– storage vessels with a capacity greater than or equal to 151 m<sup>3</sup> [approx. 39,890 gal] storing a liquid with a maximum true vapor pressure less than 3.5 kPa</li> <li>– storage vessels with a capacity greater than or equal to 75 m<sup>3</sup> [approx. 19,813 gal] but less than 151 m<sup>3</sup> [approx. 39,890 gal] storing a liquid with a maximum true vapor pressure less than 15.0 kPa</li> <li>– vessels at coke oven by-product plants</li> <li>– pressure vessels designed to operate in excess of 204.9 kPa and without emissions to the atmosphere</li> <li>– vessels permanently attached to mobile vehicles such as trucks, railcars, barges, or ships</li> <li>– vessels with a design capacity less than or equal to 1,589.874 m<sup>3</sup> [approx. 420,000 gal] used for petroleum or condensate stored, processed, or treated prior to custody transfer</li> <li>– vessels located at bulk gasoline plants</li> <li>– storage vessels located at gasoline service stations</li> <li>– vessels used to store beverage alcohol</li> <li>– vessels subject to subpart GGGG of 40 CFR 63.)</li> </ul> <p>(NOTE: This checklist item only applies when storing VOL with a vapor pressure equal to or greater than 5.2 kPa, but less than 76.6 kPa.)</p> <p>Verify that storage vessels with a design capacity greater than or equal to 151 m<sup>3</sup> [approx. 39,890 gal] containing VOL with a vapor pressure equal to or greater than 5.2 kPa, but less than 76.6 kPa are equipped with one of the following:</p> <ul style="list-style-type: none"> <li>– a fixed roof in combination with an internal floating roof meeting the following specifications: <ul style="list-style-type: none"> <li>– the internal floating roof rests or floats on the liquid surface (but not necessarily in complete contact with it) inside a storage vessel that has a fixed roof</li> <li>– the internal floating roof floats on the liquid surface at all times, except during initial fill and during those intervals when the storage vessel is completely emptied or subsequently emptied and refilled</li> <li>– when the roof is resting on the leg supports, the process of filling, emptying, or refilling is continuous and is accomplished as rapidly as possible</li> <li>– each internal floating roof is equipped with one of the following closure devices between the wall of the storage vessel and the edge of the internal floating roof: <ul style="list-style-type: none"> <li>– a foam- or liquid-filled seal mounted in contact with the liquid (liquid-mounted seal) (NOTE: A liquid-mounted seal means a foam-</li> </ul> </li> </ul> </li> </ul>

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	<p>or liquid-filled seal mounted in contact with the liquid between the wall of the storage vessel and the floating roof continuously around the circumference of the tank.)</p> <ul style="list-style-type: none"> <li>– two seals mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the internal floating roof (NOTE: The lower seal may be vapor-mounted, but both must be continuous.)</li> <li>– a mechanical shoe seal which is a metal sheet held vertically against the wall of the storage vessel by springs or weighted levers and is connected by braces to the floating roof (NOTE: A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof)</li> <li>– each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents provides a projection below the liquid surface</li> <li>– each opening in the internal floating roof, except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains is equipped with a cover or lid which is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use (NOTE: The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted except when they are in use.)</li> <li>– automatic bleeder vents are equipped with a gasket and are closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports</li> <li>– rim space vents are equipped with a gasket and are set to open only when the internal floating roof is not floating or at the manufacturer's recommended setting</li> <li>– each penetration of the internal floating roof for the purpose of sampling is a sample well and the sample well has a slit fabric cover that covers at least 90 percent of the opening</li> <li>– each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof has a flexible fabric sleeve seal or a gasketed sliding cover</li> <li>– each penetration of the internal floating roof that allows for passage of a ladder has a gasketed sliding cover</li> <li>– an external floating roof (i.e., pontoon-type or double-deck type cover that rests on the liquid surface in a vessel with no fixed roof) meets the following specifications: <ul style="list-style-type: none"> <li>– each external floating roof is equipped with a closure device between the wall of the storage vessel and the roof edge consisting of two seals, one above the other (NOTE: The lower seal is referred to as the primary seal, and the upper seal is referred to as the secondary seal): <ul style="list-style-type: none"> <li>– the primary seal is either a mechanical shoe seal or a liquid-mounted seal and, except as provided in 40 CFR 60.113b(b)(4) (see checklist</li> </ul> </li> </ul> </li> </ul>

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<p>item ST.20.6.US), the seal completely covers the annular space between the edge of the floating roof and tank wall</p> <ul style="list-style-type: none"> <li>– the secondary seal completely cover the annular space between the external floating roof and the wall of the storage vessel in a continuous fashion except as allowed in 40 CFR 60.113b(b)(4) (see checklist item ST.20.6.US)</li> <li>– except for automatic bleeder vents and rim space vents, each opening in a noncontact external floating roof provides a projection below the liquid surface</li> <li>– except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof is equipped with a gasketed cover, seal, or lid that is maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use automatic bleeder vents are closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports</li> <li>– rim vents are set to open when the roof is being floated off the roof legs supports or at the manufacturer's recommended setting</li> <li>– automatic bleeder vents and rim space vents are to be gasketed</li> <li>– each emergency roof drain is provided with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening.</li> <li>– the roof is floating on the liquid at all times (i.e., off the roof leg supports) except during initial fill until the roof is lifted off leg supports and when the tank is completely emptied and subsequently refilled</li> <li>– the process of filling, emptying, or refilling when the roof is resting on the leg supports shall be continuous and is accomplished as rapidly as possible</li> <li>– a closed vent system and control device meeting the following specifications: <ul style="list-style-type: none"> <li>– the closed vent system is designed to collect all VOC vapors and gases discharged from the storage vessel and operated with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background and visual inspections, as determined in 40 CFR 60, subpart VV, 40 CFR 60.485(b)</li> <li>– the control device is designed and operated to reduce inlet VOC emissions by 95 percent or greater</li> <li>– if a flare is used as the control device, it meets the specifications described in the general control device requirements (40 CFR 60.18)</li> </ul> </li> <li>– a system equivalent to those described above.</li> </ul> <p><b>ST.20.2.US.</b> Checklist item moved to ST.20.4.US [Revised April 2000; Moved April 2004].</p> <p><b>ST.20.3.US.</b> Specific recordkeeping requirement must be met for benzene</p>	<p>(NOTE: Checklist item moved to ST.20.4.US.)</p> <p>Verify that readily accessible records of the dimensions and capacity of the vessel are kept for benzene storage vessels.</p>

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<p>storage vessels (40 CFR 61.276(b)).</p> <p><b>ST.20.4.US.</b> Each storage vessel with a design capacity greater than or equal to 75 m<sup>3</sup> but less than 151 m<sup>3</sup> containing a VOL for which construction, reconstruction, or modification is commenced after 23 July 1984 is required to meet specific equipment standards (40 CFR 60.110b(a) through 60.110b(d), and 60.112b(a)) [Added April 2000; Revised July 2011].</p>	<p>(NOTE: This applies regardless of the size of the vessel.)</p> <p>(NOTE: This checklist item only applies to storage vessels containing VOL that, as stored, has a maximum true vapor pressure equal to or greater than 27.6 kPa but less than 76.6 kPa.)</p> <p>(NOTE: This checklist item does not apply to:</p> <ul style="list-style-type: none"> <li>– storage vessels with a capacity greater than or equal to 151 m<sup>3</sup> [approx. 39,890 gal] storing a liquid with a maximum true vapor pressure less than 3.5 kPa</li> <li>– storage vessels with a capacity greater than or equal to 75 m<sup>3</sup> [approx. 19,813 gal] but less than 151 m<sup>3</sup> [approx. 39,890 gal] storing a liquid with a maximum true vapor pressure less than 15.0 kPa</li> <li>– vessels at coke oven by-product plants</li> <li>– pressure vessels designed to operate in excess of 204.9 kPa and without emissions to the atmosphere</li> <li>– vessels permanently attached to mobile vehicles such as trucks, railcars, barges, or ships</li> <li>– vessels with a design capacity less than or equal to 1,589.874 m<sup>3</sup> [approx. 420,000 gal] used for petroleum or condensate stored, processed, or treated prior to custody transfer</li> <li>– vessels located at bulk gasoline plants</li> <li>– storage vessels located at gasoline service stations</li> <li>– vessels used to store beverage alcohol</li> <li>– vessels subject to subpart GGGG of 40 CFR 63.)</li> </ul> <p>Verify that the owner or operator of each storage vessel with a design capacity greater than or equal to 75 m<sup>3</sup> [approx. 19,813 gal] but less than 151 m<sup>3</sup> [approx. 39,890 gal] containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 27.6 kPa but less than 76.6 kPa, equips each storage vessel with one of the following:</p> <ul style="list-style-type: none"> <li>– a fixed roof in combination with an internal floating roof meeting the following specifications: <ul style="list-style-type: none"> <li>– the internal floating roof rests or floats on the liquid surface (but not necessarily in complete contact with it) inside a storage vessel that has a fixed roof</li> <li>– the internal floating roof floats on the liquid surface at all times, except during initial fill and during those intervals when the storage vessel is completely emptied or subsequently emptied and refilled</li> <li>– when the roof is resting on the leg supports, the process of filling, emptying, or refilling is continuous and is accomplished as rapidly as possible</li> <li>– each internal floating roof is equipped with one of the following closure devices between the wall of the storage vessel and the edge of the internal floating roof:</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– a foam- or liquid-filled seal mounted in contact with the liquid (liquid-mounted seal) (NOTE: A liquid-mounted seal means a foam- or liquid-filled seal mounted in contact with the liquid between the wall of the storage vessel and the floating roof continuously around the circumference of the tank.)</li> <li>– two seals mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the internal floating roof (NOTE: The lower seal may be vapor-mounted, but both must be continuous.)</li> <li>– a mechanical shoe seal which is a metal sheet held vertically against the wall of the storage vessel by springs or weighted levers and is connected by braces to the floating roof (NOTE: A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof)</li> <li>– each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents provides a projection below the liquid surface</li> <li>– each opening in the internal floating roof, except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains is equipped with a cover or lid which is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use (NOTE: The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted except when they are in use.)</li> <li>– automatic bleeder vents are equipped with a gasket and are closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports</li> <li>– rim space vents are equipped with a gasket and are set to open only when the internal floating roof is not floating or at the manufacturer's recommended setting</li> <li>– each penetration of the internal floating roof for the purpose of sampling is a sample well and the sample well has a slit fabric cover that covers at least 90 percent of the opening</li> <li>– each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof has a flexible fabric sleeve seal or a gasketed sliding cover</li> <li>– each penetration of the internal floating roof that allows for passage of a ladder has a gasketed sliding cover</li> <li>– an external floating roof (i.e., pontoon-type or double-deck type cover that rests on the liquid surface in a vessel with no fixed roof) meets the following specifications: <ul style="list-style-type: none"> <li>– each external floating roof is equipped with a closure device between the wall of the storage vessel and the roof edge consisting of two seals, one above the other (NOTE: The lower seal is referred to as the primary seal, and the upper seal is referred to as the secondary seal):</li> </ul> </li> </ul>

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<p><b>ST.20.5.US.</b> Each storage vessel with a design capacity greater than or equal to 75 m<sup>3</sup> used to store VOL that, for which construction, reconstruction, or modification is commenced after 23 July 1984 is required</p>	<ul style="list-style-type: none"> <li>– the primary seal is either a mechanical shoe seal or a liquid-mounted seal and, except as provided in 40 CFR 60.113b(b)(4) (see checklist item ST.20.6.US), the seal completely covers the annular space between the edge of the floating roof and tank wall</li> <li>– the secondary seal completely covers the annular space between the external floating roof and the wall of the storage vessel in a continuous fashion except as allowed in 40 CFR 60.113b(b)(4) (see checklist item ST.20.6.US)</li> <li>– except for automatic bleeder vents and rim space vents, each opening in a noncontact external floating roof provides a projection below the liquid surface</li> <li>– except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof is equipped with a gasketed cover, seal, or lid that is maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use automatic bleeder vents are closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports</li> <li>– rim vents are set to open when the roof is being floated off the roof legs supports or at the manufacturer's recommended setting</li> <li>– automatic bleeder vents and rim space vents are gasketed</li> <li>– each emergency roof drain is provided with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening.</li> <li>– the roof is floating on the liquid at all times (i.e., off the roof leg supports) except during initial fill until the roof is lifted off leg supports and when the tank is completely emptied and subsequently refilled</li> <li>– the process of filling, emptying, or refilling when the roof is resting on the leg supports is continuous and accomplished as rapidly as possible</li> <li>– a closed vent system and control device meeting the following specifications: <ul style="list-style-type: none"> <li>– the closed vent system is designed to collect all VOC vapors and gases discharged from the storage vessel and operated with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background and visual inspections, as determined in 40 CFR 60, subpart VV, 40 CFR 60.485(b)</li> <li>– the control device is designed and operated to reduce inlet VOC emissions by 95 percent or greater</li> <li>– if a flare is used as the control device, it meets the specifications described in the general control device requirements (40 CFR 60.18)</li> </ul> </li> <li>– a system equivalent to those described above.</li> </ul> <p>(NOTE: This checklist item only applies to VOL which, as stored, has a maximum true vapor pressure greater than or equal to 76.6 kPa.)</p> <p>(NOTE: This checklist item does not apply to:</p> <ul style="list-style-type: none"> <li>– storage vessels with a capacity greater than or equal to 151 m<sup>3</sup> [approx. 39,890 gal] storing a liquid with a maximum true vapor pressure less than 3.5 kPa</li> </ul>

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<p>to meet specific equipment standards (40 CFR 60.110b(a) through 60.110b(d), and 60.112b(b)) [Added April 2004; Revised July 2011].</p> <p><b>ST.20.6.US.</b> Depending on the kPa of the VOL stored, each storage vessel with a design capacity greater than or equal to 75 m<sup>3</sup> for which construction, reconstruction, or modification is commenced after 23 July 1984 is required to meet specific testing requirements (40 CFR 60.110b(a) through 60.110b(d), 60.112b(a), and 60.113b(a) through</p>	<ul style="list-style-type: none"> <li>– storage vessels with a capacity greater than or equal to 75 m<sup>3</sup> [approx. 19,813 gal] but less than 151 m<sup>3</sup> [approx. 39,890 gal] storing a liquid with a maximum true vapor pressure less than 15.0 kPa</li> <li>– vessels at coke oven by-product plants</li> <li>– pressure vessels designed to operate in excess of 204.9 kPa and without emissions to the atmosphere</li> <li>– vessels permanently attached to mobile vehicles such as trucks, railcars, barges, or ships</li> <li>– vessels with a design capacity less than or equal to 1,589.874 m<sup>3</sup> [approx. 420,000 gal] used for petroleum or condensate stored, processed, or treated prior to custody transfer</li> <li>– vessels located at bulk gasoline plants</li> <li>– storage vessels located at gasoline service stations</li> <li>– vessels used to store beverage alcohol</li> <li>– vessels subject to subpart GGGG of 40 CFR 63.)</li> </ul> <p>Verify that the owner or operator of each storage vessel with a design capacity greater than or equal to 75 m<sup>3</sup> which contains a VOL that, as stored, has a maximum true vapor pressure greater than or equal to 76.6 kPa equips each storage vessel with the following:</p> <ul style="list-style-type: none"> <li>– a closed vent system and control device meeting the following specifications: <ul style="list-style-type: none"> <li>– the closed vent system is designed to collect all VOC vapors and gases discharged from the storage vessel and operated with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background and visual inspections, as determined in 40 CFR 60, subpart VV, 40 CFR 60.485(b)</li> <li>– the control device is designed and operated to reduce inlet VOC emissions by 95 percent or greater</li> <li>– if a flare is used as the control device, it meets the specifications described in the general control device requirements (40 CFR 60.18)</li> </ul> </li> <li>– an equivalent system.</li> </ul> <p>(NOTE: This checklist item specifically applies to:</p> <ul style="list-style-type: none"> <li>– storage vessels with a design capacity greater than or equal to 151 m<sup>3</sup> [approx. 39,890 gal] containing VOL that, as stored, has a maximum true vapor pressure equal to or greater than 5.2 kPa but less than 76.6 kPa</li> <li>– storage vessels with a design capacity greater than or equal to 75 m<sup>3</sup> [approx. 19,813 gal] but less than 151 m<sup>3</sup> [approx. 39,890 gal] containing VOL that, as stored, has a maximum true vapor pressure equal to or greater than 27.6 kPa but less than 76.6 kPa.)</li> </ul> <p>(NOTE: This checklist item does not apply to:</p> <ul style="list-style-type: none"> <li>– storage vessels with a capacity greater than or equal to 151 m<sup>3</sup> [approx. 39,890 gal] storing a liquid with a maximum true vapor pressure less than 3.5 kPa</li> </ul>

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60.113b(c)) [Added April 2004; Revised July 2011].	<ul style="list-style-type: none"> <li>– storage vessels with a capacity greater than or equal to 75 m<sup>3</sup> [approx. 19,813 gal] but less than 151 m<sup>3</sup> [approx. 39,890 gal] storing a liquid with a maximum true vapor pressure less than 15.0 kPa</li> <li>– vessels at coke oven by-product plants</li> <li>– pressure vessels designed to operate in excess of 204.9 kPa and without emissions to the atmosphere</li> <li>– vessels permanently attached to mobile vehicles such as trucks, railcars, barges, or ships</li> <li>– vessels with a design capacity less than or equal to 1,589.874 m<sup>3</sup> [approx. 420,000 gal] used for petroleum or condensate stored, processed, or treated prior to custody transfer</li> <li>– vessels located at bulk gasoline plants</li> <li>– storage vessels located at gasoline service stations</li> <li>– vessels used to store beverage alcohol</li> <li>– vessels subject to subpart GGGG of 40 CFR 63.)</li> </ul> <p>(NOTE: The testing requirements that are applicable depend on which control equipment is installed.)</p> <p>Verify that, after installing a permanently affixed roof and internal floating roof, each owner or operator:</p> <ul style="list-style-type: none"> <li>– visually inspects the internal floating roof, the primary seal, and the secondary seal (if one is in service), prior to filling the storage vessel with VOL and if there are holes, tears, or other openings in the primary seal, the secondary seal, or the seal fabric or defects in the internal floating roof, or both, the owner or operator repairs the items before filling the storage vessel</li> <li>– for vessels equipped with a liquid-mounted or mechanical shoe primary seal: <ul style="list-style-type: none"> <li>– visually inspects the internal floating roof and the primary seal or the secondary seal (if one is in service) through manholes and roof hatches on the fixed roof at least once every 12 mo after initial fill</li> <li>– if the internal floating roof is not resting on the surface of the VOL inside the storage vessel, or there is liquid accumulated on the roof, or the seal is detached, or there are holes or tears in the seal fabric, the owner or operator repairs the items or empties and removes the storage vessel from service within 45 days</li> </ul> </li> <li>– <input type="checkbox"/> for vessels equipped with a double-seal system, one of the following: <ul style="list-style-type: none"> <li>– visually the internal floating roof, the primary seal, the secondary seal (if one is in service), gaskets, slotted membranes and sleeve seals (if any) each time the storage vessel is emptied and degassed at least every 5 yr</li> <li>– visually inspect the vessel as specified for vessels equipped with a liquid-mounted or mechanical shoe primary seal</li> <li>– visually inspect the internal floating roof, the primary seal, the secondary seal (if one is in service), gaskets, slotted membranes and sleeve seals (if any) each time the storage vessel is emptied and degassed:</li> <li>– if the internal floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has</li> </ul> </li> </ul>

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	<p>holes, tears, or other openings in the seal or the seal fabric, or the gaskets no longer close off the liquid surfaces from the atmosphere, or the slotted membrane has more than 10 percent open area, the owner or operator repairs the items as necessary so that none of the conditions exist before refilling the storage vessel with VOL</p> <ul style="list-style-type: none"> <li>– inspections conducted in accordance with this provision do not occur at intervals greater than 10 yr in the case of vessels conducting the annual visual inspection and at intervals no greater than 5 yr</li> </ul> <p>Verify that the owner or operator with a permanently affixed roof and internal floating roof notifies the Administrator in writing at least 30 days prior to the filling or refilling of each storage vessel with a permanently affixed roof and internal floating roof when inspecting:</p> <ul style="list-style-type: none"> <li>– the internal floating roof, the primary seal, and the secondary seal (if one is in service), prior to filling the storage vessel with VOL</li> <li>– the internal floating roof, the primary seal, the secondary seal (if one is in service), gaskets, slotted membranes and sleeve seals (if any) each time the storage vessel is emptied and degassed.</li> </ul> <p>(NOTE: If the inspection of the internal floating roof, the primary seal, the secondary seal (if one is in service), gaskets, slotted membranes and sleeve seals (if any) each time the storage vessel is emptied and degassed is not planned and the owner or operator could not have known about the inspection 30 days in advance or refilling the tank, the owner or operator shall notify the Administrator at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the Administrator at least 7 days prior to the refilling.)</p> <p>Verify that, after installing an external floating roof, the owner or operator:</p> <ul style="list-style-type: none"> <li>– determines the gap areas and maximum gap widths, between the primary seal and the wall of the storage vessel and between the secondary seal and the wall of the storage vessel according to the following frequency: <ul style="list-style-type: none"> <li>– measurements of gaps between the tank wall and the primary seal (seal gaps) is performed during the hydrostatic testing of the vessel or within 60 days of the initial fill with VOL and at least once every 5 yr thereafter</li> <li>– measurements of gaps between the tank wall and the secondary seal are performed within 60 days of the initial fill with VOL and at least once per year thereafter</li> </ul> </li> <li>– determines gap widths and areas in the primary and secondary seals individually by the following procedures: <ul style="list-style-type: none"> <li>– measure seal gaps, if any, at one or more floating roof levels when the roof is floating off the roof leg supports.</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– measure seal gaps around the entire circumference of the tank in each place where a 0.32-cm diameter uniform probe passes freely (without forcing or binding against seal) between the seal and the wall of the storage vessel and measure the circumferential distance of each such location.</li> <li>– the total surface area of each gap is determined by using probes of various widths to measure accurately the actual distance from the tank wall to the seal and multiplying each such width by its respective circumferential distance.</li> <li>– add the gap surface area of each gap location for the primary seal and the secondary seal individually and divide the sum for each seal by the nominal diameter of the tank and compare each ratio to the respective standards</li> <li>– make necessary repairs or empty the storage vessel within 45 days of identification in any inspection for seals not meeting the requirements.</li> </ul> <p>Verify that the accumulated area of gaps between the tank wall and the mechanical shoe or liquid-mounted primary seal do not exceed 212 cm<sup>2</sup>/m of tank diameter, and the width of any portion of any gap shall not exceed 3.81 cm for the external floating roof, and:</p> <ul style="list-style-type: none"> <li>– one end of the mechanical shoe is to extend into the stored liquid, and the other end is to extend a minimum vertical distance of 61 cm above the stored liquid surface.</li> <li>– there are no holes, tears, or other openings in the shoe, seal fabric, or seal envelope.</li> </ul> <p>Verify that the secondary seal meets the following requirements:</p> <ul style="list-style-type: none"> <li>– the secondary seal is installed above the primary seal so that it completely covers the space between the roof edge and the tank wall</li> <li>– the accumulated area of gaps between the tank wall and the secondary seal does not exceed 21.2 cm<sup>2</sup>/meter of tank diameter, and the width of any portion of any gap shall not exceed 1.27 cm.</li> <li>– there are no holes, tears, or other openings in the seal or seal fabric.</li> </ul> <p>(NOTE: If a failure detected during inspections cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the Administrator in the inspection report. Such a request for an extension must document that alternate storage capacity is unavailable and specify a schedule of actions the company will take that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible.)</p> <p>Verify that the owner or operator with an external floating roof notifies the Administrator in writing at least 30 days prior to the determination of the gap areas and maximum gap widths, between the primary seal and the wall of the storage vessel and between the secondary seal and the wall of the storage vessel.</p>

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<p><b>ST.20.7.US.</b> Each storage vessel with a capacity greater than or equal to 75 m<sup>3</sup> used to store VOL for which construction, reconstruction,</p>	<p>Verify that the external floating roof, the primary seal, secondary seal, and fittings are visually inspected each time the vessel is emptied and degassed, and if the external floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, the owner or operator repairs the items as necessary so that none of these conditions exist before filling or refilling the storage vessel with VOL.</p> <p>(NOTE: If any source ceases to store VOL for a period of 1 yr or more, subsequent introduction of VOL into the vessel shall be considered an initial fill.)</p> <p>Verify that the owner or operator of each vessel that is equipped with a closed vent system and control device (other than a flare) meets the following requirements:</p> <ul style="list-style-type: none"> <li>– submits for approval by the Administrator an operating plan containing the information listed below: <ul style="list-style-type: none"> <li>– documentation demonstrating that the control device will achieve the required control efficiency during maximum loading conditions</li> <li>– a description of the parameter or parameters to be monitored to ensure that the control device will be operated in conformance with its design and an explanation of the criteria used for selection of that parameter (or parameters)</li> </ul> </li> <li>– operates the closed vent system and control device and monitors the parameters of the closed vent system and control device in accordance with the operating plan submitted to the Administrator unless the plan was modified by the Administrator during the review process, in that case, the modified plan applies.</li> </ul> <p>(NOTE: The documentation demonstrating that the control device will achieve the required control efficiency during maximum loading conditions is to include a description of the gas stream which enters the control device, including flow and VOC content under varying liquid level conditions (dynamic and static) and manufacturer's design specifications for the control device. If the control device or the closed vent capture system receives vapors, gases, or liquids other than fuels from sources that are not designated sources under this subpart, the efficiency demonstration is to include consideration of all vapors, gases, and liquids received by the closed vent capture system and control device. If an enclosed combustion device with a minimum residence time of 0.75 sec and a minimum temperature of 816 C is used to meet the 95 percent requirement, documentation that those conditions will exist is sufficient to meet the requirements.)</p> <p>(NOTE: This checklist item does not apply to:</p> <ul style="list-style-type: none"> <li>– storage vessels with a capacity greater than or equal to 151 m<sup>3</sup> [approx. 39,890 gal] storing a liquid with a maximum true vapor pressure less than 3.5 kPa</li> </ul>

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<p>or modification is commenced after 23 July 1984 is required to meet specific monitoring standards (40 CFR 60.110b(a) through 60.110b(d), and 60.116b) [Added April 2004; Revised July 2011].</p>	<ul style="list-style-type: none"> <li>– storage vessels with a capacity greater than or equal to 75 m<sup>3</sup> [approx. 19,813 gal] but less than 151 m<sup>3</sup> [approx. 39,890 gal] storing a liquid with a maximum true vapor pressure less than 15.0 kPa</li> <li>– vessels at coke oven by-product plants</li> <li>– pressure vessels designed to operate in excess of 204.9 kPa and without emissions to the atmosphere</li> <li>– vessels permanently attached to mobile vehicles such as trucks, railcars, barges, or ships</li> <li>– vessels with a design capacity less than or equal to 1,589.874 m<sup>3</sup> [approx. 420,000 gal] used for petroleum or condensate stored, processed, or treated prior to custody transfer</li> <li>– vessels located at bulk gasoline plants</li> <li>– storage vessels located at gasoline service stations</li> <li>– vessels used to store beverage alcohol</li> <li>– vessels subject to subpart GGGG of 40 CFR 63.)</li> </ul> <p>Verify that copies of all records relating to monitoring are kept for at least 2 yr.</p> <p>Verify that the owner or operator of each storage vessel keeps readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel for the life of the source.</p> <p>Verify that the owner or operator of each storage vessel with a design capacity greater than or equal to 151 m<sup>3</sup> storing a liquid with a maximum true vapor pressure greater than or equal to 3.5 kPa maintains a record of the VOL stored, the period of storage, and the maximum true vapor pressure of that VOL during the respective storage period.</p> <p>Verify that the owner or operator of each storage vessel with a design capacity greater than or equal to 75 m<sup>3</sup> but less than 151 m<sup>3</sup> storing a liquid with a maximum true vapor pressure greater than or equal to 15.0 kPa maintains a record of the VOL stored, the period of storage, and the maximum true vapor pressure of that VOL during the respective storage period.</p> <p>(NOTE: The owner or operator of each vessel equipped with a closed vent system and control device meeting or with emissions reductions equipment is exempt from the requirement to maintain a record of the VOL stored, the period of storage, and the maximum true vapor pressure of that VOL during the respective storage period.)</p> <p>Verify that, the owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m<sup>3</sup> storing a liquid with a maximum true vapor pressure that is normally less than 5.2 kPa notifies the Administrator within 30 days when the maximum true vapor pressure of the liquid exceeds the respective maximum true vapor pressure values for each volume range.</p> <p>Verify that, the owner or operator of each storage vessel with a design capacity greater than or equal to 75 m<sup>3</sup> but less than 151 m<sup>3</sup> storing a liquid with a maximum</p>

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	<p>true vapor pressure that is normally less than 27.6 kPa notifies the Administrator within 30 days when the maximum true vapor pressure of the liquid exceeds the respective maximum true vapor pressure values for each volume range.</p> <p>(NOTE: The owner or operator of each vessel equipped with a closed vent system and control device meeting or with emissions reductions equipment is exempt from the requirements to notify the Administrator within 30 days when the maximum true vapor pressure of the liquid exceeds the respective maximum true vapor pressure values for each volume range.)</p> <p>(NOTE: Available data on the storage temperature may be used to determine the maximum true vapor pressure as determined below:</p> <ul style="list-style-type: none"> <li>– for vessels operated above or below ambient temperatures, the maximum true vapor pressure is calculated based upon the highest expected calendar-month average of the storage temperature. For vessels operated at ambient temperatures, the maximum true vapor pressure is calculated based upon the maximum local monthly average ambient temperature as reported by the National Weather Service.</li> <li>– for crude oil or refined petroleum products the vapor pressure may be obtained by the following: <ul style="list-style-type: none"> <li>– available data on the Reid vapor pressure and the maximum expected storage temperature based on the highest expected calendar-month average temperature of the stored product may be used to determine the maximum true vapor pressure from nomographs contained in API Bulletin 2517, unless the Administrator specifically requests that the liquid be sampled, the actual storage temperature determined, and the Reid vapor pressure determined from the sample(s)</li> <li>– the true vapor pressure of each type of crude oil with a Reid vapor pressure less than 13.8 kPa or with physical properties that preclude determination by the recommended method is to be determined from available data and recorded if the estimated maximum true vapor pressure is greater than 3.5 kPa</li> </ul> </li> <li>– for other liquids, the vapor pressure, one of the following: <ul style="list-style-type: none"> <li>– may be obtained from standard reference texts</li> <li>– determined by ASTM D2879-83, 96, or 97</li> <li>– measured by an appropriate method approved by the Administrator</li> <li>– calculated by an appropriate method approved by the Administrator.)</li> </ul> </li> </ul> <p>Verify that, prior to the initial filling of the vessel, the highest maximum true vapor pressure for the range of anticipated liquid compositions to be stored is determined by owners or operators of each vessel storing a waste mixture of indeterminate or variable composition.</p> <p>Verify that, owners or operators of vessels storing a waste mixture of indeterminate or variable composition, in which the vapor pressure of the anticipated liquid composition is above the cutoff for monitoring but below the cutoff for controls an</p>

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<p><b>ST.20.8.US.</b> Depending on the kPa of the VOL stored, each storage vessel with a design capacity greater than or equal to 75 m<sup>3</sup> for which construction, reconstruction, or modification is commenced after 23 July 1984 must meet recordkeeping and reporting requirements (40 CFR 60.110b(a) through 60.110b(d), 60.112b(a), and 60.115b) [Added April 2004; Revised July 2011].</p>	<p>initial physical test of the vapor pressure is done; and a physical test at least once every 6 months thereafter is required as determined by the following methods:</p> <ul style="list-style-type: none"> <li>– ASTM D2879-83, 96, or 97</li> <li>– ASTM D323-82 or 94</li> <li>– as measured by an appropriate method as approved by the Administrator.</li> </ul> <p>(NOTE: This checklist item specifically applies to:</p> <ul style="list-style-type: none"> <li>– storage vessels with a design capacity greater than or equal to 151 m<sup>3</sup> [approx. 39,890 gal] containing VOL that, as stored, has a maximum true vapor pressure equal to or greater than 5.2 kPa but less than 76.6 kPa</li> <li>– storage vessels with a design capacity greater than or equal to 75 m<sup>3</sup> [approx. 19,813 gal] but less than 151 m<sup>3</sup> [approx. 39,890 gal] containing VOL that, as stored, has a maximum true vapor pressure equal to or greater than 27.6 kPa but less than 76.6 kPa.)</li> </ul> <p>(NOTE: This checklist item does not apply to:</p> <ul style="list-style-type: none"> <li>– storage vessels with a capacity greater than or equal to 151 m<sup>3</sup> [approx. 39,890 gal] storing a liquid with a maximum true vapor pressure less than 3.5 kPa</li> <li>– storage vessels with a capacity greater than or equal to 75 m<sup>3</sup> [approx. 19,813 gal] but less than 151 m<sup>3</sup> [approx. 39,890 gal] storing a liquid with a maximum true vapor pressure less than 15.0 kPa</li> <li>– vessels at coke oven by-product plants</li> <li>– pressure vessels designed to operate in excess of 204.9 kPa and without emissions to the atmosphere</li> <li>– vessels permanently attached to mobile vehicles such as trucks, railcars, barges, or ships</li> <li>– vessels with a design capacity less than or equal to 1,589.874 m<sup>3</sup> [approx. 420,000 gal] used for petroleum or condensate stored, processed, or treated prior to custody transfer</li> <li>– vessels located at bulk gasoline plants</li> <li>– storage vessels located at gasoline service stations</li> <li>– vessels used to store beverage alcohol</li> <li>– vessels subject to subpart GGGG of 40 CFR 63.)</li> </ul> <p>Verify that owners and operators keep copies of all required reports and records for at least 2 yr except the operating plan is kept for the life of the control equipment.</p> <p>(NOTE: The types of reporting and recordkeeping needed depends on the control equipment installed.)</p> <p>Verify that, after installing a fixed roof and internal floating roof, the owner or operator:</p> <ul style="list-style-type: none"> <li>– furnishes the Administrator with a report that describes the control equipment and certifies that the control equipment meets the appropriate specifications of</li> </ul>

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	<p>40 CFR 60.112b(a)(1) and 40 CFR 60.113b(a)(1) (see checklist items ST.20.1.US, ST.20.4.US and ST.20.6.US)</p> <ul style="list-style-type: none"> <li>– keeps a record of each inspection and each record shall identify the storage vessel on which the inspection was performed and shall contain the date the vessel was inspected and the observed condition of each component of the control equipment (seals, internal floating roof, and fittings)</li> <li>– if the internal floating roof is not resting on the surface of the VOL inside the storage vessel, or there is liquid accumulated on the roof, or the seal is detached, or there are holes or tears in the seal fabric are detected during the annual visual inspection, a report is furnished to the Administrator within 30 days of the inspection identifying the storage vessel, the nature of the defects, and the date the storage vessel was emptied or the nature of and date the repair was made</li> <li>– after each required inspection that finds holes or tears in the seal or seal fabric, or defects in the internal floating roof, or other control equipment defects, a report is furnished to the Administrator within 30 days of the inspection and the report shall identify the storage vessel and the reason it did not meet the specifications and a list each repair made</li> </ul> <p>Verify that, after installing an external floating roof, the owner or operator meets the following requirements:</p> <ul style="list-style-type: none"> <li>– furnishes the Administrator with a report that describes the control equipment and certifies that the control equipment meets the appropriate specifications of 40 CFR 60.112b(a)(2) and 40 CFR 60.113b(b)(2) through 60.113b(b)(4) (see checklist items ST.20.1.US, ST.20.4.US and ST.20.6.US)</li> <li>– within 60 days of performing the seal gap measurements, furnishes the Administrator with a report that contains: the date of measurement; the raw data obtained in the measurement; the calculations described in 40 CFR. 60.113b(b)(2) and (b)(3) (see checklist item ST.20.6.US)</li> <li>– keeps a record of each gap measurement performed such that each record identifies the storage vessel in which the measurement was performed and contains: <ul style="list-style-type: none"> <li>– the date of measurement</li> <li>– the raw data obtained in the measurement</li> <li>– the required calculations</li> </ul> </li> <li>– after each seal gap measurement that detects gaps exceeding the limitations, submit a report to the Administrator within 30 days of the inspection which identifies the vessel the date the vessel was emptied or the repairs made and date of repair.</li> </ul> <p>Verify that, after installing closed vent system and control device other than a flare, the owner or operator keeps the following records:</p> <ul style="list-style-type: none"> <li>– a copy of the operating plan.</li> <li>– a record of the measured values of the parameters monitored.</li> </ul>

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	<p>Verify that, after installing a closed vent system and flare, the owner or operator meets the following requirements:</p> <ul style="list-style-type: none"> <li>– a report containing the measurements required by 40 CFR 60.18(f)(1) through 60.18(f)(6) is furnished to the Administrator within 6 mo of the initial start-up date</li> <li>– records are kept of all periods of operation during which the flare pilot flame is absent</li> <li>– semiannual reports of all periods in which the pilot flame was absent are furnished to the Administrator.</li> </ul>

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<p><b>ST.21</b></p> <p><b>EMISSIONS FROM REMEDIATION SITE TANKS</b></p> <p><b>ST.21.1.US.</b> All affected tanks at site remediations must meet specific emissions standards (40 CFR 63.7881(a), 63.7881(b), 63.7882(a), 63.7895(a), 63.7895(b)(1), and 7895(b)(2)) [<b>Added April 2004</b>].</p> <p><b>ST.21.2.US.</b> Certain affected tanks at site remediations must</p>	<p>(NOTE: These requirements apply at facilities at which a site remediation [see definitions] meets all three of the following conditions:</p> <ul style="list-style-type: none"> <li>– the site remediation cleans up a remediation material</li> <li>– the site remediation is co-located at the facility with one or more other stationary sources that emit HAP and meet an affected source definition specified for a source category that is regulated by another subpart under 40 CFR 63 [NOTE: This condition applies regardless whether or not the affected stationary source(s) at the facility is subject to the standards under the applicable subpart(s)]</li> <li>– the facility is a major source of HAP. )</li> </ul> <p>(NOTE: A major source emits or has the potential to emit any single HAP at the rate of 10 tons (9.07 megagrams) or more per year of any HAP or any combination of HAP at a rate of 25 tons (22.68 megagrams) or more per year. All emissions of HAP from every source at the facility (i.e., both the site remediation activity and all other facility activities) must be considered in making this calculation.)</p> <p>(NOTE: See also the definitions for Exempted Site Remediation and Affected Site Remediation Sources.)</p> <p>(NOTE: See Appendix 10-0a for the compliance schedule.)</p> <p>Verify that HAP emissions from each new and existing tank are controlled according to emissions limitations and work practice standards that apply to the affected tanks.</p> <p>Verify that, for each affected tank, the facility installs and operates air pollution controls that meet the following requirements as applicable to the individual tank:</p> <ul style="list-style-type: none"> <li>– unless the tank is used for a waste stabilization process, determine the maximum HAP vapor pressure (expressed in kPa) of the remediation material placed in the tank using the procedures specified in 40 CFR 63.7944</li> <li>– if the maximum HAP vapor pressure of the remediation material placed in the tank is less than 76.6 kPa, determine which tank level controls (i.e., Tank Level 1 or Tank Level 2) apply to the tank as shown in Appendix 10-0b, and based on the tank's design capacity (expressed in m3) and the maximum HAP vapor pressure of the remediation material placed in the tank.</li> </ul> <p>(NOTE: See checklist item ST.21.1.US for applicability information.)</p>

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<p>meet use Tank Level 1 controls (40 CFR 63.7895(c)) [Added April 2004].</p> <p><b>ST.21.3.US.</b> Certain affected tanks at site remediations must meet use Tank Level 2 controls (40 CFR 63.7895(b)(3), 63.7895(b)(4), and 63.7895(d)) [Added April 2004].</p>	<p>Verify that, if the tank is required by Appendix 10-0b to use Tank Level 1 controls, then the facility has installed and operates a fixed roof according to the requirements in 40 CFR 63.902.</p> <p>(NOTE: As an alternative to using this fixed roof, the facility may choose to use one of Tank Level 2 controls.)</p> <p>(NOTE: See checklist item ST.21.1.US for applicability information.)</p> <p>Verify that, if maximum HAP vapor pressure of the remediation material placed in the tank is 76.6 kPa or greater, the tank uses one of the following Tank Level 2 controls:</p> <ul style="list-style-type: none"> <li>– install and operate a fixed roof vented through a closed vent system to a control device according to the requirements in 40 CFR 63.685(g) and meet the emissions limitations and work practice standards in 40 CFR 63.7925 (see checklist item AE.323.1.US) that apply to the closed vent system and control device</li> <li>– install and operate a pressure tank according to the requirements in 40 CFR 63.685(h)</li> <li>– locate the tank inside a permanent total enclosure and vent emissions from the enclosure through a closed vent system to a control device that is an enclosed combustion device according to the requirements in 40 CFR 63.685(i) and meet the emissions limitations and work practice standards in 40 CFR 63.7925 (see checklist item AE.323.1.US) which apply to the closed vent system and control device.</li> </ul> <p>Verify that a tank used for a waste stabilization process, as uses one of the following Tank Level 2 controls as appropriate for the waste stabilization process:</p> <ul style="list-style-type: none"> <li>– install and operate a fixed roof with an internal floating roof according to the requirements in 40 CFR 63.1063(a)(1)(i), 63.1063(a)(2), and 63.1063 (b)</li> <li>– install and operate an external floating roof according to the requirements in 40 CFR 63.1063(a)(1)(ii), 63.1063(a)(2), and 63.1063(b)</li> <li>– install and operate a fixed roof vented through a closed vent system to a control device according to the requirements in 40 CFR 63.685(g) and meet the emissions limitations and work practice standards in 40 CFR 63.7925 (see checklist item AE.323.1.US) that apply to the closed vent system and control device</li> <li>– install and operate a pressure tank according to the requirements in 40 CFR 63.685(h)</li> <li>– locate the tank inside a permanent total enclosure and vent emissions from the enclosure through a closed vent system to a control device that is an enclosed combustion device according to the requirements in 40 CFR 63.685(i) and meet the emissions limitations and work practice standards in 40 CFR 63.7925 (see checklist item AE.323.1.US) which apply to the closed vent system and control device.</li> </ul>

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<p><b>ST.21.4.US.</b> Affected tanks at site remediations must meet specific inspections and monitoring standards (40 CFR 63.7897) [Added April 2004].</p>	<p>Verify that, if the tank is required by Appendix 10-0b to use Tank Level 2 controls, one of the requirements of the following options are met:</p> <ul style="list-style-type: none"> <li>– install and operate a fixed roof with an internal floating roof according to the requirements in 40 CFR 63.1063(a)(1)(i), 63.1063(a)(2), and 63.1063 (b)</li> <li>– install and operate an external floating roof according to the requirements in 40 CFR 63.1063(a)(1)(ii), 63.1063(a)(2), and 63.1063(b)</li> <li>– install and operate a fixed roof vented through a closed vent system to a control device according to the requirements in 40 CFR 63.685(g) and meet the emissions limitations and work practice standards in 40 CFR 63.7925 (see checklist item AE.323.1.US) that apply to the closed vent system and control device</li> <li>– install and operate a pressure tank according to the requirements in 40 CFR 63.685(h)</li> <li>– locate the tank inside a permanent total enclosure and vent emissions from the enclosure through a closed vent system to a control device that is an enclosed combustion device according to the requirements in 40 CFR 63.685(i) and meet the emissions limitations and work practice standards in 40 CFR 63.7925 (see checklist item AE.323.1.US) which apply to the closed vent system and control device.</li> </ul> <p>(NOTE: The facility may request approval from the EPA to use an alternative to the work practice standards that apply to the tanks. If permission is requested to use an alternative to the work practice standards, the information described in 40 CFR 63.6(g)(2) must be submitted.)</p> <p>(NOTE: See checklist item ST.21.1.US for applicability information.)</p> <p>Verify that each tank using Tank Level 1 controls for defects is visually inspected at least annually.</p> <p>Verify that each tank using Tank Level 2 controls is inspected and monitored according to the following:</p> <ul style="list-style-type: none"> <li>– if the tank has a fixed roof with an internal floating roof it is inspected according to the requirements in 40 CFR 63.1063(d)(1) and (2)</li> <li>– if the tank has an external floating roof, the external floating roof is visually inspected according to the requirements in 40 CFR 63.1063(d)(1) and the seals are inspected according to the requirements in 40 CFR 63.1063(d)(2) and (3).</li> <li>– if the tank has a fixed roof vented to a control device, the following requirements are met: <ul style="list-style-type: none"> <li>– the fixed roof and closure devices are visually inspected for defects according to the requirements in 40 CFR 63.695(b)(3).</li> <li>– the closed vent system and control device are monitored and inspected according to the requirements in 40 CFR 63.7927 (see checklist item AE.323.3.US) that apply</li> </ul> </li> </ul>

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<p><b>ST.21.5.US.</b> Affected tanks at site remediations must demonstrate initial compliance (40 CFR 63.7896) [<b>Added April 2004</b>].</p>	<ul style="list-style-type: none"> <li>– if a pressure tank is used, the tank and its closure devices for are visually inspected for defects at least annually to ensure they are operating according to the design requirements in 40 CFR 63.685(h)</li> <li>– if a permanent total enclosure vented to an enclosed combustion device is used, the facility must meet the following requirements: <ul style="list-style-type: none"> <li>– perform the verification procedure for the permanent total enclosure at least annually according to the requirements in 40 CFR 63.685(i)</li> <li>– monitor and inspect the closed vent system and control device according to the requirements in 40 CFR 63.7927 (see checklist item AE.323.3.US) that apply.</li> </ul> </li> </ul> <p>(NOTE: See checklist item ST.21.1.US for applicability information.)</p> <p>Verify that initial compliance with the emissions limitations and work practice standards applicable for tanks are demonstrated by meeting the following standards as applicable:</p> <ul style="list-style-type: none"> <li>– as part of the notification of compliance status, a signed statement is submitted that the following requirements have been met: <ul style="list-style-type: none"> <li>– the applicable tank control levels specified for the tanks to be used for the site remediation has been determined</li> <li>– the maximum HAP vapor pressure of the remediation material placed in each affected tank that does not use Tank Level 2 controls has been determined and recorded</li> </ul> </li> <li>– initial compliance of each tank determined to require Tank Level 1 controls is demonstrated if as part of the notification of compliance status, a signed statement that the following requirements have been met: <ul style="list-style-type: none"> <li>– each tank using Tank Level 1 controls is equipped with a fixed roof and closure devices according to the requirements in 40 CFR 63.902(b) and (c) and the facility has records documenting the design</li> <li>– an initial visual inspection of the fixed roof and closure devices has been performed for defects according to the requirements in 40 CFR 63.906(a) and the facility has records documenting the inspection results</li> <li>– the facility operates the fixed roof and closure devices according to the requirements in 40 CFR 63.902</li> </ul> </li> <li>– initial compliance of each tank determined to require Tank Level 2 controls and using a fixed roof with an internal floating roof is demonstrated if, as part of the notification of compliance status, a signed statement that the following requirements have been met: <ul style="list-style-type: none"> <li>– each tank is equipped with an internal floating roof that meets the requirements in 40 CFR 63.1063(a) and the facility has records documenting the design</li> <li>– the internal floating roof is operated according to the requirements in 40 CFR 63.1063(b)</li> <li>– an initial visual inspection has been performed according to the requirements in 40 CFR 63.1063(d)(1) and the facility has a record of the inspection results</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– initial compliance of each tank determined to require Tank Level 2 controls and using an external floating roof is demonstrated if, as part of the notification of compliance status, a signed statement that the facility has met the following requirements: <ul style="list-style-type: none"> <li>– each tank is equipped with an external floating roof that meets the requirements in 40 CFR 63.1063(a) and the facility has records documenting the design</li> <li>– the external floating roof is operated according to the requirements in 40 CFR 63.1063(b)</li> <li>– an initial seal gap measurement inspection has been performed according to the requirements in 40 CFR 63.1063(d)(3) and the facility has records of the measurement results.</li> </ul> </li> <li>– initial compliance is demonstrated for each tank determined to require Tank Level 2 controls and using a fixed roof vented to a control device if the facility has submitted as part of their notification of compliance status a signed statement that the following requirements have been met: <ul style="list-style-type: none"> <li>– each tank is equipped with a fixed roof and closure devices according to the requirements in 40 CFR 63.902(b) and (c) and the facility has records documenting the design</li> <li>– the facility has performed an initial visual inspection of fixed roof and closure devices for defects and has records documenting the inspection results</li> <li>– the fixed roof and closure devices are operated according to the requirements in 40 CFR 63.685(g)</li> <li>– the facility has met each applicable requirement for demonstrating initial compliance with the emission limitations and work practice standards for a closed vent system and control device</li> </ul> </li> <li>– initial compliance of each tank determined to require Tank Level 2 controls and operates as a pressure tank is demonstrated if the facility has submitted as part of their notification of compliance status, a signed statement that the following requirements have been met: <ul style="list-style-type: none"> <li>– each tank is designed to operate as a pressure tank according to the requirements in 40 CFR 63.685(h), and the facility has records documenting the design</li> <li>– the pressure tank is operated according to the requirements in 40 CFR 63.685(h)</li> </ul> </li> <li>– initial compliance of each tank determined to require Tank Level 2 controls and using a permanent total enclosure vented to an enclosed combustion device is demonstrated if as part of the notification of compliance status, a signed statement that the following requirements have been met: <ul style="list-style-type: none"> <li>– as part of the notification of compliance status a signed statement was submitted that the facility has performed the verification procedure according to the requirements in 40 CFR 63.685(i), and the facility has records of the supporting calculations and measurements</li> <li>– the facility has met each applicable requirement for demonstrating initial compliance with the emission limitations and work practice standards for a closed vent system and control device.</li> </ul> </li> </ul>

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<p><b>ST.21.6.US.</b> Affected tanks at site remediations must demonstrate continuous compliance (40 CFR 63.7898(a) and 63.7898(b)) [Added April 2004].</p>	<p>(NOTE: These requirements apply at facilities at which a site remediation [see definitions], meets all three of the following conditions:</p> <ul style="list-style-type: none"> <li>– the site remediation cleans up a remediation material</li> <li>– the site remediation is co-located at the facility with one or more other stationary sources that emit HAP and meet an affected source definition specified for a source category that is regulated by another subpart under 40 CFR 63 [NOTE: This condition applies regardless whether or not the affected stationary source(s) at the facility is subject to the standards under the applicable subpart(s)]</li> <li>– the facility is a major source of HAP. )</li> </ul> <p>(NOTE: A major source emits or has the potential to emit any single HAP at the rate of 10 tons (9.07 megagrams) or more per year of any HAP or any combination of HAP at a rate of 25 tons (22.68 megagrams) or more per year. All emissions of HAP from every source at the facility (i.e., both the site remediation activity and all other facility activities) must be considered in making this calculation.)</p> <p>(NOTE: See also the definitions for <i>Exempted Site Remediation</i> and <i>Affected Site Remediation Sources</i>.)</p> <p>(NOTE: See Appendix 10-0a for the compliance schedule.)</p> <p>(NOTE: See checklist item ST.21.1.US for applicability information.)</p> <p>Verify that continuous compliance with the requirement to determine the applicable tank control level is demonstrated by meeting the following requirements:</p> <ul style="list-style-type: none"> <li>– keeping records of the tank design capacity</li> <li>– for tanks operating as a remediation material management unit and not using Tank Level 2 controls, meeting the following requirements: <ul style="list-style-type: none"> <li>– keeping records of the maximum HAP vapor pressure determined for the remediation material placed in each affected tank.</li> <li>– performing a new determination of the maximum HAP vapor pressure whenever changes to the remediation material managed in the tank could potentially cause the maximum HAP vapor pressure to increase to a level that is equal to or greater than the maximum HAP vapor pressure for the tank design capacity specified in Appendix 10-0b</li> </ul> </li> <li>– keeping records of each determination</li> <li>– keeping records to document compliance according to the requirements in 40 CFR 63.7952 (see checklist item AE.300.10.US).</li> </ul>
<p><b>ST.21.7.US.</b> Affected tanks that are required to use Tank Level 1 controls at site remediations must</p>	<p>(NOTE: See checklist item ST.21.1.US for applicability information.)</p> <p>Verify that continuous compliance is demonstrated for each tank determined to require Tank Level 1 controls by meeting the following requirements:</p>

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<p>demonstrate continuous compliance (40 CFR 63.7898(c)) [Added April 2004].</p> <p><b>ST.21.8.US.</b> Affected tanks that are required to use Tank Level 2 controls at site remediations must demonstrate continuous compliance (40 CFR 63.7898(d) through 63.7898(e)) [Added April 2004].</p>	<ul style="list-style-type: none"> <li>– operating and maintaining the fixed roof and closure devices according to the requirements in 40 CFR 63.902(c)</li> <li>– visually inspecting the fixed roof and closure devices for defects at least annually according to the requirements in 40 CFR 63.906(a).</li> <li>– repairing defects according to the requirements in 40 CFR 63.906(b).</li> <li>– recording the information specified in 40 CFR 63.907(a)(3) and (b).</li> <li>– keeping records to document compliance according to the requirements in 40 CFR 63.7952 (see checklist item AE.300.10.US).</li> </ul> <p>(NOTE: See checklist item ST.21.1.US for applicability information.)</p> <p>Verify that continuous compliance is demonstrated for each tank determined to require Tank Level 2 controls and using a fixed roof with an internal floating roof by meeting the following requirements:</p> <ul style="list-style-type: none"> <li>– operating and maintaining the internal floating roof according to the requirements in 40 CFR 63.1063(b)</li> <li>– visually inspecting the internal floating roof according to the requirements in 40 CFR 63.1063(d)(1) and (2)</li> <li>– repairing defects according to the requirements in 40 CFR 63.1063(e)</li> <li>– recording the information specified in 40 CFR 63.1065(b) through (d)</li> <li>– keeping records to document compliance according to the requirements in 40 CFR 63.7952 (see checklist item AE.300.10.US).</li> </ul> <p>Verify that continuous compliance is demonstrated for each tank determined to require Tank Level 2 controls and using an external floating roof by meeting the following requirements:</p> <ul style="list-style-type: none"> <li>– operating and maintaining the external floating roof according to the requirements in 40 CFR 63.1063(b)</li> <li>– visually inspecting the external floating roof according to the requirements in 40 CFR 63.1063(d)(1) and inspecting the seals according the requirements in 40 CFR 63.1063(d)(2) and (3)</li> <li>– repairing defects according to the requirements in 40 CFR 63.1063(e)</li> <li>– recording the information specified in 40 CFR 63.1065(b) through (d)</li> <li>– keeping records to document compliance according to the requirements in 40 CFR 63.7952 (see checklist item AE.300.10.US).</li> </ul> <p>Verify that continuous compliance is demonstrated for each tank determined to require Tank Level 2 controls and using a fixed roof vented to a control device by meeting the following requirements:</p> <ul style="list-style-type: none"> <li>– operating and maintaining the fixed roof and closure devices according to the requirements in 40 CFR 63.685(g).</li> <li>– visually inspecting the fixed roof and closure devices for defects at least annually according to the requirements in 40 CFR 63.695(b)(3)(i).</li> </ul>

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	<ul style="list-style-type: none"> <li>– repairing defects according to the requirements in 40 CFR 63.695(b)(4).</li> <li>– recording the information specified in 40 CFR 63.696(e).</li> <li>– meeting each applicable requirement for demonstrating continuous compliance with the emission limitations and work practice standards for a closed vent system and control device in 40 CFR 63.7928 (see checklist item AE.323.4.US)</li> <li>– keeping records to document compliance according to the requirements in 40 CFR 63.7952 (see checklist item AE.300.10.US).</li> </ul> <p>Verify that continuous compliance is demonstrated for each tank determined to require Tank Level 2 controls and operated as a pressure tank by meeting the following requirements:</p> <ul style="list-style-type: none"> <li>– operating and maintaining the pressure tank and closure devices according to the requirements in 40 CFR 63.685(h).</li> <li>– visually inspecting each pressurized tank and closure devices for defects at least annually to ensure they are operating according to the design requirements in 40 CFR 63.685(h), and recording the results of each inspection.</li> <li>– keeping records to document compliance according to the requirements in 40 CFR 63.7952 (see checklist item AE.300.10.US).</li> </ul> <p>Verify that continuous compliance is demonstrated for each tank determined to require Tank Level 2 controls and using a permanent total enclosure vented to an enclosed combustion device by meeting the following requirements:</p> <ul style="list-style-type: none"> <li>– performing the verification procedure for the enclosure annually according to the requirements in 40 CFR 63.685(i)</li> <li>– recording the information specified in 40 CFR 63.696(f)</li> <li>– meeting each applicable requirement for demonstrating continuous compliance with the emissions limitations and work practice standards for a closed vent system and control device</li> <li>– keeping records to document compliance according to the requirements in 40 CFR 63.7952 (see checklist item AE.300.10.US).</li> </ul>

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<b>ST.25</b>  <b>SUBSTANDARD USTs</b>  <b>ST.25.1.US.</b> Existing UST systems are required to be upgraded, or closed (40 CFR 280.21) [Revised March 2000; Revised July 2015].	<p>(NOTE: To determine applicability of this checklist item, see the definitions for:</p> <ul style="list-style-type: none"> <li>– Underground Storage Tanks</li> <li>– Excluded USTs</li> <li>– Partially Excluded USTs (this checklist item does not apply to partially excluded USTs.)</li> </ul> <p>Verify that existing USTs meet one of the following standards:</p> <ul style="list-style-type: none"> <li>– the performance standards for new USTs in 40 CFR 280.20 (see checklist items ST.35.1.US, ST.35.3.US, and ST.35.4.US.)</li> <li>– spill and overfill prevention requirements in 40 CFR 280.20(c) (see checklist item ST.35.1.US)</li> <li>– upgrading requirements in 40 CFR 280.21(b) through 40 CFR 280.21(d) outlined in this checklist item</li> <li>– temporarily or permanently closed according to 40 CFR 280.70 through 280.74 (see checklist items ST.90.2.US. and ST.95.1.US. through ST.95.7.US.).</li> </ul> <p>(NOTE: In relation to the upgrading or closure of airport hydrant fuel distribution systems and UST systems with field constructed tanks see 40 CFR 280.251 and 280.252, checklist item ST.35.8.US.)</p> <p>Verify that, if a steel tank is upgraded through interior lining:</p> <ul style="list-style-type: none"> <li>– the lining is installed according to 40 CFR 280.33 (see checklist item ST.55.1.US.)</li> <li>– within 10 yr after lining, and every 5 yr thereafter, the lined tank is inspected internally and found to be structurally sound, with the lining still performing in accordance with original design specifications.</li> </ul> <p>Verify that, if a steel tank is upgraded through cathodic protection:</p> <ul style="list-style-type: none"> <li>– the cathodic protection system meets the following:             <ul style="list-style-type: none"> <li>– field-installed systems are designed by a corrosion expert</li> <li>– impressed current systems are designed to allow determination of the current operating status</li> <li>– cathodic protection systems are maintained and operated in accordance with 40 CFR 280.31 (see checklist item ST.50.1.US.) or according to guidelines established by the implementing agency</li> </ul> </li> <li>– one of the following methods is used:</li> </ul>

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	<ul style="list-style-type: none"> <li>– tank was internally inspected and assessed to ensure that the tank is structurally sound and free of corrosion holes prior to installing the cathodic protection system</li> <li>– the tank has been installed for less than 10 yr and is monitored monthly for releases in accordance with 40 CFR 280.43(d) through 280.43(i) (see Appendix 10-3)</li> <li>– the tank has been installed for less than 10 yr and is assessed for corrosion holes by conducting two tightness tests meeting the requirements of 280.43(c) (see Appendix 10-3), one before installation and one 3 - 6 mo after first operation of the cathodic protection system</li> <li>– tank is assessed for corrosion holes by a method that is determined to be protective of human health and the environment.</li> </ul> <p>Verify that, if a steel tank is upgraded with internal lining combined with cathodic protection:</p> <ul style="list-style-type: none"> <li>– the lining is installed according to requirements in 40 CFR 280.33 (see checklist item ST.55.1.US)</li> <li>– the cathodic protection system meets the following: <ul style="list-style-type: none"> <li>– field-installed systems are designed by a corrosion expert</li> <li>– impressed current systems are designed to allow determination of the current operating status</li> <li>– cathodic protection systems are maintained and operated in accordance with 40 CFR 280.31 (see checklist item ST.50.1.US.) or according to guidelines established by the implementing agency.</li> </ul> </li> </ul> <p>Verify that metal piping that routinely contains regulated substances and is in contact with the ground is cathodically protected in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory which meets the following:</p> <ul style="list-style-type: none"> <li>– field-installed systems are designed by a corrosion expert</li> <li>– impressed current systems are designed to allow determination of the current operating status</li> <li>– cathodic protection systems are maintained and operated in accordance with 40 CFR 280.31 (see checklist item ST.50.1.US.) or according to guidelines established by the implementing agency.</li> </ul> <p>(NOTE: See the text of 40 CFR 280.21 for a list of the currently accepted codes of practice.)</p>

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<b>ST.28</b>  <b>UST OPERATORS</b>  <b>ST.28.1.US.</b> Owners and operators of UST systems must have designated Class A, Class B, and Class C operators who meet specific training requirements (40 CFR 280.240 through 280.245) [Added July 2015].	<p>Verify that, not later than 13 October 2018, all owners/operators of UST systems have designated Class A, Class B, and Class C operators.</p> <p>Verify that, after 13 October 2018, Class A and Class B operators meet the training requirements within 30 days of assuming duties.</p> <p>Verify that, after 13 October 2018, Class C operators are trained before assuming the duties of a Class C operator.</p> <p>(NOTE: See Appendix 10-3a for the details on what the operator training must cover.)</p> <p>Verify that, If the implementing agency determines that a UST system is out of compliance, Class A and Class B operators complete an approved training program or comparable examination developed or administered by an independent organization, the implementing agency, or a recognized authority no later than 30 days after noncompliance is determined except when:</p> <ul style="list-style-type: none"> <li>– Class A and Class B operators take annual refresher training which includes all applicable requirements</li> <li>– the implementing agency waives the retraining requirement.</li> </ul> <p>Verify that the owners and operators of underground storage tank systems maintain a list of designated Class A, Class B, and Class C operators and maintain the records verifying that training and retraining, as applicable, have been completed, as follows:</p> <ul style="list-style-type: none"> <li>– identify all Class A, Class B, and Class C operators currently designated for the facility</li> <li>– include names, class of operator trained, date assumed duties, date each completed initial training, and any retraining.</li> </ul> <p>Verify that records documenting completion of training or retraining are a paper or electronic record for Class A, Class B, and Class C operators and, at a minimum:</p> <ul style="list-style-type: none"> <li>– identify name of trainee</li> <li>– date trained</li> <li>– operator training class completed</li> <li>– the name of the trainer or examiner and the training company name, address, and telephone number.</li> </ul>

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	<p>Verify that records from classroom or field training programs (including Class C operator training provided by the Class A or Class B operator) or a comparable examination are, at a minimum, signed by the trainer or examiner;</p> <p>Verify that records from computer based training, at a minimum, indicate the name of the training program and web address, if Internet based.</p> <p>Verify that records of retraining include those areas on which the Class A or Class B operator has been retrained.</p> <p>Verify that owners and operators maintain these records for as long as Class A, Class B, and Class C operators are designated.</p>

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<b>ST.35</b>  <b>NEW OR UPGRADED USTs</b>  <b>ST.35.1.US.</b> New UST systems are required to be fitted with spill and overfill prevention equipment (40 CFR 280.20(c)) [Revised March 2000; Revised July 2015].	<p>(NOTE: To determine applicability of this checklist item, see the definitions for:</p> <ul style="list-style-type: none"> <li>– Underground Storage Tanks</li> <li>– Excluded USTS</li> <li>– Partially Excluded USTs (this checklist item does not apply to partially excluded USTs.)</li> </ul> <p>Verify that spill prevention equipment will prevent a release of product to the environment when the transfer hose is detached from the fill pipe (for example a spill catchment basin).</p> <p>Verify that overfill prevention equipment does one of the following:</p> <ul style="list-style-type: none"> <li>– automatically shuts off flow into the tank when the tank is no more than 95 percent full</li> <li>– alerts the transfer operator when the tank is no more than 90 percent full by restricting the flow into the tank or triggering a high-level alarm</li> <li>– restrict flow 30 min prior to overfilling, alerting the operator with a high-level alarm 1 min before overfilling, or automatically shut off flow into the tank so that none of the fittings located on top of the tank are exposed to product due to overfilling.</li> </ul> <p>(NOTE: This spill and overfill equipment is not required if one of the following is true:</p> <ul style="list-style-type: none"> <li>– alternative equipment is used that is determined by the implementing agency to be no less protective of human health and the environment</li> <li>– the UST system is filled by transfers of no more than 25 gal at one time.)</li> </ul> <p>Verify that flow restrictors are not used to achieve compliance with overfill prevention equipment requirements when overfill prevention is installed or replaced after 13 October 2015.</p> <p>Verify that spill and overfill prevention equipment undergoes periodic integrity testing or inspection in accordance with 40 CFR 280.35 (see checklist item ST.60.4.US).</p> <p><b>ST.35.2.US.</b> Notice must be given within 30 days when a UST system is brought into service (40 CFR 280.22)</p> <p>(NOTE: To determine applicability of this checklist item, see the definitions for:</p> <ul style="list-style-type: none"> <li>– Underground Storage Tanks</li> <li>– Excluded USTS</li> <li>– Partially Excluded USTs (this checklist item does not apply to partially excluded USTs.)</li> </ul>

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<p>[Revised March 2000; Revised July 2015].</p> <p><b>ST.35.3.US.</b> New USTs and piping must be constructed in such a manner that they will remain structurally sound for their operating life (40 CFR 280.20(a) and 280.20(b)) [Revised March 2000; Revised July 2015].</p>	<p>Verify that, for any UST brought into service after 8 May 1986 the owner have submitted notice of the tanks existence to the implementing agency within 30 days of bringing the UST into use.</p> <p>(NOTE: This 30 days also applies for change of ownership of a UST.)</p> <p>(NOTE: Owners are required to submit notice for each tank that they own. Owners may provide notice for several tanks using one form, but owners who own tanks located at more than one place of operation must file a separate notification form for each separate place of operation.)</p> <p>Verify that owners and operators of new UST systems certify in the notification form compliance with the following:</p> <ul style="list-style-type: none"> <li>– installation of tanks and piping under 40 CFR 280.20(a) (see checklist item ST.35.3.US.)</li> <li>– cathodic protection of steel tanks and piping under 40 CFR 280.20(a) and 280.20 (b) (see checklist item ST.35.3.US.)</li> <li>– financial responsibility under 40 CFR 280, Subpart H (when applicable)</li> <li>– release detection under 40 CFR 280.41 and 280.42 (see checklist items ST.65.1.US and ST.70.1.US).</li> </ul> <p>Verify that all owners of new USTs ensure that the installer certifies in the notification form that appropriate methods were used to install the tank and piping in compliance with the requirements of 40 CFR 280.20(d) (see checklist item ST.35.4.US.).</p> <p>(NOTE: To determine applicability of this checklist item, see the definitions for:</p> <ul style="list-style-type: none"> <li>– Underground Storage Tanks</li> <li>– Excluded USTS</li> <li>– Partially Excluded USTs (this checklist item does not apply to partially excluded USTs.)</li> </ul> <p>Verify that tanks or piping installed or replaced after 11 April 2016 are secondarily contained and use interstitial monitoring in accordance with 40 CFR 280.43(g) (see Appendix 10-3).</p> <p>(NOTE: Secondary containment must be able to contain regulated substances leaked from the primary containment until they are detected and removed and prevent the release of regulated substances to the environment at any time during the operational life of the UST system. For cases where the piping is considered to be replaced, the entire piping run must be secondarily contained.)</p> <p>(NOTE: The secondary containment requirement does not apply to suction piping that meets the requirements of 280.41(b)(1)(ii)(A) through (E) (see checklist item ST.65.1.US).)</p>

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	<p>Verify that each tank is properly designed and constructed, and any portion underground that routinely contains product is protected from corrosion in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory and the tank is constructed of one of the following materials:</p> <ul style="list-style-type: none"> <li>– fiberglass-reinforced plastic</li> <li>– steel which has cathodic protection in the following manner: <ul style="list-style-type: none"> <li>– coated with a suitable dielectric material</li> <li>– field installed cathodic protection designed by a corrosion expert</li> <li>– impressed current systems which allow determination of current operating status as required in 40 CFR 280.31(c) (see checklist item ST.50.1.US.)</li> <li>– cathodic protection systems are operated and maintained in accordance with 40 CFR 280.31 or according to a guideline established by the implementing agency (see checklist item ST.50.1.US.)</li> </ul> </li> <li>– steel and clad or jacketed with a non-corrodible material</li> <li>– metal without additional corrosion protection provided that: <ul style="list-style-type: none"> <li>– the tank is installed at a site that has been determined by a corrosion expert not to be corrosive enough to cause it to have a release due to corrosion during the operating life of the tank</li> <li>– records are maintained by owners/operators for the operating life of the tank that it is in a corrosion free environment</li> <li>– tank construction and corrosion protection are determined by the implementing agency to be designed to prevent the release or threatened release of any stored regulated substance in a manner that is as protective of human health and the environment as the above criteria.</li> </ul> </li> </ul> <p>Verify that piping which routinely contains regulated substances and is in contact with the ground is properly designed, constructed, and protected from corrosion in accordance with a code of practice developed by a nationally recognized association or independent testing lab.</p> <p>Verify that the piping is constructed of one of the following:</p> <ul style="list-style-type: none"> <li>– a non-corrodible material</li> <li>– steel and cathodically protected such that: <ul style="list-style-type: none"> <li>– it is coated with a suitable dielectric material</li> <li>– field installed cathodic protection systems are designed by a corrosion expert</li> <li>– impressed current systems are designed to allow determination of current operating status as required in 40 CFR 280.31(c) (see checklist item ST.50.1.US)</li> <li>– cathodic protection systems are operated and maintained in accordance with 40 CFR 280.31 or according to a guideline established by the implementing agency (see checklist item ST.50.1.US.)</li> </ul> </li> <li>– metal without additional corrosion protection provided that:</li> </ul>

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<p><b>ST.35.4.US.</b> Installation of new UST systems must be certified and done according to standard practices (40 CFR 280.20(d) and 280.20(e)) [Revised March 2000; Revised July 2015].</p>	<ul style="list-style-type: none"> <li>– the piping is installed at a site that has been determined by a corrosion expert not to be corrosive enough to cause it to have a release due to corrosion during its operating life</li> <li>– records are maintained by owners/operators for the operating life of the piping that it is in a corrosion free environment</li> <li>– construction and corrosion protection determined by the implementing agency to be designed to prevent the release or threatened release of any stored regulated substance in a manner that is no less protective of human health and the environment.</li> </ul> <p>(NOTE: See the text of 40 CFR 280.20(a) and 280.20(c) for a list of the currently accepted codes of practice.)</p> <p>(NOTE: To determine applicability of this checklist item, see the definitions for:</p> <ul style="list-style-type: none"> <li>– Underground Storage Tanks</li> <li>– Excluded USTS</li> <li>– Partially Excluded USTs (this checklist item does not apply to partially excluded USTs.)</li> </ul> <p>Determine if new UST systems have been properly installed by reviewing records for certification.</p> <p>Verify that installation of tanks and piping is done in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory and in accordance with the manufacturer’s instructions.</p> <p>(NOTE: See the text of 40 CFR 280.20(d) for a list of the currently accepted codes of practice.)</p> <p>Verify that one or more of the following methods of certification, testing, or inspection is used to demonstrate compliance with installation requirements:</p> <ul style="list-style-type: none"> <li>– the installer has been certified by the tank and piping manufacturer</li> <li>– the installer has been certified or licensed by the implementing agency</li> <li>– the installation has been inspected and certified by a registered professional engineer with education and experience in UST system installation</li> <li>– the installation has been inspected and approved by the implementing agency</li> <li>– all work listed in the manufacturer’s installation checklists has been completed</li> <li>– the owner and operator have complied with another method for ensuring compliance that is determined by the implementing agency to be no less protective of human health and the environment.</li> </ul>
<p><b>ST.35.5.US.</b> UST systems must be made of or lined with materials compatible with the substance stored (40 CFR</p>	<p>Verify that the substances stored in UST systems are compatible with the system.</p>

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<p>280.32(a)) [Reviewed March 2000; Citation Revised July 2015].</p> <p><b>ST.35.6.US.</b> When storing substances containing &gt; 10 percent ethanol or substances containing &gt; 20 percent biodiesel in USTs specific notification and compatibility requirements must be met (40 CFR 280.32(b)) [Added July 2015].</p>	<p>Determine which USTs are being used to store a substance other than that for which it was originally intended.</p> <p>(NOTE: To determine applicability of this checklist item, see the definitions for:</p> <ul style="list-style-type: none"> <li>– Underground Storage Tanks</li> <li>– Excluded USTS</li> <li>– Partially Excluded USTs (this checklist item does not apply to partially excluded USTs.)</li> </ul> <p>Verify that owners and operators notify the implementing agency at least 30 days prior to switching to a regulated substance containing greater than 10 percent ethanol, greater than 20 percent biodiesel, or any other regulated substance identified by the implementing agency.</p> <p>Verify that owners and operators with UST systems storing these regulated substances meet one of the following:</p> <ul style="list-style-type: none"> <li>– demonstrate compatibility of the UST system (including the tank, piping, containment sumps, pumping equipment, release detection equipment, spill equipment, and overfill equipment) using one of the following options: <ul style="list-style-type: none"> <li>– certification or listing of UST system equipment or components by a nationally recognized, independent testing laboratory for use with the regulated substance stored</li> <li>– equipment or component manufacturer approval.</li> </ul> </li> <li>– use another option determined by the implementing agency to be no less protective of human health and the environment.</li> </ul> <p>(NOTE: If using the manufacturer’s approval to demonstrate compatibility, it must be in writing, indicate an affirmative statement of compatibility, specify the range of biofuel blends the equipment or component is compatible with, and be from the equipment or component manufacturer.)</p> <p>Verify that owners and operators document compliance with these requirements for as long as the UST is used to store the regulated substance.</p>
<p><b>ST.35.7.US.</b> UST systems with new dispenser systems installed after 11 April 2016 must have under dispenser containment (40 CFR 280.20(f)) [Added July 2015].</p>	<p>(NOTE: To determine applicability of this checklist item, see the definitions for:</p> <ul style="list-style-type: none"> <li>– Underground Storage Tanks</li> <li>– Excluded USTS</li> <li>– Partially Excluded USTs (this checklist item does not apply to partially excluded USTs.)</li> </ul> <p>Verify that each UST system with a new dispenser system installed after 11 April 2016 is equipped with under dispenser containment.</p>

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<p><b>ST.35.8.US.</b> Airport hydrant fuel distribution systems and UST systems with field constructed tanks must meet the requirements of 40 CFR 280 over a phased-in period of time (40 CFR 280.10(a)(1)(i), 280.251, 280.252(a) through 280.252(c)) <b>[Added July 2015]</b>.</p>	<p>(NOTE: A <i>Dispenser</i> is defined as equipment located aboveground that dispenses regulated substances from the UST system. A <i>Dispenser System</i> is the dispenser and the equipment necessary to connect the dispenser to the underground storage tank system. <i>Under-dispenser Containment or UDC</i> is defined as containment underneath a dispenser system designed to prevent leaks from the dispenser and piping within or above the UDC from reaching soil or groundwater.)</p> <p>(NOTE: A dispenser system is considered new when both the dispenser and the equipment needed to connect the dispenser to the UST system are installed at an UST facility. The equipment necessary to connect the dispenser to the UST system includes check valves, shear valves, unburied risers or flexible connectors, or other transitional components that are underneath the dispenser and connect the dispenser to the underground piping.)</p> <p>Verify that under-dispenser containment is liquid-tight on its sides, bottom, and at any penetrations.</p> <p>Verify that under-dispenser containment allows for visual inspection and access to the components in the containment system or it is periodically monitored for leaks from the dispenser system.</p> <p>Verify that, no later than 13 October 2018, owners of these previously deferred airport hydrant fuel distribution systems and UST systems with field constructed tanks submit a one-time notice to the implementing agency documenting the existence of the tank(s).</p> <p>Verify that airport hydrant fuel distribution systems and UST systems with field constructed tanks installed on or before 13 October 2015 meet the following 40 CFR 280 requirements by 13 October 2015:</p> <ul style="list-style-type: none"> <li>– release reporting (40 CFR 280.50. see checklist item ST.80.1.US)</li> <li>– response and investigation (40 CFR 280.51 and 280.52, see checklist item ST.80.2.US)</li> <li>– closure (40 CFR 280.70 through 280.74, see checklist items ST.90.2.US. and ST.95.1.US. through ST.95.7.US.)</li> <li>– financial responsibility and notification.</li> </ul> <p>Verify that airport hydrant fuel distribution systems and UST systems with field constructed tanks installed on or before 13 October 2015 meet the following 40 CFR 280 requirements by 13 October 2018:</p> <ul style="list-style-type: none"> <li>– upgrading of UST systems or closure (40 CFR 280.21 and 280.70 through 280.74, see checklist items ST.25.1.US, ST.90.2.US. and ST.95.1.US. through ST.95.7.US.)</li> </ul>

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	<ul style="list-style-type: none"> <li>– general operating requirements (40 CFR 280.30 through 280.36, see checklist items ST.45.1.US, ST.45.2.US, ST.50.1.US, ST.55.1.US, SY.60.2.US, ST.90.1.US, and ST.90.2.US)</li> <li>– operator training (40 CFR 280.240 through 280.245, see checklist items ST.28.1.US).</li> </ul> <p>Verify that, except as outlined in this checklist item, airport hydrant fuel distribution systems and UST systems with field constructed tanks installed after 13 October 2015 meet all of the requirements in 40 CFR 280.</p> <p>Verify that, no later than 13 October 2018, owners of these previously deferred airport hydrant fuel distribution systems and UST systems with field constructed tanks submit a one-time notice to the implementing agency documenting the existence of the tank.</p> <p>(NOTE: Owners and operators may use single walled piping when installing or replacing piping associated with UST systems with field constructed tanks greater than 50,000 gallons and piping associated with airport hydrant systems. Piping associated with UST systems with field constructed tanks less than or equal to 50,000 gallons not part of an airport hydrant system must meet the secondary containment requirement when installed or replaced.)</p> <p>Verify that not later than 13 October 2018, airport hydrant systems and UST systems with field constructed tanks where installation commenced on or before 13 October 2015 meet the following requirements or be permanently closed:</p> <ul style="list-style-type: none"> <li>– corrosion protection for UST system components in contact with the ground that routinely contain regulated substances meets the following: <ul style="list-style-type: none"> <li>– new UST performance standards for tanks at 40 CFR 280.20(a) and piping 280.20(b) (see checklist item ST.35.3.US)</li> <li>– be constructed of metal and cathodically protected according to a code of practice developed by a nationally recognized association or independent testing laboratory and meets the following: <ul style="list-style-type: none"> <li>– cathodic protection for steel tanks meets the requirements for field installed cathodic protection systems, impressed current systems and operation and maintenance 40 CFR 280.20(a)(2)(ii), (iii), and (iv); see checklist item ST.35.3.US):</li> <li>– cathodic protection for steel piping meets the requirements for field installed cathodic protection systems, impressed current systems and operation and maintenance 40 CFR 280.20(b)(2)(ii), (iii), and (iv); see checklist item ST.35.3.US)</li> <li>– tanks greater than 10 years old without cathodic protection are assessed to ensure the tank is structurally sound and free of corrosion holes prior to adding cathodic protection</li> </ul> </li> </ul> </li> <li>– spill and overfill prevention in compliance with 280.20(c) (see checklist item ST.35.1.US).</li> </ul>

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	<p>Verify that, for the assessment of tanks greater than 10 yr old without cathodic protection, the assessment is by internal inspection or another method determined by the implementing agency to adequately assess the tank for structural soundness and corrosion holes.</p> <p>Verify that, in addition to the walkthrough inspection requirements found in 40 CFR 280.36, owners and operators inspect the following additional areas for airport hydrant systems at least once every 30 days if confined space entry according to OSHA is not required and at least annually if confined space entry is required:</p> <ul style="list-style-type: none"> <li>– hydrant pits</li> <li>– hydrant piping vaults</li> </ul> <p>Verify that hydrant pits are visually checked for any damage, any liquid or debris is removed, and there is a check for leaks.</p> <p>Verify that hydrant piping vaults are checked for any hydrant piping leaks.</p>

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<b>ST.40</b>  <b>METALLIC USTs</b>  <b>ST.40.1.US.</b> This checklist item has been deleted [ <b>Deleted July 2002</b> ].	<p>(NOTE: The July 2002 revision of 40 CFR 112 resulted in the deletion of this checklist item. Specifically, the revision of 40 CFR 112 has eliminated the concept of a bulk storage tank. Instead, the revised regulation is written in terms of bulk storage containers. In the “Section by Section Analysis,” the USEPA comments on page 47066 that the minimum size bulk storage container is 55 gal. On page 47072, they comment that a bulk storage container may be aboveground, partially buried, bunkered, or completely buried. Findings previously documented under ST.40.1.US may now be documented under checklist item PO.20.4.US)</p>





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	<p>(NOTE: Spills or overfills of hazardous substances to the environment equal to or greater than the reportable quantity must be immediately reported to the National Response Center (NRC).)</p> <p>Verify that a spill or overfill of petroleum that is less than 25 gal or another reasonable amount specified by the implementing agency is contained and immediately cleaned up.</p> <p>Verify that a spill or overfill of a hazardous substances that is less than the reportable quantity, or another reasonable amount specified by the implementing agency is contained and immediately cleaned up.</p> <p>Verify that if the cleanup of these lesser quantities cannot be accomplished within 24 h, or another reasonable time period established by the implementing agency, the implementing agency is immediately notified by the owners.</p>

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<b>ST.50</b>  <b>UST CORROSION PROTECTION AND REPAIRS</b>  <b>ST.50.1.US.</b> Metal UST systems with corrosion protection must meet specific requirements (40 CFR 280.31) [Revised March 2000; Revised July 2015].	<p>(NOTE: To determine applicability of this checklist item, see the definitions for:</p> <ul style="list-style-type: none"> <li>– Underground Storage Tanks</li> <li>– Excluded USTS</li> <li>– Partially Excluded USTs (this checklist item does not apply to partially excluded USTs.)</li> </ul> <p>Verify that the corrosion protection systems are operated and maintained to continuously provide corrosion protection to the metal components of that portion of the tank and piping that routinely contain regulated substances and are in contact with the ground.</p> <p>Verify that all UST systems equipped with cathodic protection systems are inspected for proper operation by a qualified cathodic protection tester in accordance with the following:</p> <ul style="list-style-type: none"> <li>– all cathodic protection systems are tested within 6 mo of installation and at least every 3 yr thereafter or according to another reasonable time frame established by the implementing agency</li> <li>– criteria used to determine cathodic protection is adequate is in accordance with a code of practice developed by a nationally recognized association.</li> </ul> <p>(NOTE: The following are the recognized codes of practice for this checklist item:</p> <ul style="list-style-type: none"> <li>– NACE International Test Method TM 0101, “Measurement Techniques Related to Criteria for Cathodic Protection of Underground Storage Tank Systems”</li> <li>– NACE International Test Method TM0497, “Measurement Techniques Related to Criteria for Cathodic Protection on Underground or Submerged Metallic Piping Systems”</li> <li>– Steel Tank Institute Recommended Practice R051, “Cathodic Protection Testing Procedures for STI-P3® USTs”</li> <li>– NACE International Standard Practice SP 0285, “External Control of Underground Storage Tank Systems by Cathodic Protection”</li> <li>– NACE International Standard Practice SP 0169, “Control of External Corrosion on Underground or Submerged Metallic Piping Systems”.)</li> </ul> <p>Verify that UST systems with impressed current cathodic protection are inspected every 60 days to ensure the equipment is running properly</p>

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<b>ST.50.2.US.</b> Checklist item moved [Moved July 2005].	<p>Verify that, for UST systems using cathodic protection, inspection records are maintained in accordance with 40 CFR 280.34 (see checklist item ST.90.1.US and ST.90.2.US).</p> <p>Verify that the results of the last 3 inspections of impressed current cathodic protection systems are kept.</p> <p>Verify that the results of the last 2 inspections for all USTs equipped with cathodic protection are kept.</p> <p>(NOTE: The requirements in this checklist item apply until the UST system is permanently closed or undergoes a change-in-service.)</p> <p>This item was moved to ST.55.1.US to ensure consistency across all TEAM manuals.</p>

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<b>ST.55</b>  <b>UST REPAIRS</b>  <b>ST.55.1.US.</b> Repairs to USTs must be performed according to industry code (40 CFR 280.33) [Revised March 2000; Moved July 2005; Revised July 2015].	<p>(NOTE: To determine applicability of this checklist item, see the definitions for:</p> <ul style="list-style-type: none"> <li>– Underground Storage Tanks</li> <li>– Excluded USTs</li> <li>– Partially Excluded USTs (this checklist item does not apply to partially excluded USTs.)</li> </ul> <p>Verify that repairs of UST systems prevent releases due to structural failure or corrosion as long as the UST system is used to store regulated substances.</p> <p>Verify that repairs to UST systems are properly conducted in accordance with a code of practice developed by a nationally recognized association or an independent testing laboratory.</p> <p>Verify that repairs to fiberglass reinforced plastic tanks are made by the manufacturer's authorized representative or in accordance with a code of practice developed by a nationally recognized association or an independent testing laboratory.</p> <p>Verify that metal pipe sections and fittings that have released product due to corrosion are replaced.</p> <p>(NOTE: Non-corrodible pipes and fittings may be repaired according to manufacturer's specifications.)</p> <p>Verify that repairs to secondary containment areas of tanks and piping used for interstitial monitoring and to containment sumps used for interstitial monitoring of piping have the secondary containment tested for tightness according to the manufacturer's instructions, a code of practice developed by a nationally recognized association or independent testing laboratory, or according to requirements established by the implementing agency within 30 days following the date of completion of the repair.</p> <p>Verify that all other repairs to tanks and piping undergo tightness testing in accordance with 280.43(c) and 280.44(b) (see Appendix 10-3) within 30 days following the date of completion of the repair.</p> <p>(NOTE: Tanks and piping need not undergo tightness testing if one of the following is met:</p> <ul style="list-style-type: none"> <li>– the repaired tank is internally inspected in accordance with a code of practice developed by a nationally recognized association or an independent testing laboratory</li> </ul>

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	<ul style="list-style-type: none"> <li>– the repaired portion of the UST is monitored monthly for releases in accordance with a method that satisfies 280.43(d) through (i) (see Appendix 10-3)</li> <li>– another test method is used that is determined by the implementing agency to be no less protective of human health and the environment.)</li> </ul> <p>Verify that within 6 mo following the repair of any cathodically protected UST, the cathodic protection system is tested as detailed in 40 CFR 280.31(b) and 280.31(c) (see checklist item ST.50.1.US):</p> <ul style="list-style-type: none"> <li>– every 3 yr thereafter for all cathodic protection systems</li> <li>– every 60 days for impressed current cathodic protection systems.</li> </ul> <p>Verify that, within 30 days following any repair to spill or overfill prevention equipment, the repaired spill or overfill prevention equipment is tested or inspected, as appropriate, in accordance with 40 CFR 280.35 (see checklist item ST.60.4.US) to ensure it is operating properly.</p> <p>Verify that records of repairs that demonstrate compliance with these requirements are maintained until the UST system is permanently closed or undergoes a change-in-service.</p>

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<b>RELEASE DETECTION FOR USTs</b>  <b>ST.60</b> <b>General</b>  <b>ST.60.1.US.</b> Owners and operators of USTs must provide a method, or combination of methods of release detection that meets specific parameters (40 CFR 280.40(a) and 280.40(c)) [Revised June 1997; Revised March 2000; Revised July 2015].	<p>(NOTE: To determine applicability of this checklist item, see the definitions for:</p> <ul style="list-style-type: none"> <li>– Underground Storage Tanks</li> <li>– Excluded USTs</li> <li>– Partially Excluded USTs (this checklist item does not apply to partially excluded USTs.)</li> </ul> <p>Verify that owners and operators of UST systems provide a method, or combination of methods, of release detection that:</p> <ul style="list-style-type: none"> <li>– can detect a release from any portion of the tank and the connected underground piping that routinely contains product</li> <li>– is installed, calibrated, operated, and maintained in accordance with the manufacturer's instructions</li> <li>– meets the performance requirements in 40 CFR 280.43 or 280.44, with any performance claims and their manner of determination described in writing by the equipment manufacturer or installer (see Appendix 10-3 of this document)</li> <li>– meets the performance requirements in 40 CFR 280.43 or 280.44 (see Appendix 10-3), or 40 CFR 280.251 and 280.252 (see checklist items ST.35.8.US and ST.60.3.US), as applicable, with any performance claims and their manner of determination described in writing by the equipment manufacturer or installer.</li> </ul> <p>(NOTE: The methods listed in 40 CFR 280.43(b), (c), (d), (h), and (i), 280.44(a) and (b), and 40 CFR 280.251 and 280.252, must be capable of detecting the leak rate or quantity specified for that method with a probability of detection of 0.95 and a probability of false alarm of 0.05.)</p> <p>Verify that beginning 13 October 2018 owners and operators of UST systems provide a method, or combination of methods, of release detection that is operated and maintained, and electronic and mechanical components are tested for proper operation, in accordance with one of the following:</p> <ul style="list-style-type: none"> <li>– manufacturer's instructions</li> <li>– a code of practice developed by a nationally recognized association or independent testing laboratory</li> <li>– requirements determined by the implementing agency to be no less protective of human health and the environment.</li> </ul> <p>Verify that beginning 13 October 2018, a test of the proper operation of the release detection is performed at least annually and, at a minimum, covers the following components as applicable to the UST system:</p>

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<p><b>ST.60.2.US.</b> In order to prevent releases, owners/operators must conduct walkthrough inspections according to certain parameters (40 CFR 280.36) [Added July 2015].</p>	<ul style="list-style-type: none"> <li>– automatic tank gauge and other controllers</li> <li>– probes and sensors</li> <li>– automatic line leak detector:</li> <li>– vacuum pumps and pressure gauges</li> <li>– hand-held electronic sampling equipment associated with groundwater and vapor monitoring</li> </ul> <p>Verify that testing of the automatic tank gauge and other controllers includes testing the alarm, verifying system configuration, and testing battery backup.</p> <p>Verify that testing of probes and sensors includes: inspecting for residual buildup; ensuring floats move freely; ensuring shaft is not damaged; ensuring cables are free of kinks and breaks; and testing alarm operability and communication with controller.</p> <p>Verify that, when testing the automatic line leak detector the test operation meets the criteria in 40 CFR 280.44(a) (see Appendix 10-3) by simulating a leak.</p> <p>Verify that, when testing vacuum pumps and pressure gauges, proper communication with sensors and controller are ensured.</p> <p>Verify that, when testing hand-held electronic sampling equipment associated with groundwater and vapor monitoring their proper operation is ensured.</p> <p>Verify that existing UST systems that cannot apply a compliant method of release detection are closed in accordance with 40 CFR 280.70 through 280.74 (see checklist items ST.90.2.US. and ST.95.1.US. through ST.95.7.US.).</p> <p>(NOTE: To determine applicability of this checklist item, see the definitions for:</p> <ul style="list-style-type: none"> <li>– Underground Storage Tanks</li> <li>– Excluded USTS</li> <li>– Partially Excluded USTs (this checklist item does not apply to partially excluded USTs.)</li> </ul> <p>Verify that, not later than 13 October 2018 owners and operators implement one of the following:</p> <ul style="list-style-type: none"> <li>– conduct a walkthrough inspection that, at a minimum, checks the following equipment as specified: <ul style="list-style-type: none"> <li>– every 30 days (Exception: spill prevention equipment at UST systems receiving deliveries at intervals greater than every 30 days may be checked prior to each delivery)</li> <li>– annually check containment sumps</li> <li>– annually check hand-held release detection equipment</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– conduct operation and maintenance walkthrough inspections according to a standard code of practice developed by a nationally recognized association or independent laboratory that checks equipment.</li> <li>– conduct operations and maintenance walkthrough inspections developed by the implementing agency.</li> </ul> <p>Verify that, when checking spill prevention equipment, owners and operators:</p> <ul style="list-style-type: none"> <li>– visually check for damage</li> <li>– remove liquid or debris</li> <li>– check for and remove obstructions in the fill pipe</li> <li>– check the fill cap to make sure it is securely on the fill pipe</li> <li>– for double walled spill prevention equipment with interstitial monitoring, check for a leak in the interstitial area.</li> </ul> <p>Verify that, when evaluating release detection equipment, the owner or operator checks to make sure the release detection equipment is operating with no alarms or other unusual operating conditions present; and ensure records of release detection testing are reviewed and current.</p> <p>Verify that, when checking containment sumps the owner or operator visually checks for damage, leaks to the containment area, or releases to the environment; removes liquid (in contained sumps) or debris; and, for double walled sumps with interstitial monitoring, checks for a leak in the interstitial area.</p> <p>Verify that, when checking hand held release detection equipment, the owner or operator checks devices such as tank gauge sticks or groundwater bailers for operability and serviceability.</p> <p>(NOTE: The following code of practice may be used to comply with this checklist item: Petroleum Equipment Institute Recommended Practice RP 900, “Recommended Practices for the Inspection and Maintenance of UST Systems”.)</p> <p>Verify that owners and operators maintain records (in accordance with 40 CFR 280.34 [see checklist item ST.90.1.US and ST.90.2.US]) of operation and maintenance walkthrough inspections for one year.</p> <p>Verify that operation and maintenance walkthrough inspection records include:</p> <ul style="list-style-type: none"> <li>– a list of each area checked</li> <li>– whether each area checked was acceptable or needed action taken</li> <li>– a description of actions taken to correct an issue</li> <li>– delivery records if spill prevention equipment is checked less frequently than every 30 days due to infrequent deliveries.</li> </ul>

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<p><b>ST.60.3.US.</b> Release detection for airport hydrant fuel distribution systems and UST systems with field constructed tanks must meet specific requirements (40 CFR 280.10(a)(1)(i), and 280.252(d)) [Added July 2015].</p>	<p>(NOTE: To determine applicability of this checklist item, see the definitions for:</p> <ul style="list-style-type: none"> <li>– Underground Storage Tanks</li> <li>– Excluded USTS</li> <li>– Partially Excluded USTs (this checklist item does not apply to partially excluded USTs.)</li> </ul> <p>(NOTE: Owners and operators of UST systems with field constructed tanks and airport hydrant systems must begin meeting the release detection requirements described in this checklist item not later than 13 October 2018.)</p> <p>Verify that owners and operators of field-constructed tanks with a capacity less than or equal to 50,000 gal meet the release detection requirements in 40 CFR 280.40 through 280.45 (see checklist items ST.60.1.US, ST.65.1.US, ST.70.1.US, and ST.90.2.US)</p> <p>Verify that owners and operators of field constructed tanks with a capacity greater than 50,000 gal meet the requirements in 40 CFR 280.40 through 280.45 (see checklist items ST.60.1.US, ST.65.1.US, ST.70.1.US, and ST.90.2.US) except as stated below, or use one or a combination of the following alternative methods of release detection:</p> <ul style="list-style-type: none"> <li>– conduct an annual tank tightness test that can detect a 0.5 gal/h leak rate</li> <li>– use an automatic tank gauging system to perform release detection at least every 30 days that can detect a leak rate <math>\leq</math> 1 gal/h (NOTE: This method must be combined with a tank tightness test that can detect a 0.2 gal/h leak rate performed at least every 3 yr)</li> <li>– use an automatic tank gauging system to perform release detection at least every 30 days that can detect a leak rate <math>\leq</math> 2 gal/h (NOTE: This method must be combined with a tank tightness test that can detect a 0.2 gal/h leak rate performed at least every 2 yr)</li> <li>– perform vapor monitoring (conducted in accordance with 40 CFR 280.43(e) for a tracer compound placed in the tank system [see Appendix 10-3]) capable of detecting a 0.1 gal/h leak rate at least every 2 yr</li> <li>– perform inventory control (conducted in accordance with DoD Directive 4140.25; <i>ATA Airport Fuel Facility Operations and Maintenance Guidance Manual</i>; or equivalent procedures) at least every 30 days that can detect a leak equal to or less than 0.5 percent of flowthrough, and one of the following: <ul style="list-style-type: none"> <li>– perform a tank tightness test that can detect a 0.5 gal/h leak rate at least every 2 yr</li> <li>– perform vapor monitoring or groundwater monitoring (conducted in accordance with § 280.43(e) or (f), respectively, for the stored regulated substance [see Appendix 10-3]) at least every 30 days</li> </ul> </li> <li>– another method approved by the implementing agency if the owner and operator can demonstrate that the method can detect a release as effectively as any of the methods allowed above.</li> </ul>

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<p><b>ST.60.4.US.</b> Spill prevention equipment, overfill equipment, and containment sumps used for interstitial monitoring must undergo periodic testing to ensure releases to the environment are prevented (40 CFR 280.35) [Added July 2015].</p>	<p>Verify that owners and operators of underground piping associated with field-constructed tanks less than or equal to 50,000 gal meet the release detection requirements in meet the release detection requirements in 40 CFR 280.40 through 280.45 (see checklist items ST.60.1.US, ST.65.1.US, ST.70.1.US, and ST.90.2.US).</p> <p>Verify that owners and operators of underground piping associated with airport hydrant systems and field-constructed tanks greater than 50,000 gal meet the requirements in 40 CFR 280.40 through 280.45 (see checklist items ST.60.1.US, ST.65.1.US, ST.70.1.US, and ST.90.2.US)) except as stated below, or use one or a combination of the following alternative methods of release detection:</p> <ul style="list-style-type: none"> <li>– perform a semiannual or annual line tightness test at or above the piping operating pressure in accordance with Appendix 10-2 (NOTE: Piping volumes not capable of meeting the maximum 3.0 gal/h leak rate for the semiannual test may be tested at a leak rate up to 6.0 gal/h per the schedule in Appendix 10-2)</li> <li>– perform vapor monitoring in accordance with 40 CFR 280.43(e) (see Appendix 10-3) for a tracer compound placed in the tank system capable of detecting a 0.1 gal/h leak rate at least every 2 yr</li> <li>– perform inventory control in accordance with DoD Directive 4140.25; ATA <i>Airport Fuel Facility Operations and Maintenance Guidance Manual</i>; or equivalent procedures) at least every 30 days that can detect a leak equal to or less than 0.5 percent of flowthrough, and one of the following: <ul style="list-style-type: none"> <li>– perform a line tightness test (conducted in accordance with Appendix 10-3 using the leak rates for the semiannual test) at least every 2 yr</li> <li>– perform vapor monitoring or groundwater monitoring (conducted in accordance with 40 CFR 280.43(e) or (f) [See Appendix 10-3], respectively, for the stored regulated substance) at least every 30 days</li> </ul> </li> <li>– another method approved by the implementing agency if the owner and operator can demonstrate that the method can detect a release as effectively as any of the approved methods.</li> </ul> <p>Verify that owners and operators of UST systems with field constructed tanks and airport hydrant systems maintain release detection records according to the recordkeeping requirements in 40 CFR 280.45 (see checklist item ST.90.2.US).</p> <p>(NOTE: To determine applicability of this checklist item, see the definitions for:</p> <ul style="list-style-type: none"> <li>– Underground Storage Tanks</li> <li>– Excluded USTS</li> <li>– Partially Excluded USTs (this checklist item does not apply to partially excluded USTs.)</li> </ul> <p>(NOTE: For UST systems in use on or before 13 October 2015, the initial spill prevention equipment test, containment sump test and overfill prevention equipment inspection must be conducted not later than 13 October 2018. For UST</p>

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	<p>systems brought into use after 13 October 2015, these requirements apply at installation.)</p> <p>Verify that spill prevention equipment (such as a catchment basin, spill bucket, or other spill containment device) and containment sumps used for interstitial monitoring of piping prevent releases to the environment by meeting one of the following:</p> <ul style="list-style-type: none"> <li>– the equipment is double walled and the integrity of both walls is periodically monitored at a frequency not less than the frequency of the walkthrough inspections described in 40 CFR 280.36 (see checklist item ST.60.2.US)</li> <li>– the spill prevention equipment and containment sumps used for interstitial monitoring of piping are tested at least once every 3 yr to ensure the equipment is liquid tight by using vacuum, pressure, or liquid testing in accordance with one of the following criteria: <ul style="list-style-type: none"> <li>– requirements developed by the manufacturer (NOTE: Owners and operators may use this option only if the manufacturer has developed requirements);</li> <li>– code of practice developed by a nationally recognized association or independent testing laboratory; or</li> <li>– requirements determined by the implementing agency to be no less protective of human health and the environment.</li> </ul> </li> </ul> <p>(NOTE: Owners and operators of spill prevention equipment [such as a catchment basin, spill bucket, or other spill containment device] and containment sumps used for interstitial monitoring of piping which end required periodic monitoring [see above] must meet the requirements for spill prevention equipment and containment sumps used for interstitial monitoring of piping and conduct a test within 30 days of discontinuing periodic monitoring of this equipment.)</p> <p>Verify that overfill prevention equipment is inspected at least once every 3 yr and, at a minimum, the inspection ensures that overfill prevention equipment is set to activate at the correct level and will activate when regulated substance reaches that level.</p> <p>Verify that inspections of overfill prevention equipment are conducted in accordance with one of the following criteria:</p> <ul style="list-style-type: none"> <li>– requirements developed by the manufacturer (NOTE: Owners and operators may use this option only if the manufacturer has developed requirements);</li> <li>– code of practice developed by a nationally recognized association or independent testing laboratory; or</li> <li>– requirements determined by the implementing agency to be no less protective of human health and the environment.</li> </ul> <p>Verify that owners and operators maintain records for spill prevention equipment, containment sumps used for interstitial monitoring of piping, and overfill</p>

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	<p>prevention equipment in accordance with 40 CFR 280.34 (see checklist item ST.90.1.US and ST.90.2.US).</p> <p>Verify that all records of testing or inspection are maintained for 3 yr.</p> <p>Verify that, for spill prevention equipment and containment sumps used for interstitial monitoring of piping not tested every 3 yr, there is documentation showing that the prevention equipment is double walled and the integrity of both walls is periodically monitored and the documentation is maintained for as long as the equipment is periodically monitored.</p>



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<b>RELEASE DETECTION FOR USTs</b>  <b>ST.65</b> <b>Petroleum USTs</b>  <b>ST.65.1.US.</b> UST systems containing petroleum must meet specific release detection system requirements (40 CFR 280.41) [Revised March 2000; Revised July 2015].	<p>(NOTE: To determine applicability of this checklist item, see the definitions for:</p> <ul style="list-style-type: none"> <li>– Underground Storage Tanks</li> <li>– Excluded USTs</li> <li>– Partially Excluded USTs (this checklist item does not apply to partially excluded USTs.)</li> </ul> <p>Verify that tanks installed on or before 11 April 2016 are monitored every 30 days using one of the following methods (details of methods are provided in Appendix 10-3):</p> <ul style="list-style-type: none"> <li>– automatic tank gauging</li> <li>– vapor monitoring</li> <li>– groundwater monitoring</li> <li>– interstitial monitoring</li> <li>– statistical inventory reconciliation</li> <li>– other acceptable methods.</li> </ul> <p>(NOTE: The following tanks are exceptions to the 30 day monitoring requirement for tanks installed before 11 April 2016:</p> <ul style="list-style-type: none"> <li>– UST systems that meet performance standards in 40 CFR 280.20 or 280.21, (see checklist items ST.25.1.US., ST.35.1.US., ST.35.3.US., and ST.35.4.US.) and monthly inventory requirements (see Appendix 10-3) may use tank tightness testing at least every 5 yr until 10 yr after the tank was installed</li> <li>– tanks with a capacity of 550 gal or less may use manual tank gauging as described in 40 CFR 280.43(b) (See Appendix 10-3)</li> <li>– tanks with a capacity of 551 to 1,000 gal that meet the tank diameter criteria in 40 CFR 280.43(b) (see Appendix 10-3) may use manual tank gauging as described in 40 CFR 280.43(b) (see Appendix 10-3).</li> </ul> <p>Verify that tanks installed after 11 April 2016 are monitored for releases at least every 30 days in accordance with 40 CFR 280.43(g) interstitial monitoring requirements (see Appendix 10-3 for details).</p> <p>Verify that piping installed on or before 11 April 2016 that routinely contains a regulated substance is monitored for releases in a manner that meets one of the following requirements:</p> <ul style="list-style-type: none"> <li>– pressurized piping:             <ul style="list-style-type: none"> <li>– be equipped with automatic line leak detector</li> <li>– annual tightness testing or monthly monitoring</li> </ul> </li> </ul>

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	<p>– suction piping: line tightness testing every 3 yr or acceptable monthly monitoring.</p> <p>(NOTE: For suction piping installed on or before 11 April 2016, no release detection system is needed for suction piping designed and constructed to meet all of the following standards:</p> <ul style="list-style-type: none"> <li>– the below-grade piping operates at less than atmospheric pressure</li> <li>– the below-grade piping is sloped so that contents of pipe will roll back to tank when suction is released</li> <li>– only one check valve is included in each suction line</li> <li>– the check valve is located directly below and as close as practical to the suction pump</li> <li>– a method is provided that allows compliance with this NOTE to be readily determined.)</li> </ul> <p>Verify that piping installed or replaced after 11 April 2016 meets one of the following release detection requirements:</p> <ul style="list-style-type: none"> <li>– pressurized piping is monitored for releases at least every 30 days in accordance with 40 CFR 280.43(g) and be equipped with an automatic line leak detector in accordance with 40 CFR 280.44(a)</li> <li>– suction piping is monitored for releases at least every 30 days in accordance with 40 CFR 280.43(g).</li> </ul> <p>NOTE: For suction piping installed after 11 April 2016, no release detection system is needed for suction piping designed and constructed to meet all of the following standards:</p> <ul style="list-style-type: none"> <li>– the below-grade piping operates at less than atmospheric pressure</li> <li>– the below-grade piping is sloped so that contents of pipe will roll back to tank when suction is released</li> <li>– only one check valve is included in each suction line</li> <li>– the check valve is located directly below and as close as practical to the suction pump</li> <li>– a method is provided that allows compliance with this NOTE to be readily determined.)</li> </ul> <p>(NOTE: See Appendix 10-3 for the details on how to implement required monitoring.)</p>

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<b>RELEASE DETECTION FOR USTs</b>  <b>ST.70</b> <b>Hazardous Substance USTs</b>  <b>ST.70.1.US.</b> Owners and operators of hazardous substance UST systems must provide containment and monitor the containment (40 CFR 280.42) [ <b>Revised March 2000; Revised July 2015</b> ].	<p>(NOTE: To determine applicability of this checklist item, see the definitions for:</p> <ul style="list-style-type: none"> <li>– Underground Storage Tanks</li> <li>– Excluded USTS</li> <li>– Partially Excluded USTs (this checklist item does not apply to partially excluded USTs.)</li> </ul> <p>Verify that, if secondary containment systems are used, they are designed, constructed and installed to:</p> <ul style="list-style-type: none"> <li>– contain regulated substances released from the tank system until they are detected and removed</li> <li>– prevent the release of regulated substances to the environment at any time during the operational life of the UST system</li> <li>– be checked for evidence of a release at least every 30 days</li> </ul> <p>Verify that, if double-walled tanks are used, they are designed, constructed, and installed to:</p> <ul style="list-style-type: none"> <li>– contain a leak from any portion of the inner tank within the outer wall</li> <li>– detect the failure of the inner wall.</li> </ul> <p>Verify that, if external liners (including vaults) are used, they are designed, constructed, and installed to:</p> <ul style="list-style-type: none"> <li>– contain 100 percent of the capacity of the largest tank within its boundary</li> <li>– prevent the interference of precipitation or groundwater intrusion with the ability to contain or detect a release of regulated substances</li> <li>– surround the tank completely (i.e., it is capable of preventing lateral as well as vertical migration of regulated substances).</li> </ul> <p>Verify that underground piping is equipped with secondary containment system that satisfies the requirements for containment for tanks (e.g., trench liners, double-walled pipe).</p> <p>Verify that underground piping that conveys regulated substances under pressure is equipped with an automatic line leak detector.</p> <p>(NOTE: Other methods of release detection may be used for hazardous substance UST systems installed on or before 13 October 2015 if owners and operators perform all of the following:</p>

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<b>ST.70.2.US.</b> Checklist item deleted [Revised March 2000; Deleted July 2015].	<ul style="list-style-type: none"> <li>– demonstrate to the implementing agency that an alternate method can detect a release of the stored substance as effectively as any of the methods allowed in 40 CFR 280.43(b) through 280.43(i) can detect a release of petroleum (see Appendix 10-3)</li> <li>– provide information to the implementing agency on effective corrective action technologies, health risks, and chemical and physical properties of the stored substance, and the characteristics of the UST site</li> <li>– obtain approval from the implementing agency to use the alternate release detection method before the installation and operation of the new UST system.)</li> </ul> <p>(NOTE: This checklist item was deleted due to the July 2015 revision of 40 CFR 280.)</p>

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<b>RELEASE DETECTION FOR USTs</b>  <b>ST.75</b> <b>USTs Connected to Emergency Generators</b>  <b>ST.75.1.US.</b> UST systems that store fuel solely for use by emergency power generators must meet specific standards (40 CFR 280.10(a)(1)(ii) and 280.10(a)(1)(iii)) <b>[Added July 2015]</b> .	<p>Verify that UST systems that store fuel solely for use by emergency power generators installed on or before 13 October 2015 meet the release detection requirements in 40 CFR 280.40 through 280.45 [see checklist items ST.60.1.US, ST.65.1.US, ST.70.1.US, ST.80.1.US, and ST.90.2.US) on or before 13 October 2018.</p> <p>Verify that UST systems that store fuel solely for use by emergency power generators installed after 13 October 2015 meet all applicable requirements of 40 CFR 280 at the time of installation.</p>



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<p><b>ST.80</b></p> <p><b>UST RELEASES</b></p> <p><b>ST.80.1.US.</b> Releases from UST systems are required to be reported under specific conditions (40 CFR 280.40(b) and 280.50) [Revised March 2000; Revised July 2015].</p>	<p>(NOTE: To determine applicability of this checklist item, see the definitions for:</p> <ul style="list-style-type: none"> <li>– Underground Storage Tanks</li> <li>– Excluded USTS</li> <li>– Partially Excluded USTs (this checklist item does not apply to partially excluded USTs.)</li> </ul> <p>Verify that, when a release detection method operated in accordance with the performance standards in 40 CFR 280.43 and 280.44 (see Appendix 10-3), or 40 CFR 280.251 through 280.252 (see checklist items ST.35.8.US and ST.60.3.US), indicates a release may have occurred, the implementing agency is notified in accordance with 40 CFR 280.50 through 280.53 (see checklist items ST.45.2.US., ST.80.1.US., ST.80.2.US.).</p> <p>Verify that any and all releases that meet any of the following conditions were reported:</p> <ul style="list-style-type: none"> <li>– released regulated substances found at the UST site or in the surrounding area (such as the presence of free product or vapors in soils, basements, sewer and utility lines, and nearby surface waters)</li> <li>– unusual operating conditions observed such as the erratic behavior of dispensing equipment or a sudden loss of product, an unexplained presence of water in the tank, or liquid in the interstitial space of a secondarily contained system unless : <ul style="list-style-type: none"> <li>– the system equipment or component is found not to be releasing regulated substances to the environment</li> <li>– any defective system equipment or component is immediately repaired or replaced</li> <li>– for secondarily contained systems, except as detailed in 40 CFR 280.43(g)(2)(iv) (see Appendix 10-3), any liquid in the interstitial space not used as part of the interstitial monitoring method (for example, brine filled) is immediately removed</li> </ul> </li> <li>– monitoring results, including investigation of an alarm, from a release detection method operated in accordance with the performance standards in 40 CFR 280.41 and 280.42 (see checklist items ST.65.1.US and ST.70.1.US) indicates a possible release, unless: <ul style="list-style-type: none"> <li>– the monitoring device is found to be defective, and is immediately repaired, recalibrated, or replaced, and additional monitoring does not confirm the initial result</li> <li>– the leak is contained in the secondary containment and: <ul style="list-style-type: none"> <li>– except as in 40 CFR 280.43(g)(2)(iv) (see Appendix 10-3), any liquid in the interstitial space not used as part of the interstitial monitoring method (for example, brine filled) is immediately removed</li> </ul> </li> </ul> </li> </ul>

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<b>ST.80.2.US.</b> Investigation of a suspected release must follow certain parameters (40 CFR 280.51 and 280.52) [Reviewed March 2000; Revised July 2015].	<ul style="list-style-type: none"> <li>– any defective system equipment or component is immediately repaired or replaced.</li> <li>– in the case of inventory control, a second month of data does not confirm the initial result of the investigation determines no release has occurred</li> <li>– the alarm was investigated and determined to be a non-release event (for example, a power surge or caused by filling the tank during release detection testing).</li> </ul> <p>Verify that the implementing agency was notified within 24 h (or another reasonable time period specified by the implementing agency).</p> <p>(NOTE: To determine applicability of this checklist item, see the definitions for:</p> <ul style="list-style-type: none"> <li>– Underground Storage Tanks</li> <li>– Excluded USTS</li> <li>– Partially Excluded USTs (this checklist item does not apply to partially excluded USTs.)</li> </ul> <p>Verify that the owner/operators immediately investigates and confirms all suspected releases of regulated substances requiring reporting (see ST.80.1.US) within 7 days, or another reasonable time period specified by the implementing agency.</p> <p>(NOTE: This investigation and confirmation step is not required if corrective action has already been initiated as detailed in 40 CFR 280.60 through 280.67 (see checklist items ST.80.3.US. through ST.80.8.US).</p> <p>Verify that the investigation and confirmation process uses either the following steps or another procedure approved by the implementing agency:</p> <ul style="list-style-type: none"> <li>– system test</li> <li>– site check.</li> </ul> <p>Verify that the system test include tightness testing (see Appendix 10-3) in or, as appropriate, secondary containment testing described in 40 CFR 280.33(d) (see checklist item ST.55.1.US).</p> <p>Verify that the system test determines whether either of the following is true:</p> <ul style="list-style-type: none"> <li>– a leak exists in that portion of the tank that routinely contains product, or the attached delivery piping</li> <li>– a breach of either wall of the secondary containment has occurred.</li> </ul> <p>(NOTE: If the system test results for the system, tank or delivery piping indicate that a leak has occurred, repair, replacement, or upgrade actions, and corrective actions must be started [see checklist items ST.80.3.US. through ST.80.8.US].)</p>

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<p><b>ST.80.3.US.</b> Specific initial response actions must be performed within 24 h of a confirmed release from petroleum or hazardous substance USTs (40 CFR 280.60 and 280.61) [Reviewed March 2000; Revised July 2015].</p> <p><b>ST.80.4.US.</b> Specific initial abatement measures and site checks must be performed when there is a confirmed release from petroleum or</p>	<p>(NOTE: If the test results, for the system, tank or delivery piping do not indicate a leak and environmental contamination is not the basis for suspecting a release, no further investigation is needed.)</p> <p>Verify that, if environmental contamination is the basis for suspecting a leak, and the test results for the system, tank, and delivery piping do not indicate a release exists, a site check is done.</p> <p>Verify that, as part of the site check, when selecting sample types, sample locations, and measurement methods for a site check, owners and operators consider the nature of the stored substance, the type of initial alarm or cause for suspicion, the type of backfill, the depth of groundwater, and other factors appropriate for identifying the presence and source of the release.</p> <p>(NOTE: If the test results or excavation zone or UST site indicate that a release has occurred, owners and operators must begin corrective action in accordance with 40 CFR 280.60 through 280.67 [see checklist items ST.80.3.US. through ST.80.8.US].)</p> <p>(NOTE: When required by the implementing agency, owners and operators of UST systems must follow the procedures in this checklist item to determine if the UST system is the source of off-site impacts. These impacts include the discovery of regulated substances (such as the presence of free product or vapors in soils, basements, sewer and utility lines, and nearby surface and drinking waters) that has been observed by the implementing agency or brought to its attention by another party.)</p> <p>(NOTE: This checklist item does not apply to excluded USTs (see the definitions) or USTs exempted under the RCRA Subtitle C Section 3004(u) corrective action requirements. A RCRA Subtitle C, Section 3004(u) UST is a UST holding a hazardous material at a RCRA Subtitle C permitted facility. A release from such a UST would be handled as required under the RCRA permit's corrective action plan.)</p> <p>Verify that all of the following initial response actions are performed within 24 h of confirmation of a release from petroleum or hazardous substance USTs, or within another reasonable period of time determined by the implementing agency:</p> <ul style="list-style-type: none"> <li>– report the release to the implementing agency (e.g., by telephone or email)</li> <li>– take immediate action to prevent any further release of the regulated substance into the environment</li> <li>– identify and mitigate fire, explosion, and vapor hazards.</li> </ul> <p>(NOTE: This checklist item does not apply to excluded USTs (see the definitions) or USTs exempted under the RCRA Subtitle C Section 3004(u) corrective action requirements. A RCRA Subtitle C, Section 3004(u) UST is a UST holding a hazardous material at a RCRA Subtitle C permitted facility. A release from such a</p>

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<p>hazardous substance USTs unless directed to do otherwise by the implementing agency (40 CFR 280.60 and 280.62) <b>[Revised March 2000; Revised July 2015]</b>.</p> <p><b>ST.80.5.US.</b> When there is a confirmed release from petroleum or hazardous substance UST, information about the site and nature of the release must be assembled unless exempted by the implementing agency (40 CFR 280.60 and 280.63) <b>[Revised March 2000; Revised July 2015]</b>.</p>	<p>UST would be handled as required under the RCRA permit's corrective action plan.)</p> <p>Verify that all of the following abatement actions are performed, unless the facility is directed to do otherwise by the implementing agency:</p> <ul style="list-style-type: none"> <li>– removal of as much of the regulated substance from the UST system as is necessary to prevent further release to the environment</li> <li>– visual inspection of any aboveground releases or exposed belowground releases is done and further migration of the released substance into surrounding soils and groundwaters is prevented</li> <li>– continued monitoring and mitigation of any fire and safety hazards posed by vapors or free product that may have migrated from the UST excavation zone and entered into subsurface structures (such as sewers or basements)</li> <li>– remedy hazards from contaminated soils that are excavated or exposed as a result of release confirmation, site investigation, abatement, or corrective action</li> <li>– measurements are done for the presence of a release where the contamination is most likely to be present unless the presence and source of the release has previously been confirmed through a site check (40 CFR 280.52(b), see checklist item ST.80.2.US) or the closure site assessment (40 CFR 280.72(a), see checklist item ST.95.5.US)</li> <li>– an investigation is done for the presence of free product and the removal of free product is done as soon as possible.</li> </ul> <p>Verify that, when selecting sample types, sample locations, and measurement methods, the owner and operator considers the nature of the stored substance, the type of backfill, depth to groundwater and other factors as appropriate for identifying the presence and source of the release.</p> <p>Verify that within 20 days after release confirmation, or within another reasonable period of time determined by the implementing agency, a report is submitted to the implementing agency summarizing the initial abatement steps and any resulting information or data.</p> <p>(NOTE: This checklist item does not apply to excluded USTs (see the definitions) or USTs exempted under the RCRA Subtitle C Section 3004(u) corrective action requirements. A RCRA Subtitle C, Section 3004(u) UST is a UST holding a hazardous material at a RCRA Subtitle C permitted facility. A release from such a UST would be handled as required under the RCRA permit's corrective action plan.)</p> <p>Verify that, unless directed to do otherwise by the implementing agency, owners and operators assemble information about the site and the nature of the release, including information gained while confirming the release or completing initial abatement measures.</p>

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<p><b>ST.80.6.US.</b> When there is a confirmed release from petroleum or hazardous substance UST and site investigations have indicated free product, the free product must be removed to the maximum extent possible as required by the implementing agency (40 CFR 280.60 and 280.64) <b>[Revised March 2000; Revised July 2015]</b>.</p>	<p>Verify that, specifically, this information includes but is not limited to:</p> <ul style="list-style-type: none"> <li>– data on the nature and estimated quantities of the release</li> <li>– data from available sources and/or site investigations concerning: surrounding populations, water quality, use and approximate locations of wells potentially affected by the release, subsurface soil conditions, locations of subsurface sewers, climatological conditions, and land use</li> <li>– results of site check</li> <li>– results of free product investigation.</li> </ul> <p>Verify that within 45 days of the release confirmation, or another reasonable period of time determined by the implementing agency, this information is submitted to the implementing agency in a manner which demonstrates its applicability and technical adequacy, or in a format required by the implementing agency.</p> <p>(NOTE: This checklist item does not apply to excluded USTs (see the definitions) or USTs exempted under the RCRA Subtitle C Section 3004(u) corrective action requirements. A RCRA Subtitle C, Section 3004(u) UST is a UST holding a hazardous material at a RCRA Subtitle C permitted facility. A release from such a UST would be handled as required under the RCRA permit’s corrective action plan.)</p> <p>Determine if there are any release sites where free product has been confirmed.</p> <p>Verify that the free product is removed to the maximum extent practicable as determined by the implementing agency while continuing, as necessary, initial response measures, initial abatement measures and site checks, site investigations, and preparing for investigations for soil and groundwater cleanup and the development of the corrective action plan.</p> <p>Verify that free product removal is done so that the spread of contamination into previously uncontaminated zones is minimized by using recovery and disposal techniques appropriate to the hydrogeologic conditions at the site, and that properly treats, discharges or disposes of recovery byproducts in compliance with applicable regulations.</p> <p>Verify that the abatement of free product migrations is used as a minimum objective for the design of the free product removal system and any flammable products are handled in a safe and competent manner to prevent fires or explosions.</p> <p>Verify that, unless directed otherwise by the implementing agency, within 45 days after confirming a release, a free product removal report is submitted to the implementing agency that includes at least the following:</p> <ul style="list-style-type: none"> <li>– the name of the person(s) responsible for implementing the free product removal measures</li> <li>– the estimated quantity, type, and thickness of free product observed or measured in wells, boreholes, and excavations</li> </ul>

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<p><b>ST.80.7.US.</b> When there is a confirmed release from petroleum or hazardous substance USTs, an investigation for soil and groundwater contamination is required to be performed (40 CFR 280.60 and 280.65) [Revised March 2000; Revised July 2015].</p>	<ul style="list-style-type: none"> <li>– the type of free product recovery system used</li> <li>– whether there will be any on-site or off-site discharges during the recovery operation and where this discharge will be located</li> <li>– the type of treatment applied to, and the effluent quality exempted from, any discharge</li> <li>– the steps that have been or are being taken to obtain any required permits for any discharge</li> <li>– the disposition of the recovered free product.</li> </ul> <p>(NOTE: This checklist item does not apply to excluded USTs (see the definitions) or USTs exempted under the RCRA Subtitle C Section 3004(u) corrective action requirements. A RCRA Subtitle C, Section 3004(u) UST is a UST holding a hazardous material at a RCRA Subtitle C permitted facility. A release from such a UST would be handled as required under the RCRA permit’s corrective action plan.)</p> <p>Verify that an investigation of the release, the release site, and possibly affected surrounding areas has been done and identified if any of the following conditions exists:</p> <ul style="list-style-type: none"> <li>– evidence that groundwater wells have been affected by the release (e.g., as found during release confirmation or previous corrective action measures)</li> <li>– free product is found to need recovery</li> <li>– evidence that contaminated soil is in contact with groundwater (e.g., as found during conduct of the initial response measures or investigations)</li> <li>– the implementing agency requests an investigation based on the potential effects of contaminated soil or groundwater on nearby surface water and groundwater resources.</li> </ul> <p>Verify that the results of the investigation are submitted to the implementing agency as soon as practicable, or according to a time schedule defined by the implementing agency.</p>
<p><b>ST.80.8.US.</b> In specific situations, a corrective action plan is required (40 CFR 280.66 and 280.67) [Added March 2000; Moved July 2015].</p>	<p>(NOTE: This was previously checklist item ST.95.8.US.)</p> <p>Determine if, after reviewing the information submitted for site characterization, free product removal, and soil/groundwater cleanup, the implementing agency has required the owner and operators to submit additional information or to develop and submit a corrective action plan for responding to contaminated soils and ground water.</p> <p>Verify that, if a corrective action plan is required, it is submitted according to a schedule and format established by the implementing agency.</p> <p>(NOTE: Alternatively, owners and operators may, after fulfilling the requirements for site characterization, free product removal, and soil/groundwater cleanup,</p>

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	<p>choose to submit a corrective action plan for responding to contaminated soil and ground water.)</p> <p>Verify that the corrective action plan provides for adequate protection of human health and the environment as determined by the implementing agency.</p> <p>(NOTE: The implementing agency will approve the corrective action plan only after ensuring that implementation of the plan will adequately protect human health, safety, and the environment.)</p> <p>Verify that the approved corrective action plan is implemented, and the owners and operators monitor, evaluate, and report the results of implementing the plan in accordance with the schedule and in a format established by the implementing agency.</p> <p>(NOTE: Owners and operators may, in the interest of minimizing environmental contamination and promoting more effective cleanup, begin cleanup of soil and ground water before the corrective action plan is approved provided that they do all of the following:</p> <ul style="list-style-type: none"> <li>– notify the implementing agency of their intention to begin cleanup</li> <li>– comply with any conditions imposed by the implementing agency, including halting cleanup or mitigating adverse consequences from cleanup activities</li> <li>– incorporate these self-initiated cleanup measures in the corrective action plan that is submitted to the implementing agency for approval.)</li> </ul> <p>(NOTE: For each confirmed release that requires a corrective action plan, the implementing agency must provide notice to the public by means designed to reach those members of the public directly affected by the release and the planned corrective action. This notice may include, but is not limited to, public notice in local newspapers, block advertisements, public service announcements, publication in a state register, letters to individual households, or personal contacts by field staff. The implementing agency must ensure that site release information and decisions concerning the corrective action plan are made available to the public for inspection upon request.)</p>



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<b>ST.85</b>  <b>DEFERRED UST SYSTEMS</b>  <b>ST.85.1.US.</b> Certain partially excluded UST systems are required to meet specific installation standards (40 CFR 280.10(c) and 280.11) [Revised June 1997; Reviewed March 2000; Revised July 2015].	<p>(NOTE: With the publication of the July 2015 updates to 40 CFR 280 the concept of “deferred USTs” no longer exists. Instead there are “Partially Excluded USTs” which are not required to meet all of the requirements in 40 CFR 280.)</p> <p>(NOTE: This checklist item applies to:</p> <ul style="list-style-type: none"> <li>– wastewater treatment tank systems which are not otherwise excluded (see definition of “Excluded USTs”)</li> <li>– any UST system containing radioactive material that are regulated under the Atomic Energy Act of 1954</li> <li>– any UST system that is part of an emergency generator system at nuclear power generation facilities licensed by the Nuclear Regulatory Commission and subject to Nuclear Regulatory Commission requirements regarding design and quality criteria, including but not limited to 10 CFR 50.)</li> </ul> <p>Verify that the partially excluded UST systems identified in the Applicability NOTE above (whether single or double-walled) are not installed to store regulated substances unless:</p> <ul style="list-style-type: none"> <li>– releases due to corrosion or structural failure will be prevented for the operational life of the system</li> <li>– they are cathodically protected against corrosion, constructed of noncorrodible materials, steel clad with a noncorroding material, or designed to prevent release or threatened release of any stored substance</li> <li>– they are constructed or lined with material that is compatible with the stored substance.</li> </ul> <p>(NOTE: UST systems without corrosion protection may be installed at a site that is determined by a corrosion expert not to be corrosive enough to cause it to have a release due to corrosion during its operating life.)</p> <p>Verify that records demonstrating compliance with these requirements are maintained for the remaining life of the tank.</p> <p>(NOTE: The following codes of practice may be used as guidance for complying with this checklist item:</p> <ul style="list-style-type: none"> <li>– NACE International Standard Practice SP 0285, “External Corrosion Control of Underground Storage Tank Systems by Cathodic Protection”</li> <li>– NACE International Standard Practice SP 0169, “Control of External Corrosion on Underground or Submerged Metallic Piping Systems”</li> <li>– American Petroleum Institute Recommended Practice 1632, “Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems”</li> </ul>

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	Steel Tank Institute Recommended Practice R892, “Recommended Practice for Corrosion Protection of Underground Piping Networks Associated with Liquid Storage and Dispensing Systems”.)

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<p><b>ST.90</b></p> <p><b>UST DOCUMENTATION</b></p> <p><b>ST.90.1.US.</b> Specific reporting requirements are required to be met in relation to USTs (40 CFR 280.34(a)) [Revised March 1995; Reviewed March 2000; Revised July 2015].</p> <p><b>ST.90.2.US.</b> Specific recordkeeping requirements must be met in relation to USTs (40 CFR 280.34(b), 280.34(c), 280.45, and 280.252(d)(3)) [Revised March 1995; Revised March 2000; Revised July 2015].</p>	<p>(NOTE: To determine applicability of this checklist item, see the definitions for:</p> <ul style="list-style-type: none"> <li>– Underground Storage Tanks</li> <li>– Excluded USTS</li> <li>– Partially Excluded USTs (this checklist item does not apply to partially excluded USTs.)</li> </ul> <p>Verify that the following has been submitted to the implementing agency when applicable:</p> <ul style="list-style-type: none"> <li>– notifications for all UST systems, including certification of installation for new USTs and changes in ownership</li> <li>– notifications prior to switching to certain regulated substances 280.32(b) (see checklist item ST.5.6.US)</li> <li>– release reports, including suspected releases, spills and overfills, and confirmed releases</li> <li>– planned or complete corrective actions, including: initial abatement measures, initial site characterization, free product removal, investigation of soil and groundwater cleanup, and the corrective action plan</li> <li>– notice of permanent closure or change in service.</li> </ul> <p>(NOTE: To determine applicability of this checklist item, see the definitions for:</p> <ul style="list-style-type: none"> <li>– Underground Storage Tanks</li> <li>– Excluded USTS</li> <li>– Partially Excluded USTs (this checklist item does not apply to partially excluded USTs.)</li> </ul> <p>(NOTE: This checklist item also applies to owners and operators of UST systems with field constructed tanks and airport hydrant systems.)</p> <p>Verify that records are kept of the following:</p> <ul style="list-style-type: none"> <li>– a corrosion expert’s analysis of site corrosion potential if corrosion protection equipment is not used</li> <li>– documentation of operation of corrosion protection equipment</li> <li>– compatibility for UST systems</li> <li>– UST system repairs</li> <li>– compliance for spill and overfill prevention equipment and containment sumps being used for interstitial monitoring of piping</li> <li>– periodic walk-through inspections</li> <li>– compliance with release detection requirements</li> <li>– results of any site investigations at permanent closure</li> </ul>

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	<p>– operator training.</p> <p>Verify that records are available at one of the following:</p> <ul style="list-style-type: none"> <li>– at the UST site and immediately available for inspection by the implementing agency</li> <li>– at a readily available alternative site and provided to the implementing agency for inspection upon request.</li> </ul> <p>(NOTE: In relation to permanent closure records, owners and operators have the additional alternative of mailing closure records to the implementing agency if they cannot be kept at the site or an alternative site.)</p> <p>Verify that records relating to release detection are kept in accordance with 40 CFR 280.34 (see checklist item ST.90.1.US and ST.90.2.US) as follows:</p> <ul style="list-style-type: none"> <li>– all written performance claims pertaining to any release detection system used, and the manner in which these claims have been justified or tested by the equipment manufacturer or installer, are maintained for 5 yr, or another reasonable period of time determined by the implementing agency, from the date of installation</li> <li>– not later than 13 October 2018, site assessments required under 40 CFR 280.43(e)(6) (vapor monitoring) and (f)(7) (groundwater monitoring) (see Appendix 10-3) are maintained for as long as the methods are used</li> <li>– site assessment records developed after 13 October 2015 are signed by a professional engineer or professional geologist or equivalent licensed professional with experience in environmental engineering, hydrogeology, or other relevant technical discipline acceptable to the implementing</li> <li>– the results of any sampling, testing, or monitoring are maintained for 1 yr, or another reasonable period of time determined by the implementing agency, except: <ul style="list-style-type: none"> <li>– the results of annual operation tests done in accordance with 40 CFR 280.40(a)(3) (see checklist item ST.60.1.US) are maintained for 3 yr and at a minimum the results list each component tested, whether or not the component is in compliance or needs to have action taken, and a description of any action taken to correct an issue</li> <li>– the tank tightness results conducted in accordance with 40 CFR 280.43(c) (see Appendix 10-3) are kept until the next test is conducted</li> <li>– the results of tank tightness testing, line tightness testing, and vapor monitoring using a tracer compound placed in the tank system in accordance with 280.252(d) (see checklist item ST.60.3.US) is retained until the next test is done</li> </ul> </li> <li>– written documentation of all calibration, maintenance, repair of release detection equipment permanently located on-site is maintained at least 1 yr after the servicing work is done, or another reasonable period of time determined by the implementing agency,</li> </ul>

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	<p>– schedules of required calibration and maintenance provided by the release detection equipment manufacturer are maintained for 5 yr after the date of installation.</p>



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<b>ST.95</b>  <b>CHANGES IN SERVICE OR CLOSURE OF USTs</b>  <b>ST.95.1.US.</b> USTs which are put out of service temporarily must have continued maintenance (40 CFR 280.70) [Revised March 1995; Reviewed March 2000; Revised July 2015].	<p>(NOTE: To determine applicability of this checklist item, see the definitions for:</p> <ul style="list-style-type: none"> <li>– Underground Storage Tanks</li> <li>– Excluded USTs</li> <li>– Partially Excluded USTs [this checklist item does not apply to partially excluded USTs].)</li> </ul> <p>Determine if there are any temporarily closed USTs.</p> <p>Verify that, for temporarily closed USTs, proper operation and maintenance is being performed for the following:</p> <ul style="list-style-type: none"> <li>– corrosion protection in accordance with 40 CFR 280.31 (see checklist item ST.50.1.US.)</li> <li>– release detection in accordance with 40 CFR 280.40 through 280.45 (see checklist items ST.60.1.US, ST.65.1.US, ST.70.1.US, ST.70.2.US, ST.80.1.US, and ST.90.2.US.)</li> <li>– release detection in accordance with 40 CFR 280.251 and 280.252 (see checklist item ST.35.8.US and ST.60.3.US).</li> </ul> <p>(NOTE: Release reporting and response requirements 40 CFR 280.50 through 280.53 (see checklist items ST.45.2.US, ST.80.1.US, ST.80.2.US.) and 40 CFR 280.60 through 280.67 (see checklist items ST.80.3.US. through ST.80.8.US) must be complied with if a release is suspected or confirmed.)</p> <p>(NOTE: If the UST is empty, the following release detection operation and maintenance testing and inspections are not required:</p> <ul style="list-style-type: none"> <li>– 40 CFR 280.30 through 280.36 (see checklist items ST.45.1.US, ST.45.2.US, ST.50.1.US, ST.55.1.US, ST.60.2.US, ST.90.1.US, and ST.90.2.US)</li> <li>– 40 CFR 280.40 through 280.45 (see checklist item ST.60.1.US, ST.65.1.US, ST.70.1.US, ST.80.1.US, and ST.90.1.US)</li> </ul> <p>(NOTE: The UST system is empty when all materials have been removed using commonly employed practices so that no more than 2.5 cm (1 in.) of residue or less than 0.3 percent by weight of total capacity of the UST system remain in the system.)</p> <p>Verify that, if a UST system is temporarily closed for 3 mo or more, the vent lines are left open and functioning and all other lines, pumps, manways, and ancillary equipment are capped and secured.</p>

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<p><b>ST.95.2.US.</b> Notification must be given to the implementing agency for any permanent closure or change in service 30 days in advance or within a reasonable time frame as determined by the implementing agency (40 CFR 280.71(a)) [<b>Revised March 1995; Revised March 2000; Revised July 2015</b>].</p> <p><b>ST.95.3.US.</b> UST closure must be done according to specific requirements (40 CFR 280.71(b)) [<b>Revised March 1995; Revised March 2000; Revised July 2015</b>].</p>	<p>Verify that, if the UST has been temporarily closed for more than 12 mo, the UST must be permanently closed if the UST does not meet either performance standards for a new UST in 40 CFR 280.20, or an upgraded UST in 40 CFR 280.21 (see checklist items ST.25.1.US., ST.35.1.US., ST.35.3.US., and ST.35.4.US.) except that spill and overfill requirements do not have to be met.</p> <p>Verify that, if the UST has been temporarily closed for more than 12 mo and does not meet the standards for new or upgraded USTs, it is permanently closed at the end of this 12 mo period in accordance with 40 CFR 280.71 through 280.74 (see checklist items ST.90.2.US. and ST.95.1.US. through ST.95.7.US.) unless the implementing agency has provided an extension of the 12 mo temporary closure period.</p> <p>(NOTE: A site assessment has to be done before applying for an extension.)</p> <p>(NOTE: To determine applicability of this checklist item, see the definitions for:</p> <ul style="list-style-type: none"> <li>– Underground Storage Tanks</li> <li>– Excluded USTs</li> <li>– Partially Excluded USTs [this checklist item does not apply to partially excluded USTs].)</li> </ul> <p>Determine if there are plans to permanently close or make a change in service to any USTs.</p> <p>Verify that the implementing agency was notified of intent to permanently closure or make the change-in-service at least 30 days, or within a reasonable time frame as determined by the implementing agency, before start of the activity unless the activity is in response to corrective action.</p> <p>Verify that the required assessment of the excavation zone (40 CFR 280.72, see checklist item ST.95.5.US) is done after notifying the implementing agency but before completion of the permanent closure or change-in-service.</p> <p>(NOTE: To determine applicability of this checklist item, see the definitions for:</p> <ul style="list-style-type: none"> <li>– Underground Storage Tanks</li> <li>– Excluded USTs</li> <li>– Partially Excluded USTs [this checklist item does not apply to partially excluded USTs].)</li> </ul> <p>Verify that tanks being permanently closed are emptied and cleaned by removing all liquids and accumulated sludges.</p> <p>Verify that, if USTs have been, or are being, permanently closed, one of the following methods is used:</p> <ul style="list-style-type: none"> <li>– it is removed from the ground</li> </ul>

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<p><b>ST.95.4.US.</b> Prior to a change-in-service, tanks must be emptied and cleaned and a site assessment conducted (40 CFR 280.71(c)) [<b>Revised March 1995; Revised March 2000; Revised July 2015</b>].</p> <p><b>ST.95.5.US.</b> Prior to permanent closure or change-in-service, measurements must be made for the presence of a release where contamination is most likely to be present at the</p>	<ul style="list-style-type: none"> <li>– it is left in place with the contents removed, and filled with an inert solid material</li> <li>– closed in place in a manner approved by the implementing agency.</li> </ul> <p>Determine if there are any possible abandoned USTs, and if there are plans to close the UST in an appropriate manner.</p> <p>(NOTE: The following cleaning and closure procedures may be used to comply with this checklist item:</p> <ul style="list-style-type: none"> <li>– API Recommended Practice RP 1604, “Closure of Underground Petroleum Storage Tanks”</li> <li>– API Standard 2015, “Safe Entry and Cleaning of Petroleum Storage Tanks, Planning and Managing Tank Entry From Decommissioning Through Recommissioning”</li> <li>– API Recommended Practice 2016, “Guidelines and Procedures for Entering and Cleaning Petroleum Storage Tanks”</li> <li>– API Recommended Practice RP 1631, “Interior Lining and Periodic Inspection of Underground Storage Tanks”</li> <li>– NFPA Standard 326, “Standard for the Safeguarding of Tanks and Containers for Entry, Cleaning, or Repair”</li> <li>– (National Institute for Occupational Safety and Health Publication 80–106, “Criteria for a Recommended Standard . . . Working in Confined Space” may be used as guidance for conducting safe closure procedures at some hazardous substance tanks.)</li> </ul> <p>(NOTE: To determine applicability of this checklist item, see the definitions for:</p> <ul style="list-style-type: none"> <li>– Underground Storage Tanks</li> <li>– Excluded USTS</li> <li>– Partially Excluded USTs [this checklist item does not apply to partially excluded USTs].)</li> </ul> <p>(NOTE: Continued use of an UST system to store a non-regulated substance is considered a change-in-service.)</p> <p>Verify that, prior to the change-in-service, the tank was emptied and cleaned by removing all liquid and accumulated sludge.</p> <p>Verify that, prior to the change-in-service, a site assessment in accordance with 40 CFR 280.72 (see checklist item ST.95.5.US.) was done.</p> <p>(NOTE: To determine applicability of this checklist item, see the definitions for:</p> <ul style="list-style-type: none"> <li>– Underground Storage Tanks</li> <li>– Excluded USTS</li> <li>– Partially Excluded USTs [this checklist item does not apply to partially excluded USTs].)</li> </ul>

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<p>site (40 CFR 280.72) [<b>Revised March 1995; Revised March 2000; Revised July 2015</b>].</p>	<p>Verify that prior to permanent closure or change in service, measurements for the presence of a release are done where contamination is most likely to be present at the UST site.</p> <p>Verify that in selecting sample types, sample locations, and measurement methods, owners and operators have considered the method of closure, the nature of the stored substances, the type of backfill, the depth to groundwater, and other appropriate factors for identifying the presence of a release.</p> <p>(NOTE: These requirements are satisfied if one of the leak detection methods outlined in 40 CFR 280.43(e) [vapor monitoring] and 280.43(f) [groundwater monitoring] [see Appendix 10-3] are in operation at the time of closure and there is no indication of release.)</p> <p>Verify that in the event contaminated soils, contaminated groundwater or free product as a liquid or vapor is discovered, corrective action is undertaken in accordance with 40 CFR 280.60 through 280.67 (see checklist items ST.80.3.US. through ST.80.8.US).</p>
<p><b>ST.95.6.US.</b> The excavation zone of UST systems permanently closed prior to 22 December 1988 must be assessed and the UST closed according to current standards when directed by the implementing agency (40 CFR 280.73) [<b>Revised March 1995; Reviewed March 2000; Revised July 2015</b>].</p>	<p>(NOTE: To determine applicability of this checklist item, see the definitions for:</p> <ul style="list-style-type: none"> <li>– Underground Storage Tanks</li> <li>– Excluded USTS</li> <li>– Partially Excluded USTs [this checklist item does not apply to partially excluded USTs].)</li> </ul> <p>Determine if there are any USTs which were permanently closed prior to 22 December 1988.</p> <p>Verify that the excavation zone of these USTs has been assessed and cleanup done as needed when directed to do so by the implementing agency.</p>
<p><b>ST.95.7.US.</b> Closure records shall be maintained for 3 yr (40 CFR 280.74) [<b>Revised March 1995; Revised March 2000; Revised July 2015</b>].</p>	<p>(NOTE: To determine applicability of this checklist item, see the definitions for:</p> <ul style="list-style-type: none"> <li>– Underground Storage Tanks</li> <li>– Excluded USTS</li> <li>– Partially Excluded USTs [this checklist item does not apply to partially excluded USTs].)</li> </ul> <p>Verify that records demonstrating compliance with closure requirements are maintained in accordance with 280.34 (see checklist item ST.90.1.US and ST.90.2.US).</p> <p>Verify that results of excavation zone assessments are maintained for at least 3 yr after completion of permanent closure or change-in-service in one of the following ways:</p> <ul style="list-style-type: none"> <li>– by the owners and operators who took the UST out of service</li> </ul>

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<b>ST.95.8.US.</b> Checklist item moved [Added March 2000; Moved July 2015].	<ul style="list-style-type: none"> <li>– by the current owners and operators of the UST system site</li> <li>– by mailing the records to the implementing agency if they cannot be maintained at the closed facility.</li> </ul> <p>(NOTE: This checklist item about corrective action plans in response to release detection was moved to the Topic Heading concerning release detection into checklist item ST.80.8.US.)</p>



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<b>HAZARDOUS WASTE STORAGE TANKS</b>  <b>ST.100</b> <b>Small Quantity Generators (SQGs)</b>  <b>ST.100.1.US.</b> SQGs must comply with certain storage tank requirements (40 CFR 262.16(b)(3)(ii) through 262.16(b)(3)(iv) and 262.16(b)(6)(ii)) <b>[Revised July 2006, Revised January 2017]</b> .	<p>Verify that:</p> <ul style="list-style-type: none"> <li>– when being used for the treatment or accumulation of ignitable or reactive waste, and the mixture or commingling of incompatible wastes, or incompatible wastes and materials, the tank prevents:             <ul style="list-style-type: none"> <li>– generation of extreme heat or pressure, fire or explosions, or violent reactions</li> <li>– production of uncontrolled toxic mists, fumes, dusts, or gases in quantities that would threaten human health</li> <li>– production of uncontrolled flammable fumes or gases in sufficient quantities that would pose a risk of fire or explosion</li> <li>– damage to structural integrity of the device or facility containing the waste</li> <li>– threats to human health or the environment through other means</li> </ul> </li> <li>– no treatment reagent or hazardous wastes are placed in the tank that would cause the tank or its inner liner to rupture, leak, corrode, or otherwise fail before the end of its intended life</li> <li>– uncovered tanks have at least 60 cm (2 ft) of freeboard unless the tank has a containment structure (e.g., dike or trench), drainage control system, or a diversion structure (e.g., standby tank) with a capacity that equals or exceeds the volume of the top 60 cm (2 ft) of the tank</li> <li>– where hazardous waste is continuously fed into a tank, the tank is equipped with a means to stop the in-flow (e.g., waste feed cutoff system or bypass system to a stand-by tank).</li> </ul> <p>Verify that SQGs accumulating hazardous waste in tanks marks the tanks as follows:</p> <ul style="list-style-type: none"> <li>– with the words “Hazardous Waste”</li> <li>– with an indication of the hazards of the contents; examples include, but are not limited to:             <ul style="list-style-type: none"> <li>– the applicable hazardous waste characteristic(s) (<i>i.e.</i>, ignitable, corrosive, reactive, toxic)</li> <li>– hazard communication consistent with the DoT requirements at 49 CFR 172 subpart E (labeling) or subpart F (placarding)</li> <li>– a hazard statement or pictogram consistent with the OSHA Hazard Communication Standard at 29 CFR 1910.1200</li> <li>– a chemical hazard label consistent with the NFPA code 704.</li> </ul> </li> </ul>

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	<p>Verify that the SQG uses inventory logs, monitoring equipment, or other records to demonstrate that hazardous waste has been emptied within 180 days of first entering the tanks if using a batch process.</p> <p>(NOTE: For a continuous flow process tank, the SQG must demonstrate that estimated volumes of hazardous waste entering the tank daily exit the tank within 180 days of first entering.)</p> <p>Verify that inventory logs or records are kept onsite and are readily available for inspection.</p> <p>Verify that the following are inspected at the indicated times where present:</p> <ul style="list-style-type: none"> <li>– discharge control equipment (e.g., waste feed cutoff systems, by-pass systems, and drainage systems) at least once each operating day to ensure it is in good working order</li> <li>– data gathered from monitoring equipment (e.g., pressure and temperature gauges) at least once each operating day to ensure the tank is being operated according to its design</li> <li>– waste level in tank at least once each operating day to ensure any required freeboard is present</li> <li>– construction material of the tank for corrosion or leakage at least weekly to detect corrosion or leaking of fixtures or seams</li> <li>– construction materials of, and the area immediately surrounding discharge confinement structures (e.g., dikes) at least weekly to detect erosion or obvious signs of leakage (e.g., wet spots or dead vegetation).</li> </ul> <p>Verify that, the SQG remedies any deterioration or malfunction of equipment or structure revealed by the inspection on a schedule which ensures the problem does not lead to an environmental or human health hazard.</p> <p>Verify that, where a hazard is imminent or has already occurred, remedial action was taken immediately.</p> <p>Verify that SQGs that accumulate hazardous waste in tanks or tank systems that have full secondary containment and that either use leak detection equipment to alert facility personnel to leaks, or implement established workplace practices to ensure leaks are promptly identified, inspect at least weekly, where applicable, the following areas:</p> <ul style="list-style-type: none"> <li>– discharge control equipment (e.g., waste feed cutoff systems, by-pass systems, and drainage systems) at least once each operating day to ensure it is in good working order</li> <li>– data gathered from monitoring equipment (e.g., pressure and temperature gauges) at least once each operating day to ensure the tank is being operated according to its design</li> </ul>

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<p><b>ST.100.2.US.</b> Tank systems at SQGs must comply with requirements for ignitable, reactive, or incompatible wastes (40 CFR 262.16(b)(3)(vii)) [Citation Revised July 2006; Revised January 2017].</p>	<ul style="list-style-type: none"> <li>– waste level in tank at least once each operating day to ensure any required freeboard is present</li> <li>– construction material of the tank for corrosion or leakage at least weekly to detect corrosion or leaking of fixtures or seams</li> <li>– construction materials of, and the area immediately surrounding discharge confinement structures (e.g., dikes) at least weekly to detect erosion or obvious signs of leakage (e.g., wet spots or dead vegetation).</li> </ul> <p>Verify that use of the alternate inspection schedule is documented in the SQG's operating record and includes a description of the established workplace practices at the SQG.</p> <p>Verify that ignitable or reactive wastes are not placed in a tank system unless one of the following is done:</p> <ul style="list-style-type: none"> <li>– the waste is treated, rendered, or mixed before or immediately after placement in the tank system so that the resulting waste, mixture, or dissolution of material no longer meets the definition of reactive or ignitable waste and the following are prevented: <ul style="list-style-type: none"> <li>– generation of extreme heat or pressure, fire or explosions, or violent reactions</li> <li>– production of uncontrolled toxic mists, fumes, dusts, or gases in quantities that would threaten human health</li> <li>– production of uncontrolled flammable fumes or gases in sufficient quantities that would pose a risk of fire or explosion</li> <li>– damage to structural integrity of the device or facility containing the waste</li> <li>– threats to human health or the environment through other means</li> </ul> </li> <li>– the waste is accumulated or treated in such a way that it is protected from any material or conditions that may cause the waste to ignite or react</li> <li>– the tank is used solely for emergencies.</li> </ul> <p>Verify that an SQG treating or accumulating ignitable or reactive waste in covered tanks complies with the buffer zone requirements for tanks in Tables 2-1 through 2-6 of the National Fire Protection Association's (NFPA's) <i>Flammable and Combustible Liquids Code</i> (1977 or 1981).</p> <p>Verify that incompatible waste, or incompatible wastes and materials, are not placed in the same tank system unless the following are prevented:</p> <ul style="list-style-type: none"> <li>– generation of extreme heat or pressure, fire or explosions, or violent reactions</li> <li>– production of uncontrolled toxic mists, fumes, dusts, or gases in quantities that would threaten human health</li> <li>– production of uncontrolled flammable fumes or gases in sufficient quantities that would pose a risk of fire or explosion</li> <li>– damage to structural integrity of the device or facility containing the waste</li> </ul>

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<p><b>ST.100.3.US.</b> SQGs must comply with specific tank closure requirements (40 CFR 262.16(b)(3)(vi)) [Citation Revised July 2006, Revised January 2017].</p>	<p>– threats to human health or the environment through other means.</p> <p>Verify that hazardous waste is not placed in an unwashed tank system that previously held an incompatible waste or material unless the following are prevented:</p> <ul style="list-style-type: none"> <li>– generation of extreme heat or pressure, fire or explosions, or violent reactions</li> <li>– production of uncontrolled toxic mists, fumes, dusts, or gases in quantities that would threaten human health</li> <li>– production of uncontrolled flammable fumes or gases in sufficient quantities that would pose a risk of fire or explosion</li> <li>– damage to structural integrity of the device or facility containing the waste</li> <li>– threats to human health or the environment through other means.</li> </ul> <p>Verify that tank systems in the process of being closed or closed had all hazardous waste removed from tanks, discharge control equipment, and discharge confinement structures.</p> <p>Verify that all removed waste is managed according to its correct characterization.</p>

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<p><b>HAZARDOUS WASTE STORAGE TANKS</b></p> <p><b>ST.105</b>  <b>Generators</b></p> <p><b>ST.105.1.US.</b> Secondary containment is required for specific types of tank systems used to store or treat hazardous waste at hazardous waste generators (40 CFR 262.17(a)(2), 265.190(a), 265.190(b), and 265.193(a)) [Revised July 2006; Citation Revised January 2017].</p> <p><b>ST.105.2.US.</b> Secondary containment on tank systems at hazardous waste generators must meet specific requirements (40 CFR 262.17(a)(2), 265.190(a), and 265.193(b) through 265.193(d)) [Citation Revised January 2017].</p>	<p>(NOTE: See Appendix 10-4 for guidance on the schedule for implementation of air emissions standards in 40 CFR 265.1080 through 265.1091. Also, in relation to the requirements for air emissions standard, see the definition of Exempted Hazardous Waste Management Units.)</p> <p>Verify that, in order to prevent the release of hazardous waste or hazardous constituents to the environment, secondary containment that meets the following requirements is provided:</p> <ul style="list-style-type: none"> <li>– for all new and existing tank systems or components, prior to their being put into service</li> <li>– for tank systems that store or treat materials that become hazardous wastes, within 2 yr of the hazardous waste listing, or when the tank system has reached 15 yr of age, whichever comes later.</li> </ul> <p>(NOTE: The following are exempt from these requirements:</p> <ul style="list-style-type: none"> <li>– tank systems that are used to store or treat hazardous waste that contains no free liquids and are situated inside a building with an impermeable floor</li> <li>– tank systems, including sumps, which serve as part of a secondary containment system to collect or contain releases of hazardous wastes.)</li> </ul> <p>(NOTE: See Appendix 10-4 for guidance on the schedule for implementation of air emissions standards in 40 CFR 265.1080 through 265.1091. Also, in relation to the requirements for air emissions standard, see the definition of Exempted Hazardous Waste Management Units.)</p> <p>Verify that secondary containment meets the following criteria:</p> <ul style="list-style-type: none"> <li>– it is designed, installed, and operated to prevent the migration of liquid out of the system</li> <li>– it is capable of detecting and collecting releases and accumulated liquids until removal is possible</li> <li>– it is constructed of or lined with materials compatible with the wastes</li> <li>– it is placed on a foundation or base that can provide appropriate support and prevent failure due to settlement, compression, or upset</li> <li>– a leak-detection system is present that is designed and operated to detect the failure of either the primary or secondary containment structure or the release of any hazardous waste within 24 h or the earliest practicable time</li> <li>– it is sloped or designed to drain and remove liquids from leaks, spills, or precipitation.</li> </ul>

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<p><b>ST.105.3.US.</b> External liners, vaults, and double-walled tanks at generators are required to meet specific standards (40 CFR 262.17(a)(2), 265.190(a), and 265.193(e)) [Citation Revised January 2017].</p>	<p>Verify that spilled or leaked wastes are removed from secondary containment within 24 h or as timely as possible.</p> <p>Verify that secondary containment for tanks includes one or more of the following:</p> <ul style="list-style-type: none"> <li>– a liner (external to the tank)</li> <li>– a vault</li> <li>– a double-walled tank</li> <li>– an equivalent approved device.</li> </ul> <p>(NOTE: Tank systems that are used to store or treat hazardous waste that contains no free liquids and are situated inside a building with an impermeable floor are exempt from these requirements.)</p> <p>(NOTE: See Appendix 10-4 for guidance on the schedule for implementation of air emissions standards in 40 CFR 265.1080 through 265.1091. Also, in relation to the requirements for air emissions standard, see the definition of Exempted Hazardous Waste Management Units.)</p> <p>Verify that external liner systems meet the following requirements:</p> <ul style="list-style-type: none"> <li>– they are designed and operated so that 100 percent of the capacity of the largest tank within the boundary would be contained</li> <li>– they prevent run-on and infiltration of precipitation into the secondary containment unless the collection system has sufficient capacity to handle run-on or infiltration</li> <li>– it is free of cracks or gaps</li> <li>– it surrounds the tank completely and covers all surrounding earth likely to come into contact with the waste if there is a release</li> <li>– capacity is sufficient to contain precipitation from a 25-yr, 24-h rainfall event.</li> </ul> <p>Verify that vault systems meet the following criteria:</p> <ul style="list-style-type: none"> <li>– it will contain 100 percent of the capacity of the largest tank within its boundary</li> <li>– it prevents run-on and infiltration of precipitation unless there is sufficient excess capacity</li> <li>– it is constructed with chemical-resistant water stops at all joints</li> <li>– it has an impermeable interior coating that is compatible with the wastes it contains</li> <li>– has a means to protect against the formation and ignition of vapors within the vault if the waste is ignitable or reactive</li> <li>– it has an exterior moisture barrier or otherwise operated to prevent migration of moisture into the vault.</li> </ul>

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<p><b>ST.105.4.US.</b> Tank ancillary equipment at hazardous waste generators must also be provided with secondary containment (40 CFR 262.17(a)(2), 265.190(a), and 265.193(f)) [Citation Revised January 2017].</p>	<p>Verify that double-walled tanks meet the following criteria:</p> <ul style="list-style-type: none"> <li>– it is designed as an integral structure so that any release is contained by the outer shell</li> <li>– it is protected from both corrosion of the primary tank and the external surface of the outer shell if constructed of metal</li> <li>– it has a built-in continuous leak detection system capable of detecting a release within 24 h.</li> </ul> <p>(NOTE: Tank systems that are used to store or treat hazardous waste that contains no free liquids and are situated inside a building with an impermeable floor are exempt from these requirements.)</p> <p>(NOTE: See Appendix 10-4 for guidance on the schedule for implementation of air emissions standards in 40 CFR 265.1080 through 265.1091. Also, in relation to the requirements for air emissions standard, see the definition of Exempted Hazardous Waste Management Units.)</p> <p>Verify that ancillary equipment, except for the following, has secondary containment:</p> <ul style="list-style-type: none"> <li>– aboveground piping that is visually inspected for leaks on a daily basis</li> <li>– welded flanges, welded joints, and welded connections that are visually inspected for leaks on a daily basis</li> <li>– sealless or magnetic coupling pumps and sealless valves, that are visually inspected for leaks on a daily basis</li> <li>– pressurized aboveground piping systems with automatic shutoff valves that are visually inspected for leaks on a daily basis.</li> </ul> <p>(NOTE: Tank systems that are used to store or treat hazardous waste that contains no free liquids and are situated inside a building with an impermeable floor are exempt from these requirements.)</p>
<p><b>ST.105.5.US.</b> Existing tank systems that do not have secondary containment are required to meet specific requirements (40 CFR 262.17(a)(2), 265.190(a), 265.191(a) through 265.191(c), and 265.193(i)) [Revised July 2006; Citation Revised January 2017].</p>	<p>(NOTE: See Appendix 10-4 for guidance on the schedule for implementation of air emissions standards in 40 CFR 265.1080 through 265.1091. Also, in relation to the requirements for air emissions standard, see the definition of Exempted Hazardous Waste Management Units.)</p> <p>Verify that the owner or operator determines that the tank system is not leaking or in unfit for use.</p> <p>Verify that existing tank systems without secondary containment meet the following:</p> <ul style="list-style-type: none"> <li>– for nonenterable underground tanks, a leak test is conducted annually</li> </ul>

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<p><b>ST.105.6.US.</b> Generators with new tank systems must submit to the regional administrator a written assessment review certified by an independent, qualified, registered professional engineer to certify that the tank was installed according to specific standards (40 CFR 262.17(a)(2) and 265.192) [Revised July 2006; Citation Revised January 2017].</p>	<p>– for other than nonenterable underground tanks and for ancillary equipment, either a leak test, or an internal inspection and/or other tank integrity examination certified by a qualified professional engineer.</p> <p>Verify that a written assessment reviewed and certified by a professional engineer is maintained.</p> <p>Verify that tank systems which store or treat materials that become hazardous waste after 14 July 1986 are assessed within 12 mo after the waste becomes hazardous.</p> <p>(NOTE: Tank systems that are used to store or treat hazardous waste that contains no free liquids and are situated inside a building with an impermeable floor are exempt from these requirements.)</p> <p>(NOTE: See Appendix 10-4 for guidance on the schedule for implementation of air emissions standards in 40 CFR 265.1080 through 265.1091. Also, in relation to the requirements for air emissions standard, see the definition of Exempted Hazardous Waste Management Units.)</p> <p>Determine if there are any new tank systems.</p> <p>Verify that owners or operators of new tank systems or components ensure that the foundation, structural support, seams, connections, and pressure controls (if applicable) are adequately designed and that the tank system has sufficient structural strength, compatibility with the waste(s) to be stored or treated, and corrosion protection so that it will not collapse, rupture, or fail.</p> <p>Verify that the owner or operator obtains a written assessment reviewed and certified by a qualified Professional Engineer that the system has sufficient structural integrity and is acceptable for the storing and treating of hazardous waste.</p> <p>Verify that, when the tanks are installed, they are handled so as to prevent damage to the tank and any backfill material that is used is a noncorrosive, porous, homogeneous substance.</p> <p>Verify that, prior to covering, enclosing, or placing a new tank system or component in use, an independent, qualified installation inspector or a qualified Professional Engineer, either of whom is trained and experienced in the proper installation of tank systems, inspects the system or component.</p> <p>Verify that the written assessments from the individuals required to certify the tank and supervise the installation of the tank are kept on file.</p>
<p><b>ST.105.7.US.</b> Tanks used for hazardous waste treatment or storage at generators must follow certain operating and</p>	<p>(NOTE: See Appendix 10-4 for guidance on the schedule for implementation of air emissions standards in 40 CFR 265.1080 through 265.1091. Also, in relation to the requirements for air emissions standard, see the definition of Exempted Hazardous Waste Management Units.)</p>

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<p>marking requirements (40 CFR 262.17(a)(2), 262.17(a)(5)(ii), and 265.194) [Revised January 2017].</p> <p><b>ST.105.8.US.</b> Tank systems at generators must comply with requirements for ignitable, reactive, or incompatible wastes (40 CFR 262.17(a)(2), 265.198, and 265.199) [Citation Revised January 2017].</p>	<p>Verify that hazardous wastes or treatment reagents are not placed in tanks if they could cause the tank system (including ancillary equipment, or containment system) to fail.</p> <p>Verify that appropriate measures are taken to prevent overfill, including:</p> <ul style="list-style-type: none"> <li>– spill prevention controls</li> <li>– overfill prevention controls</li> <li>– maintenance of sufficient freeboard to prevent overtopping by wave, wind action or precipitation for uncovered tanks.</li> </ul> <p>Verify that LQGs accumulating hazardous waste in tanks marks the tanks as follows:</p> <ul style="list-style-type: none"> <li>– with the words “Hazardous Waste”</li> <li>– with an indication of the hazards of the contents; examples include, but are not limited to: <ul style="list-style-type: none"> <li>– the applicable hazardous waste characteristic(s) (<i>i.e.</i>, ignitable, corrosive, reactive, toxic)</li> <li>– hazard communication consistent with the DoT requirements at 49 CFR 172 subpart E (labeling) or subpart F (placarding)</li> <li>– a hazard statement or pictogram consistent with the OSHA Hazard Communication Standard at 29 CFR 1910.1200</li> <li>– a chemical hazard label consistent with the NFPA code 704.</li> </ul> </li> </ul> <p>Verify that the LQG uses inventory logs, monitoring equipment, or other records to demonstrate that hazardous waste has been emptied within 90 days of first entering the tanks if using a batch process.</p> <p>(NOTE: For a continuous flow process tank, the LQG must demonstrate that estimated volumes of hazardous waste entering the tank daily exit the tank within 90 days of first entering.)</p> <p>Verify that inventory logs or records are kept onsite and are readily available for inspection.</p> <p>(NOTE: See Appendix 10-4 for guidance on the schedule for implementation of air emissions standards in 40 CFR 265.1080 through 265.1091. Also, in relation to the requirements for air emissions standard, see the definition of Exempted Hazardous Waste Management Units.)</p> <p>Verify that ignitable or reactive wastes are not placed in a tank system, unless one of the following is met:</p>

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<p><b>ST.105.9.US.</b> Generators must conduct inspections of tank systems and associated equipment (40 CFR 262.17(a)(2) and 265.195) [Revised May 1997; Revised July 2006; Citation Revised January 2017].</p>	<ul style="list-style-type: none"> <li>– the waste is treated, rendered, or mixed before or immediately after placement in the tank system so that it is no longer reactive or ignitable and the minimum requirements for reactive and ignitable wastes are met</li> <li>– the waste is treated or stored in such a way that it is protected from any material or conditions that may cause the waste to ignite or react</li> <li>– the tank system is used solely for emergencies.</li> </ul> <p>Verify that the minimum protective distances between waste management areas and any public ways, streets, alleys, or an adjoining property line that can be built upon as required in Tables 2-1 through 2-6 of the NFPA's <i>Flammable and Combustible Liquids Code</i> are maintained.</p> <p>Verify that incompatible waste, or incompatible wastes and materials, are not placed in the same tank system unless minimum safety requirements are met.</p> <p>Verify that hazardous waste is not placed in a tank system that has not been decontaminated and that previously held an incompatible waste or material unless minimum safety requirements are met.</p> <p>Verify that the owner or operator develops and follows a schedule and procedure for inspecting overfill controls.</p> <p>Verify that the owner or operator inspects at least once each operating day data gathered from monitoring and leak detection equipment (e.g., pressure or temperature gauges, monitoring wells) to ensure that the tank system is being operated according to its design.</p> <p>Verify that, in addition, the owner or operator inspects the following at least once each operating day:</p> <ul style="list-style-type: none"> <li>– overfill/spill control equipment to ensure it is in good working order</li> <li>– aboveground portions of the tank system, if any, to detect corrosion or releases of waste</li> <li>– the construction materials and the area immediately surrounding the externally accessible portion of the tank system, including the secondary containment system (e.g., dikes) to detect erosion or signs of releases of hazardous waste (e.g., wet spots, dead vegetation).</li> </ul> <p>(NOTE: Owners or operators of tank systems that either use leak detection systems to alert facility personnel to leaks, or implement established workplace practices to ensure leaks are promptly identified, must inspect at least weekly the following:</p> <ul style="list-style-type: none"> <li>– overfill/spill control equipment to ensure it is in good working order</li> <li>– aboveground portions of the tank system, if any, to detect corrosion or releases of waste</li> <li>– the construction materials and the area immediately surrounding the externally accessible portion of the tank system, including the secondary containment</li> </ul>

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<p><b>ST.105.10.US.</b> Tank systems or secondary containment systems at generators from which there has been a leak or spill or which have been declared unfit for use must be removed from service immediately and meet specific requirements (40 CFR 262.17(a)(2) and 265.196) [Revised June 1996; Citation Revised January 2017].</p>	<p>system (e.g., dikes) to detect erosion or signs of releases of hazardous waste (e.g., wet spots, dead vegetation).</p> <p>Use of the alternate inspection schedule must be documented in the facility's operating record. This documentation must include a description of the established workplace practices at the facility.)</p> <p>(NOTE: Performance Track member facilities may inspect on a less frequent basis, upon approval by the Director, but must inspect at least once each month. To apply for a less than weekly inspection frequency, the Performance Track member facility must follow the procedures described in 40 CFR 264.15(b)(5) or 265.15(b)(5).)</p> <p>Verify that ancillary equipment that is not provided with secondary containment is inspected at least once each operating day.</p> <p>Verify that the owner or operator inspects cathodic protection systems, if present, according to, at a minimum, the following schedule to ensure that they are functioning properly:</p> <ul style="list-style-type: none"> <li>– the proper operation of the cathodic protection system is confirmed within 6 mo after initial installation and annually thereafter</li> <li>– all sources of impressed current are inspected and/or tested, as appropriate, at least bimonthly (i.e., every other month).</li> </ul> <p>(NOTE: The practices described in the National Association of Corrosion Engineers (NACE) standard, “Recommended Practice (RP-02-85)—Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems,” and the American Petroleum Institute (API) Publication 1632, “Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems,” may be used, where applicable, as guidelines in maintaining and inspecting cathodic protection systems.)</p> <p>Verify that the owner or operator documents the inspections in the operating record of the facility.</p> <p>(NOTE: See Appendix 10-4 for guidance on the schedule for implementation of air emissions standards in 40 CFR 265.1080 through 265.1091. Also, in relation to the requirements for air emissions standard, see the definition of Exempted Hazardous Waste Management Units.)</p> <p>Verify that the following steps are taken:</p> <ul style="list-style-type: none"> <li>– the flow or addition of hazardous wastes to the tank is stopped</li> <li>– the hazardous waste is removed from the tank: <ul style="list-style-type: none"> <li>– within 24 h of leak detection (or other reasonable time as demonstrated by the owner/operator) remove as much waste from the tank as necessary to prevent further release and allow inspection and repair</li> </ul> </li> </ul>

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<p><b>ST.105.11.US.</b> Hazardous waste generators are required to follow specific procedures when closing a tank system (40 CFR 262.17(a)(2), 265.197(a), and 265.197(b)) [Citation Revised January 2017].</p>	<ul style="list-style-type: none"> <li>– within 24 h (or in as timely a manner as is possible to prevent harm to human health and the environment) remove waste released to secondary containment system</li> <li>– a visual inspection of the release is done and: <ul style="list-style-type: none"> <li>– action is taken to prevent further migration to soils or surface or ground water</li> <li>– visible contamination of soil and surface water is removed and disposed.</li> </ul> </li> </ul> <p>Verify that notification is made within 24 h for any release to the environment to the regional administrator except for releases of 0.45 kg (1 lb) or less that are immediately contained and cleaned up.</p> <p>Verify that a report is submitted within 30 days containing the following information:</p> <ul style="list-style-type: none"> <li>– likely route of migration</li> <li>– characteristics of the surrounding soil</li> <li>– results of any monitoring or sampling</li> <li>– proximity to downgradient drinking water, surface water, and population areas</li> <li>– description of response actions taken or planned.</li> </ul> <p>Verify that the tank and/or secondary containment is repaired prior to its return to service and that extensive repairs are certified by an independent, qualified, registered, professional engineer.</p> <p>Verify that, when the release was from a component that was without secondary containment, secondary containment features were installed before the tank was returned to service.</p> <p>Verify that, if leaking components are replaced, the replacement complies with the relevant requirements for new tank systems.</p> <p>(NOTE: Reports of hazardous waste releases made pursuant to 40 CFR 302 will satisfy the reporting requirements of this part.)</p> <p>(NOTE: See Appendix 10-4 for guidance on the schedule for implementation of air emissions standards in 40 CFR 265.1080 through 265.1091. Also, in relation to the requirements for air emissions standard, see the definition of Exempted Hazardous Waste Management Units.)</p> <p>Determine if any tank systems have been closed.</p> <p>Verify that all waste residues, contaminated containment system components, contaminated soils, and structures and equipment contaminated with waste have been removed or decontaminated.</p>

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<p><b>ST.105.12.US.</b> Certain tanks used for the storage of hazardous waste are required to meet Level 1 control standards for air emissions control (40 CFR 262.17(a)(2), 265.202, and 265.1085(a) through 265.1085(c)(3)) [Revised December 1997; Citation Revised January 2017].</p>	<p>Verify that, if it is not possible and/or practicable to remove or decontaminate all soils, the tank is closed and postclosure care performed as required for landfills.</p> <p>(NOTE: See Appendix 10-4 for guidance on the schedule for implementation of air emissions standards in 40 CFR 265.1080 through 265.1091.)</p> <p>(NOTE: See the definition of <i>Exempted Waste Management Unit</i> and <i>Exempted Hazardous Waste Storage Tanks</i> for exemptions to these requirements.)</p> <p>Verify that the following tanks meet the requirements for Tank Level 1 controls:</p> <ul style="list-style-type: none"> <li>– the hazardous waste in the tank has a maximum organic vapor pressure which is less than the maximum organic vapor pressure for the tank’s design capacity category as follows: <ul style="list-style-type: none"> <li>– for a tank design capacity equal to or greater than 151 m<sup>3</sup> [approx. 39,890 gal], the maximum organic vapor pressure limit for the tank is 5.2 kPa</li> <li>– for a tank design capacity equal to or greater than 75 m<sup>3</sup> [approx. 39,890 gal] but less than 151 m<sup>3</sup> [approx. 39,890 gal], the maximum organic vapor pressure limits for the tank is 27.6 kPa</li> <li>– for a tank design capacity less than 75 m<sup>3</sup> [approx. 39,890 gal], the maximum organic vapor pressure limit for the tank is 76.6 kPa</li> </ul> </li> <li>– the hazardous waste in the tank is not heated to a temperature that is greater than the temperature at which the maximum organic vapor pressure of the hazardous waste is determined</li> <li>– the hazardous waste in the tank is not treated using a waste stabilization process.</li> </ul> <p>Verify that tanks not required to meet the requirements for Level 1 controls meet the requirements for Level 2 controls.</p> <p>Verify that, when required, the following Level 1 controls are met:</p> <ul style="list-style-type: none"> <li>– the maximum organic vapor pressure for a hazardous waste is determined before the first time the waste is placed in the tank</li> <li>– new maximum organic vapor pressure determinations are made each time there are changes to the hazardous waste which could cause the maximum organic vapor pressure to increase to a level that is equal to or greater than the maximum organic vapor pressure limit for the tank capacity.</li> </ul> <p>Verify that tanks requiring Level 1 control are equipped with a fixed roof designed as follows:</p> <ul style="list-style-type: none"> <li>– the roof and its closure devices are designed to form a continuous barrier over the entire surface area of the hazardous waste in the tank</li> </ul>

<p style="text-align: center;"><b>COMPLIANCE CATEGORY</b>  <b>STORAGE TANK MANAGEMENT</b>  <b>U.S. TEAM Guide</b></p>	
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<p><b>ST.105.13.US.</b> Certain tanks are required to use Level 2 control standards for air emissions control (40 CFR 262.17(a)(2), 265.202, 265.1085(b)(2), 265.1085(d) through 265.1085(e)(2), 265.1085(f)(1) and 265.1085(f)(2), 265.1085(g)(1), 265.1085(g)(2), 265.1085(h), and 265.1085(i)(1) through 265.1085(i)(3)) <b>[Revised]</b></p>	<ul style="list-style-type: none"> <li>– the fixed roof is installed so that there are no visible cracks, holes, gaps, or other open spaces between roof section joints or between the interface of the roof edge and the tank wall</li> <li>– each opening in the fixed roof, and any manifold system associated with the fixed roof, meets one of the following: <ul style="list-style-type: none"> <li>– it is equipped with a closure device designed to operate so that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the opening and the closure device</li> <li>– connected by a closed vent system that is vented to a control device which removes or destroys organics in the vent stream and operates whenever hazardous waste is managed in the tank except during periods when access is necessary</li> </ul> </li> <li>– the fixed roof and closure devices are made of suitable materials that minimize exposure of the hazardous waste to the atmosphere to the extent practical and maintain the integrity of the fixed roof and closure devices throughout their intended service life.</li> </ul> <p>Verify that, for tanks requiring Level 1 control, whenever hazardous waste is in the tank, a fixed roof is installed with each closure device secured in the closed position except as follows:</p> <ul style="list-style-type: none"> <li>– opening of the closure devices or removal of the fixed roof is allowed in order to: <ul style="list-style-type: none"> <li>– provide access to the tank for performing routine inspections, maintenance, or other activities needed for normal operations</li> <li>– remove accumulated sludge or other residues at the bottom of the tank</li> </ul> </li> <li>– opening of spring loaded pressure vacuum relief valves, conservation vent, or similar type of pressure relief devices is allowed during normal operations in order to maintain the tanks internal pressure in accordance with design standards</li> <li>– opening of a safety device in order to avoid unsafe conditions.</li> </ul> <p>(NOTE: See Appendix 10-4 for guidance on the schedule for implementation of air emissions standards in 40 CFR 265.1080 through 265.1091.)</p> <p>(NOTE: See the definition of <i>Exempted Waste Management Unit</i> and <i>Exempted Hazardous Waste Storage Tanks</i> for exemptions to these requirements.)</p> <p>Verify that tanks not required to meet the requirements for Level 1 controls meet the requirements for Level 2 controls.</p> <p>Verify that, when using Level 2 controls, the following types of tanks are used:</p> <ul style="list-style-type: none"> <li>– a fixed roof tank equipped with an internal floating roof</li> <li>– a tank equipped with an external floating roof</li> <li>– a tank vented through a closed vent system to a control device</li> </ul>

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<b>April 1999; Citation Revised January 2017].</b>	<ul style="list-style-type: none"> <li>– a pressure tank</li> <li>– a tank located inside an enclosure that is vented through a closed vent system to an enclosed combustion control device.</li> </ul> <p>Verify that, when a fixed roof with an internal floating roof is used, the following requirements are met:</p> <ul style="list-style-type: none"> <li>– the internal floating roof is designed to float on the liquid surface except when the floating roof is supported by the leg supports</li> <li>– the internal floating roof is equipped with a continuous seal between the wall of the tank and the floating roof edge that meets one of the following requirements: <ul style="list-style-type: none"> <li>– a single continuous seal that is either a liquid mounted seal or a metallic shoe seal</li> <li>– two continuous seals mounted one above the other</li> </ul> </li> <li>– the internal floating roof meets the following specifications: <ul style="list-style-type: none"> <li>– each opening in a noncontact internal floating roof, except for automatic bleeder vents and rim space vents, provides a projection below the liquid surface</li> <li>– each opening in the internal floating roof is equipped with a gasketed cover or a gasketed lid except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains</li> <li>– each penetration of the internal floating roof for sampling has a slit fabric cover that covers at least 90 percent of the opening</li> <li>– each automatic bleeder vent and rim space vent is gasketed</li> <li>– each penetration of the internal floating roof that allows for passage of a ladder has a gasketed sliding cover</li> <li>– each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof has a flexible fabric sleeve seal or a gasketed sliding cover</li> </ul> </li> <li>– the tank is operated such that, when the floating roof is resting on the leg supports, the process of filling, emptying, or refilling is continuous and is completed as soon as practical</li> <li>– automatic bleeder vents are set at “closed” at all times when the roof is floating, except when the roof is being floated off or is being landed on the leg supports</li> <li>– before filling the tank, each cover, access hatch, gauge float well, or lid on any opening in their internal floating roof is bolted or fastened closed</li> <li>– rim space vents are set to “open” only when the internal floating roof is not floating or when the pressure beneath the rim exceeds recommended settings.</li> </ul> <p>Verify that, when an external floating roof is used to control air emissions, the following requirements are met:</p> <ul style="list-style-type: none"> <li>– the external floating roof is designed to float on the liquid surface except when the floating roof is supported by leg supports</li> </ul>

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	<ul style="list-style-type: none"> <li>– the floating roof is equipped with two continuous seals, one above the other, between the wall of the tank and the roof edge</li> <li>– the primary seal is a liquid mounted seal or a metallic shoe seal and the total area of the gaps between the tank wall and the primary seal do not exceed 21.2 cm<sup>2</sup>/m of tank diameter and the width of any portion of these gaps does not exceed 3.8 cm</li> <li>– if a metallic shoe seal is used for the primary seal, it is designed so that one end extends into the liquid in the tank and the other end extends a vertical distance of at least 61 cm above the liquid surface</li> <li>– the secondary seal is mounted above the primary seal and covers the annular space between the floating roof and the wall of the tank, and the total area of the gaps between the tank wall and the secondary seal do not exceed 21.2 cm<sup>2</sup>/m of tank diameter, and the width of any portion of these gaps does not exceed 1.3 cm</li> <li>– the external floating roof meets the following: <ul style="list-style-type: none"> <li>– each opening in a noncontact external floating roof provides a projection below the liquid surface except for automatic bleeder vents and rim space vents</li> <li>– each opening is equipped with a gasketed cover, seal, or lid except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves</li> <li>– each access hatch and each gauge float is equipped with a cover designed to be bolted or fastened when the cover is secured in the closed position</li> <li>– each automatic bleeder vent and each rim space vent is equipped with a gasket</li> <li>– each roof drain that empties into the liquid managed in the tank is equipped with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening</li> <li>– each unslotted and slotted guide pole well is equipped with a gasketed sliding cover or a flexible fabric sleeve seal</li> <li>– each unslotted guide pole is equipped with a gasketed cap on the end of the pole</li> <li>– each slotted guide pole is equipped with a gasketed float or other device to close off the liquid surface from the atmosphere</li> <li>– each gauge hatch and sample well is equipped with a gasketed cover.</li> </ul> </li> </ul> <p>Verify that, when an external floating roof is used, the tank is operated as follows:</p> <ul style="list-style-type: none"> <li>– when the floating roof is resting on the leg supports, the process of filling, emptying, or refilling is continuous and completed as soon as practical</li> <li>– each opening in the roof, except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, is secured and maintained in a closed position at all times except when the closure device is opened for access</li> <li>– covers on each access hatch and each gauge float well are bolted or fastened when secured in the closed position</li> <li>– automatic bleeder vents are set at “closed” at all times when the roof is floating except when the roof is being floated off or is being landed on the leg supports</li> </ul>

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	<ul style="list-style-type: none"> <li>– rim space vents are set to “open” only at those times that the roof is being floated off the roof leg supports or when the pressure beneath the rim seal exceeds the manufacturer’s setting</li> <li>– the cap on the end of each unslotted guide pole is secured in the closed position at all times except when measuring the level or collecting samples of the liquid in the tank</li> <li>– the cover on each gauge hatch or sample well is secured in the closed position at all times except when the hatch or well must be opened for access</li> <li>– both the primary seal and the secondary seal completely cover the annular space between the external floating roof and the wall of the tank in a continuous fashion except during inspection.</li> </ul> <p>Verify that, when air emissions are controlled from a tank by venting the tank to a control device, the following requirements are met:</p> <ul style="list-style-type: none"> <li>– the tank is covered by a fixed roof and vented directly through a closed vent system to a control device as follows: <ul style="list-style-type: none"> <li>– the fixed roof and its closure devices form a continuous barrier over the entire surface area of the liquid in the tank</li> <li>– each opening in the fixed roof not vented to a control device is equipped with a closure device</li> <li>– the fixed roof and the closure devices are made of suitable materials to minimize exposure of the hazardous waste to the atmosphere, and maintain the integrity of the fixed roof and closure devices throughout their intended service life</li> <li>– the closed vent system is designed according to the requirements in 40 CFR 265.1088</li> </ul> </li> <li>– whenever a hazardous waste is in the tank, the fixed roof is installed with each closure device secured in the closed position and the vapor headspace underneath the fixed roof is vented to the control device except as follows: <ul style="list-style-type: none"> <li>– to provide access to the tank for performing routine inspection, maintenance, or other activities needed for normal operations</li> <li>– to remove accumulated sludge or other residues from the bottom of the tank</li> <li>– opening of safety devices to avoid an unsafe condition.</li> </ul> </li> </ul> <p>Verify that, when a pressure tank is used to control emissions, the following requirements are met:</p> <ul style="list-style-type: none"> <li>– the tank is designed not to vent to the atmosphere as a result of compression of the vapor headspace in the tank during the filling of the tank to capacity</li> <li>– all tank openings are equipped with closure devices designed to operate with no detectable organic emissions</li> <li>– whenever a hazardous waste is in the tank, it is operated as a closed system that does not vent to the atmosphere except when a safety device is opened to avoid an unsafe condition or when purging inerts from the tank is required and</li> </ul>

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<p><b>ST.105.14.US.</b> Checklist item deleted <b>[Deleted January 1997]</b>.</p> <p><b>ST.105.15.US.</b> Checklist item deleted <b>[Deleted January 1997]</b>.</p> <p><b>ST.105.16.US.</b> Closed vent systems are required to be designed according to specific standards (40 CFR 262.17(a)(2), 265.202, and 265.1088) <b>[Revised December 1997; Citation Revised January 2017]</b>.</p>	<p>the purge stream is routed to a closed-vent system and there is an appropriate control device.</p> <p>Verify that, if air emissions are being controlled by using an enclosure vented through a closed vent system to an enclosed combustion control device, the following are met:</p> <ul style="list-style-type: none"> <li>– the tank is located inside an enclosure designed and operated according to the criteria for a permanent total enclosure as specified in 40 CFR 52.741, Appendix B</li> <li>– the enclosure is vented through a closed vent system to an enclosed, combustion control device that is designed and operated according to the standards in 40 CFR 265.1088.</li> </ul> <p>Checklist item deleted.</p> <p>Checklist item deleted.</p> <p>(NOTE: See Appendix 10-4 for guidance on the schedule for implementation of air emissions standards in 40 CFR 265.1080 through 265.1091.)</p> <p>(NOTE: See the definition of Exempted Waste Management Unit for exemptions to these requirements.)</p> <p>Verify that closed vent systems:</p> <ul style="list-style-type: none"> <li>– route the gases, vapors, and fumes emitted from the hazardous waste to a control device</li> <li>– are designed according to 265.1033(j)</li> <li>– meet the following if they contain bypass devices, except for low leg drains, high point bleeds, analyzer vents, open ended valves or lines, spring loaded pressure relief valves, and other fittings used for safety devices, that could be used to divert the gas or vapor stream before entering the control device: <ul style="list-style-type: none"> <li>– it is equipped with a flow indicator installed at the inlet to the bypass line used to divert gases and vapors from the closed vent system to the atmosphere at a point upstream of the control device inlet</li> <li>– it is equipped with a seal or locking device placed on the mechanism by which the bypass device is in the closed position so that the bypass device cannot be opened without breaking the seal or removing the lock</li> </ul> </li> <li>– seals or closure mechanism are inspected at least once a month.</li> </ul> <p>Verify that the control device is one of the following:</p>

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<p><b>ST.105.17.US.</b> When transferring hazardous waste to a tank, specific requirements must be met (40 CFR 262.17(a)(2), 265.202, and 265.1085(j)) <b>[Revised]</b></p>	<ul style="list-style-type: none"> <li>– a control device designed and operated to reduce the total organic content of the inlet vapor stream vented to the control device by at least 95 percent weight</li> <li>– an enclosed combustion device</li> <li>– a flare.</li> </ul> <p>Verify that, when using a closed vent system and control device, periods of planned routine maintenance to the control device during which the control device does not meet specifications do not exceed 240 h/yr.</p> <p>Verify that the following are met when using a carbon adsorption system:</p> <ul style="list-style-type: none"> <li>– all activated carbon in the control device is replaced on a regular basis after start-up if carbon adsorption is used</li> <li>– all carbon that is a hazardous waste and that is removed from the control device is managed according to 40 CFR 265.1033(m) regardless of the average volatile organic concentration</li> <li>– operation and maintenance is done in accordance with 265.1033(j) or 265.1033(j) if a control device is used other than a thermal vapor incinerator, flare, boiler, process heater, condenser, or carbon adsorption system</li> <li>– achievement of control device performance requirements is done by a performance test or design analysis for each control device except for the following: <ul style="list-style-type: none"> <li>– a flare</li> <li>– a boiler or process heater with a design heat input capacity of 44 MW or greater</li> <li>– a boiler or process heater into which the vent stream is introduced with the primary fuel</li> <li>– a boiler or industrial furnace burning hazardous waste for which a final permit has been issued and the unit is designed and operated in accordance with 40 CFR 266</li> <li>– a boiler or process heater for which the owner/operator has certified compliance</li> </ul> </li> <li>– carbon adsorption systems demonstrate achievement of performance requirements based on the total quantity of organics vented to the atmosphere from all carbon adsorption equipment that is used for organic adsorption, organic desorptions or carbon regeneration, organic recovery, and carbon disposal.</li> </ul> <p>(NOTE: See Appendix 10-4 for guidance on the schedule for implementation of air emissions standards in 40 CFR 265.1080 through 265.1091.)</p> <p>Verify that transfer of hazardous waste to the tank from another tank or from a surface impoundment is done using continuous hard piping or another closed system that does not allow exposure of the hazardous waste to the atmosphere.</p>

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<b>December 1997; Citation Revised January 2017].</b>	<p>(NOTE: These requirements do not apply when transferring a hazardous waste to a tank under the following conditions:</p> <ul style="list-style-type: none"> <li>– the hazardous waste meets the average VO concentration of less than 500 ppm at the point of waste origination</li> <li>– the hazardous waste has been treated by an organic destruction or removal process</li> <li>– the hazardous waste meets the numerical concentrations limits for organic hazardous constituents as specified in 40 CFR 280</li> <li>– the hazardous waste has been treated by the treatment technology established by the USEPA or has been removed or destroyed by an equivalent method of treatment.)</li> </ul>
<b>ST.105.18.US.</b> Checklist item deleted <b>[Deleted January 1997].</b>	<p>Checklist item deleted.</p>
<b>ST.105.19.US.</b> Facilities are required to meet inspection and repair requirements for tanks (40 CFR 262.17(a)(2), 265.202, and 265.1085(c)(4), 265.1085(e)(3), 265.1085(f)(3), 265.1085(g)(3), 265.1085(k) and 265.1085(l)) <b>[Revised January 1997; Revised January 2017].</b>	<p>(NOTE: See Appendix 10-4 for guidance on the schedule for implementation of air emissions standards in 40 CFR 265.1080 through 265.1091.)</p> <p>Verify that fixed roofs and closure devices are inspected and managed as follows:</p> <ul style="list-style-type: none"> <li>visually inspected for defects that could result in air pollutant emissions</li> <li>initial inspection is on or before the date that the tank becomes subject to these requirements</li> <li>inspected annually after the initial inspection.</li> </ul> <p>Verify that internal floating roofs are inspected and managed as follows:</p> <ul style="list-style-type: none"> <li>– visually inspected for defects that could result in air pollutant emissions</li> <li>– inspected through the openings in the fixed roof at least once every 12 mo</li> <li>– when the tank is emptied and degassed, inspected at least every 10 yr.</li> </ul> <p>(NOTE: As an alternative to the requirements for inspecting the internal floating roof, if an internal floating roof is equipped with two continuous seals, one above the other, visual inspection may be done of the internal floating roof, primary and secondary seals, gaskets, slotted membranes, and sleeve seals each time the tank is emptied and degassed and at least every 5 yr.)</p> <p>Verify that inspection of external floating roofs are done and managed as follows:</p> <ul style="list-style-type: none"> <li>– measurement of the gaps between the tank wall and the primary seal are done within 60 calendar days after initial operation of the tank following installation of the floating roof and thereafter at least once every 5 yr</li> <li>– measurement of gaps between the tank wall and the secondary seal are done within 60 calendar day after initial operation of the tank following installation of the floating roof and thereafter at least once every year</li> </ul>

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<p><b>ST.105.20.US.</b> Facilities are required to meet documentation requirements</p>	<ul style="list-style-type: none"> <li>– the floating roof and closure devices are visually inspected for defects that could result in air pollutant emissions initially on or before the date that the tank becomes subject to this regulation and thereafter annually.</li> </ul> <p>(NOTE: If a tank ceases to hold hazardous waste for a period of 1 yr or more, subsequent introduction of hazardous waste into the tank will be considered an initial operation for inspection purposes.)</p> <p>Verify that the Regional Administrator is notified prior to each of the inspections of the internal floating or the external floating roof as follows:</p> <ul style="list-style-type: none"> <li>– prior to each visual inspection of the internal floating roof or the external floating roof in a tank that has been emptied and degassed, written notification is sent so that it is received by the Regional Administrator at least 30 calendar days before refilling the tank except when an inspection is not planned</li> <li>– prior to each inspection to measure external floating roof seal gaps, written notification is sent so that it is received by the Regional Administrator at least 30 calendar days before the date the measurements are scheduled to be performed</li> <li>– when a visual inspection is not planned and could not have been known about, the Regional Administrator is notified as soon as possible but no later than 7 calendar days before refilling the tank.</li> </ul> <p>Verify that, for fixed roofs and associated closure devices, the air emission control equipment is visually inspected for defects that could result in air pollutant emissions initially before the tank becomes subject to these requirements and thereafter annually.</p> <p>Verify that defects detected during inspections are repaired as follows:</p> <ul style="list-style-type: none"> <li>– first efforts at repair are made no later than 5 calendar days after detection</li> <li>– repair is completed no later than 45 days after detection unless it is determined that the repair requires emptying or temporary removal from service of the tank and no alternative capacity is available to accept the hazardous waste managed in the tank.</li> </ul> <p>(NOTE: After the initial inspections of the cover, following inspections may be performed at intervals longer than 1 yr under the following conditions:</p> <ul style="list-style-type: none"> <li>– when inspecting or monitoring the cover would expose a worker to dangerous, hazardous, or other unsafe conditions and the cover is designated as unsafe to inspect</li> <li>– when the tank is buried partially or entirely underground, only those portions aboveground are monitored annually.)</li> </ul> <p>(NOTE: See Appendix 10-4 for guidance on the schedule for implementation of air emissions standards in 40 CFR 265.1080 through 265.1091.)</p>

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<p>for tanks (40 CFR 262.17(a)(2), 265.202, 265.1090(a), 265.1090(b), and 265.1090(e) through 265.1090(i)) [Revised December 1997; Citation Revised January 2017].</p>	<p>Verify that the following records are kept for tanks using air emissions control:</p> <ul style="list-style-type: none"> <li>– a tank identification number or other unique identifying description</li> <li>– a record for each required inspection that includes the following: <ul style="list-style-type: none"> <li>– date the inspection was done</li> <li>– location and description of defects</li> <li>– date of detection and corrective action to repair.</li> </ul> </li> </ul> <p>Verify that, for tanks using fixed roofs to meet Level 1 control standards, records are kept for each determination of the maximum organic vapor pressure of the hazardous waste, including the date and time the samples were collected, analysis method used, and analysis results.</p> <p>Verify that, for tanks using internal floating roofs to meet Level 2 control standards, documentation is maintained describing the floating roof design.</p> <p>Verify that, for tanks using external floating roofs to comply with Level 2 control standards, the following records are maintained:</p> <ul style="list-style-type: none"> <li>– documentation describing the floating roof design and the dimensions of the tank</li> <li>– records for each seal gap inspection, including the date, results, and calculations.</li> </ul> <p>Verify that, for situations where an enclosure is being used to comply with Level 2 control requirements, the following are maintained:</p> <ul style="list-style-type: none"> <li>– records for the most recent set of calculations and measurements performed by the owner or operator to verify that the enclosure meets the criteria for a permanent total enclosure</li> <li>– all records required for closed vent systems and control devices.</li> </ul> <p>Verify that, if using a closed-vent system and control device, the following records are maintained:</p> <ul style="list-style-type: none"> <li>– certification that is signed and dated by the owner/operator stating that the control device is designed to operate at the performance level documented by a design analysis or by performance tests when the tank is operating at capacity or the highest level reasonably expected to occur</li> <li>– design documents if design analysis is used, including information describing the control device design and certification that the equipment meets the applicable specification</li> <li>– a performance test plan if performance tests are used</li> <li>– description and date of each modification, as applicable</li> <li>– identification of operating parameters, description of monitoring devices, and diagrams of monitoring sensor locations, as applicable</li> </ul>

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	<ul style="list-style-type: none"> <li>– semiannual records of the following for those planned routine maintenance operations that would require the control device to exceed limitations:               <ul style="list-style-type: none"> <li>– a description of the planned routine maintenance that is anticipated to be performed for the control device during the next 6-mo period, including the type of maintenance needed, planned frequency, and lengths of maintenance periods</li> <li>– a description of the planned routine maintenance that was performed for the control device during the previous 6-mo period, including the type of maintenance performed and the total number of hours during those 6 mo that the control device did not meet applicable requirements</li> </ul> </li> <li>– records of the following for those unexpected control device system malfunctions that would cause the control device to not meet specifications:               <ul style="list-style-type: none"> <li>– the occurrence and duration of each malfunction of the control device system</li> <li>– the duration of each period during a malfunction when gases, vapors, or fumes are vented from the waste management unit through the closed vent system to the control device while the control device is not properly functioning</li> <li>– actions taken during periods of malfunction to restore a malfunctioning control device to its normal or usual manner of operation</li> </ul> </li> <li>– records of the management of the carbon removed from a carbon adsorption system.</li> </ul> <p>Verify that, for exempted tanks (see the definition of Exempted Hazardous Waste Storage Tanks), the following records are prepared and maintained as applicable:</p> <ul style="list-style-type: none"> <li>– if exempted under the hazardous waste concentration conditions, information used for the waste determination in the facility operating log and/or the date, time, and location of each waste sample if analysis results for samples are used</li> <li>– if exempted under incineration use or process destruction use, the identification number for the incinerator, boiler, or industrial furnace in which the hazardous waste is treated.</li> </ul> <p>Verify that the covers which are designated as unsafe to monitor, are listed in a log kept in the facility operating record with an explanation of why they are unsafe to inspect and monitor and a plan and schedule of inspection and monitoring is recorded.</p> <p>Verify that, for tanks not using the air emissions controls specified in 40 CFR 265.1085 through 265.1088, the following information is maintained:</p> <ul style="list-style-type: none"> <li>– a list of the individual organic peroxide compounds manufactured at the facility if it produces more than one functional family of organic peroxides or multiple organic peroxides within one functional family, and one or more of these organic peroxides could potentially undergo self-accelerating thermal decomposition at or below ambient temperatures</li> </ul>

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	<ul style="list-style-type: none"> <li>– a description of how the hazardous waste containing the organic peroxide compounds identified in the above list are managed, including:               <ul style="list-style-type: none"> <li>– a facility identification number for the tank or group of tanks</li> <li>– the purpose and placement of this tank or group of tanks in the management train of this hazardous waste</li> <li>– the procedures used to ultimately dispose of the hazardous waste handled in the tanks</li> </ul> </li> <li>– an explanation why managing these tanks would be an undue safety hazard</li> <li>– certification that the tank is not using inappropriate emissions control devices</li> <li>– identification of the requirements in 40 CFR 60, 61, or 63 that the tank is in compliance with.</li> </ul> <p>Verify that all records, except design information records, are kept for at least 3 yr.</p> <p>Verify that design information records are maintained in the operating record until the air emissions control equipment is replaced or otherwise no longer in service.</p>

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<p><b>HAZARDOUS WASTE STORAGE TANKS</b></p> <p><b>ST.110 TSDFs</b></p> <p><b>ST.110.1.US.</b> Secondary containment is required for specific types of tank systems used to store or treat hazardous waste at TSDFs (40 CFR 264.190(a), 264.190(b), 264.193(a), 265.190(a), 265.190(b), and 265.193(a)) [Revised July 2005; Revised July 2006].</p> <p><b>ST.110.2.US.</b> Secondary containment on tank systems at TSDFs must meet specific requirements (40 CFR 264.190(a), 264.193(b) through 264.193(d), 265.190(a), and 265.193(b) through 265.193(d)) [Revised July 2005].</p>	<p>Verify that, in order to prevent the release of hazardous waste or hazardous constituents to the environment, secondary containment is provided:</p> <ul style="list-style-type: none"> <li>– for all new and existing tank systems or components, prior to their being put into service</li> <li>– for tank systems that store or treat materials that become hazardous wastes, within 2 yr of the hazardous waste listing, or when the tank system has reached 15 yr of age, whichever comes later.</li> </ul> <p>(NOTE: This checklist item applies to owners and operators of facilities that use tank systems for storing or treating hazardous waste except as follows:</p> <ul style="list-style-type: none"> <li>– tank systems that are used to store or treat hazardous waste which contains no free liquids and are situated inside a building with an impermeable floor and demonstrate the absence or presence of free liquids in the stored/treated waste, by using the following test: Method 9095 (Paint Filter Liquids Test) as described in “Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,” EPA Publication SW-846</li> <li>– tank systems, including sumps, which serve as part of a secondary containment system to collect or contain releases of hazardous wastes.)</li> </ul> <p>Verify that secondary containment meets the following criteria:</p> <ul style="list-style-type: none"> <li>– it is designed, installed, and operated to prevent the migration of liquid out of the system</li> <li>– it is capable of detecting and collecting releases and accumulated liquids until removal is possible</li> <li>– it is constructed of or lined with materials compatible with the wastes</li> <li>– it is placed on a foundation or base that can provide appropriate support and prevent failure due to settlement, compression, or upset</li> <li>– a leak-detection system is present that is designed and operated to detect the failure of either the primary or secondary containment structure or the release of any hazardous waste within 24 h or the earliest practicable time</li> <li>– it is sloped or designed to drain and remove liquids from leaks, spills, or precipitation.</li> </ul> <p>Verify that spilled or leaked wastes are removed from secondary containment within 24 h or as timely as possible.</p> <p>Verify that secondary containment for tanks includes one or more of the following:</p> <ul style="list-style-type: none"> <li>– a liner (external to the tank)</li> </ul>

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<p><b>ST.110.3.US.</b> External liners, vaults and double-walled tanks at TSDFs are required to meet specific standards (40 CFR 264.190(a), 264.193(e), 265.190(a), and 265.193(e)) [Revised July 2005].</p>	<ul style="list-style-type: none"> <li>– a vault</li> <li>– a double-walled tank</li> <li>– an equivalent approved device.</li> </ul> <p>(NOTE: Tank systems that are used to store or treat hazardous waste that contains no free liquids and are situated inside a building with an impermeable floor as demonstrated using Method 9095B (Paint Filter Liquids Test) as described in “Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,” EPA Publication SW-846 are exempt from this checklist item.)</p> <p>Verify that external liner systems meet the following requirements:</p> <ul style="list-style-type: none"> <li>– it is designed and operated so that 100 percent of the capacity of the largest tank within the boundary would be contained</li> <li>– it prevents run-on and infiltration of precipitation into the secondary containment unless the collection system has sufficient capacity to handle run-on or infiltration</li> <li>– it is free of cracks or gaps</li> <li>– it surrounds the tank completely and covers all surrounding earth likely to come into contact with the waste if there is a release</li> <li>– capacity is sufficient to contain precipitation from a 24-h, 25-yr rainfall event.</li> </ul> <p>Verify that vault systems meet the following criteria:</p> <ul style="list-style-type: none"> <li>– it will contain 100 percent of the capacity of the largest tank within its boundary</li> <li>– it prevents run-on and infiltration of precipitation unless there is sufficient excess capacity</li> <li>– it is constructed with chemical-resistant water stops at all joints</li> <li>– it has an impermeable interior coating that is compatible</li> <li>– it has a means to protect against the formation of, and ignition of, vapors within the vault if the waste is ignitable or reactive</li> <li>– it has an exterior moisture barrier or otherwise operated to prevent migration of moisture into the vault.</li> </ul> <p>Verify that double-walled tanks meet the following criteria:</p> <ul style="list-style-type: none"> <li>– it is designed as an integral structure so that any release is contained by the outer shell</li> <li>– it is protected from both corrosion of the primary tank and the external surface of the outer shell if constructed of metal</li> <li>– it has a built-in continuous leak detection system capable of detecting a release within 24 h.</li> </ul> <p>(NOTE: Tank systems that are used to store or treat hazardous waste that contains no free liquids and are situated inside a building with an impermeable floor as</p>

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<p><b>ST.110.4.US.</b> Tank ancillary equipment at TSDFs must also be provided with secondary containment (40 CFR 264.190(a), 264.193(f), 265.190(a), and 265.193(f)) [Revised July 2005].</p>	<p>demonstrated using Method 9095B (Paint Filter Liquids Test) as described in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846 are exempt from this checklist item.)</p> <p>Verify that ancillary equipment, except for the following, has secondary containment:</p> <ul style="list-style-type: none"> <li>– aboveground piping that is visually inspected for leaks on a daily basis</li> <li>– welded flanges, welded joints, and welded connections that are visually inspected for leaks on a daily basis</li> <li>– sealless or magnetic coupling pumps and sealless valves that are visually inspected for leaks on a daily basis</li> <li>– pressurized aboveground piping systems with automatic shutoff valves that are visually inspected for leaks on a daily basis.</li> </ul> <p>(NOTE: Tank systems that are used to store or treat hazardous waste that contains no free liquids and are situated inside a building with an impermeable floor as demonstrated using Method 9095B (Paint Filter Liquids Test) as described in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846 are exempt from this checklist item.)</p>
	<p>Verify that for existing tank systems without secondary containment meeting the requirements of 40 CFR 264.193 (see checklist item ST.110.1.US through, ST.110.4.US) the owner or operator determines that the tank system is not leaking or is unfit for use.</p> <p>Verify that the owner or operator obtains and keeps on file at the facility a written assessment reviewed and certified by a qualified Professional Engineer that attests to the tank system's integrity by 12 January 1988.</p> <p>Verify that the assessment determines if the tank system is adequately designed and has sufficient structural strength and compatibility with the waste(s) to be stored or treated, to ensure that it will not collapse, rupture, or fail.</p> <p>Verify that, at a minimum, the assessment considers the following:</p> <ul style="list-style-type: none"> <li>– design standard(s), if available, according to which the tank and ancillary equipment were constructed</li> <li>– hazardous characteristics of the waste(s) that have been and will be handled;</li> <li>– existing corrosion protection measures</li> <li>– documented age of the tank system, if available (otherwise, an estimate of the age)</li> <li>– results of a leak test, internal inspection, or other tank integrity examination such that:</li> </ul>

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	<ul style="list-style-type: none"> <li>– for non-enterable underground tanks, the assessment includes a leak test that is capable of taking into account the effects of temperature variations, tank end deflection, vapor pockets, and high water table effects</li> <li>– for other than non-enterable underground tanks and for ancillary equipment, the assessment includes either a leak test, as described above, or other integrity examination that is certified by a qualified Professional Engineer that addresses cracks, leaks, corrosion, and erosion.</li> </ul> <p>(NOTE: The practices described in the American Petroleum Institute (API) Publication, Guide for Inspection of Refinery Equipment, Chapter XIII, “Atmospheric and Low-Pressure Storage Tanks,” 4th edition, 1981, may be used, where applicable, as guidelines in conducting other than a leak test.)</p> <p>Verify that all tank systems, until such time as secondary containment that meets the requirements is provided, comply with the following:</p> <ul style="list-style-type: none"> <li>– for non-enterable underground tanks, a leak test or other tank integrity method, as approved or required by the Regional Administrator, is conducted at least annually</li> <li>– for other than non-enterable underground tanks and ancillary equipment, the assessment includes either a leak test or other integrity examination certified by a qualified Professional Engineer.</li> </ul> <p>(NOTE: For interim status tanks, the owner or operator must conduct a leak test or an internal inspection or other tank integrity examination by a qualified Professional Engineer.)</p> <p>Verify that, if for other than non-enterable underground tanks the owner or operator chooses to develop a schedule and procedure for the overall assessment, the following criteria are met:</p> <ul style="list-style-type: none"> <li>– the schedule and procedure are adequate to detect obvious cracks, leaks, and corrosion or erosion that may lead to cracks and leaks</li> <li>– the owner or operator removes the stored waste from the tank, if necessary, to allow the condition of all internal tank surfaces to be assessed</li> <li>– the frequency of these assessments is based on the material of construction of the tank and its ancillary equipment, the age of the system, the type of corrosion or erosion protection used, the rate of corrosion or erosion observed during the previous inspection, and the characteristics of the waste being stored or treated.</li> </ul> <p>(NOTE: The practices described in the American Petroleum Institute (API) Publication Guide for Inspection of Refinery Equipment, Chapter XIII, “Atmospheric and Low-Pressure Storage Tanks,” 4th edition, 1981, may be used, where applicable, as guidelines for assessing the overall condition of the tank system.)</p>

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<p><b>ST.110.6.US.</b> TSDFs with new tank systems must submit to the regional administrator a written assessment review certified by an independent, qualified, registered professional engineer and install the tank according to specific standards (40 CFR 264.192 and 265.192) [Revised July 2006].</p>	<p>Verify that the owner or operator maintains on file at the facility a record of the results of the assessments conducted.</p> <p>Verify that, if a tank system or component is found to be leaking or unfit for use as a result of the leak test or assessment, the owner or operator complies with the requirements of 40 CFR 264.196 (see checklist item ST.110.10.US).</p> <p>Verify that the owners or operators of new tank systems or components must obtain and submit to the Regional Administrator, at time of submittal of part B information, a written assessment, reviewed and certified by a qualified Professional Engineer, in accordance with 40 CFR 270.11(d), attesting that the tank system has sufficient structural integrity and is acceptable for the storing and treating of hazardous waste.</p> <p>Verify that the assessment shows that the foundation, structural support, seams, connections, and pressure controls (if applicable) are adequately designed and that the tank system has sufficient structural strength, compatibility with the waste(s) to be stored or treated, and corrosion protection to ensure that it will not collapse, rupture, or fail.</p> <p>Verify that this assessment, which will be used by the Regional Administrator to review and approve or disapprove the acceptability of the tank system design, includes, at a minimum, the following information:</p> <ul style="list-style-type: none"> <li>– design standard(s) according to which tank(s) and/or the ancillary equipment are constructed</li> <li>– hazardous characteristics of the waste(s) to be handled</li> <li>– for new tank systems or components in which the external shell of a metal tank or any external metal component of the tank system will be in contact with the soil or with water, a determination by a corrosion expert of: <ul style="list-style-type: none"> <li>– factors affecting the potential for corrosion, including but not limited to: soil moisture content; soil pH; soil sulfides level; soil resistivity; structure to soil potential; influence of nearby underground metal structures (e.g., piping); existence of stray electric current; existing corrosion-protection measures (e.g., coating, cathodic protection)</li> </ul> </li> <li>– the type and degree of external corrosion protection that are needed to ensure the integrity of the tank system during the use of the tank system or component, consisting of one or more of the following: corrosion-resistant materials of construction such as special alloys, fiberglass reinforced plastic, etc.; corrosion-resistant coating (such as epoxy, fiberglass, etc.) with cathodic protection (e.g., impressed current or sacrificial anodes); and electrical isolation devices such as insulating joints, flanges, etc.</li> <li>– for underground tank system components that are likely to be adversely affected by vehicular traffic, a determination of design or operational measures that will protect the tank system against potential damage; and</li> </ul>

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	<ul style="list-style-type: none"> <li>– design considerations to ensure that:               <ul style="list-style-type: none"> <li>– tank foundations will maintain the load of a full tank</li> <li>– tank systems will be anchored to prevent flotation or dislodgment where the tank system is placed in a saturated zone, or is located within a seismic fault zone</li> <li>– tank systems will withstand the effects of frost heave.</li> </ul> </li> </ul> <p>(NOTE: The practices described in the National Association of Corrosion Engineers (NACE) standard, “Recommended Practice (RP-02-85)—Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems,” and the American Petroleum Institute (API) Publication 1632, “Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems,” may be used, where applicable, as guidelines in providing corrosion protection for tank systems.)</p> <p>Verify that the owner or operator of a new tank system ensures that proper handling procedures are adhered to in order to prevent damage to the system during installation.</p> <p>Verify that, prior to covering, enclosing, or placing a new tank system or component in use, an independent, qualified, installation inspector or a qualified Professional Engineer, either of whom is trained and experienced in the proper installation of tanks systems or components, inspects the system for the presence of any of the following items:</p> <ul style="list-style-type: none"> <li>– weld breaks</li> <li>– punctures</li> <li>– scrapes of protective coatings</li> <li>– cracks</li> <li>– corrosion</li> <li>– other structural damage or inadequate construction/installation.</li> </ul> <p>Verify that all discrepancies are remedied before the tank system is covered, enclosed, or placed in use.</p> <p>Verify that new tank systems or components that are placed underground and that are backfilled are provided with a backfill material that is a noncorrosive, porous, homogeneous substance and that is installed so that the backfill is placed completely around the tank and compacted to ensure that the tank and piping are fully and uniformly supported.</p> <p>Verify that all new tanks and ancillary equipment is tested for tightness prior to being covered, enclosed, or placed in use. If a tank system is found not to be tight, all repairs necessary to remedy the leak(s) in the system are performed prior to the tank system being covered, enclosed, or placed into use.</p>

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<p><b>ST.110.7.US.</b> Tanks used for hazardous waste treatment or storage at TSDFs must follow certain operating requirements (40 CFR 264.194 and 265.194).</p> <p><b>ST.110.8.US.</b> Tank systems at TSDFs must comply with requirements for ignitable, reactive, or incompatible wastes (40 CFR 264.198, 264.199, 265.198, and 265.199).</p>	<p>Verify that ancillary equipment is supported and protected against physical damage and excessive stress due to settlement, vibration, expansion, or contraction.</p> <p>(NOTE: The piping system installation procedures described in American Petroleum Institute (API) Publication 1615 (November 1979), "Installation of Underground Petroleum Storage Systems," or ANSI Standard B31.3, "Petroleum Refinery Piping," and ANSI Standard B31.4 "Liquid Petroleum Transportation Piping System," may be used, where applicable, as guidelines for proper installation of piping systems.)</p> <p>Verify that the owner or operator provides the type and degree of corrosion protection recommended by an independent corrosion expert or other corrosion protection if the Regional Administrator believes other corrosion protection is necessary to ensure the integrity of the tank system during use of the tank system.</p> <p>Verify that the installation of a corrosion protection system that is field fabricated is supervised by an independent corrosion expert to ensure proper installation.</p> <p>Verify that the owner or operator obtains and keeps on file at the facility written statements by those persons required to certify the design of the tank system and supervise the installation of the tank system that attest that the tank system was properly designed and installed and that required repairs were performed.</p> <p>Verify that hazardous wastes or treatment reagents are not placed in tanks if they could cause the tank system (including ancillary equipment or containment system) to fail.</p> <p>Verify that appropriate measures are taken to prevent overfill, including:</p> <ul style="list-style-type: none"> <li>– spill prevention controls</li> <li>– overfill prevention controls</li> <li>– maintenance of sufficient freeboard to prevent overtopping by wave, wind action, or precipitation for uncovered tanks.</li> </ul> <p>Verify that ignitable or reactive wastes are not placed in a tank system, unless one of the following is met:</p> <ul style="list-style-type: none"> <li>– the waste is treated, rendered, or mixed before or immediately after placement in the tank system so that it is no longer reactive or ignitable and the minimum requirements for reactive and ignitable wastes are met</li> <li>– the waste is treated or stored in such a way that it is protected from any material or conditions that may cause the waste to ignite or react</li> <li>– the tank system is used solely for emergencies.</li> </ul> <p>Verify that the minimum protective distances between waste management areas and any public ways, streets, alleys, or an adjoining property line that can be built upon</p>

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<p><b>ST.110.9.US.</b> Personnel at TSDFs must conduct inspections of tank systems and associated equipment (40 CFR 264.195 and 265.195). <b>[Revised June 1997; Revised July 2006].</b></p>	<p>as required in Tables 2-1 through 2-6 of the NFPA's <i>Flammable and Combustible Liquids Code</i> are maintained.</p> <p>Verify that incompatible waste, or incompatible wastes and materials, are not placed in the same tank system unless minimum safety requirements are met.</p> <p>Verify that hazardous waste is not placed in a tank system that has not been decontaminated and that previously held an incompatible waste or material unless minimum safety requirements are met.</p> <p>Verify that the owner or operator develops and follows a schedule and procedure for inspecting overfill controls.</p> <p>Verify that the owner or operator inspects at least once each operating day data gathered from monitoring and leak detection equipment (e.g., pressure or temperature gauges, monitoring wells) to ensure that the tank system is being operated according to its design.</p> <p>Verify that, in addition, the owner or operator inspects the following at least once each operating day:</p> <ul style="list-style-type: none"> <li>– overfill/spill control equipment to ensure it is in good working order</li> <li>– aboveground portions of the tank system, if any, to detect corrosion or releases of waste</li> <li>– the construction materials and the area immediately surrounding the externally accessible portion of the tank system, including the secondary containment system (e.g., dikes) to detect erosion or signs of releases of hazardous waste (e.g., wet spots, dead vegetation).</li> </ul> <p>(NOTE: Owners or operators of tank systems that either use leak detection systems to alert facility personnel to leaks, or implement established workplace practices to ensure leaks are promptly identified, must inspect at least weekly the following:</p> <ul style="list-style-type: none"> <li>– overfill/spill control equipment to ensure it is in good working order</li> <li>– aboveground portions of the tank system, if any, to detect corrosion or releases of waste</li> <li>– the construction materials and the area immediately surrounding the externally accessible portion of the tank system, including the secondary containment system (e.g., dikes) to detect erosion or signs of releases of hazardous waste (e.g., wet spots, dead vegetation).</li> </ul> <p>Use of the alternate inspection schedule must be documented in the facility's operating record. This documentation must include a description of the established workplace practices at the facility.)</p> <p>(NOTE: Performance Track member facilities may inspect on a less frequent basis, upon approval by the Director, but must inspect at least once each month. To apply</p>

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<p><b>ST.110.10.US.</b> Tank systems or secondary containment systems at TSDFs from which there has been a leak or spill or which have been declared unfit for use must be removed from service immediately and specific requirements met (40 CFR 264.196 and 265.196) [Revised June 1996; Revised July 2006].</p>	<p>for a less than weekly inspection frequency, the Performance Track member facility must follow the procedures described in 40 CFR 264.15(b)(5) or 265.15(b)(5).)</p> <p>Verify that ancillary equipment that is not provided with secondary containment is inspected at least once each operating day.</p> <p>Verify that the owner or operator inspects cathodic protection systems, if present, according to, at a minimum, the following schedule to ensure that they are functioning properly:</p> <ul style="list-style-type: none"> <li>– the proper operation of the cathodic protection system is confirmed within 6 mo after initial installation and annually thereafter</li> <li>– all sources of impressed current are inspected and/or tested, as appropriate, at least bimonthly (i.e., every other month).</li> </ul> <p>(NOTE: The practices described in the National Association of Corrosion Engineers(NACE) standard, “Recommended Practice (RP-02-85)—Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems,” and the American Petroleum Institute (API) Publication 1632, “Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems,” may be used, where applicable, as guidelines in maintaining and inspecting cathodic protection systems.)</p> <p>Verify that the owner or operator documents the inspections in the operating record of the facility.</p> <p>Verify that a tank system or secondary containment system from which there has been a leak or spill, or which is unfit for use, is removed from service immediately, and the owner or operator satisfies the following requirements:</p> <ul style="list-style-type: none"> <li>– immediately stop the flow of hazardous waste into the tank system or secondary containment system and inspect the system to determine the cause of the release</li> <li>– if the release was from the tank system, the owner/operator, within 24 h after detection of the leak or, if the owner/operator demonstrates that it is not possible, at the earliest practicable time, remove as much of the waste as is necessary to prevent further release of hazardous waste to the environment and to allow inspection and repair of the tank system to be performed</li> <li>– if the material released was to a secondary containment system, all released materials are removed within 24 h or in as timely a manner as is possible to prevent harm to human health and the environment.</li> <li>– immediately conduct a visual inspection of the release and, based upon that inspection: <ul style="list-style-type: none"> <li>– prevent further migration of the leak or spill to soils or surface water</li> <li>– remove, and properly dispose of, any visible contamination of the soil or surface water.</li> </ul> </li> </ul>

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	<p>Verify that any release to the environment is reported to the Regional Administrator within 24 h of its detection.</p> <p>(NOTE: If the release has been reported pursuant to 40 CFR 302, that report will satisfy this requirement.)</p> <p>(NOTE: A leak or spill of hazardous waste is exempted from the reporting requirements if it is less than or equal to a quantity of 1 lb and immediately contained and cleaned up.)</p> <p>Verify that, within 30 days of detection of a release to the environment, a report containing the following information is submitted to the Regional Administrator:</p> <ul style="list-style-type: none"> <li>– likely route of migration of the release</li> <li>– characteristics of the surrounding soil (soil composition, geology, hydrogeology, climate)</li> <li>– results of any monitoring or sampling conducted in connection with the release (if available) (NOTE: If sampling or monitoring data relating to the release are not available within 30 days, these data must be submitted to the Regional Administrator as soon as they become available.)</li> <li>– proximity to downgradient drinking water, surface water, and populated areas</li> <li>– description of response actions taken or planned.</li> </ul> <p>Verify that, unless the owner/ operator satisfies the following requirements, the tank system must be closed:</p> <ul style="list-style-type: none"> <li>– if the cause of the release was a spill that has not damaged the integrity of the system, the owner/operator may return the system to service as soon as the released waste is removed and repairs, if necessary, are made</li> <li>– if the cause of the release was a leak from the primary tank system into the secondary containment system, the system must be repaired prior to returning the tank system to service</li> <li>– if the source of the release was a leak to the environment from a component of a tank system without secondary containment, the owner/operator provides the component of the system from which the leak occurred with required secondary containment before it can be returned to service, unless the source of the leak is an aboveground portion of a tank system that can be inspected visually.</li> </ul> <p>(NOTE: If the source of a leak to the environment is an aboveground component that can be inspected visually, the component must be repaired and may be returned to service without secondary containment as long as the certification requirements satisfied. If a component is replaced, that component must satisfy the requirements for new tank systems or components in 40 CFR 264.192 and 264.193 [See checklist items ST.110.1.US through ST.110.6.US]. Additionally, if a leak has occurred in any portion of a tank system component that is not readily accessible for visual</p>

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<p><b>ST.110.11.US.</b> TSDFs are required to follow specific procedures when closing a tank system (40 CFR 264.197(a), 264.197(b), 265.197(a), and 265.197(b)).</p> <p><b>ST.110.12.US.</b> Certain tanks used for the storage of hazardous waste are required to meet Level 1 control standards for air emissions control (40 CFR 264.200, 264.1084(a) through 264.1084(c)(3), 265.202, and 265.1085(a) through 265.1085(c)(3)) <b>[Revised December 1997; Citation Revised January 2017].</b></p>	<p>inspection (e.g., the bottom of an in ground or on ground tank), the entire component must be provided with secondary containment prior to being returned to use.)</p> <p>Verify that, if the owner/operator has repaired a tank system and the repair has been extensive (e.g., installation of an internal liner; repair of a ruptured primary containment or secondary containment vessel), the tank system is not returned to service unless the owner/operator has obtained a certification by a qualified Professional Engineer that the repaired system is capable of handling hazardous wastes without release for the intended life of the system.</p> <p>Verify that the certification is placed in the operating record and maintained until closure of the facility.</p> <p>(NOTE: The Regional Administrator may, on the basis of any information received that there is or has been a release of hazardous waste or hazardous constituents into the environment, issue an order under RCRA section 3004(v), 3008(h), or 7003(a) requiring corrective action or such other response as deemed necessary to protect human health or the environment.)</p> <p>Determine if the TSDF has closed any tank systems.</p> <p>Verify that all waste residues, contaminated containment system components, contaminated soils, and structures and equipment contaminated with waste have been removed or decontaminated.</p> <p>Verify that, if it is not possible and/or practicable to remove or decontaminate all soils, the tank is closed and postclosure care is performed as is required for landfills.</p> <p>(NOTE: See Appendix 10-4 for guidance on the schedule for implementation of air emissions standards in 40 CFR 265.1080 through 265.1091.)</p> <p>(NOTE: See the definition of <i>Exempted Waste Management Unit</i> and <i>Exempted Hazardous Waste Storage Tanks</i> for exemptions to these requirements.)</p> <p>Verify that the following tanks meet the requirements for Tank Level 1 controls:</p> <ul style="list-style-type: none"> <li>– the hazardous waste in the tank has a maximum organic vapor pressure which is less than the maximum organic vapor pressure for the tank’s design capacity category as follows: <ul style="list-style-type: none"> <li>– for a tank design capacity equal to or greater than 151 m3 [approx. 39,890 gal], the maximum organic vapor pressure limit for the tank is 5.3 kPa</li> <li>– for a tank design capacity equal to or greater than 75 m3 [approx. 19,813 gal] but less than 151 m3 [approx. 39,890 gal], the maximum organic vapor pressure limits for the tank is 27.6 kPa</li> <li>– for a tank design capacity less than 75 m3 [approx. 19,813 gal], the maximum organic vapor pressure limit for the tank is 76.6 kPa</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– the hazardous waste in the tank is not heated to a temperature that is greater than the temperature at which the maximum organic vapor pressure of the hazardous waste is determined</li> <li>– the hazardous waste in the tank is not treated using a waste stabilization process.</li> </ul> <p>Verify that tanks not required to meet the requirements for Level 1 controls meet the requirements for Level 2 controls.</p> <p>Verify that, when required, the following Level 1 controls are met:</p> <ul style="list-style-type: none"> <li>– the maximum organic vapor pressure for a hazardous waste is determined before the first time the waste is placed in the tank</li> <li>– new maximum organic vapor pressure determinations are made each time there are changes to the hazardous waste which could cause the maximum organic vapor pressure to increase to a level that is equal to or greater than the maximum organic vapor pressure limit for the tank capacity.</li> </ul> <p>Verify that tanks requiring Level 1 control are equipped with a fixed roof designed as follows:</p> <ul style="list-style-type: none"> <li>– the roof and its closure devices are designed to form a continuous barrier over the entire surface area of the hazardous waste in the tank</li> <li>– the fixed roof is installed so that there are no visible cracks, holes, gaps, or other open spaces between roof section joints or between the interface of the roof edge and the tank wall</li> <li>– each opening in the fixed roof, and any manifold system associated with the fixed roof, meets one of the following: <ul style="list-style-type: none"> <li>– it is equipped with a closure device designed to operate so that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the opening and the closure device</li> <li>– connected by a closed vent system that is vented to a control device which removes or destroys organics in the vent stream and operates whenever hazardous waste is in the tank except during periods of required access to the tank</li> </ul> </li> <li>– the fixed roof and closure devices are made of suitable materials that minimize exposure of the hazardous waste to the atmosphere to the extent practical and maintain the integrity of the fixed roof and closure devices throughout their intended service life.</li> </ul> <p>Verify that, for tanks requiring Level 1 control, whenever hazardous waste is in the tank, a fixed roof is installed with each closure device secured in the closed position except as follows:</p> <ul style="list-style-type: none"> <li>– opening of the closure devices or removal of the fixed roof is allowed in order to:</li> </ul>

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<p><b>ST.110.13.US.</b> Certain tanks are required to use Level 2 control standards for air emissions control (40 CFR 264.200, 264.1084(b)(2), 264.1084(d) through 264.1084(i)(3), 265.202, 265.1085(b)(2), and 265.1085(d) through 265.1085(i)(3)) <b>[Revised April 1999; Citation Revised January 2017].</b></p>	<ul style="list-style-type: none"> <li>– provide access to the tank for performing routine inspections, maintenance, or other activities needed for normal operations</li> <li>– remove accumulated sludge or other residues at the bottom of the tank</li> <li>– opening of a spring-loaded pressure vacuum relief valve, conservation vent, or similar type of pressure relief device is allowed during normal operations in order to maintain the tanks internal pressure in accordance with design standards</li> <li>– opening of a safety device in order to avoid unsafe conditions.</li> </ul> <p>(NOTE: See Appendix 10-4 for guidance on the schedule for implementation of air emissions standards in 40 CFR 265.1080 through 265.1091.)</p> <p>(NOTE: See the definition of <i>Exempted Waste Management Unit</i> and <i>Exempted Hazardous Waste Storage Tanks</i> for exemptions to these requirements.)</p> <p>Verify that tanks not required to meet the requirements for Level 1 controls meet the requirements for Level 2 controls.</p> <p>Verify that, when using Level 2 controls, the following types of tanks are used:</p> <ul style="list-style-type: none"> <li>– a fixed roof tank equipped with an internal floating roof</li> <li>– a tank equipped with an external floating roof</li> <li>– a tank vented through a closed vent system to a control device</li> <li>– a pressure tank</li> <li>– a tank located inside an enclosure that is vented through a closed vent system to an enclosed combustion device control device.</li> </ul> <p>Verify that, when a fixed roof with an internal floating roof is used, the following requirements are met:</p> <ul style="list-style-type: none"> <li>– the internal floating roof is designed to float on the liquid surface except when the floating roof is supported by the leg supports</li> <li>– the internal floating roof is equipped with a continuous seal between the wall of the tank and the floating roof edge that meets one of the following requirements: <ul style="list-style-type: none"> <li>– a single continuous seal that is either a liquid mounted seal or a metallic shoe seal</li> <li>– two continuous seals mounted one above the other</li> </ul> </li> <li>– the internal floating roof meets the following specifications: <ul style="list-style-type: none"> <li>– each opening in a noncontact internal floating roof, except for automatic bleeder vents and rim space vents, provides a projection below the liquid surface</li> <li>– each opening in the internal floating roof is equipped with a gasketed cover or a gasketed lid except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– each penetration of the internal floating roof for sampling has a slit fabric cover that covers at least 90 percent of the opening</li> <li>– each automatic bleeder vent and rim space vent is gasketed</li> <li>– each penetration of the internal floating roof that allows for passage of a ladder has a gasketed sliding cover</li> <li>– each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof has a flexible fabric sleeve seal or a gasketed sliding cover</li> <li>– the tank is operated such that when the floating roof is resting on the leg supports, the process of filling, emptying, or refilling is continuous and is completed as soon as practical</li> <li>– automatic bleeder vents are set at closed at all times when the roof is floating, except when the roof is being floated off or is being landed on the leg supports</li> <li>– before filling the tank, each cover, access hatch, gauge float well, or lid on any opening in their internal floating roof is bolted or fastened closed</li> <li>– rim space vents are set to open only when the internal floating roof is not floating or when the pressure beneath the rim exceeds recommended settings.</li> </ul> <p>Verify that, when an external floating roof is used to control air emissions, the following requirements are met:</p> <ul style="list-style-type: none"> <li>– the external floating roof is designed to float on the liquid surface except when the floating roof is supported by leg supports</li> <li>– the floating roof is equipped with two continuous seals, one above the other, between the wall of the tank and the roof edge</li> <li>– the primary seal is a liquid mounted seal or a metallic shoe seal and the total area of the gaps between the tank wall and the primary seal do not exceed 212 cm<sup>2</sup>/m of tank diameter and the width of any portion of these gaps does exceed 3.8 cm</li> <li>– if a metallic shoe seal is used for the primary seal, it is designed so that one end extends into the liquid in the tank and the other end extends a vertical distance of at least 61 cm above the liquid surface</li> <li>– the secondary seal is mounted above the primary seal and covers the annular space between the floating roof and the wall of the tank and the total area of the gaps between the tank wall and the secondary seal do not exceed 21.2 cm<sup>2</sup>/m of tank diameter and the width of any portion of these gaps does not exceed 1.3 cm</li> <li>– the external floating roof meets the following: <ul style="list-style-type: none"> <li>– each opening in a noncontact external floating roof provides a projection below the liquid surface except for automatic bleeder vents and rim space vents</li> <li>– each opening is equipped with a gasketed cover, seal, or lid except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves</li> <li>– each access hatch and each gauge float is equipped with a cover designed to be bolted or fastened when the cover is secured in the closed position</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– each automatic bleeder vent and each rim space vent is equipped with a gasket</li> <li>– each roof drain that empties into the liquid managed in the tank is equipped with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening</li> <li>– each unslotted and slotted guide pole well is equipped with a gasketed sliding cover or a flexible fabric sleeve seal</li> <li>– each unslotted guide pole is equipped with a gasketed cap on the end of the pole</li> <li>– each slotted guide pole is equipped with a gasketed float or other device to close off the liquid surface from the atmosphere</li> <li>– each gauge hatch and sample well is equipped with a gasketed cover.</li> </ul> <p>Verify that, when an external floating roof is used, the tank is operated as follows:</p> <ul style="list-style-type: none"> <li>– when the floating roof is resting on the leg supports, the process of filling, emptying, or refilling is continuous and completed as soon as practical</li> <li>– each opening in the roof, except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, is secured and maintained in a closed position at all times except when the closure device is opened for access</li> <li>– covers on each access hatch and each gauge float well are bolted or fastened when secured in the closed position</li> <li>– automatic bleeder vents are set closed at all times when the roof is floating except when the roof is being floated off or is being landed on the leg supports</li> <li>– rim space vents are set to open only at those times that the roof is being floated off the roof leg supports or when the pressure beneath the rim seal exceeds the manufacturer's setting</li> <li>– the cap on the end of each unslotted guide pole is secured in the closed position at all times except when measuring the level or collecting samples of the liquid in the tank</li> <li>– the cover on each gauge hatch or sample well is secured in the closed position at all times except when the hatch or well must be opened for access</li> <li>– both the primary seal and the secondary seal completely cover the annular space between the external floating roof and the wall of the tank in a continuous fashion except during inspection.</li> </ul> <p>Verify that, when air emissions are controlled from a tank by venting the tank to a control device, the following requirements are met:</p> <ul style="list-style-type: none"> <li>– the tank is covered by a fixed roof and vented directly through a closed vent system to a control device as follows: <ul style="list-style-type: none"> <li>– the fixed roof and its closure devices form a continuous barrier over the entire surface area of the liquid in the tank</li> <li>– each opening in the fixed roof not vented to a control device is equipped with a closure device</li> <li>– the fixed roof and the closure devices are made of suitable materials to minimize exposure of the hazardous waste to the atmosphere, and</li> </ul> </li> </ul>

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<p><b>ST.110.14.US.</b> Checklist item deleted [Deleted January 1997].</p>	<p>maintain the integrity of the fixed roof and closure devices throughout their intended service life</p> <ul style="list-style-type: none"> <li>– the closed vent system is designed according to the requirements in 40 CFR 264/1087/265.1088</li> <li>– whenever a hazardous waste is in the tank, the fixed roof is installed with each closure device secured in the closed position and the vapor headspace underneath the fixed roof is vented to the control device except as follows: <ul style="list-style-type: none"> <li>– to provide access to the tank for performing routine inspection, maintenance, or other activities needed for normal operations</li> <li>– to remove accumulated sludge or other residues from the bottom of the tank</li> <li>– opening of safety devices to avoid an unsafe condition.</li> </ul> </li> </ul> <p>Verify that, when a pressure tank is used to control emissions, the following requirements are met:</p> <ul style="list-style-type: none"> <li>– the tank is designed not to vent to the atmosphere as a result of compression of the vapor headspace in the tank during the filling of the tank to capacity</li> <li>– all tank openings are equipped with closure devices designed to operate with no detectable organic emissions</li> <li>– whenever a hazardous waste is in the tank, it is operated as a closed system that does not vent to the atmosphere except when a safety device is opened to avoid an unsafe condition or when purging of inerts is required and the purge stream is routed to a closed-vent system and appropriate control device.</li> </ul> <p>Verify that, if air emissions are being controlled by using an enclosure vented through a closed vent system to an enclosed combustion control device, the following are met:</p> <ul style="list-style-type: none"> <li>– the tank is located inside an enclosure that is designed and operated according to the criteria for a permanent total enclosure as specified in 40 CFR 52.741, Appendix B</li> <li>– the enclosure is vented through a closed vent system to an enclosed, combustion control device that is designed and operated according to the standards in 40 CFR 264.1087/265.1088</li> <li>– all safety devices, if present, remain in the closed position during normal operations and are not used for venting of gases from the vapor headspace of the tank during tank filling operations or as a means of adjusting pressure in the tank.</li> </ul> <p>Checklist item deleted.</p>

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<p><b>ST.110.15.US.</b> Checklist item deleted <b>[Deleted January 1997]</b>.</p> <p><b>ST.110.16.US.</b> Closed vent systems are required to be designed according to specific standards (40 CFR 2264.200, 264.1087, 265.202, and 265.1088) <b>[Revised January 1997; Citation Revised January 2017]</b>.</p>	<p>Checklist item deleted.</p> <p>(NOTE: See Appendix 10-4 for guidance on the schedule for implementation of air emissions standards in 40 CFR 265.1080 through 265.1091.)</p> <p>(NOTE: See the definition of <i>Exempted Waste Management Unit</i> for exemptions to these requirements.)</p> <p>Verify that closed-vent systems:</p> <ul style="list-style-type: none"> <li>– route the gases, vapors, and fumes emitted from the hazardous waste to a control device</li> <li>– are designed according to 40 CFR 264.1033(k)/265.1033(j)</li> <li>– meet the following if they contain bypass devices, except for low leg drains, high point bleeds, analyzer vents, open ended valves or lines, spring loaded pressure relief valves, and other fittings used for safety devices, that could be used to divert the gas or vapor stream before entering the control device: <ul style="list-style-type: none"> <li>– it is equipped with a flow indicator installed at the inlet to the bypass line used to divert gases and vapors from the closed vent system to the atmosphere at a point upstream of the control device inlet</li> <li>– it is equipped with a seal or locking device placed on the mechanism by which the bypass device is in the closed position so that the bypass device cannot be opened without breaking the seal or removing the lock</li> <li>– seals or closure mechanism are inspected at least once a month.</li> </ul> </li> </ul> <p>Verify that the control device meets the following:</p> <ul style="list-style-type: none"> <li>– it is one of the following: <ul style="list-style-type: none"> <li>– a control device designed and operated to reduce the total organic content of the inlet vapor stream vented to the control device by at least 95 percent weight</li> <li>– an enclosed combustion device</li> <li>– a flare</li> </ul> </li> <li>– periods of planned routine maintenance to the control device during which the control device does not meet specifications do not exceed 240 h/yr</li> <li>– all activated carbon in the control device is replaced on a regular basis after start-up if carbon adsorption is used</li> <li>– operation and maintenance is done in accordance with 40 CFR 264.1033(k)/265.1033(j) if a control device is used other than a thermal vapor incinerator, flare, boiler, process heater, condenser, or carbon adsorption system</li> <li>– achievement of control device performance requirements is done by a performance test or design analysis for each control device except for the following: <ul style="list-style-type: none"> <li>– a flare</li> </ul> </li> </ul>

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<p><b>ST.110.17.US.</b> When transferring hazardous waste to a tank, specific requirements must be met (40 CFR 264.200, 264.1084(j), 265.202, and 265.1085(j)) [Revised January 1997; Citation Revised January 2017].</p> <p><b>ST.110.18.US.</b> Checklist item deleted [Deleted January 1997].</p> <p><b>ST.110.19.US.</b> TSDFs are required to meet inspection and repair requirements for tanks (40 CFR 264.200, 264.1084(c)(4), 264.1084(e)(3), 264.1084(f)(3), 264.1084(g)(3), 264.1084(k), 264.1084(l), 265.202, 265.1085(c)(4), 265.1085(e)(3), 265.1085(f)(3), 265.1085(g)(3), 265.1085(k)</p>	<ul style="list-style-type: none"> <li>– a boiler or process heater with a design heat input capacity of 44 MW or greater</li> <li>– a boiler or process heater into which the vent stream is introduced with the primary fuel</li> <li>– a boiler or industrial furnace burning hazardous waste for which a final permit has been issued and the unit is designed and operated in accordance with 40 CFR 266</li> <li>– a boiler or process heater for which the owner/operator has certified compliance</li> <li>– carbon adsorption systems demonstrate achievement of performance requirements based on the total quantity of organics vented to the atmosphere from all carbon adsorption equipment that is used for organic adsorption, organic desorptions or carbon regeneration, organic recovery, and carbon disposal.</li> </ul> <p>(NOTE: See Appendix 10-4 for guidance on the schedule for implementation of air emissions standards in 40 CFR 265.1080 through 265.1091.)</p> <p>Verify that transfer of hazardous waste to the tank from another tank or from a surface impoundment is done using continuous hard piping or another closed system that does not allow exposure of the hazardous waste to the atmosphere.</p> <p>(NOTE: These requirements do not apply when transferring a hazardous waste to a tank under the following conditions:</p> <ul style="list-style-type: none"> <li>– the hazardous waste meet the average VO concentration of less than 500 ppm at the point of waste origination</li> <li>– the hazardous waste has been treated by an organic destruction or removal process.)</li> </ul> <p>Checklist item deleted.</p> <p>(NOTE: See Appendix 10-4 for guidance on the schedule for implementation of air emissions standards in 40 CFR 265.1080 through 265.1091.)</p> <p>Verify that fixed roofs and closure devices are inspected and managed as follows:</p> <ul style="list-style-type: none"> <li>– visually for defects that could result in air pollutant emissions</li> <li>– initial inspection is on or before the date that the tank becomes subject to these requirements</li> <li>– annually after the initial inspection.</li> </ul> <p>Verify that internal floating roofs are inspected and managed as follows:</p> <ul style="list-style-type: none"> <li>– visually for defects that could result in air pollutant emissions</li> </ul>

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<p>and 265.1085(1)) [Revised January 1997; Citation Revised January 2017].</p>	<ul style="list-style-type: none"> <li>– inspect through the openings in the fixed roof at least once every 12 mo</li> <li>– when the tank is emptied and degassed, at least every 10 yr.</li> </ul> <p>(NOTE: As an alternative to the requirements for inspecting the internal floating roof, if an internal floating roof is equipped with two continuous seals, one above the other, visual inspection may be done of the internal floating roof, primary and secondary seals, gaskets, slotted membranes, and sleeve seals each time the tank is emptied and degassed and at least every 5 yr.)</p> <p>Verify that inspection of external floating roofs are done and managed as follows:</p> <ul style="list-style-type: none"> <li>– measurement of the gaps between the tank wall and the primary seal are done within 60 calendar days after initial operation of the tank following installation of the floating roof and thereafter at least once every 5 yr</li> <li>– measurement of gaps between the tank wall and the secondary seal are done within 60 calendar day after initial operation of the tank following installation of the floating roof and thereafter at least once every year.</li> <li>– the floating roof and closure devices are visually inspected for defects that could result in air pollutant emissions initially on or before the date that the tank becomes subject to this regulation and thereafter annually.</li> </ul> <p>(NOTE: If a tank ceases to hold hazardous waste for a period of 1 yr or more, subsequent introduction of hazardous waste into the tank will be considered an initial operation for inspection purposes.)</p> <p>Verify that the Regional Administrator is notified prior to each of the inspections of the internal or external floating roof as follows:</p> <ul style="list-style-type: none"> <li>– prior to each visual inspection of the internal floating roof or the external floating roof in a tank that has been emptied and degassed, written notification is sent so that it is received by the Regional Administrator at least 30 calendar days before refilling the tank except when an inspection is not planned</li> <li>– prior to each inspection to measure external floating roof seal gaps written notification is sent so that it is received by the Regional Administrator at least 30 calendar days before the date the measurements are scheduled to be performed</li> <li>– when a visual inspection is not planned and could not have been known about, the Regional Administrator is notified as soon as possible but no later than 7 calendar days before refilling the tank.</li> </ul> <p>Verify that, for fixed roofs and associated closure devices, the air emission control equipment is visually inspected for defects that could result in air pollutant emissions initially before the tank becomes subject to these requirements and thereafter annually.</p> <p>Verify that defects detected during inspections are repaired as follows:</p>

<p style="text-align: center;"><b>COMPLIANCE CATEGORY</b>  <b>STORAGE TANK MANAGEMENT</b>  <b>U.S. TEAM Guide</b></p>	
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<p><b>ST.110.20.US.</b> TSDFs are required to meet documentation requirements for tanks (40 CFR 264.1089(a), 264.1089(b), and 264.1089(e) through 264.1089(i); 265.202, 265.1090(a), 265.1090(b), and 265.1090(e) through 265.1090(i)) <b>[Revised December 1997; Citation Revised January 2017].</b></p>	<ul style="list-style-type: none"> <li>– first efforts at repair are made no later than 5 calendar days after detection</li> <li>– repair is completed no later than 45 days after detection unless it is determined that the repair requires emptying or temporary removal from service of the tank and no alternative capacity is available to accept the hazardous waste managed in the tank.</li> </ul> <p>(NOTE: After the initial inspections of the cover, following inspections may be performed at intervals longer than 1 yr under the following conditions:</p> <ul style="list-style-type: none"> <li>– when inspecting or monitoring the cover would expose a worker to dangerous, hazardous, or other unsafe conditions and the cover is designated as unsafe to inspect</li> <li>– when the tank is buried partially or entirely underground, only those portions aboveground are monitored annually.)</li> </ul> <p>(NOTE: See Appendix 10-4 for guidance on the schedule for implementation of air emissions standards in 40 CFR 265.1080 through 265.1091.)</p> <p>Verify that the following records are kept for tanks using air emissions control:</p> <ul style="list-style-type: none"> <li>– a tank identification number or other unique identifying description</li> <li>– a record for each required inspection that includes the following: <ul style="list-style-type: none"> <li>– date the inspection was done</li> <li>– location and description of defects</li> <li>– date of detection and corrective action to repair.</li> </ul> </li> </ul> <p>Verify that, for tanks using fixed roofs to meet Level 1 control standards, records are kept for each determination of the maximum organic vapor pressure of the hazardous waste, including the date and time the samples were collected, analysis method used, and analysis results.</p> <p>Verify that, for tanks using internal floating roofs to meet Level 2 control standards, documentation is maintained describing the floating roof design.</p> <p>Verify that, for tanks using external floating roofs to comply with Level 2 control standards, the following records are maintained:</p> <ul style="list-style-type: none"> <li>– documentation describing the floating roof design and the dimensions of the tank</li> <li>– records for each seal gap inspection, including the date, results, and calculations.</li> </ul> <p>Verify that, for situations where an enclosure is being used to comply with Level 2 control requirements, the following are maintained:</p> <ul style="list-style-type: none"> <li>– records for the most recent set of calculations and measurements performed by the owner or operator to verify that the enclosure meets the criteria for a permanent total enclosure</li> <li>– all records required for closed vent systems and control devices.</li> </ul>

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	<p>Verify that, when measurements of seal gaps indicate nonconformance with specifications, records are kept that include a description of repairs that were made, date the repairs were made, and the date the tanks were emptied.</p> <p>Verify that, if using a closed-vent system and control device, the following records are maintained:</p> <ul style="list-style-type: none"> <li>– certification that is signed and dated by the owner/operator stating that the control device is designed to operate at the performance level documented by a design analysis or by performance tests when the tank is operating at capacity or the highest level reasonably expected to occur</li> <li>– design documents if design analysis is used, including information describing the control device design and certification that the equipment meets the applicable specification</li> <li>– a performance test plan if performance tests are used</li> <li>– description and date of each modification, as applicable</li> <li>– identification of operating parameters, description of monitoring devices, and diagrams of monitoring sensor locations, as applicable</li> <li>– semiannual records of the following for those planned routine maintenance operations that would require the control device to exceed limitations: <ul style="list-style-type: none"> <li>– a description of the planned routine maintenance that is anticipated to be performed for the control device during the next 6-mo period, including the type of maintenance needed, planned frequency, and lengths of maintenance periods</li> <li>– a description of the planned routine maintenance that was performed for the control device during the previous 6-mo period, including the type of maintenance performed and the total number of hours during those 6 mo that the control device did not meet applicable requirements</li> </ul> </li> <li>– records of the following for those unexpected control device system malfunctions that would cause the control device to not meet specifications: <ul style="list-style-type: none"> <li>– the occurrence and duration of each malfunction of the control device system</li> <li>– the duration of each period during a malfunction when gases, vapors, or fumes are vented from the waste management unit through the closed vent system to the control device while the control device is not properly functioning</li> <li>– actions taken during periods of malfunction to restore a malfunctioning control device to its normal or usual manner of operation</li> </ul> </li> <li>– records of the management of the carbon removed from a carbon adsorption system.</li> </ul> <p>Verify that, for exempted tanks (see the definition of Exempted Hazardous Waste Storage Tanks), the following records are prepared and maintained as applicable:</p>

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<p><b>ST.110.21.US.</b> TSDFs are required to meet specific reporting requirements as related to air emissions controls (40 CFR 264.1090(a), and 264.1090(b)) [<b>Revised January 1997</b>].</p>	<ul style="list-style-type: none"> <li>– if exempted under the hazardous waste concentration conditions, information used for the waste determination in the facility operating log and/or the date, time, and location of each waste sample if analysis results for samples are used</li> <li>– if exempted under incineration use or process destruction use, the identification number for the incinerator, boiler, or industrial furnace in which the hazardous waste is treated.</li> </ul> <p>Verify that the covers which are designated as unsafe to monitor, are listed in a log kept in the facility operating record with an explanation of why they are unsafe to inspect and monitor and a plan and schedule of inspection and monitoring is recorded.</p> <p>Verify that, for tanks not using the air emissions controls specified in 40 CFR 264.1084 through 264.1087 or 40 CFR 265.1085 through 265.1088, the following information is maintained:</p> <ul style="list-style-type: none"> <li>– a list of the individual organic peroxide compounds manufactured at the facility if it produces more than one functional family of organic peroxides or multiple organic peroxides within one functional family, and one or more of these organic peroxides could potentially undergo self-accelerating thermal decomposition at or below ambient temperatures</li> <li>– a description of how the hazardous waste containing the organic peroxide compounds identified in the above list are managed, including: <ul style="list-style-type: none"> <li>– a facility identification number for the tank or group of tanks</li> <li>– the purpose and placement of this tank or group of tanks in the management train of this hazardous waste</li> <li>– the procedures used to ultimately dispose of the hazardous waste handled in the tank</li> </ul> </li> <li>– an explanations why managing these tanks would be an undue safety hazard.</li> </ul> <p>Verify that all records, except air emission control equipment design information records, are kept for at least 3 yr.</p> <p>Verify that air emission control equipment design information records are maintained in the operating record until the air emissions control equipment is replaced otherwise no longer in service.</p> <p>(NOTE: See Appendix 10-4 for guidance on the schedule for implementation of air emissions standards in 40 CFR 265.1080 through 265.1091.)</p> <p>Verify that a written report is submitted to the Regional Administrator within 15 calendar days of becoming aware that hazardous waste is being managed in an exempted tank in noncompliance with the applicable design and operating requirements.</p> <p>Verify that written reports for noncompliance using exempted tanks contain:</p>

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	<ul style="list-style-type: none"> <li>– USEPA identification number</li> <li>– facility name and address</li> <li>– description of the noncompliance event and the cause</li> <li>– actions taken to correct noncompliance and prevent recurrence</li> <li>– date and signature by the authorized agent of the facility.</li> </ul> <p>Verify that the report contains an explanation of why the control device could not be returned to compliance within 24 h and actions taken to correct noncompliance.</p> <p>Verify that a written report is submitted to the Regional Administrator within 15 calendar days of becoming aware that hazardous waste is being managed in a tank equipped with air emissions controls in noncompliance with the applicable design and operating standards and the report contains:</p> <ul style="list-style-type: none"> <li>– USEPA identification number</li> <li>– facility name and address</li> <li>– description of the noncompliance event and the cause</li> <li>– actions taken to correct noncompliance and prevent recurrence</li> <li>– date and signature by the authorized agent of the facility.</li> </ul> <p>(NOTE: If the facility received its permit under RCRA Section 3005 prior to 6 December 1995, these requirements will be incorporated in the permit when it is reviewed. Until that time, the TSDF is required to comply with 40 CFR 265 Subpart CC (40 CFR 264.1080(c) and 265.1080(c)).)</p>



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<b>ST.120</b>  <b>FLAMMABLE/ COMBUSTIBLE LIQUID STORAGE TANKS</b>  <b>ST.120.1.US.</b> Tanks used for the storage of flammable liquids are required to meet specific design and construction standards (29 CFR 1910.106(b)(1)) [Revised April 2012].	<p>Verify that tanks are built of steel unless:</p> <ul style="list-style-type: none"> <li>– the properties of the liquid stored in the tank require something other than steel</li> <li>– the tank is designed to specification embodying principles recognized as good engineering design for the material used</li> <li>– it is a concrete tank used for flammable liquids have a gravity of 40° API or heavier.</li> </ul> <p>Verify that tanks located above ground or inside buildings are of noncombustible construction.</p> <p>(NOTE: Concrete tanks with special lining may be used for other services provided the design is in accordance with good engineering practice.)</p> <p>(NOTE: Special engineering consideration is required if the specific gravity of the liquid to be stored exceeds that of water or if the tanks are designed to contain flammable or combustible liquids at a liquid temperature below 0 °F.)</p> <p>Verify that metal tanks are welded, riveted, and caulked, brazed, or bolted, or constructed by use of a combination of these methods.</p> <p>Verify that filler metal used in brazing is nonferrous metal or an alloy having a melting point above 1000 °F. and below that of the metal joined.</p> <p>Verify that atmospheric tanks are built in accordance with acceptable good standards of design (see the text of 29 CFR 1910.106(b)(1)(iii)).</p> <p>(NOTE: Tanks designed for underground service not exceeding 2,500 gal capacity may be used aboveground.)</p> <p>(NOTE: Low-pressure tanks and pressure vessels may be used as atmospheric tanks.)</p> <p>Verify that atmospheric tanks are not used for the storage of a flammable liquid at a temperature at or above its boiling point.</p> <p>Verify that, for low pressure tanks, the normal operating pressure of the tank does not exceed the design pressure of the tank.</p> <p>Verify that low-pressure tanks are built in accordance with acceptable standards of design (see text of 29 CFR 1910.106(b)(1)(iv)).</p>

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<p><b>ST.120.2.US.</b> Outside aboveground tanks used for the storage of flammable liquids are required to be installed according to specific parameters (29 CFR 1910.106(b)(2)(ii)) [Revised April 2012].</p>	<p>(NOTE: Pressure vessels may be used as low-pressure tanks.)</p> <p>Verify that, for pressure vessels, the normal operating pressure of the vessel does not exceed the design pressure of the vessel.</p> <p>Verify that pressure vessels are built in accordance with the Code for Unfired Pressure Vessels, Section VIII of the ASME Boiler and Pressure Vessel Code 1968.</p> <p>Verify that, when tanks are not designed in accordance with the American Petroleum Institute, American Society of Mechanical Engineers, or the Underwriters' Laboratories, Inc.'s, standards, or if corrosion is anticipated beyond that provided for in the design formulas used, additional metal thickness or suitable protective coatings or linings are provided to compensate for the corrosion loss expected during the design life of the tank.</p> <p>Verify that there is a minimum distance of 3 ft between any two flammable liquid aboveground outside tanks.</p> <p>Verify that the distance between any two adjacent tanks is not less than one-sixth the sum of their diameters.</p> <p>(NOTE: When the diameter of one tank is less than half the diameter of the adjacent tank, the distance between the two tanks is not less than one-half the diameter of the smaller tank.)</p> <p>Verify that where unstable flammable liquids are stored, the distance between the tanks is not less than one-half the sum of their diameters.</p> <p>Verify that, when tanks are compacted in three or more rows or in an irregular pattern, greater spacing or other means is provided for firefighting access.</p> <p>Verify that there is a minimum distance of 20 ft between a liquefied petroleum gas (LPG) container and a flammable liquid storage tank.</p> <p>(NOTE: In the case of flammable liquid tanks operating at pressure exceeding 2.5 psig or equipped with emergency venting which will permit pressures to exceed 2.5 psig, spacing of 3 ft or the use of the formula concerning one-sixth of diameters may be used.)</p> <p>Verify that suitable means such as diversion curbs or grading are provided to prevent the accumulation of flammable liquids under adjacent LPG containers.</p> <p>Verify that when flammable liquid storage tanks are within a diked area, LPG containers are outside the diked area and at least 10 ft away from the centerline of the wall of the diked area.</p>

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<b>ST.120.3.US.</b> Tanks for the storage of flammable liquids are required to meet specific containment requirements (29 CFR 1910.106(b)(2)(vii)) [Revised April 2012].	<p>(NOTE: The requirement concerning LPG containers and diked areas does not apply if LPG containers of 125 gal or less capacity are installed adjacent to fuel oil supply of 550 gal or less capacity.)</p> <p>Verify that the area surrounding a tank, or a group of tanks, is either provided with drainage or diked to prevent accidental discharge of liquid from endangering adjoining property or reaching waterways.</p> <p>Verify that, if a drainage system is used, it terminate in vacant land or other area or in an impounding basin having a capacity not smaller than that of the largest tank served.</p> <p>Verify that, if a drainage system is used, the termination area and the route of the drainage system is located so that, if the flammable liquids in the drainage system are ignited, the fire will not seriously expose tanks or adjoining property.</p> <p>Verify that, if a diked area is used, the volumetric capacity of the diked area is not less than the greatest amount of liquid that can be released from the largest tank within the diked area, assuming a full tank.</p> <p>(NOTE: The capacity of the diked area enclosing more than one tank is calculated by deducting the volume of the tanks other than the largest tank below the height of the dike.)</p> <p>Verify that, for a tank or group of tanks with fixed roofs containing crude petroleum with boilover characteristics, the volumetric capacity of the diked area is not less than the capacity of the largest tank served by the enclosure, assuming a full tank.</p> <p>(NOTE: The capacity of the diked enclosure is calculated by deducting the volume below the height of the dike of all tanks within the enclosure.)</p> <p>Verify that walls of the diked area are of earth, steel, concrete or solid masonry designed to be liquid-tight and to withstand a full hydrostatic head.</p> <p>Verify that earthen walls 3 ft or more in height have a flat section at the top not less than 2 ft wide.</p> <p>Verify that the slope of an earthen wall is consistent with the angle of repose of the material of which the wall is constructed.</p> <p>Verify that the walls of the diked area are restricted to an average height of 6 ft above interior grade.</p> <p>Verify that no loose combustible material, empty or full drum or barrel, are permitted within the diked area.</p>

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<p><b>ST.120.4.US.</b> In locations where flammable vapors may be present from storage tanks, precautions are required to be taken to prevent ignition (29 CFR 1910.106(b)(6)).</p>	<p>Verify that sources of ignition such as open flames, smoking, welding and cutting, hot surfaces, sparks, and radiant heat are avoided.</p>
<p><b>ST.120.5.US.</b> Tanks used for the storage of flammable liquids are required to be strength tested before being placed into service (29 CFR 1910.106(b)(7)(i)) <b>[Revised April 1995; Revised April 2012]</b>.</p>	<p>Verify that the tank has been strength tested before it was placed into service.</p> <p>(NOTE: It is common for a tank that has been strength tested to be marked with an American Society of Mechanical Engineers (ASME) code stamp, API monogram, or the label of the Underwriters Laboratory.)</p>

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<b>USED OIL STORAGE TANKS</b>  <b>ST.125</b> <b>Generators</b>  <b>ST.125.1.US.</b> Tanks storing used oil produced by used oil generators are required to meet specific criteria (40 CFR 279.22(b) and 279.22(c)) <b>[Revised March 2000]</b> .	<p>Verify that ASTs and fill pipes used to transfer used oil into underground storage facilities are clearly marked with the phrase USED OIL.</p> <p>Verify that ASTs are not leaking, bulging, rusting, damaged, or dented.</p> <p>(NOTE: USTs storing used oil are subject to the applicable standards in 40 CFR 280.)</p> <p>(NOTE: See Section 8 titled <i>POL Management</i> for additional guidance on used oil.)</p> <p>(NOTE: The requirements for used oil generators do not apply to the following (40 CFR 279.20(a)) <b>[Reviewed March 2000]</b>:</p> <ul style="list-style-type: none"> <li>– household Do-it-Yourselfer (DIY) used oil generators</li> <li>– vessels at sea or at port (it is considered generation when it is transported ashore)</li> <li>– mixtures of used oil and diesel fuel mixed by the generator of the used oil for use in the generator's own vehicles (NOTE: Prior to mixing, the used oil fuel is subject to 40 CFR 279, Subpart C.)</li> <li>– farmers who generate an average of 25 gal/mo or less of used oil from vehicles or machinery used on the farm in a calendar year.)</li> </ul> <p>(NOTE: In relation to used oil coming ashore from vessels, the owner or operator of the vessel and the person removing or accepting used oil from the vessel are cogenerators of the used oil and are both responsible for managing the waste as used oil once it is ashore <b>[Reviewed March 2000]</b>.)</p>



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<b>USED OIL STORAGE TANKS</b>  <b>ST.130</b> <b>Collection Centers and Aggregation Points</b>  <b>ST.130.1.US.</b> Do-it-yourselfer (DIY) used oil collection centers are required to meet the same storage tank standards as used oil generators (40 CFR 279.30) [Reviewed March 2000].	<p>Verify that DIY used oil collection centers meet the requirements for storage tanks as used oil generators.</p> <p>(NOTE: See Section 8 titled POL Management for additional guidance on used oil.)</p>



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<b>USED OIL STORAGE TANKS</b>  <b>ST.135</b> <b>Used Oil Burners</b>  <b>ST.135.1.US.</b> Used oil burners are required to store used oil in tanks that meet specific requirements (40 CFR 279.60(a) and 279.64(a) through 279.64(f)) [ <b>Reviewed March 2000</b> ].	<p>Verify that the tanks at used oil burners meet the requirements outlined in the section titled Used Oil Generators.</p> <p>Verify that tanks used to store used oil have secondary containment that meets the following minimum requirements:</p> <ul style="list-style-type: none"> <li>– dikes, berms, or retaining walls</li> <li>– a floor that covers the entire area within the dikes, berms, or retaining walls</li> <li>– the system is impervious.</li> </ul> <p>Verify that tanks are labeled with the phrase USED OIL.</p> <p>(NOTE: The following are exempt from meeting these requirements:</p> <ul style="list-style-type: none"> <li>– the burning of used oil by a generator in an onsite space heater</li> <li>– the burning of used oil by a processor/re-refiner for purposes of processing.)</li> </ul> <p>(NOTE: See Section 8 titled POL Management for additional guidance on used oil.)</p>



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<p><b>ST.140</b></p> <p><b>MARINE PORTABLE TANKS (MPTs)</b></p> <p><b>ST.140.1.US.</b> MPTs are required to undergo specific inspections and tests to maintain integrity (46 CFR 64.77 through 64.83).</p> <p><b>ST.140.2.US.</b> Portable tanks are required to be handled and stowed according to specific requirements (46 CFR 98.30-6, 98.30-7, 98.30-9, and 98.30-15).</p>	<p>Verify that pressure relief and vacuum relief devices are inspected one or more times during each 12-mo period of service.</p> <p>Verify that the MPT is inspected internally and externally for corrosion, cracking, weld defects, and operational defects during the 30 mo before any month in which it is in service.</p> <p>Verify that the MPT has passed a hydrostatic test during the 60 mo before any month in which it is in service.</p> <p>Verify that the MPT passes a hydrostatic test after each welded repair.</p> <p>(NOTE: Verification of the 30-mo test and the tests of pressure relief and vacuum relief devices can be done by examining the dates on or near the tank's metal identification plate.)</p> <p>Verify that smoking is not allowed within 50 ft of a portable tank on the deck where the tank is stowed.</p> <p>Verify that portable tanks are stowed on open decks and not:</p> <ul style="list-style-type: none"> <li>– in the vicinity of another tank that contains a chemically incompatible product</li> <li>– in the area of a tank and its associated equipment that is within 10 horizontal ft or 8 ft above deck unless all electrical equipment is explosion-proof or intrinsically safe.</li> </ul> <p>Verify that product is not transferred to or from a vessel unless there is a container or enclosed deck that can hold, in all conditions of vessel list or trim to be encountered during transfer, 5 gal or more and has a means of draining or removing any leakage without mixing incompatible products or discharging into the water.</p>



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<b>ST.145</b>  <b>STORAGE TANKS ON CARGO AND MISCELLANEOUS VESSELS</b>  <b>ST.145.1.US.</b> Fuel oil tanks with at least one side integral to the vessel's hull and located within the hull are required to undergo inspections (46 CFR 91.43-1) [ <b>Citation Revised July 2014</b> ].	<p>Verify that prior to internal inspection, the tanks are cleaned out and gas-free.</p> <p>Verify that tanks are examined at least every 5 yr.</p> <p>(NOTE: Under the following circumstances, tanks need not be cleaned out and internally inspected:</p> <ul style="list-style-type: none"> <li>– integral nondouble-bottom fuel oil tanks if exterior inspection shows the general condition is satisfactory</li> <li>– double-bottom fuel oil tanks on vessels for less than 10 yr or if external examination shows the general condition is satisfactory</li> <li>– all double-bottom fuel oil tanks on vessels between 10 and 15 yr of age if the marine inspector can determine by internal inspection of at least one forward double-bottom fuel oil tank and external examination of all other double-bottom fuel oil tanks that the general condition is satisfactory</li> <li>– all double-bottom fuel oil tanks on vessels between 15- and 25-yr of age if the marine inspector can determine by internal examination of at least one forward, one amidships, and one aft double-bottom fuel oil tank and by external examination of all other double-bottom fuel oil tanks on the vessel that the general condition is satisfactory</li> <li>– all double-bottom fuel oil tanks on vessels 25-yr of age or older if internal examination of at least one double-bottom fuel oil tank in way of each cargo hold/tank and external examination of all other double-bottom fuel oil tanks shows the general condition is satisfactory.)</li> </ul>



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<b>ST.150</b>  <b>STORAGE TANKS ON SHIPS</b>  <b>ST.150.1.US.</b> Ships of 300 gross tons or more that were constructed after 30 June 1974 are required to have a fixed container or enclosed deck area under or around each fuel oil or bulk lubricating oil tank vent, overflow, and fill pipe (33 CFR 155.100, 155.320(a), and 155.320(c))  <b>ST.150.2.US.</b> Ships of 100 gross tons or more constructed before 1 July 1974, and ships of 100 gross tons or more, but less than 300 gross tons constructed after 30 June 1974 are required to meet specific standards for discharge containment (33 CFR 155.100, 155.320(b), and 155.320(c)).	<p>Verify that ships of 300 gross tons or more, but less than 600 gross tons have fixed containers or enclosed decks with a capacity of at least a 1/2 bbl [approx. 21 gal].</p> <p>Verify that ships of 600 gross tons or more have fixed containers or enclosed decks with a capacity of at least 1 bbl [approx. 42 gal].</p> <p>(NOTE: These requirements apply to each ship that is operated under the authority of the United States, however, provisions for exemptions of public vessels exist under certain circumstances.)</p> <p>Verify that one of the following criteria is met:</p> <ul style="list-style-type: none"> <li>– there are fixed containers or enclosed deck areas under or around each issue oil or bulk lubricating oil tank vent, overflow, or fill pipe that has a capacity of at least a 1/2 bbl [approx. 21 gal]</li> <li>– each fuel oil or bulk lubricating oil tank vent, overflow, and fill pipe is equipped during oil transfer operations with a portable container with at least a 5 gal capacity</li> <li>– ships with a fill fitting for which containment is impractical have an automatic back pressure shut-off nozzle.</li> </ul> <p>(NOTE: These requirements apply to each ship that is operated under the authority of the United States, however, provisions for exemption of public vessels exist under certain circumstances.)</p>



## Appendix 10-0

### Calculations for 40 CFR 63, Subpart R Applicability

(40 CFR 63.420(a)(1) and 63.420(b)(1))

[Added April 2004]

#### Bulk Gasoline Terminals

$$ET = CF[0.59(TF)(1-CE) + 0.17(TE) + 0.08(TES) + 0.038(TI) + 8.5 \times 10^{-6}(C) + KQ] + 0.04(OE)$$

where:

ET = emissions screening factor for bulk gasoline terminals;

CF = 0.161 for bulk gasoline terminals and pipeline breakout stations that do not handle any reformulated or oxygenated gasoline containing 7.6 percent by volume or greater methyl tert-butyl ether (MTBE), OR

CF = 1.0 for bulk gasoline terminals and pipeline breakout stations that handle reformulated or oxygenated gasoline containing 7.6 percent by volume or greater MTBE;

CE = control efficiency limitation on potential to emit for the vapor processing system used to control emissions from fixed-roof gasoline storage vessels [value should be added in decimal form (percent divided by 100)];

TF = total number of fixed-roof gasoline storage vessels without an internal floating roof;

TE = total number of external floating roof gasoline storage vessels with only primary seals;

TES = total number of external floating roof gasoline storage vessels with primary and secondary seals;

TI = total number of fixed-roof gasoline storage vessels with an internal floating roof;

C = number of valves, pumps, connectors, loading arm valves, and open-ended lines in gasoline service;

Q = gasoline throughput limitation on potential to emit or gasoline throughput limit in compliance with paragraphs (c), (d), and (f) of this section (liters/day);

K =  $4.52 \times 10^{-6}$  for bulk gasoline terminals with uncontrolled loading racks (no vapor collection and processing systems), OR

K =  $(4.5 \times 10^{-9})(EF + L)$  for bulk gasoline terminals with controlled loading racks (loading racks that have vapor collection and processing systems installed on the emission stream);

EF = emission rate limitation on potential to emit for the gasoline cargo tank loading rack vapor processor outlet emissions (mg of total organic compounds per liter of gasoline loaded);

OE = other HAP emissions screening factor for bulk gasoline terminals or pipeline breakout stations (tons per year). OE equals the total HAP from other emission sources not specified in parameters in the equations for

ET or EP. If the value of  $0.04(OE)$  is greater than 5 percent of either ET or EP, then paragraphs (a)(1) and (b)(1) of this section shall not be used to determine applicability;

L = 13 mg/l for gasoline cargo tanks meeting the requirement to satisfy the test criteria for a vapor-tight gasoline tank truck in 40 CFR 60.501, OR

L = 304 mg/l for gasoline cargo tanks not meeting the requirement to satisfy the test criteria for a vapor-tight gasoline tank truck in 40 CFR 60.501;

#### Pipeline Breakout Station

$$EP = CF [6.7(TF)(1-CE) + 0.21(TE) + 0.093(TES) + 0.1(TI) + 5.31 \times 10^{-6}(C) + 0.04(OE)];$$

where EP = emissions screening factor for pipeline breakout stations, and the definitions for CF, TF, CE, TE, TES, TI, C, and OE are the same as provided in paragraph (a)(1) of this section.



**Appendix 10-0a**  
**Compliance Schedule for Site Remediation Emission Limitations**  
(40 CFR 63.7883)

<b>Facility Type</b>	<b>Requirements</b>	<b>Compliance Date</b>
Existing Affected Source*	Emission limitation, work practice standard, and operation and maintenance requirements.	9 October 2006
New affected sources that manage remediation material other than a radioactive mixed waste with an initial startup date on or before 8 October 2003.	Emission limitation, work Practice standard, and operation and maintenance requirements.	8 October 2003
New affected sources that manages remediation material other than a radioactive mixed waste with an initial startup date after 8 October 2003.	Emission limitation, work practice standard, and operation and maintenance requirements.	Upon Initial Startup
New affected sources that manages remediation material that is a radioactive mixed waste with an initial startup date is on or before 8 October 2003	Emission limitation, work practice standard, and operation and maintenance requirements.	9 October 2006
New affected sources that manages remediation material that is a radioactive mixed waste with an initial startup date after 8 October 2003.	Emission limitation, work practice standard, and operation and maintenance requirements.	Upon Initial Startup
The facility is an area source that increases its emissions or its potential to emit such that it becomes a major source of HAP, for each source at the facility that is a new affected source.	Emission limitation, work practice standard, and operation and maintenance requirements.	Upon Initial Startup
The facility is an area source that increases its emissions or its potential to emit such that it becomes a major source of HAP, for all other affected sources.	Emission limitation, work practice standard, and operation and maintenance requirements.	No later than 3 yr after the facility becomes a major source.

Affected Site Remediation Sources are:

1. Process vents. The affected source is the entire group of process vents associated with the in-situ and ex-situ remediation processes used at your site to remove, destroy, degrade, transform, or immobilize hazardous substances in the remediation material subject to remediation. Examples of such in-situ remediation processes include, but are not limited to, soil vapor extraction and bioremediation processes. Examples of such ex-situ remediation processes include but are not limited to, thermal desorption, bioremediation, and air stripping processes.
2. Remediation material management units. Remediation material management unit means a tank, surface impoundment, container, oil-water separator, organic-water separator, or transfer system, as defined in 40 CFR 63.7957(see definitions) and is used at the site to manage remediation material. The affected source is the entire

group of remediation material management units used for the site remediations at the site. For the purpose of this 40 CFR 63, Subpart GGGGG, a tank or container that is also equipped with a vent that serves as a process vent, as defined in 40 CFR 63.7957, is not a remediation material management unit, but instead this unit is considered to be a process vent affected source under paragraph 1.

3. Equipment leaks. The affected source is the entire group of equipment components (pumps, valves, etc.) used to manage remediation materials and meeting both of the following conditions. If either of these conditions does not apply to an equipment component, then that component is not part of the affected source for equipment leaks.
  - a. The equipment component contains or contacts remediation material having a concentration of total HAP listed in Appendix 1-27 of this 40 CFR 63, Subpart GGGG (Appendix 1-27) equal to or greater than 10 percent by weight.
  - b. The equipment component is intended to operate for 300 h or more during a calendar year in remediation material service, as defined in 40 CFR 63.7957.

## Appendix 10-0b

### Control Levels for Tanks Managing Remediation Material With a Maximum HAP Vapor Pressure Less Than 76.6 kPa

(Table 2 to Subpart GGGGG of Part 63)

[Added April 2004]

If your tank design capacity is...	And the maximum HAP vapor pressure of the remediation material placed in the tank is...	Then your tank must use . . .
1. Less than 38 m3.....	Less than 76.6 kPa.	Tank Level 1 controls under 40 CFR 63.7895(b).
2. At least 38 m3 but less than 151 m3	Less than 13.1 kPa.	Tank Level 1 controls under 40 CFR 63.7895(b).
3. 151 m3 or greater.....	Less than 0.7 kPa.	Tank Level 1 controls under 40 CFR 63.7895(b).
4. at least 38 m <sup>3</sup> but less than 151 m <sup>3</sup> .	13.1 kPa or greater.	Tank Level 2 controls under 40 CFR 63.7895(c).
5. 151 m <sup>3</sup> or greater.....	0.7 kPa or greater..	Tank Level 2 controls under 40 CFR 63.7895(c).



## Appendix 10-0c

### List of Hazardous Air Pollutants (Table 1 to Subpart GGGGG of Part 63) [Added April 2004]

CA NO. <sup>a</sup>	Compound Name	fm305
75070	Acetaldehyde	1.000
75058	Acetonitrile	0.989
98862	Acetophenone	0.314
107028	Acrolein	1.000
107131	Acrylonitrile	0.999
107051	Allyl chloride	1.000
71432	Benzene (includes benzene in gasoline)	1.000
98077	Benzotrichloride (isomers and mixture)	0.958
100447	Benzyl chloride	1.000
92524	Biphenyl	0.864
542881	Bis(chloromethyl)ether <sup>b</sup>	0.999
75252	Bromoform	0.998
106990	1,3-Butadiene	1.000
75150	Carbon disulfide	1.000
56235	Carbon Tetrachloride	1.000
43581	Carbonyl sulfide	1.000
133904	Chloramben	0.633
108907	Chlorobenzene	1.000
67663	Chloroform	1.000
107302	Chloromethyl methyl ether <sup>b</sup>	1.000
126998	Chloroprene	1.000
98828	Cumene	1.000
94757	2,4-D, salts and esters	0.167
334883	Diazomethane <sup>c</sup>	0.999
132649	Dibenzofurans	0.967
96128	1,2-Dibromo-3-chloropropane	1.000
106467	1,4-Dichlorobenzene(p)	1.000
107062	Dichloroethane (Ethylene dichloride)	1.000
111444	Dichloroethyl ether (Bis(2-chloroethyl ether)).	0.757
542756	1,3-Dichloropropene	1.000
79447	Dimethyl carbamoyl chloride	0.150
57147	1,1-Dimethyl hydrazine	
64675	Diethyl sulfate	0.0025
77781	Dimethyl sulfate	0.086
121697	N,N-Dimethylaniline	0.0008
51285	2,4-Dinitrophenol	0.0077
121142	2,4-Dinitrotoluene	0.0848
121142	2,4-Dinitrotoluene	0.0848
123911	1,4-Dioxane (1,4-Diethyleneoxide)	0.869
106898	Epichlorohydrin (1-Chloro-2,3-epoxypropane)	0.939
106887	1,2-Epoxybutane	1.000
140885	Ethyl acrylate	1.000
100414	Ethyl benzene	1.000
75003	Ethyl chloride (Chloroethane)	1.000
106934	Ethylene dibromide (Dibromoethane)	0.999
107062	Ethylene dichloride (1,2-Dichloroethane)	1.000
151564	Ethylene imine (Aziridine)	0.867
75218	Ethylene oxide	1.000

75343	Ethylidene dichloride (1,1-Dichloroethane)	1.000
	Glycol ethers\ d\ that have a Henry's Law (e) constant value equal to or greater than 0.1 Y/X(1.8 x 10 <sup>-6</sup> atm/gm-mole/m <sup>3</sup> ) at 25 C.	
118741	Hexachlorobenzene	0.97
87683	Hexachlorobutadiene	0.88
67721	Hexachloroethane	0.499
110543	Hexane	1.000
78591	Isophorone	0.506
58899	Lindane (all isomers)	1.000
67561	Methanol	0.855
74839	Methyl bromide (Bromomethane)	1.000
74873	Methyl chloride (Chloromethane)	1.000
71556	Methyl chloroform (1,1,1-Trichloroethane)	1.000
78933	Methyl ethyl ketone (2-Butanone)	0.990
74884	Methyl iodide (Iodomethane)	1.000
108101	Methyl isobutyl ketone (Hexone)	0.979
624839	Methyl isocyanate	1.000
80626	Methyl methacrylate	0.999
1634044	Methyl tert butyl ether	1.000
75092	Methylene chloride (Dichloromethane)	1.000
91203	Naphthalene	0.994
98953	Nitrobenzene	0.394
79469	2-Nitropropane	0.989
82688	Pentachloronitrobenzene (Quintobenzene)	0.839
87865	Pentachlorophenol	0.0898
75445	Phosgene\ c\	1.000
123386	Propionaldehyde	0.999
78875	Propylene dichloride (1,2-Dichloropropane)	1.000
75569	Propylene oxide	1.000
75558	1,2-Propylenimine (2-Methyl aziridine)	0.945
100425	Styrene	1.000
96093	Styrene oxide	0.830
79345	1,1,2,2-Tetrachloroethane	0.999
127184	Tetrachloroethylene (Perchloroethylene)	1.000
108883	Toluene	1.000
95534	o-Toluidine	0.152
120821	1,2,4-Trichlorobenzene	1.000
71556	1,1,1-Trichloroethane (Methyl chloroform)	1.000
79005	1,1,2-Trichloroethane (Vinyl trichloride)	1.000
79016	Trichloroethylene	1.000
95954	2,4,5-Trichlorophenol	0.108
88062	2,4,6-Trichlorophenol	0.132
121448	Triethylamine	1.000
540841	2,2,4-Trimethylpentane	1.000
108054	Vinyl acetate	1.000
593602	Vinyl bromide	1.000
75014	Vinyl chloride	1.000
75354	Vinylidene chloride (1,1-Dichloroethylene)	1.000
1330207	Xylenes (isomers and mixture)	1.000
95476	o-Xylenes.	1.000
108383	m-Xylenes	1.000
106423	p-Xylenes	1.000

1. fm305 = Fraction measure factor in Method 305, 40 CFR part 63, appendix A.

- <sup>a</sup> CAS numbers refer to the Chemical Abstracts Services registry number assigned to specific compounds, isomers, or mixtures of compounds.
- <sup>b</sup> Denotes a HAP that hydrolyzes quickly in water, but the hydrolysis products are also HAP chemicals.
- <sup>c</sup> Denotes a HAP that may react violently with water.
- <sup>d</sup> Denotes a HAP that hydrolyzes slowly in water.
- <sup>e</sup> The fm305 factors for some of the more common glycol ethers can be obtained by contacting the Waste and Chemical Processes Group, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711.



## Appendix 10-0d

### Applicability Criteria, Emission Limits, and Management Practices for Storage Tanks and Loading Racks

(Table 1 and Table 2 to Subpart BBBBBB of 40 CFR 63)

[Added April 2008]

<b>Table 1</b> <b>Applicability Criteria, Emission Limits, and Management Practices for Storage Tanks</b>	
<b>If you own or operate</b>	<b>Then you must</b>
1. A gasoline storage tank with a capacity of less than 75 cubic meters (m <sup>3</sup> ).	Equip each gasoline storage tank with a fixed roof that is mounted to the storage tank in a stationary manner, and maintain all openings in a closed position at all times when not in use.
2. A gasoline storage tank with a capacity of greater than or equal - to 75 m <sup>3</sup> .	(a) Reduce emissions of total organic HAP or TOC by 95 weight percent with a closed vent system and control device as specified in 40 CFR 60.112b(a)(3); or
	(b) Equip each internal floating roof gasoline storage tank according to the requirements in 40 CFR 60.112b(a)(1), except for the secondary seal requirements under 40 CFR 60.112b(a)(1)(ii)(B) and the requirements in 40 CFR 60.112b(a)(1)(iv) through (ix); and
	(c) Equip each external floating roof gasoline storage tank according to the requirements in 40 CFR 60.112b(a)(2), except that the requirements of 40 CFR 60.112b(a)(2)(ii) shall only be required if such storage tank does not currently meet the requirements of 40 CFR 60.112b(a)(2)(i); or
	(d) Equip and operate each internal and external floating roof gasoline storage tank according to the applicable requirements in 40 CFR 63.1063(a)(1) and (b), and equip each external floating roof gasoline storage tank according to the requirements of 40 CFR 63.1063(a)(2) if such storage tank does not currently meet the requirements of 40 CFR 63.1063(a)(1).

<b>Table 2</b> <b>Applicability Criteria, Emission Limits, and Management Practices for Loading Racks</b>	
<b>If you own or operate</b>	<b>Then you must</b>
1. A gasoline loading rack(s) at a bulk gasoline terminal with a gasoline throughput of 250,000 gal/day, or greater.	(a) Equip your loading rack(s) with a vapor collection system designed to collect the TOC vapors displaced from cargo tanks during product loading; and

<b>Table 2</b> <b>Applicability Criteria, Emission Limits, and Management Practices for Loading Racks</b>	
<b>If you own or operate</b>	<b>Then you must</b>
	(b) Reduce emissions of TOC to $\leq 80$ mg/l of gasoline loaded into gasoline cargo tanks at the loading rack; and
	(c) Design and operate the vapor collection system to prevent any TOC vapors collected at one loading rack from passing to another loading rack; and
	(d) Limit the loading of gasoline into gasoline cargo tanks that are vapor tight using the procedures specified in 40 CFR 60.502(e) through (j). For the purposes of this section, the term “tank truck” as used in 40 CFR 60.502(e) through (j) means “cargo tank” as defined in 40 CFR 63.11100.
2. A gasoline loading rack(s) at a bulk gasoline terminal with a gasoline throughput $< 250,000$ gal/day.	(a) Use submerged filling with a submerged fill pipe that is no more than 6 in from the bottom of the cargo tank.
	(b) Make records available within 24 h of a request by the Administrator to document your gasoline throughput.

## **Appendix 10-1**

**Deleted July 2015 with issuance of new UST regulations**



## Appendix 10-2

### UST Systems With Field-Constructed Tanks and Airport Hydrant Fuel Distribution System: Leak Detection (40 CFR 280.252(d)(2)(i)(A) and 280.252(d)(2)(i)(B)) [Revised July 2015]

Maximum Leak Detection Rate Per Test Section Volume		
Test Section Volume (gallons)	Semiannual Test –leak detection rate not to exceed (gal/h)	Annual Test - leak detection rate not to exceed (gal/h)
< 50,000	1.0	0.5
>= 50,000 to < 75,000	1.5	0.75
>= 75,000 to < 100,000	2.0	1.0
>= 100,000	3.0	1.5

Phase In for Piping Segments >= 100,000 Gallons in Volume	
First test	Not later than 13 October 2018 (may use up to 6.0 gph leak rate)
Second test	Between 13 October 2018 and 13 October 2021 (may use up to 6.0 gph leak rate)
Third test	Between 13 October 2021 and 13 October 2022 (must use 3.0 gph for leak rate)
Subsequent tests	After 13 October 2022, begin using semiannual or annual line testing according to the Maximum Leak Detection Rate Per Test Section Volume table above.



## Appendix 10-3

### Release Detection Requirements for USTs and Underground Piping (40 CFR 280. 280.43 and 280.44) [Revised July 2015]

#### UST Release Detection Methods

**A. Inventory Control (40 CFR 280.43(a)):** Product inventory control [or another test of equivalent performance] must be conducted monthly to detect a release of at least 1.0 percent of flow-through plus 130 gal on a monthly basis in the following manner:

1. inventory volume measurements for regulated substance inputs, withdrawals, and the amount still remaining in the tank are recorded each operating day
2. the equipment used is capable of measuring the level of product over the full range of the tanks height to the nearest 1/8 in.
3. the regulated substance inputs are reconciled with delivery receipts by measurements of the tank inventory volume before and after delivery
4. deliveries are made through a drop tube that extends to within 1 ft of the tank bottom
5. product dispensing is metered and recorded within the local standards for meter calibration or an accuracy of 6 in<sup>3</sup> for every 5 gal of product withdrawn, and
6. the measurement of any water level in the bottom of the tank is made to the nearest 1/8 in. at least once a month.

(NOTE: Practices described in the American Petroleum Institute Recommended Practice RP 1621, “Bulk Liquid Stock Control at Retail Outlets” may be used, where applicable, as guidance in meeting the requirements for inventory control.)

**B. Manual Tank Gauging (40 CFR 280.43(b)):** manual tank gauging must meet the following requirements:

1. tank liquid level measurements are taken at the beginning and end of a period using the appropriate minimum duration of test value in the table below during which no liquid is added to or removed from the tank
2. level measurements are based on an average of two consecutive stick readings at both the beginning and ending of the period
3. the equipment used is capable of measuring the level of product over the full range of the tank’s height to the nearest 1/8 in.
4. a release is suspected and subject to the requirements of 40 CFR 280, subpart E if the variation between beginning and ending measurements exceeds the weekly or monthly standards in the table below

(NOTE: Tanks of 550 gal or less nominal capacity and tanks with a nominal capacity of 551 to 1,000 gal that meet the tank diameter criteria in the below table may use manual tank gauging as the sole method of release detection. All other tanks with a nominal capacity of 551 to 2000 gal may use manual tank gauging in place of inventory control. Tanks of greater than 2000 gal nominal capacity may not use manual tank gauging to meet release detection requirements.)

Nominal Tank Capacity	Minimum Duration of Test	Weekly Standard (one test)	Monthly standard (four test average)
550 gal or less	36 hours	10 gal	5 gal
551 – 1,000 gal (when tank diameter is 64 in)	44 hours	9 gal	4 gal
551 – 1,000 gal (when tank diameter is 48 in)	58 hours	12 gal	6 gal
551 – 1,000 gal (also requires periodic tank tightness testing)	36 hours	13 gal	7 gal

1,001 – 2,000 gal (also requires periodic tank tightness testing)	36 hours	26 gal	13 gal
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**C. Tank Tightness Testing (40 CFR 280.43(c)):** Tank tightness testing (or another test of equivalent performance) must be capable of detecting a 0.1 gal/h leak rate from any portion of the tank that routinely contains product while accounting for the effects of thermal expansion or contraction of the product, vapor pockets, tank deformation, evaporation or condensation, and the location of the water table.

**D. Tank Automatic Gauging (40 CFR 280.43(d)):** Equipment for automatic tank gauging that tests for the loss of product and conducts inventory control; must meet the following requirements:

1. the automatic product level monitor test can detect a 0.2 gal/h leak rate from any portion of the tank that routinely contains product,
2. the automatic tank gauging equipment meets the inventory control (or other test of equivalent performance) requirements outlined above in this Appendix,
3. the test is performed with the system operating in one of the following modes:
  - a. in-tank static testing conducted at least once every 30 days; or
  - b. continuous in-tank leak detection operating on an uninterrupted basis or operating within a process that allows the system to gather incremental measurements to determine the leak status of the tank at least once every 30 days.

**E. Vapor Monitoring (40 CFR 280.43(e)):** Testing or monitoring for vapors within the soil gas of the excavation zone must meet the following requirements:

1. the materials used as backfill are sufficiently porous (e.g., gravel, sand, crushed rock) to easily allow diffusion of vapors from releases into the excavation area
2. the stored regulated substance, or a tracer compound placed in the tank system, is sufficiently volatile (e.g., gasoline) to result in a vapor level that is detectable by the monitoring devices located in the excavation zone in the event of a release from the tank
3. the measurement of vapors by the monitoring device is not rendered inoperative by the ground water, rainfall, or soil moisture or other known interferences so that a release could go undetected for more than 30 days
4. the level of background contamination in the excavation zone will not interfere with the method used to detect releases from the tank
5. the vapor monitors are designed and operated to detect any significant increase in concentration above background of the regulated substance stored in the tank system, a component or components of that substance, or a tracer compound placed in the tank system
6. in the UST excavation zone, the site is assessed to ensure compliance with the requirements of the first four items in this method and to establish the number and positioning of monitoring wells that will detect releases within the excavation zone from any portion of the tank that routinely contains product, and
7. monitoring wells are clearly marked and secured to avoid unauthorized access and tampering.

**F. Groundwater Monitoring (40 CFR 280.43(f)):** Testing or monitoring for liquids in the groundwater must meet the following requirements:

1. the regulated substance stored is immiscible in water and has a specific gravity of less than one
2. groundwater is never more than 20 ft from the ground surface and the hydraulic conductivity of the soil(s) between the UST system and the monitoring wells or devices is not less than 0.01 cm/s (e.g., the soil should consist of gravels, coarse to medium sands, coarse silts or other permeable materials)
3. the slotted portion of the monitoring well casing must be designed to prevent migration of natural soils or filter pack into the well and to allow entry of regulated substance on the water table into the well under both high and low ground water conditions
4. monitoring wells will be sealed from the ground surface to the top of the filter pack
5. monitoring wells or devices intercept the excavation zone or are as close to it as is technically feasible

6. the continuous monitoring devices or manual methods used can detect the presence of at least 1/8 in. of free product on top of the ground water in the monitoring wells
7. within and immediately below the UST system excavation zone, the site is assessed to ensure compliance with the requirements of the first 5 items in this method and to establish the number and positioning of monitoring wells or devices that will detect releases from any portion of the tank that routinely contains product, and
8. monitoring wells are clearly marked and secured to avoid unauthorized access and tampering.

**G. Interstitial Monitoring (40 CFR 280.43(g)):** Interstitial monitoring between the UST system and a secondary barrier immediately around or beneath it may be used, but only if the system is designed, constructed and installed to detect a leak from any portion of the tank that routinely contains product and also meets one of the following requirements:

1. for double-walled UST systems, the sampling or testing method can detect a leak through the inner wall in any portion of the tank that routinely contains product
2. for UST systems with a secondary barrier within the excavation zone, the sampling or testing method used can detect a leak between the UST system and the secondary barrier, and:
  - a. the secondary barrier around or beneath the UST system consists of artificially constructed material that is sufficiently thick and impermeable (at least  $10^{-6}$  cm/sec for the regulated substance stored) to direct a release to the monitoring point and permit its detection
  - b. the barrier is compatible with the regulated substance stored so that a release from the UST system will not cause a deterioration of the barrier allowing a release to pass through undetected
  - c. for cathodically protected tanks, the secondary barrier is installed so that it does not interfere with the proper operation of the cathodic protection system
  - d. the ground water, soil moisture, or rainfall will not render the testing or sampling method used inoperative so that a release could go undetected for more than 30 days
  - e. the site is assessed to ensure that the secondary barrier is always above the ground water and not in a 25 yr flood plain, unless the barrier and monitoring designs are for use under such conditions, and
  - f. monitoring wells are clearly marked and secured to avoid unauthorized access and tampering.
3. for tanks with an internally fitted liner, an automated device can detect a release between the inner wall of the tank and the liner. The liner is compatible with the substance stored.

**H. Statistical Inventory Reconciliation (40 CFR 280.43(h)):** Release detection methods based on the application of statistical principles to inventory data similar to those described in the paragraph titled "Inventory Control" in this Appendix must meet the following requirements:

1. report a quantitative result with a calculated leak rate
2. be capable of detecting a leak rate of 0.2 gal/h or a release of 150 gal within 30 days, and
3. use a threshold that does not exceed  $\frac{1}{2}$  the minimum detectable leak rate.

**I. Other methods (40 CFR 280.43(i)):** Any other type of release detection method, or combination of methods, can be used if:

1. it can detect a 0.2 gal/h leak rate or a release of 150 gal within a month with a probability of detection of 0.95 and a probability of false alarm of 0.05, or
2. the implementing agency may approve another method, if it can be demonstrated that this method can detect releases as effectively as the methods listed in this appendix.

### **Piping Release Detection Methods**

**A. Automatic Line Leak Detectors (40 CFR 280.44(a)):** Methods which alert the operator to the presence of a leak by restricting or shutting off the flow of regulated substances through piping, or triggering an audible or visual alarm may be used only if they detect leaks of 3 gal/h at 10 lb per square inch line pressure within 1 h. An annual test of the operation of the leak detector must be conducted in accordance with 40 CFR 280.40(a)(3) (see checklist item ST.60.1.US).

**B. Line Tightness Testing (40 CFR 280.44(b)):** A periodic test of piping may be conducted only if it can detect a 0.1 gal/h leak at one and one-half times the operating pressure.

**C. Applicable Tank Methods (40 CFR 280.44(c)):** Except as described in 40 CFR 280.41(a) (see checklist item ST.65.1.US), any of the following methods for tanks may be used if they are designed to detect a release from any portion of the underground piping that routinely contains regulated substances.

- Vapor monitoring
- Groundwater monitoring
- Interstitial monitoring
- Statistical inventory reconciliation
- Other approved methods.

## **Appendix 10-3a**

### **Requirements for UST Operator Training (40 CFR 280.242) [Added July 2015]**

Any training program must meet the minimum requirements outlined in this Appendix and include an evaluation through testing, a practical demonstration, or another approach acceptable to the implementing agency.

A comparable examination must, at a minimum, test the knowledge of the Class A, Class B, or Class C operators in accordance with the requirements outlined in this Appendix.

#### *Class A Operators.*

Each designated Class A operator must either be trained on the following information or pass a comparable examination. At a minimum, the training program for the Class A operator must provide general knowledge of the following requirements.

The purpose, methods, and function of:

- Spill and overfill prevention;
- Release detection;
- Corrosion protection;
- Emergency response;
- Product and equipment compatibility and demonstration;
- Financial responsibility;
- Notification and storage tank registration;
- Temporary and permanent closure;
- Related reporting, recordkeeping, testing, and inspections;
- Environmental and regulatory consequences of releases;
- Training requirements for Class B and Class C operators.

At a minimum, the training program must evaluate Class A operators to determine these individuals have the knowledge and skills to make informed decisions regarding compliance and determine whether appropriate individuals are fulfilling the operation, maintenance, and recordkeeping requirements for UST systems.

#### *Class B Operators.*

Each designated Class B operator must either be trained on the following information or pass a comparable examination.

At a minimum, the training program for the Class B operator must cover either:

- general requirements that encompass all regulatory requirements and typical equipment used at UST facilities; or
- site-specific requirements which address only the regulatory requirements and equipment specific to the facility.

At a minimum, the training program for Class B operators must teach the Class B operator, as applicable, about the purpose, methods, and function of:

- Operation and maintenance;
- Spill and overfill prevention;
- Release detection and related reporting;
- Corrosion protection;
- Emergency response;
- Product and equipment compatibility and demonstration;

- Reporting, recordkeeping, testing, and inspections;
- Environmental and regulatory consequences of releases; and
- Training requirements for Class C operators.

At a minimum, the training program must evaluate Class B operators to determine these individuals have the knowledge and skills to implement applicable UST regulatory requirements in the field on the components of typical UST systems or, as applicable, site-specific equipment used at an UST facility.

#### *Class C Operators*

Each designated Class C operator must either:

- be trained by a Class A or Class B operator on the required information;
- complete a training program, or
- pass a comparable examination.

At a minimum, the training program for the Class C operator must teach the Class C operators to take appropriate actions (including notifying appropriate authorities) in response to emergencies or alarms caused by spills or releases resulting from the operation of the UST system.

At a minimum, the training program must evaluate Class C operators to determine these individuals have the knowledge and skills to take appropriate action (including notifying appropriate authorities) in response to emergencies or alarms caused by spills or releases from an underground storage tank

## **Appendix 10-4**

### **Schedule for Implementation of Air Emissions Standards (40 CFR 265.1082)**

Facilities existing on 6 October 1996, which are required to comply with 40 CFR 265, Subparts I, J, and K, shall:

- install and begin operation of all required control equipment by 6 October 1996. If it cannot be installed and operating by 6 October 1996, the owner and operator shall:
  - install and begin operation as soon as possible but not later than 8 December 1997
  - prepare an implementation schedule which is placed in the operating record by 6 October 1996.

Facilities which are required to comply with 40 CFR 265, Subparts I, J, and K due to a statutory or regulatory amendment shall:

- install and begin operation of all required control equipment by the effective date of the amendment. If it cannot be installed and operating by the effective date of the amendment the owner and operator shall:
  - install and begin operation as soon as possible but not later than 30 mo after the amendment effective date
  - prepare an implementation schedule which is placed in the operating record no later than the effective date of the amendment.

(NOTE: The Regional Administrator may elect to extend the implementation date at a facility on a case- by-case basis.)



## SECTION 11

### TOXIC SUBSTANCES MANAGEMENT U.S. TEAM Guide, December 2018

#### A. Applicability

This section is used to determine the compliance status of the management activities associated with the following:

1. PCBs and in-service and out-of-service PCB items
2. the removal of asbestos from buildings and its ultimate disposal
3. testing for potential radon exposure
4. management of lead based paint.

Assessors are required to review state and local regulations and, if applicable, the appropriate Agency Supplement, to perform a comprehensive assessment.

Select portions of this section (i.e., Review of Federal Legislation, State and Local Regulations, Key Compliance Requirements, Key Terms and Definitions, Typical Records to Review, Typical Physical Features to Inspect, and the Checklist) have been reviewed by USEPA personnel from the Office of Enforcement and Compliance Assurance (OECA) and USEPA's Office of General Counsel. USEPA's comments and suggestions for changes have been incorporated in this version of the TEAM Guide. USEPA did not review all portions of this section. USEPA also did not review and comment on items pertaining to federal Executive Orders, DOT regulations, OSHA regulations or any other area outside of Title 40 of the Code of Federal Regulations. Portions that have been added or revised as a result of this review are identified as being reviewed, revised, or added in March 2000, for example [**Added March 2000**].

#### B. Federal Legislation

- *The Toxic Substances Control Act (TSCA)*. This act, as last amended in 1986, 15 U.S. Code (USC) 2601-2671, is the Federal legislation which deals with the control of toxic substances. The act consists of three subchapters, one of which regulates the control of toxic substances, another governs asbestos hazard emergency response, and another subchapter regulates indoor radon abatement. The policy developed in TSCA on chemical substances is as follows (15 USC 2601(b)):
  1. adequate data should be developed with respect to the effect of chemical substances and mixtures on health and the environment and that the development of such data should be the responsibility of those who manufacture and those who process such chemical substances and mixtures
  2. adequate authority should exist to regulate chemical substances and mixtures that present an unreasonable risk of injury to health or the environment, and to take action regarding chemical substances and mixtures
  3. authority over chemical substances and mixtures should be exercised in such a manner as not to impede unduly or create unnecessary economic barriers to technological innovation while fulfilling the primary purpose of this act to assure that such innovation and commerce in such chemical substances and mixtures do not present an unreasonable risk of injury to health or the environment.

Upon request by the U.S. Environmental Protection Agency (USEPA), each Federal Department and Agency is authorized to (15 USC 2625(a)):

1. make its services, personnel, and facilities available (with or without reimbursement) to the USEPA to assist the USEPA in the administration of this act
2. furnish the USEPA with information, data, estimates, and statistics, and allow the USEPA access to all information in its possession as the USEPA may reasonably determine to be necessary for the administration of this act.

The Secretary of Defense, in cooperation with the USEPA, must, to the extent feasible and consistent with the national security, take such action as may be necessary to provide for the identification, inspection, and management (including abatement) of asbestos in any building used by the DOD as an overseas school for dependents of members of the Armed Forces. Such identification, inspection, and management (including abatement) must, subject to the preceding sentence, be carried out in a manner comparable to the manner in which a local educational agency is required to carry out such activities with respect to a school building under this act (15 USC 2643(L)(2)).

Under TSCA the national long-term goal of the United States with respect to radon levels in building is that the air within buildings in the United States should be as free of radon as the ambient air outside of buildings (15 USC 2661). The head of each Federal Department or Agency that owns a Federal building must conduct a study for the purpose of determining the extent of radon contamination in such buildings. Such study must include, in the case of a Federal building using a nonpublic water source (such as a well or other groundwater), radon contamination of the water. Such a study must be based on design criteria specified by the USEPA (15 USC 2669(a)(c)(e)).

An amendment to TSCA requires the creation of regulations governing lead-based paint activities to ensure that individuals engaged in such activities are properly trained; that training programs are accredited; and that contractors engaged in such activities are certified. Within 15 USC 2688 expressly mandates Federal agency compliance with all Federal, state, interstate, and local requirements, both substantive and procedural pertaining to lead-based paint, lead-based paint activities, and lead-based paint hazards. This section also expressly waives any immunity otherwise applicable to the United States, including immunity from penalties and fines levied by the USEPA and state agencies (15 USC 2681 through 2692) **[Revised June 1998]**.

- *The Asbestos Hazard Emergency Response Act (AHERA)* of 1986. This act, last amended in November 1990, 15 USC 2641-2656, et al., and 20 USC 4014, et al., is the Federal legislation governing the control and abatement of asbestos hazard present in school buildings. The purpose of this act is (15 USC 2641(b)):
  1. to provide for the establishment of Federal regulations which require inspection for asbestos-containing material and implementation of appropriate response actions with respect to asbestos-containing material in the nation's schools in a safe and complete manner
  2. to mandate safe and complete periodic reinspection of school buildings following response actions, where appropriate
  3. to require the USEPA to conduct a study to find out the extent of the danger to human health posed by asbestos in public and commercial buildings and the means to respond to any such danger.
- *The Hazardous Materials Transportation Act*. This act was amended in 1978 to regulate the transport of asbestos materials. The regulations are contained in 49 CFR 172-177. In particular 49 CFR 177 requires that asbestos must be loaded, handled, and unloaded in a manner that will minimize occupational exposure to airborne asbestos. Asbestos wastes which are transported for disposal at a landfill or other disposal facility must meet all applicable requirements.
- EO 12088, *Federal Compliance with Pollution Standards*. This EO, dated 13 October 1978, requires Federally owned and operated facilities to comply with applicable Federal, state, and local pollution control standards. It makes the head of each executive agency responsible for ensuring that the agencies, facilities, programs, and activities the Agency funds meet applicable Federal, state, and local environmental requirements for correcting situations that are not in compliance with such requirements. In addition, the EO requires that each agency ensure that sufficient funds for environmental compliance are included in the agency budget. Sections 1-4, "Pollution Control Plan" was revoked by EO 13148 **[Revised October 2002]**.

### C. State/Local Regulations **[Revised March 2000]**

For information on regulations in specific states, see the State Supplements to TEAM Guide.

Section 18 of TSCA (15 USC 2617), under most circumstances (the only notable exception being paragraph (2) of Section 18), allows states and smaller governmental entities to establish or continue to enforce their own regulations governing chemical substances, mixtures or articles containing a chemical substance or mixture. However, TSCA is different from other federal statutes and programs (e.g., RCRA) where states are authorized by USEPA to operate a regulatory program in lieu of the federal program after the state demonstrates equivalence. The TSCA PCB program is *not* delegated to the states. In accordance with Section 18 of TSCA, states may develop their own PCB regulations providing they are consistent with the Section 18 preemption provisions.

In some cases, states regulations have been developed which regulate PCBs more stringently than the federal program. State PCB regulations may provide additional regulatory requirements beyond the federal program to address a specific concern or activity sensitive in that state.

Many state and local governments have enacted standards more stringent than the federal requirements concerning certification of asbestos workers, and disposal of asbestos waste. Similarly, states and local jurisdictions may also impose more stringent requirements for the use and removal of lead-based paint. Prior to conducting the audit, auditors should consult the appropriate state and local agencies and determine in what ways the applicable state and local programs and requirements differ from the requirements under TSCA.

#### D. Key Compliance Requirements

- General Management of Polychlorinated Biphenyls (PCBs) - No one can manufacture PCBs for use in the U.S. or manufacture for export from the U.S. without an exemption. Additionally, no one can process or distribute in commerce in the U.S. or for export without an exemption. Personnel disposing of PCB-Articles have to be protected from dermal exposure or inhalation of PCBs. Generators, commercial storers, transporters, and disposers of PCB are required to have a USEPA identification number (40 CFR 761.20, 761.60(b), 761.202 through 761.205) [**Revised March 2000**].
- PCB Equipment Marking - The following equipment is required to be marked indicating that they contain PCBs (40 CFR 761.40 and 761.45) [**Revised March 2000**]:
  - PCB Containers
  - PCB Transformers (500 ppm or >)
  - PCB Large High-Voltage Capacitors
  - equipment containing a PCB Transformer (500 ppm or >) or a PCB Large High-Voltage Capacitor
  - PCB Large Low-Voltage Capacitors at the time of removal from service
  - electric motors using PCB coolants
  - hydraulic systems using PCB hydraulic fluid
  - heat transfer systems (other than PCB Transformers) using PCBs
  - PCB Article Containers containing any of the above
  - each storage area used to store PCBs and PCB Items for disposal
  - transport vehicles loaded with PCB Containers that contain more than 45 kg (99.4 lb) of liquid PCBs with PCBs at concentrations  $\geq 50$  ppm or with one or more PCB Transformers
  - vault doors, machinery room doors, fences, hallways, or means of access, other than a manhole or grate cover, to a PCB Transformer (500 ppm or >).
  - voltage regulators with a PCB concentration of  $\geq 500$  ppm (individually)
  - vault doors, machinery room doors, fences, hallways, or means of access to voltage regulators with a PCB concentration  $\geq 500$  ppm.
- Records for PCBs - Each owner or operator of a facility, other than a commercial storer or a disposer of PCB waste, that uses or stores at any time at least 45 kg (99.4 lb) of PCBs contained in PCB containers, or one or more PCB Transformers, or 50 or more PCB Large, High-, or Low-Voltage Capacitors must develop and maintain at the facility all annual records and a written annual document log of the disposition of PCBs and PCB items. The written annual document log must be prepared by July 1 of each calendar year, covering the previous year. PCB chemical waste landfills, disposers, commercial storers, incinerators, high efficiency boilers, storage and disposal

facilities, importers, and manufacturers are all required to maintain records specific to their operations. Generators are required to maintain manifests and certificates of disposal (COD) for three years. (40 CFR 761.180) [**Revised March 2000**].

- **PCB Transformers** - PCB Transformers with PCBs of 500 ppm or >, that are in use or in storage for reuse, must not pose an exposure risk to food and feed and are subject to registration requirements. Railroad transformers must not contain dielectric fluid with > 1000 ppm PCB and must be serviced according to specific requirements. Combustible materials, including, but not limited to, paints, solvents, plastics, paper, and sawn wood, must not be stored by a PCB Transformer. PCB transformers of concentrations of 500 ppm or > in use in or near commercial buildings are subject to certain requirements. PCB transformers are required to be properly serviced, and inspections must be performed once every 3 mo for all in-service transformers. If the transformer is found to be leaking, it must be repaired or replaced to eliminate the source of the leak. When a PCB transformer is involved in a fire, the incident must be reported immediately to the National Response Center (NRC). Mineral oil transformers which are tested and found to be contaminated with 500 ppm PCBs or > must meet more stringent requirements. (40 CFR 761.30(a), 761.30(b), 761.120(a) through 761.120(c), 761.120(d)(2), and 761.125) [**Revised March 2000**].
- **PCB Spills** - Spills of 10 lb or more of PCBs of concentrations of 50 ppm must be reported to the USEPA regional office. Spills of greater than 1 lb or more by weight must be cleaned up and reported to the NRC. The criteria for cleanup is based on whether the spill is of high or low concentration of PCBs (40 CFR 761.120 and 761.125) [**Revised March 2000**].
- **PCB Items** - The use of PCBs in electromagnetic switches, voltage regulators, capacitors, heat transfer and hydraulic systems, circuit breakers, reclosers, and cable is allowed if applicable restrictions are met and precautions taken (40 CFR 761.30) [**Revised October 1998; Reviewed March 2000**].
- **PCB Storage** - PCBs and PCB Items at concentrations > 50 ppm that are to be stored before disposal must be stored in a facility that meets structural and operational requirements. Storage prior to disposal is not to exceed 1 yr. Nonleaking and structurally undamaged PCB Large, High-Voltage Capacitors and PCB-Contaminated Electric Equipment that have not been drained of freeflowing dielectric fluid may be stored on pallets next to a storage area that complies with the storage area requirements if they are checked weekly. Containers used for the storage of PCBs must comply with the shipping container specification of the Department of Transportation (DOT). Specific requirements must be met for the following: storage of PCB articles for re-use, storage of PCB household waste, storage of PCBs and PCB items in areas not in compliance with the storage area requirements, and storage of bulk PCB remediation waste or PCB bulk product (40 CFR 761.35 and 761.65) [**Revised March 2000**].
- **PCB Transportation** - A generator who offers a PCB Waste for transport to commercial offsite storage or offsite disposal must prepare a manifest. If the generator does not receive a signed copy of the manifest within 35 days from the date the waste was accepted by the initial transporter, the generator must immediately contact the transporter and/or owner or operator of the designated facility to determine the status of the PCB Waste (40 CFR 761.207 through 761.210 and 761.215) [**Revised October 1998; Reviewed March 2000**].
- **PCB Disposal** - PCB Liquids containing concentrations > 500 ppm must be disposed of in a USEPA-approved PCB incinerator. Transformers containing PCBs in concentrations  $\geq$  500 ppm must be disposed of either in an USEPA-approved incinerator or a chemical waste landfill after free liquids are removed and other required procedures are followed. PCB Capacitors must be disposed of in either a solid waste landfill (nonleaking PCB Small Capacitor only) or an approved incinerator. For each shipment of manifested PCB Waste that a disposal facility accepts, the owner or operator of the disposal facility must prepare a certificate of disposal (COD). PCB-contaminated fluids of concentrations  $\geq$  50 ppm, but less than 500 ppm, are required to be disposed of in a USEPA-approved incinerator, or chemical waste landfill, or a high efficiency boiler. PCB hydraulic machines containing PCBs at concentrations  $\geq$  50 ppm may be disposed of as municipal solid waste when drained. PCB-Contaminated Electrical Equipment, except capacitors, shall be disposed of by draining off the free-flowing liquid and then disposing of the drained equipment in: 1) a municipal solid waste unit (except thermal treatment units), 2) an industrial furnace, or 3) any other approved disposal facility. PCB Articles and Containers shall be disposed

of in a USEPA-approved incinerator or chemical waste landfill if all free-flowing liquids have been removed. Scrap metal associated with PCB-contaminated articles may be burned in a scrap metal recovery oven or smelter under 40 CFR 761.72. The following disposal methods are prohibited for PCB disposal: 1) open burning, 2) processing of PCBs into non-liquid forms to circumvent high temperature incineration requirements, and 3) discharging of PCBs into a water treatment works or navigable waters (unless PCB concentration is equal to or less than 3 ppb, or is in accordance with a PCB discharge limit set in a permit). Land disposal of PCBs must be in accordance with specific parameters. When disposing of PCB bulk product using performance-based disposal, PCB bulk product may be disposed of in an approved incinerator or chemical waste landfill, a permitted hazardous waste landfill, or through any other approved alternative method. Otherwise, PCB bulk product must be disposed of in a permitted municipal or non-municipal, non-hazardous waste landfill. PCB household waste must be disposed of in a facility permitted to manage municipal or industrial solid waste, or in any other facility given approval to dispose of PCB bulk product waste (40 CFR 761.50, 761.60, 761.62, 761.63 and 761.218) **[Revised March 2000]**.

- Asbestos in Schools - School buildings are required to be inspected a minimum of every 3 yr for asbestos. An asbestos management plan is required and response action must be done in a timely manner. If there is friable asbestos in the school, there must be an O&M and repair program that limits the asbestos from becoming airborne and risking exposure to building personnel. Warning labels will be attached immediately adjacent to any friable and nonfriable asbestos-containing building material (ACBM) and suspected ACBM assumed to be asbestos-containing material (ACM). Staff at the school must receive training on the hazards involved (40 CFR 763, Subpart E) **[Revised March 2000]**.
- Renovation and Demolition of Asbestos-Containing Structures - Facilities that demolish structures containing asbestos above certain limits, must meet notification requirements, emission control requirements and wetting requirements. This applies to facilities that demolish structures containing at least 80 linear meters (260 linear feet) of regulated asbestos containing material (RACM) on pipes, or at least 15 m<sup>2</sup> (160 ft<sup>2</sup>) of RACM on other components or at least 1 m<sup>3</sup> (35 ft<sup>3</sup>) off facility components, and facilities renovating structures and stripping or removing at least 80 linear meters (260 linear feet) of RACM on pipes, or at least 15 m<sup>2</sup> (160 ft<sup>2</sup>) of friable asbestos on other facility components and at least 1 m<sup>3</sup> (35 ft<sup>3</sup>) off facility components. If the concentration of asbestos is less than this level, then the facility must submit notification of demolition. Facilities being demolished under state or local governmental agency orders shall have the portion of the facility containing friable asbestos adequately wetted during the wrecking operation. When a site is demolished by intentional burning, all RACM must be removed. No RACM shall be stripped, removed, or otherwise handled or distributed unless at least one onsite representative trained in asbestos removal is present. When air cleaning is used as a method of controlling emissions of asbestos to the outside air, the fabric filter collection systems are required to meet specific standards, unless alternative equipment is authorized for use by the USEPA (40 CFR 61.145 and 61.152).
- Asbestos Prohibitions - Manufacturers, processors, importers, and distributors are no longer allowed to deal with the following asbestos containing materials: flooring felt, new uses of asbestos, commercial paper, corrugated paper, rollboard, and specialty paper (40 CFR 763.160 through 763.179) **[Revised March 2000]**.
- Radon - See Component Supplement.
- Disclosure of Lead-Based Paint (LBP) and/or LBP Hazards - When leasing or selling target housing, the facility is required to disclose any knowledge it has of the presence of known LBP and/or LBP hazards (40 CFR 745.100). Work done related to LBP activities must be done by certified individuals and firms according to approved work practices. In addition, a pamphlet with lead hazard information must be provided (40 CFR 745.100 through 745.119) **[Revised March 2000]**.
- Notification of LBP Hazards Prior to Renovation - Renovators are required to notify the owners and occupants of target housing prior to renovation of any LBP hazards (40 CFR 745.81 through 745.86) **[Revised March 2000]**.

- **LBP Training Requirements** - All LBP activities are required to be performed by certified individuals. Certification is available for inspectors, risk assessors, supervisors, project designers, and abatement workers. Training programs must be accredited (40 CFR 745.220 through 40 CFR 745.226) [**Revised March 2000**].
- **LBP Work Practice Standards** - Inspections, lead hazard screening, risk assessments, and LBP abatement is required to be done according to specified methodologies. These methodologies address reporting requirements, sampling methods, plans, and cleanup methodologies. Appendix 11-4 provides information on determining whether or not LBP, a paint-lead hazard, a dust-lead hazard, or a soil-lead hazard is present. (40 CFR 745.227) [**Revised April 2001**].

## E. Key Compliance Definitions

- **Abatement** - any measure or set of measures designed to permanently eliminate LBP hazards. Abatement includes, but is not limited to (40 CFR 745.223) [**Reviewed March 2000; Revised April 2001**]:
  1. the removal of paint and dust, the permanent enclosure or encapsulation of lead-based paint, the replacement of painted surfaces or fixtures, or the removal or permanent covering of soil, when lead-based paint hazards are present in such paint, dust or soil
  2. all preparation, cleanup, disposal, and post-abatement clearance testing activities associated with such measures
  3. specifically, abatement includes, but is not limited to:
    - a. projects for which there is a written contract or other documentation, which provides that an individual or firm will be conducting activities in or to a residential dwelling or child-occupied facilities that:
      - i. shall result in the permanent elimination of LBP hazards; or
      - ii. are designed to permanently eliminate LBP hazards.
    - b. projects resulting in the permanent elimination of LBP hazards, conducted by firms or individuals who are certified, unless such projects are covered by paragraph 4 of this definition
    - c. projects resulting in the permanent elimination of LBP hazards, conducted by firms or individuals who, through their company name or promotional literature, represent, advertising, or hold themselves out to be in the business of performing LBP activities as identified and defined in this regulation, unless such projects are covered by paragraph 4 of this definition
    - d. projects resulting in the permanent elimination of LBP hazards that are conducted in response to state or local abatement orders.
  4. abatement does not include renovation, remodeling, landscaping or other activities, when such activities are not designed to permanently eliminate LBP hazards, but, instead, are designed to repair, restore, or remodel a given structure or dwelling even though these activities may incidentally result in a reduction or elimination of LBP hazards. Furthermore, abatement does not include interim controls, operations, and maintenance activities, or other measures and activities designed to temporarily, but not permanently, reduce LBP hazards.
- **Accessible** - when referring to ACM means that the material is subject to disturbance by school building occupants or custodial or maintenance personnel in the course of their normal activities (40 CFR 763.83) [**Added March 2000**].
- **Accredited or Accreditation** - when referring to a person or laboratory means that such person or laboratory is accredited in accordance with section 206 of Title II of the Act (40 CFR 763.83) [**Added March 2000**].
- **Accredited Training Program** - a training program that has been accredited by USEPA pursuant to 40 CFR 745.225 to provide training for individuals engaged in lead-based paint activities (40 CFR 745.223) [**Reviewed March 2000**].
- **Active Waste Disposal Site** - any disposal site other than an inactive site (40 CFR 61.14).

- *Adequate Quality Control* – a plan or design which ensures the authenticity, integrity, and accuracy of samples, including dust, soil, and paint chip or paint film samples. Adequate quality control also includes provisions for representative sampling (40 CFR 745.223) **[Added October 2001]**.
- *Adequately Wetted* - sufficiently mixed or penetrated with liquid to prevent the release of particulates (40 CFR 61.14).
- *Agent* - any party who enters into a contract with a seller or lessor, including any party who enters into a contract with a representative of the seller or lessor, for the purpose of selling or leasing target housing. This term does not apply to purchasers or any purchaser's representative who receives all compensation from the purchaser (40 CFR 745.103) **[Reviewed March 2000]**.
- *Air Compressor System* - air compressors, piping, receiver tanks, volume tanks and bottles, dryers, airlines, and related appurtenances (40 CFR 761.3) **[Added October 1998; Reviewed March 2000]**.
- *Air Erosion* - the passage of air over friable ACBM which may result in the release of asbestos fibers (40 CFR 763.83) **[Added March 2000]**.
- *Annual Document Log* - the detailed information maintained at the facility on the PCB waste handling at the facility (40 CFR 761.3) **[Added October 2001]**.
- *Annual Report* - the written document submitted each year by each disposer and commercial storer of PCB waste to the appropriate USEPA Regional Administrator. The annual report is a brief summary of the information included in the annual document log (40 CFR 761.3) **[Added October 2001]**.
- *Arithmetic Mean* - the algebraic sum of data values divided by the number of data values (e.g., the sum of the concentration of lead in several soil samples divided by the number of samples) (40 CFR 745.63) **[Added April 2001]**.
- *Asbestos* - substances comprised of or derived from actinolite, amosite, anthophyllite, chrysotile, crocidolite, or tremolite (40 CFR 61.14).
- *Asbestos-Containing Building Material (ACBM)* - surfacing ACM, thermal system insulation ACM, or miscellaneous ACM that is found in or on interior structural members or other parts of a school building (40 CFR 763.83) **[Added March 2000]**.
- *Asbestos-Containing Material (ACM)* - when referring to school buildings means any material or product which contains more than 1 percent asbestos (40 CFR 763.83) **[Added March 2000]**.
- *Asbestos-Containing Product* - any product to which asbestos is deliberately added in any concentration or which contains more than 1.0 percent asbestos by weight or area (40 CFR 763.163) **[Added March 2000]**.
- *Asbestos-Containing Waste Materials* - means mill tailings or any waste that contains commercial asbestos and is generated by a source subject to the provisions of 40 CFR 141. This term also includes filters from control devices, friable asbestos waste material, and bags or other similar packaging contaminated with commercial asbestos. However, as applied to demolition and renovation operations, this term includes regulated ACM waste and materials contaminated with asbestos including disposable equipment and clothing (40 CFR 61.141).
- *Asbestos Debris* - pieces of ACBM that can be identified by color, texture, or composition, or means dust, if the dust is determined by an accredited inspector to be ACM (40 CFR 763.83) **[Added March 2000]**.
- *Asbestos Material* - asbestos or any material containing asbestos (40 CFR 61.141).

- *Asbestos Waste from Control Devices* - any waste material that contains asbestos and is collected by a pollution control device (40 CFR 61.141).
- *Business Day* - Monday through Friday with the exception of Federal holidays (40 CFR 745.223) [**Added July 2004**].
- *Byproduct* - chemical substance produced without separate commercial intent during the manufacturing or processing of another chemical substance(s) or mixture(s) (40 CFR 761.3) [**Added October 2001**].
- *Capacitor* - a device for accumulating and holding a charge of electricity and consisting of conducting surfaces separated by a dielectric. Types of capacitors are as follows (40 CFR 761.3) [**Reviewed March 2000**]:
  1. Small Capacitor - a capacitor that contains less than 1.36 kg (3 lb) of dielectric fluid.
  2. Large High-Voltage Capacitor - a capacitor that contains 1.36 kg (3 lb) or more of dielectric fluid and which operates at 2000 V (a.c. or d.c.) or above.
  3. Large Low-Voltage Capacitor - a capacitor that contains 1.36 kg (3 lb) or more of dielectric fluid and which operates at 2000 V (a.c. or d.c.).
- *Category I Nonfriable Asbestos-Containing Material (ACM)* - asbestos-containing packing, gaskets, resilient floor covering, and asphalt roofing products containing more than 1 percent asbestos (40 CFR 61.141).
- *Category II Nonfriable ACM* - any material including Category I nonfriable ACM containing more than 1 percent asbestos that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure (40 CFR 61.141).
- *Certified Abatement Worker* - an individual who has been trained by an accredited training program, as defined by this section, and certified by USEPA pursuant to 40 CFR 745.226 to perform abatements (40 CFR 745.223) [**Added October 2001**].
- *Chemical Waste Landfill* - landfill at which protection against risk of injury to health or the environment from mitigation of PCBs to land, water, or the atmosphere is provided from PCBs and PCB Items deposited therein by locating, engineering, and operating the landfill as required (40 CFR 761.3) [**Reviewed March 2000**].
- *Chewable Surface* - an interior or exterior surface painted with lead-based paint that a young child can mouth or chew. A chewable surface is the same as an "accessible surface" as defined in 42 U.S.C. 4851b(2)). Hard metal substrates and other materials that cannot be dented by the bite of a young child are not considered chewable (40 CFR 745.63) [**Added April 2001**].
- *Child-occupied Facility* - a building, or portion of a building, constructed prior to 1978, visited regularly by the same child, under 6 yr of age, on at least two different days within any week (Sunday through Saturday period), provided that each day's visit lasts at least 3 h and the combined weekly visits last at least 6 hours, and the combined annual visits last at least 60 h. Child-occupied facilities may include, but are not limited to, day care centers, preschools and kindergarten classrooms. Child-occupied facilities may be located in target housing or in public or commercial buildings. With respect to common areas in public or commercial buildings that contain child-occupied facilities, the child-occupied facility encompasses only those common areas that are routinely used by children under age 6, such as restrooms and cafeterias. Common areas that children under age 6 only pass through, such as hallways, stairways, and garages are not included. In addition, with respect to exteriors of public or commercial buildings that contain child-occupied facilities, the child-occupied facility encompasses only the exterior sides of the building that are immediately adjacent to the child-occupied facility or the common areas routinely used by children under age 6 (40 CFR 745.83) [**Added July 2008**].
- *Child-Occupied Facility* - a building or a portion of a building constructed prior to 1978, visited regularly by the same child, 6 yr of age or under, on at least 2 different days within any week (Sunday through Saturday period), provided that each day's visit lasts at least 3 h and the combined weekly visit lasts at least 6 h, and the combined annual visits last at least 60 h. Child-occupied facilities may include, but are not limited to, daycare centers, preschools, and kindergarten classrooms (40 CFR 745.223) [**Reviewed March 2000**].

- *Cleaning Verification Card* - a card developed and distributed, or otherwise approved, by EPA for the purpose of determining, through comparison of wet and dry disposable cleaning cloths with the card, whether post-renovation cleaning has been properly completed (40 CFR 745.83) **[Added July 2008]**.
- *Cleanup Site* - the real extent of contamination and all suitable areas in very close proximity to the contamination necessary for implementation of a cleanup of PCB remediation waste, regardless of whether the site was intended for management of waste (40 CFR 761.3) **[Added October 1998]**.
- *Clearance Levels* - values that indicate the maximum amount of lead permitted in dust on a surface following completion of an abatement activity (40 CFR 745.223) **[Reviewed March 2000]**.
- *Commercial Asbestos* - any material containing asbestos that is extracted from ore and has value because of its asbestos content (40 CFR 61.141).
- *Commercial Paper* - an asbestos-containing product which is made of paper intended for use as general insulation paper or muffler paper. Major applications of commercial papers are insulation against fire, heat transfer, and corrosion in circumstances that require a thin, but durable, barrier (40 CFR 763.163) **[Added March 2000]**.
- *Commercial Storer of PCB Waste* - the owner or operator of each facility that is subject to the PCB storage unit standards of 40 CFR 761.65(b)(1) or (c)(7) or meets the alternate storage criteria of 40 CFR 761.65(b)(2), and who engages in storage activities involving either PCB waste generated by others or that was removed while servicing the equipment owned by others and brokered for disposal. The receipt of a fee or any other form of compensation for storage services is not necessary to qualify as a commercial storer of PCB waste. A generator who only stores its own waste is subject to the storage requirements of 40 CFR 761.65, but is not required to obtain approval as a commercial storer. If a facility's storage of PCB waste generated by others at no time exceeds a total of 500 gallons of liquid and/or non-liquid material containing PCBs at regulated levels, the owner or operator is a commercial storer but is not required to seek USEPA approval as a commercial storer of PCB waste. Storage of one company's PCB waste by a related company is not considered commercial storage. A "related company" includes, but is not limited to: a parent company and its subsidiaries; sibling companies owned by the same parent company; companies owned by a common holding company; members of electric cooperatives; entities within the same Executive Agency as defined at 5 U.S.C. 105; and a company having a joint ownership interest in a facility from which PCB waste is generated (such as a jointly owned electric power generating station) where the PCB waste is stored by one of the co-owners of the facility. A "related company" does not include another voluntary member of the same trade association. Change in ownership or title of a generator's facility, where the generator is storing PCB waste, does not make the new owner of the facility a commercial storer of PCB waste (40 CFR 761.3) **[Revised October 1998; Reviewed March 2000]**.
- *Common Area* - a portion of a building generally accessible to all residents/users including, but not limited to, hallways, stairways, laundry and recreational rooms, playgrounds, community centers, and boundary fences (40 CFR 745.103) **[Reviewed March 2000]**.
- *Common Area Group* - a group of common areas that are similar in design, construction, and function. Common area groups include, but are not limited to hallways, stairwells, and laundry rooms (40 CFR 745.63) **[Added April 2001]**.
- *Component or Building Component* - specific design or structural elements or fixtures of a building or residential dwelling that are distinguished from each other by form, function, and location. These include, but are not limited to, interior components such as: Ceilings, crown molding, walls, chair rails, doors, door trim, floors, fireplaces, radiators and other heating units, shelves, shelf supports, stair treads, stair risers, stair stringers, newel posts, railing caps, balustrades, windows and trim (including sashes, window heads, jambs, sills or stools and troughs), built in cabinets, columns, beams, bathroom vanities, counter tops, and air conditioners; and exterior components such as: Painted roofing, chimneys, flashing, gutters and downspouts, ceilings, soffits, fascias, rake boards, cornerboards, bulkheads, doors and door trim, fences, floors, joists, lattice work, railings and railing caps, siding, handrails, stair risers and treads, stair stringers, columns, balustrades, windowsills or stools and troughs, casings, sashes and wells, and air conditioners (40 CFR 745.83) **[Added July 2008]**.

- *Component or Building Component* - specific design or structural elements or fixtures of a building, residential dwelling, or child-occupied facility that are distinguished from each other by form, function, and location. These include, but are not limited to, interior components such as: ceilings, crown molding, walls, chair rails, doors, door trim, floors, fireplaces, radiators and other heating units, shelves, shelf supports, stair treads, stair risers, stair stringers, newel posts, railing caps, balustrades, windows and trim (including sashes, window heads, jambs, sills or stools and troughs), built in cabinets, columns, beams, bathroom vanities, counter tops, and air conditioners; and exterior components such as: painted roofing, chimneys, flashing, gutters and downspouts, ceilings, soffits, fascias, rake boards, cornerboards, bulkheads, doors and door trim, fences, floors, joists, lattice work, railings and railing caps, siding, handrails, stair risers and treads, stair stringers, columns, balustrades, window sills or stools and troughs, casings, sashes and wells, and air conditioners (40 CFR 745.223) **[Added October 2001]**.
- *Containment* - a process to protect workers and the environment by controlling exposures to the lead-contaminated dust and debris created during an abatement (40 CFR 745.223) **[Added October 2001]**.
- *Concentration* - the relative content of a specific substance contained within a larger mass, such as the amount of lead (in micrograms per gram or parts per million by weight) in a sample of dust or soil (40 CFR 745.63) **[Added April 2001]**.
- *Contract for the Purchase and Sale of Residential Real Property* - any contract or agreement in which one party agrees to purchase an interest in real property on which there is situated one or more residential dwellings used or occupied, or intended to be used or occupied, in whole or in part, as the home or residence of one or more persons (40 CFR 745.103) **[Reviewed March 2000]**.
- *Corrugated Paper* - an asbestos-containing product made of corrugated paper, which is often cemented to a flat backing, may be laminated with foils or other materials, and has a corrugated surface. Major applications of asbestos corrugated paper include: thermal insulation for pipe coverings; block insulation; panel insulation in elevators; insulation in appliances; and insulation in low-pressure steam, hot water, and process lines (40 CFR 763.163) **[Added March 2000]**.
- *Cutting* - to penetrate with a sharp-edged instrument and includes sawing, but does not include shearing, slicing, or punching (40 CFR 61.141).
- *Damaged Friable Miscellaneous ACM* - friable miscellaneous ACM which has deteriorated or sustained physical injury such that the internal structure (cohesion) of the material is inadequate or, if applicable, which has delaminated such that its bond to the substrate (adhesion) is inadequate or which for any other reason lacks fiber cohesion or adhesion qualities. Such damage or deterioration may be illustrated by the separation of ACM into layers; separation of ACM from the substrate; flaking, blistering, or crumbling of the ACM surface; water damage; significant or repeated water stains, scrapes, gouges, mars or other signs of physical injury on the ACM. Asbestos debris originating from the ACM in question may also indicate damage (40 CFR 763.83) **[Added March 2000]**.
- *Damaged Friable Surfacing ACM* - friable surfacing ACM which has deteriorated or sustained physical injury such that the internal structure (cohesion) of the material is inadequate or which has delaminated such that its bond to the substrate (adhesion) is inadequate, or which, for any other reason, lacks fiber cohesion or adhesion qualities. Such damage or deterioration may be illustrated by the separation of ACM into layers; separation of ACM from the substrate; flaking, blistering, or crumbling of the ACM surface; water damage; significant or repeated water stains, scrapes, gouges, mars or other signs of physical injury on the ACM. Asbestos debris originating from the ACM in question may also indicate damage (40 CFR 763.83) **[Added March 2000]**.
- *Damaged or Significantly Damaged Thermal System Insulation ACM* - thermal system insulation ACM on pipes, boilers, tanks, ducts, and other thermal system insulation equipment where the insulation has lost its structural integrity, or its covering, in whole or in part, is crushed, water-stained, gouged, punctured, missing, or not intact such that it is not able to contain fibers. Damage may be further illustrated by occasional punctures, gouges or other signs of physical injury to ACM; occasional water damage on the protective coverings/jackets; or exposed

ACM ends or joints. Asbestos debris originating from the ACBM in question may also indicate damage (40 CFR 763.83) **[Added March 2000]**.

- *Demolition* - the wrecking or taking out of any load-supporting structural member of a facility together with any related handling operations or the intentional burning of a facility (40 CFR 61.141).
- *Deteriorated Paint* - paint that is cracking, flaking, chipping, peeling, or otherwise separating from the substrate of a building component (40 CFR 745.223) **[Reviewed March 2000]**.
- *Deteriorated Paint* - any interior or exterior paint or other coating that is peeling, chipping, chalking or cracking, or any paint or coating located on an interior or exterior surface or fixture that is otherwise damaged or separated from the substrate (40 CFR 745.63) **[Added April 2001]**.
- *Disposal* - intentionally or accidentally to discard, throw away, or otherwise complete or terminate the useful life of PCBs and PCB Items (40 CFR 761.3) **[Reviewed March 2000]**.
- *Distinct Painting History* - the application history, as indicated by its visual appearance or a record of application, over time, of paint or other surface coatings to a component or room (40 CFR 745.223) **[Reviewed March 2000]**.
- *Documented Methodologies* - methods or protocols used to sample for the presence of lead in paint, dust, and soil (40 CFR 745.223) **[Reviewed March 2000]**.
- *Double Wash/Rinse* - a minimum requirement to cleanse solid surfaces (both impervious and nonimpervious) two times with an appropriate solvent or other material in which PCBs are at least 5 percent soluble (by weight) (40 CFR 761.123) **[Reviewed March 2000]**.
- *Dripline* - the area within 3 feet surrounding the perimeter of a building **[Added April 2001]**.
- *Dry Disposable Cleaning Cloth* - a commercially available dry, electrostatically charged, white disposable cloth designed to be used for cleaning hard surfaces such as uncarpeted floors or counter tops (40 CFR 745.83) **[Added July 2008]**.
- *Dry Weight* - the weight of the sample, excluding the weight of the water in the sample. Prior to chemical analysis, the water may be removed by any reproducible method that is applicable to measuring PCBs in the sample matrix at the concentration of concern, such as air drying at ambient temperature, filtration, decantation, heating at low temperature followed by cooling in the presence of a desiccant, or other processes or combinations of processes which would remove water but not remove PCBs from the sample. Analytical procedures which calculate the dry weight concentration by adjusting for moisture content may also be used (40 CFR 761.3) **[Added October 1998; Reviewed March 2000]**.
- *Elevated Blood Level (EBL)* - an excessive absorption of lead that is a confirmed concentration of lead in whole blood of 20 micrograms/deciliter (dl) for a single venous test or of 15 - 19 micrograms/dl in two consecutive tests taken 3 to 4 mo apart (40 CFR 745.223) **[Reviewed March 2000]**.
- *Emergency Renovation Operation* - a renovation operation that was not planned but results from a sudden, unexpected event that, if not immediately attended to, presents a safety or public health hazard, is necessary to protect equipment from damage or is necessary to avoid imposing an unreasonable financial burden. This term includes operations necessitated by nonroutine failures of equipment (40 CFR 61.141).
- *Emergency Situations* - for continuing use of a PCB transformer exists when (40 CFR 761.3) **[Reviewed March 2000]**:
  1. neither a non-PCB transformer nor a non-PCB-contaminated transformer is currently in storage for reuse or readily available within 24 h for installation

2. immediate replacement is necessary to continue service for power users.
- *Encapsulant* - a substance that forms a barrier between lead-based paint and the environment using a liquid-applied coating (with or without reinforcement materials) or an adhesively bonded covering material (40 CFR 745.223) [**Added October 2001**].
  - *Encapsulation* - the application of an encapsulant (40 CFR 745.223) [**Added October 2001**].
  - *Encapsulation When Referring to Asbestos* - the treatment of ACM with a material that surrounds or embeds asbestos fibers in an adhesive matrix to prevent the release of fibers, as the encapsulant creates a membrane over the surface (bridging encapsulant) or penetrates the material and binds its components together (penetrating encapsulant) (40 CFR 763.83) [**Added March 2000**].
  - *Enclosure* - the use of rigid, durable construction materials that are mechanically fastened to the substrate in order to act as a barrier between lead-based paint and the environment (40 CFR 745.223) [**Added October 2001**].
  - *Enclosure When Referring to Asbestos* - an airtight, impermeable, permanent barrier around ACM to prevent the release of asbestos fibers into the air (40 CFR 763.83) [**Added March 2000**].
  - *Evaluation* - for LBP this means a risk assessment and/or inspection (40 CFR 745.103) [**Reviewed March 2000**].
  - *Excluded PCB Products* - PCB materials which appear at concentrations less than 50 ppm, including but not limited to (40 CFR 761.3) [**Added October 2001**]:
    1. Non-Aroclor inadvertently generated PCBs as a byproduct or impurity resulting from a chemical manufacturing process.
    2. Products contaminated with Aroclor or other PCB materials from historic PCB uses (investment casting waxes are one example).
    3. Recycled fluids and/or equipment contaminated during use involving the products described in paragraphs (a) and (b) of this definition (heat transfer and hydraulic fluids and equipment and other electrical equipment components and fluids are examples).
    4. Used oils, provided that in the cases of paragraphs (1) through (4) of this definition:
      - a. The products or source of the products containing < 50 ppm concentration PCBs were legally manufactured, processed, distributed in commerce, or used before October 1, 1984.
      - b. The products or source of the products containing < 50 ppm concentrations PCBs were legally manufactured, processed, distributed in commerce, or used, i.e., pursuant to authority granted by USEPA regulation, by exemption petition, by settlement agreement, or pursuant to other Agency-approved programs;
      - c. The resulting PCB concentration (i.e. below 50 ppm) is not a result of dilution, or leaks and spills of PCBs in concentrations over 50 ppm.
  - *Facility Component* - any part of any facility, including equipment (40 CFR 61.141).
  - *Fiber Release Episode* - any uncontrolled or unintentional disturbance of ACM resulting in visible emission (40 CFR 763.83) [**Added March 2000**].
  - *Firm* - a company, partnership, corporation, sole proprietorship or individual doing business, association, or other business entity; a Federal, State, Tribal, or local government agency; or a nonprofit organization (40 CFR 745.83) [**Added July 2008**].
  - *Fluorescent Light Ballast* - a device that electrically controls fluorescent light fixtures and that includes a capacitor containing 0.1 kg or less of dielectric (40 CFR 761.3) [**Added October 2001**].
  - *Friable* - when referring to material in a school building means that the material, when dry, may be crumbled, pulverized, or reduced to powder by hand pressure, and includes previously nonfriable material after such

previously nonfriable material becomes damaged to the extent that when dry it may be crumbled, pulverized, or reduced to powder by hand pressure (40 CFR 763.83) [**Added March 2000**].

- *Friable Asbestos Material* - any material that contains more than 1 percent asbestos and can be crumbled, pulverized, or reduced to powder, when dry, by hand pressure (40 CFR 61.141).
- *Friction Surface* - an interior or exterior surface that is subject to abrasion or friction, including, but not limited to, certain window, floor, and stair surfaces (40 CFR 745.63) [**Added April 2001**].
- *Fugitive Source* - any source of emissions not controlled by an air pollution control device (40 CFR 61.141).
- *Functional Space* - a room, group of rooms, or homogeneous area (including crawl spaces or the space between a dropped ceiling and the floor or roof deck above), such as classroom(s), a cafeteria, gymnasium, hallway(s), designated by a person accredited to prepare management plans, design abatement projects, or conduct response actions (40 CFR 763.83) [**Added March 2000**].
- *Generator of PCB Waste* - any person whose act or process produces PCBs that are regulated for disposal under Subpart D of 40 CFR 761, or whose act first causes PCBs or PCB Items to become subject to the disposal requirements of Subpart D of 40 CFR 761, or who has physical control over the PCBs when a decision is made that the use of the PCBs has been terminated and therefore is subject to the disposal requirements of Subpart D of 40 CFR 761. Unless another provision of 40 CFR 761 specifically requires a site-specific meaning, “generator of PCB waste” includes all of the sites of PCB waste generation owned or operated by the person who generates PCB waste (40 CFR 761.3) [**Added October 2001**].
- *Glove Bag* - a sealed compartment with attached inner gloves used for the handling of ACM (40 CFR 61.141).
- *HEPA Vacuum* - a vacuum cleaner which has been designed with a high-efficiency particulate air (HEPA) filter as the last filtration stage. A HEPA filter is a filter that is capable of capturing particulates of 0.3 microns with 99.97% efficiency. The vacuum cleaner must be designed so that all the air drawn into the machine is expelled through the HEPA filter with none of the air leaking past it. HEPA vacuums must be operated and maintained in accordance with the manufacturer's instructions (40 CFR 745.83) [**Revised October 2011**].
- *Hands-On Skills Assessment* - an evaluation which tests the trainees' ability to satisfactorily perform the work practices and procedures identified in 40 CFR 745.225(d), as well as any other skill taught in a training course (40 CFR 745.223) [**Added October 2001**].
- *High Concentration PCBs* - PCBs that contain 500 ppm or greater PCBs, or those materials which the USEPA requires to be assumed to contain 500 ppm or greater PCBs in the absence of testing (40 CFR 761.123) [**Reviewed March 2000**].
- *High-Efficiency Particulate Air (HEPA) Filter* - a filtering system capable of trapping and retaining at least 99.97 percent of all monodispersed particles 0.3µm in diameter or larger (40 CFR 763.83) [**Added March 2000**].
- *High Occupancy Area* - any area where PCB remediation waste has been disposed of onsite and where occupancy for any individual not wearing dermal and respiratory protection for a calendar year is: 840 h or more (an average of 16.8 h or more per week) for non-porous surfaces and 335 h or more (an average of 6.7 h or more per week) for bulk PCB remediation waste. Examples could include a residence, school, day care center, sleeping quarters, a single or multiple occupancy 40 h per week workstation, a school class room, a cafeteria in an industrial facility, a control room, and a work station at an assembly line (40 CFR 761.3) [**Added October 1998**].
- *Homogeneous Area* - an area of surfacing material, thermal system insulation material, or miscellaneous material that is uniform in color and texture (40 CFR 763.83) [**Added March 2000**].

- *Housing for the Elderly* - retirement communities or similar types of housing reserved for households composed of one or more persons 62 years of age or more at the time of initial occupancy (40 CFR 745.103) **[Added October 2001]**.
- *Impact Surface* - an interior or exterior surface that is subject to damage by repeated sudden force such as certain parts of door frames (40 CFR 745.63) **[Added April 2001]**.
- *Impervious Solid Surfaces* - solid surfaces which are nonporous and thus unlikely to absorb spilled PCBs within the short period of time required for cleanup of spills under this policy. Impervious solid surfaces include, but are not limited to, metals, glass, aluminum siding, and enameled or laminated surfaces (40 CFR 761.123) **[Added October 2001]**.
- *In or Near Commercial Buildings* - within the interior of, on the roof of, attached to the exterior wall of, in the parking area serving, or within 30 m [approx. 98 ft] of a nonindustrial, nonsubstation building (40 CFR 761.3) **[Reviewed March 2000]**.
- *In Poor Condition* - the binding of the material is losing its integrity as indicated by peeling, cracking, or crumbling of the material (40 CFR 61.141).
- *In-service* - the transformer is used electrically under loaded conditions that raise the temperature of the dielectric fluid to at least 50 degrees Centigrade (40 CFR 761.30(a)(2)(v)) **[Added October 2001]**.
- *Inactive Waste Disposal Site* - any disposal site or portion of it where additional asbestos-containing waste material will not be deposited and where the surface is not disturbed by vehicular traffic (40 CFR 61.141).
- *Industrial Building* - a building directly used in manufacturing or technically productive enterprises (40 CFR 761.3) **[Reviewed March 2000]**.
- *Inspection* - for LBP this means (40 CFR 745.103) **[Reviewed March 2000]**:
  1. a surface by surface investigation to determine the presence of LBP as provided in section 302(c) of the *Lead Based Paint Poisoning and Prevention Act* (42 USC 4822)
  2. the provision of a report explaining the results of the investigation.
- *Interim Certification* - the status of an individual who has successfully completed the appropriate training course in a discipline from an accredited training program, as defined by this section, but has not yet received formal certification in that discipline from USEPA pursuant to 40 CFR 745.226. Interim certifications expire 6 mo after the completion of the training course, and is equivalent to a certificate for the 6-month period (40 CFR 745.223) **[Added October 2001]**.
- *Interim Controls* - a set of measures designed to temporarily reduce human exposure or likely exposure to lead-based paint hazards, including specialized cleaning, repairs, maintenance, painting, temporary containment, ongoing monitoring of lead-based paint hazards or potential hazards, and the establishment and operation of management and resident education programs (40 CFR 745.83) **[Added July 2008]**.
- *Interim Controls* - a set of measures designed to temporarily reduce human exposure or likely exposure to lead-based paint hazards, including specialized cleaning, repairs, maintenance, painting, temporary containment, ongoing monitoring of lead-based paint hazards or potential hazards, and the establishment and operation of management and resident education programs (40 CFR 745.223) **[Added October 2001]**.
- *Interior Window Sill* - the portion of the horizontal window ledge that protrudes into the interior of the room (40 CFR 745.63) **[Added April 2001]**.

- *Lead-Based Paint (LBP)* - paint or other surface coatings that contain lead equal to or in excess of 1.0 mg/cm<sup>2</sup> or 0.5 percent by weight (40 CFR 745.103 and 40 CFR 745.223) [**Reviewed March 2000**].
- *Lead Based Paint Activities* - in the case of target housing and child-occupied facilities, inspection, risk assessment, and abatement (40 CFR 745.223) [**Reviewed March 2000**].
- *Lead-based Paint Activities Courses* - initial and refresher training courses (worker, supervisor, inspector, risk assessor, project designer) provided by accredited training programs (40 CFR 745.223) [**Added July 2004**].
- *Lead-Based Paint Free Housing* - target housing that has been found to be free of paint or other surface coatings that contain lead equal to or in excess of 1.0 mg/cm<sup>2</sup> or 0.5 percent by weight (40 CFR 745.103) [**Reviewed March 2000**].
- *Lead-Based Paint Hazard* - any condition that causes exposure to lead from lead-contaminated dust, lead contaminated soil, or lead-contaminated paint that is deteriorated or present in accessible surfaces, friction surfaces, or impact surfaces that would result in adverse human health effects as established by the appropriate Federal agency (40 CFR 745.103 and 745.223) [**Reviewed March 2000**].
- *Lead-based Paint Hazard* - hazardous lead-based paint, dust-lead hazard or soil-lead hazard defined as follows: (40 CFR 745.63 and 745.65) [**Added April 2001**]:
  1. A paint-lead hazard is any of the following:
    - a. Any lead-based paint on a friction surface that is subject to abrasion and where the lead dust levels on the nearest horizontal surface underneath the friction surface (e.g., the window sill, or floor) are equal to or greater than the dust-lead hazard levels
    - b. Any damaged or otherwise deteriorated lead-based paint on an impact surface that is caused by impact from a related building component (such as a door knob that knocks into a wall or a door that knocks against its door frame.
    - c. Any chewable lead-based painted surface on which there is evidence of teeth marks.
    - d. Any other deteriorated lead-based paint in any residential building or child-occupied facility or on the exterior of any residential building or child-occupied facility.
  2. A dust-lead hazard is surface dust in a residential dwelling or child-occupied facility that contains a mass-per-area concentration of lead equal to or exceeding 40 micrograms/ft<sup>2</sup> on floors or 250 micrograms/ft<sup>2</sup> on interior window sills based on wipe samples.
  3. A soil-lead hazard is bare soil on residential real property or on the property of a child-occupied facility that contains total lead equal to or exceeding 400 ppm (g/g) in a play area or average of 1,200 ppm of bare soil in the rest of the yard based on soil samples.
- *Lead Contaminated Dust* - surface dust in residential dwellings, or child-occupied facilities that contains an area or mass concentration of lead at or in excess of levels identified by the USEPA or authorized regulatory agency pursuant to TSCA section 403 (40 CFR 745.223) [**Added October 2001**].
- *Lead Contaminated Soil* - bare soil on residential real property and on the property of a child-occupied facility that contains lead at or in excess of levels identified by the Administrator pursuant to TSCA section 403 (40 CFR 745.223) [**Reviewed March 2000**].
- *Lead-Hazard Screen* - a limited risk assessment activity that involves limited paint and dust sampling as described in 40 CFR 745.227(c) (40 CFR 745.223) [**Added October 2001**].
- *Leak or Leaking* - any instance in which a PCB article, PCB container, or PCB equipment has any PCBs on any portion of its external surface (40 CFR 761.3) [**Reviewed March 2000**].
- *Lessee* - any entity that enters into agreement to lease, rent, or sublease target housing, including but not limited to individuals, partnerships, corporations, trusts, government agencies, housing agencies, Indian tribes, and nonprofit organizations (40 CFR 745.103) [**Reviewed March 2000**].

- *Lessor* - any entity that offers target housing for lease, rent, or sublease, including but not limited to individuals, partnerships, corporations, trusts, government agencies, housing agencies, Indian tribes, and nonprofit organizations (40 CFR 745.103) [**Reviewed March 2000**].
- *Liquid PCBs* - a homogenous flowable material containing PCBs and no more than 0.5 percent by weight non-dissolved material (40 CFR 761.3) [**Added October 1998**].
- *Living Area* - any area of a residential dwelling used by one or more children age 6 and under, including, but not limited to, living rooms, kitchen areas, dens, play rooms, and children's bedrooms (40 CFR 745.223) [**Added October 2001**].
- *Loading* - the quantity of a specific substance present per unit of surface area, such as the amount of lead in micrograms contained in the dust collected from a certain surface area divided by the surface area in square feet or square meters (40 CFR 745.63) [**Added April 2001**].
- *Low Concentration PCBs* - PCBs that are tested and found to contain less than 500 ppm PCBs or those PCB-containing materials which USEPA requires to be assumed to be at concentrations below 500 ppm (i.e., untested mineral oil dielectric fluid) (40 CFR 761.123) [**Reviewed March 2000**].
- *Low Occupancy Area* - any area where PCB remediation waste has been disposed of onsite and where occupancy for any individual not wearing dermal and respiratory protection for a calendar year is: less than 840 h (an average of 16.8 h/week) for non-porous surfaces and less than 335 h (an average of 6.7 h/week) for bulk PCB remediation waste. Examples could include an electrical substation or a location in an industrial facility where a worker spends small amounts of time per week (such as an unoccupied area outside a building, an electrical equipment vault, or in the non-office space in a warehouse where occupancy is transitory) (40 CFR 761.3) [**Added October 1998; Reviewed March 2000**].
- *Management Practice (MP)* - practices that, although not mandated by law, are encouraged to promote safe operating procedures.
- *Mark* - the descriptive name, instructions, cautions, or other information applied to PCBs and PCB items, or other objects subject to these regulations (40 CFR 761.3) [**Reviewed March 2000**].
- *Marking* - the marking of PCB items and PCB storage areas and transport vehicles by means of applying a legible mark by painting, fixation of an adhesive label, or by any other method that meets the requirements of these regulations (40 CFR 761.3) [**Reviewed March 2000**].
- *Mid-yard* - an area of a residential yard approximately midway between the dripline of a residential building and the nearest property boundary or between the driplines of a residential building and another building on the same property (40 CFR 745.63) [**Added April 2001**].
- *Mineral Oil PCB Transformers* - any transformer originally designed to contain mineral oil as the dielectric fluid and which has been tested and found to contain 500 ppm or greater PCBs (40 CFR 761.3) [**Reviewed March 2000**].
- *Minor Repair and Maintenance Activities* - activities, including minor heating, ventilation or air conditioning work, electrical work, and plumbing, that disrupt 6 square feet or less of painted surface per room for interior activities or 20 square feet or less of painted surface for exterior activities where none of the work practices prohibited or restricted by 40 CFR 745.85(a)(3) are used and where the work does not involve window replacement or demolition of painted surface areas. When removing painted components, or portions of painted components, the entire surface area removed is the amount of painted surface disturbed. Jobs, other than emergency renovations, performed in the same room within the same 30 days must be considered the same job for the purpose of determining whether the job is a minor repair and maintenance activity (40 CFR 745.83) [**Added July 2008**].

- *Miscellaneous ACM* - miscellaneous material that is ACM in a school building (40 CFR 763.83) [**Added March 2000**].
- *Miscellaneous Material* - interior building material on structural components, structural members or fixtures, such as floor and ceiling tiles, and does not include surfacing material or thermal system insulation (40 CFR 763.83) [**Added March 2000**].
- *Mixture* - any combination of two or more chemical substances if the combination does not occur in nature and is not, in whole or in part, the result of a chemical reaction; except that such term does include any combination which occurs, in whole or in part, as a result of a chemical reaction if none of the chemical substances comprising the combination is a new chemical substance and if the combination could have been manufactured for commercial purposes without a chemical reaction at the time the chemical substances comprising the combination were combined (40 CFR 761.3) [**Added October 2001**].
- *Multi-Family Dwelling* - a structure that contains more than one separate residential dwelling unit, which is used or occupied, or intended to be used or occupied, in whole or in part as the home or residence of one or more persons (40 CFR 745.223) [**Reviewed March 2000**].
- *Municipal Solid Wastes* - garbage, refuse, sludges, wastes, and other discarded materials resulting from residential and non-industrial operations and activities, such as household activities, office functions, and commercial housekeeping wastes (40 CFR 761.3) [**Added October 2001**].
- *Natural Gas Pipeline System* - natural gas gathering facilities, natural gas pipe, natural gas compressors, natural gas storage facilities, and natural gas pipeline appurtenances (including instrumentation and vessels directly in contact with transported natural gas such as valves, regulators, drips, filter separators, etc., but not including air compressors) (40 CFR 761.3) [**Added October 2001**].
- *Nonfriable* - material in a school building which when dry may not be crumbled, pulverized, or reduced to powder by hand pressure (40 CFR 763.83) [**Added March 2000**].
- *Non-Imperious Solid Surfaces* - solid surfaces which are porous and are more likely to absorb spilled PCBs prior to completion of the cleanup requirements prescribed in this policy. Non-imperious solid surfaces include, but are not limited to, wood, concrete, asphalt, and plasterboard (40 CFR 761.123) [**Added October 2001**].
- *Non-Liquid PCBs* - materials containing PCBs that, by visual inspection, do not flow at room temperature (25 oC or 77 oF) or from which no liquid passes when a 100 g or 100 mL representative sample is placed in a mesh number 60 +/- 5 percent paint filter and allowed to drain at room temperature for 5 min (40 CFR 761.3) [**Added October 1998; Reviewed March 2000**].
- *Non-PCB Transformers* - any transformer that contains less than 50 ppm PCB except any transformer that has been converted from a PCB Transformer or a PCB-Contaminated Transformer cannot be classified as a non-PCB Transformer until reclassification has occurred in accordance with the requirements of 40 CFR 761.30(a)(2)(v) (40 CFR 761.3) [**Reviewed March 2000**].
- *Non-Porous Surface* - a smooth, unpainted solid surface that limits penetration of liquid containing PCBs beyond the immediate surface. Examples are: smooth uncorroded metal; natural gas pipe with a thin porous coating originally applied to inhibit corrosion; smooth glass; smooth glazed ceramics; impermeable polished building stone such as marble or granite; and high density plastics, such as polycarbonates and melamines, that do not absorb organic solvents (40 CFR 761.3) [**Added October 1998; Reviewed March 2000**].
- *Non-Scheduled Renovation* - a renovation operation necessitated by the routine failure of equipment, which is expected to occur within a given period based on past operating experience, but for which an exact date cannot be predicted (40 CFR 61.141).

- *Nonrestricted Access Areas* - any area other than restricted access, outdoor electrical substations, and other restricted access locations, as defined in this section. In addition to residential/commercial areas, these areas include unrestricted access rural areas (areas of low density development and population where access is uncontrolled by either man-made barriers or naturally occurring barriers, such as rough terrain, mountains, or cliffs) (40 CFR 761.123) **[Added October 2001]**.
- *Open Burning* - the combustion of any PCB regulated for disposal, in a manner not approved or otherwise allowed under subpart D of this part, and without any of the following **[Added October 1998; Reviewed March 2000]**:
  1. control of combustion air to maintain adequate temperature for efficient combustion
  2. containment of the combustion reaction in an enclosed device to provide sufficient residence time and mixing for complete combustion
  3. control of emission of the gaseous combustion products (40 CFR 761.3).
- *Operations and Maintenance Program* - a program of work practices to maintain friable ACBM in good condition, ensure clean up of asbestos fibers previously released, and prevent further release by minimizing and controlling friable ACBM disturbance or damage (40 CFR 763.83) **[Added March 2000]**.
- *Other Restricted Access (Nonsubstation) Locations* - areas other than electrical substations that are at least 0.1 kilometer (km) from a residential/commercial area and limited by man-made barriers (e.g., fences and walls) to substantially limited by naturally occurring barriers such as mountains, cliffs, or rough terrain. These areas generally include industrial facilities and extremely remote rural locations. (Areas where access is restricted but are less than 0.1 km from a residential/commercial area are considered to be residential/commercial areas.) (40 CFR 761.123) **[Added October 2001]**.
- *Outdoor Electrical Substations* - outdoor, fenced-off, and restricted access areas used in the transmission and/or distribution of electrical power. Outdoor electrical substations restrict public access by being fenced or walled off as defined under 40 CFR 761.30(l)(1)(ii). For purposes of this TSCA policy, outdoor electrical substations are defined as being located at least 0.1 km from a residential/commercial area. Outdoor fenced-off and restricted access areas used in the transmission and/or distribution of electrical power which are located less than 0.1 km from a residential/commercial area are considered to be residential/commercial areas. (40 CFR 761.123) **[Added October 2001]**.
- *Outside Air* - the air outside buildings and structures, including but not limited to, air under a bridge or an open ferry dock (40 CFR 61.141).
- *Owner* - any entity that has legal title to target housing, including but not limited to individuals, partnerships, corporations, trusts, government agencies, housing agencies, Indian tribes, and nonprofit organizations except where a mortgage holds legal title to property serving as collateral for a mortgage loan, in which case the owner would be the mortgagor (40 CFR 745.103) **[Reviewed March 2000]**.
- *PCB or PCBs* - a chemical substance that is limited to the biphenyl molecule that has been chlorinated to varying degrees or any combination of substances which contains such substance (40 CFR 761.3) **[Reviewed March 2000]**.
- *PCB Article* - any manufactured article, other than a PCB container, that contains PCBs and whose surface(s) has been in direct contact with PCBs. This includes capacitors, transformers, electric motors, pumps, and pipes (40 CFR 761.3) **[Reviewed March 2000]**.
- *PCB Article Container* - any package, can, bottle, bag, barrel, drum, tank, or other device used to contain PCB articles or PCB equipment, and whose surface(s) has not been in direct contact with PCBs (40 CFR 761.3) **[Reviewed March 2000]**.
- *PCB Bulk Product Waste* - waste derived from manufactured products containing PCBs in a non-liquid state, at any concentration where the concentration at the time of designation for disposal was  $\geq 50$  ppm PCBs. PCB

bulk product waste does not include PCBs or PCB Items regulated for disposal under 40 CFR 761.60(a) through 761.60(c), 761.61, 761.63, or 761.64. PCB bulk product waste includes, but is not limited to **[Added October 1998; Reviewed March 2000; Revised July 2013]**:

1. non-liquid bulk wastes or debris from the demolition of buildings and other man-made structures manufactured, coated, or serviced with PCBs. PCB bulk product waste does not include debris from the demolition of buildings or other man-made structures that is contaminated by spills from regulated PCBs which have not been disposed of, decontaminated, or otherwise cleaned up in accordance with subpart D of this part.
2. PCB-containing wastes from the shredding of automobiles, household appliances, or industrial appliances.
3. plastics (such as plastic insulation from wire or cable; radio, television and computer casings; vehicle parts; or furniture laminates); preformed or molded rubber parts and components; applied dried paints, varnishes, waxes, or other similar coatings or sealants; caulking; adhesives; paper; Galbestos; sound deadening or other types of insulation; and felt or fabric products such as gaskets.
4. fluorescent light ballasts containing PCBs in the potting material (40 CFR 761.3).

(NOTE: The EPA Memorandum, *PCB Bulk Waste Reinterpretation*, dated 24 October 2012, “allows building material ‘coated or serviced’ with PCB bulk product waste [e.g., caulk, paint, mastics, sealants] at the time of designation for disposal as a PCB bulk product waste.”)

- *PCB Capacitor* - any capacitor that contains  $\geq 500$  ppm PCB. Concentration assumptions applicable to capacitors appear under 40 CFR 761.2 (40 CFR 761.3) **[Added October 1998; Reviewed March 2000]**.
- *PCB Concentration Assumptions* - the following assumption may be made in relation to PCB concentrations (40 CFR 761.1(b)(2), 761.1(b)(3), and 761.2(a)) **[Revised October 1999; Reviewed March 2000]**:
  1. transformers with  $< 3$  lb (1.36 kg) of fluid, circuit breakers, reclosers, oil-filled cable, and rectifiers whose PCB concentration is not established contain PCBs at  $< 50$  ppm
  2. mineral oil-filled electrical equipment that was manufactured before 2 July 1979, and whose PCB concentration is not established, is PCB-Contaminated Electrical Equipment (i.e., contains  $\geq 50$  PCB, but  $< 500$  ppm PCB)
  3. all pole-top and pad-mounted distribution transformers manufactured before 2 July 1979 are assumed to be mineral-oil filled
  4. electrical equipment manufactured after 2 July 1979 is non-PCB (i.e.,  $< 50$  ppm PCBs). If the date of manufacture of mineral oil-filled electrical equipment is unknown, assume it to be PCB-Contaminated.
  5. transformers manufactured prior to 2 July 1979, that contain 1.36 kg (3 lb) or more of fluid other than mineral oil, and whose PCB concentration is not established, are PCB Transformers (i.e.,  $\geq 500$  ppm). If the date of manufacture and the type of dielectric fluid are unknown, assume the transformer to be a PCB Transformer.
  6. a capacitor manufactured prior to 2 July 1979, whose PCB concentration is not established contains  $\geq 500$  ppm PCBs
  7. a capacitor manufactured after 2 July 1979 is non-PCB (i.e.,  $< 50$  ppm PCBs). If the date of manufacture is unknown, assume the capacitor contains  $\geq 500$  ppm PCBs
  8. a capacitor marked at the time of manufacture with the statement “No PCBs” in accordance with 40 CFR 761.40(g) is non-PCB
  9. provisions that apply to PCBs at concentrations of  $< 50$  ppm apply also to contaminated surfaces at PCB concentrations of  $\leq 10$  micrograms/100 cm<sup>2</sup>
  10. provisions that apply to PCBs at concentrations of  $\geq 50$  to  $< 500$  ppm apply also to contaminated surfaces at PCB concentrations of  $> 10$  micrograms/100 cm<sup>2</sup> to  $< 100$  micrograms/100 cm<sup>2</sup>
  11. provisions that apply to PCBs at concentrations of  $\geq 500$  ppm apply also to contaminated surfaces at PCB concentrations of  $\geq 100$  micrograms/100 cm<sup>2</sup>.

Unless otherwise noted, PCB concentrations shall be determined on a weight-per-weight basis, or for liquids on a weight-per-volume basis if the density of the liquid is also reported. Unless otherwise provided, PCBs are quantified based on the formulation of PCBs present in the material analyzed.

- *PCB Container* - any package, can, bottle, bag, barrel, drum, tank, or other device that contains PCBs or PCB Articles and whose surface(s) has been in direct contact with PCBs (40 CFR 761.3) **[Added October 2001]**.
- *PCB Container* - any package, can, bottle, bag, barrel, drum, tank, or other device that contains PCBs or PCB Articles and whose surface(s) has been in direct contact with PCBs (40 CFR 761.3) **[Added October 2001]**.
- *PCB-Contaminated* - a non-liquid material containing PCBs at concentrations  $\geq 50$  ppm but  $< 500$  ppm; a liquid material containing PCBs at concentrations  $\geq 50$  ppm but  $< 500$  ppm or where insufficient liquid material is available for analysis, a non-porous surface having a surface concentration  $> 10 \mu\text{g}/100 \text{ cm}^2$  but  $< 100 \mu\text{g}/100 \text{ cm}^2$ , measured by a standard wipe test as defined in 40 CFR 761.123 (40 CFR 761.3) **[Added October 1998; Reviewed March 2000]**.
- *PCB-Contaminated Electrical Equipment* - any electrical equipment including, but not limited to, transformers (including those used in railway locomotives and self-propelled cars), capacitors, circuit breakers, reclosers, voltage regulators, switches (including sectionalizers and motor starters), electromagnets, and cable, that contains PCBs at concentrations of  $\geq 50$  ppm and  $< 500$  ppm in the contaminating fluid. In the absence of liquids, electrical equipment is PCB-Contaminated if it has PCBs at  $> 10 \mu\text{g}/100 \text{ cm}^2$  and  $< 100 \mu\text{g}/100 \text{ cm}^2$  as measured by a standard wipe test (as defined in 40 CFR 761.123) of a non-porous surface (40 CFR 761.3) **[Revised October 1998; Reviewed March 2000]**.
- *PCB Equipment* - any manufactured item, other than a PCB container or a PCB article container, which contains a PCB article or other PCB equipment, and includes microwave ovens, electronic equipment, and fluorescent light ballasts and fixtures (40 CFR 761.3) **[Reviewed March 2000]**.
- *PCB Field Screening Test* - a portable analytical device or kit which measures PCBs. PCB field screening tests usually report less than or greater than a specific numerical PCB concentration. These tests normally build in a safety factor which increases the probability of a false positive report and decreases the probability of a false negative report. PCB field screening tests do not usually provide: an identity record generated by an instrument; a quantitative comparison record from calibration standards; any identification of PCBs; and/or any indication or identification of interferences with the measurement of the PCBs. PCB field screening test technologies include, but are not limited to, total chlorine colorimetric tests, total chlorine x-ray fluorescence tests, total chlorine microcoulometric tests, and rapid immunoassay tests (40 CFR 761.3) **[Added October 1998; Reviewed March 2000]**.
- *PCB Household Waste* - PCB waste that is generated by residents on the premises of a temporary or permanent residence for individuals (including individually owned or rented units of a multi-unit construction), and that is composed primarily of materials found in wastes generated by consumers in their homes. PCB household waste includes unwanted or discarded non-commercial vehicles (prior to shredding), household items, and appliances or appliance parts and wastes generated on the premises of a residence for individuals as a result of routine household maintenance by or on behalf of the resident. Bulk or commingled liquid PCB wastes at concentrations of  $\geq 50$  ppm, demolition and renovation wastes, and industrial or heavy-duty equipment with PCBs are not household wastes (40 CFR 761.3) **[Added October 1998; Reviewed March 2000]**.
- *PCB Item* - any PCB Article, PCB Article Container, PCB Container, PCB Equipment, or anything that deliberately or unintentionally contains or has as a part of it any PCB or PCBs (40 CFR 761.3) **[Revised October 1998; Reviewed March 2000]**.
- *PCB/Radioactive Waste* - PCBs regulated for disposal under subpart D of this part that also contain source, special nuclear, or byproduct material subject to regulation under the *Atomic Energy Act of 1954*, as amended, or naturally-occurring or accelerator-produced radioactive material (40 CFR 761.3) **[Added October 1998; Reviewed March 2000]**.
- *PCB Remediation Waste* - waste containing PCBs as a result of a spill, release, or other unauthorized disposal, at the following concentrations: Materials disposed of prior to 18 April 1978, that are currently at concentrations  $\geq 50$  ppm PCBs, regardless of the concentration of the original spill; materials which are currently at any volume

or concentration where the original source was  $\geq$  500 ppm PCB beginning on 18 April 1978, or  $\geq$  50 ppm PCB beginning on 2 July 1979; and materials which are currently at any concentration if the PCBs are spilled or released from a source not authorized for use under 40 CFR 761. PCB remediation waste means soil, rags, and other debris generated as a result of any PCB spill cleanup, including, but not limited to (40 CFR 761.3) **[Revised October 1999; Reviewed March 2000]**.

1. environmental media containing PCBs, such as soil and gravel; dredged materials, such as sediments, settled sediment fines, and aqueous decantate from sediment.
  2. sewage sludge containing  $<50$  ppm PCBs and not in use according to 40 CFR 761.20(a)(4); PCB sewage sludge; commercial or industrial sludge contaminated as the result of a spill of PCBs including sludges located in or removed from any pollution control device; aqueous decantate from an industrial sludge.
  3. buildings and other manmade structures (such as concrete floors, wood floors, or walls contaminated from a leaking PCB or PCB-Contaminated transformer), porous surfaces, and non-porous surfaces.
- *PCB Sewage Sludge* - sewage sludge as defined in 40 CFR 503.9(w) which contains  $\geq$  50 ppm PCBs, as measured on a dry weight basis (40 CFR 761.3) **[Added October 1998; Reviewed March 2000]**.
  - *PCB Transformer* - any transformer that contains  $\geq$  500 ppm PCBs. For PCB concentration assumptions applicable to transformers containing 1.36 kg (3 lb) or more of fluid other than mineral oil, see 40 CFR 761.2. For provisions permitting reclassification of electrical equipment, including PCB Transformers, containing  $\geq$  500 ppm PCBs to PCB-Contaminated Electrical Equipment, see 40 CFR 761.30(a) and (h) (40 CFR 761.3) **[Added October 1998; Reviewed March 2000]**.
  - *PCB Waste* - those PCBs and PCB Items that are subject to the disposal requirements of Subpart D of 40 CFR 761 (40 CFR 761.3) **[Reviewed March 2000]**.
  - *Paint in Poor Condition* - more than 10 ft<sup>2</sup> of deteriorated paint or exterior components with large surface areas; or more than 2 ft<sup>2</sup> of deteriorated paint on interior components with large surface areas (e.g., walls, ceilings, floors, doors); or more than 10 percent of the total surface area of the component is deteriorated on interior or exterior components with small surface areas (window sills, baseboards, soffits, trim) (40 CFR 745.223) **[Reviewed March 2000]**.
  - *Painted Surface* - a component surface covered in whole or in part with paint or other surface coatings (40 CFR 745.83) **[Added October 2011]**.
  - *Pamphlet* - the EPA pamphlet titled Renovate Right: Important Lead Hazard Information for Families, Child Care Providers and Schools developed under section 406(a) of TSCA for use in complying with section 406(b) of TSCA, or any State or Tribal pamphlet approved by EPA pursuant to 40 CFR 745.326 that is developed for the same purpose. This includes reproductions of the pamphlet when copied in full and without revision or deletion of material from the pamphlet (except for the addition or revision of State or local sources of information). Before December 22, 2008, the term "pamphlet" also means any pamphlet developed by EPA under section 406(a) of TSCA or any State or Tribal pamphlet approved by EPA pursuant to 40 CFR 745.326 (40 CFR 745.83) **[Added June 1998; Reviewed March 2000; Revised July 2008]**.
  - *Particulate Asbestos Material* - finely divided particles of asbestos or material containing asbestos (40 CFR 61.141).
  - *Permanently Covered Soil* - soil which has been separated from human contact by the placement of a barrier consisting of solid, relatively impermeable materials, such as pavement or concrete. Grass, mulch, and other landscaping materials are not considered permanent covering (40 CFR 745.223) **[Reviewed March 2000]**.
  - *Person* - any natural or judicial person including any individual, corporation, partnership, or association; any Indian tribe, state, or political subdivision thereof; any interstate body; and any department, agency, or instrumentality of the Federal Government (40 CFR 745.83) **[Added June 1998; Reviewed March 2000]**.

- *Planned Renovation Operations* - a renovation operation, or a number of such operations, in which the amount of friable asbestos material that will be removed or stripped within a given period of time can be predicted. Individual nonscheduled operations are included if a number of such operations can be predicted to occur during a given period of time based on operating experience (40 CFR 61.141).
- *Play Area* - an area of frequent soil contact by children of less than 6 yr of age as indicated by, but not limited to, such factors including the following: the presence of play equipment (e.g., sandboxes, swing sets, and sliding boards), toys, or other children's possessions, observations of play patterns, or information provided by parents, residents, care givers, or property owners (40 CFR 745.63) **[Added April 2001]**.
- *Porous Surface* - any surface that allows PCBs to penetrate or pass into itself including, but not limited to, paint or coating on metal; corroded metal; fibrous glass or glass wool; unglazed ceramics; ceramics with a porous glaze; porous building stone such as sandstone, travertine, limestone, or coral rock; low-density plastics such as styrofoam and low-density polyethylene; coated (varnished or painted) or uncoated wood; concrete or cement; plaster; plasterboard; wallboard; rubber; fiberboard; chipboard; asphalt; or tar paper. For purposes of cleaning and disposing of PCB remediation waste, porous surfaces have different requirements than non-porous surfaces (40 CFR 761.3) **[Added October 1998; Reviewed March 2000]**.
- *Posing an Exposure Risk to Food or Feed* - being in any location where human food or animal feed products could be exposed to PCBs released from a PCB Item (40 CFR 761.3) **[Reviewed March 2000]**.
- *Potential Damage* - circumstances in which (40 CFR 763.83) **[Added March 2000]**:
  1. Friable ACBM is in an area regularly used by building occupants, including maintenance personnel, in the course of their normal activities.
  2. There are indications that there is a reasonable likelihood that the material or its covering will become damaged, deteriorated, or delaminated due to factors such as changes in building use, changes in operations and maintenance practices, changes in occupancy, or recurrent damage.
- *Potential Significant Damage* - circumstances in which (40 CFR 763.83) **[Added March 2000]**:
  1. Friable ACBM is in an area regularly used by building occupants, including maintenance personnel, in the course of their normal activities.
  2. There are indications that there is a reasonable likelihood that the material or its covering will become significantly damaged, deteriorated, or delaminated due to factors such as changes in building use, changes in operations and maintenance practices, changes in occupancy, or recurrent damage.
  3. The material is subject to major or continuing disturbance, due to factors including, but not limited to, accessibility or, under certain circumstances, vibration or air erosion.
- *Preventive Measures* - actions taken to reduce disturbance of ACBM or otherwise eliminate the reasonable likelihood of the material's becoming damaged or significantly damaged (40 CFR 763.83) **[Added March 2000]**.
- *Purchaser* - an entity that enters into an agreement to purchase an interest in target housing, including but not limited to individuals, partnerships, corporations, trusts, government agencies, housing agencies, Indian tribes, and nonprofit organizations (40 CFR 745.103) **[Reviewed March 2000]**.
- *Radon-222* - a naturally occurring, inert, radioactive gas that is formed from the radioactive decay of uranium.
- *Recognized Test Kit* - a commercially available kit recognized by EPA under 40 CFR 745.88 as being capable of allowing a user to determine the presence of lead at levels equal to or in excess of 1.0 milligrams per square centimeter, or more than 0.5% lead by weight, in a paint chip, paint powder, or painted surface (40 CFR 745.83) **[Added July 2008]**.

- *Recycled PCBs* - those PCBs which appear in the processing of paper products or asphalt roofing materials from PCB-contaminated raw materials. Processes which recycle PCBs must meet the following requirements (40 CFR 761.3) [**Added October 2001**].
  1. There are no detectable concentrations of PCBs in asphalt roofing material products leaving the processing site.
  2. The concentration of PCBs in paper products leaving any manufacturing site processing paper products, or in paper products imported into the United States, must have an annual average of less than 25 ppm with a 50 ppm maximum.
  3. The release of PCBs at the point at which emissions are vented to ambient air must be less than 10 ppm.
  4. The amount of Aroclor PCBs added to water discharged from an asphalt roofing processing site must at all times be less than 3 µg/L for total Aroclors (roughly 3 ppb). Water discharges from the processing of paper products must at all times be less than 3 µg/L for total Aroclors (roughly 3 ppb), or comply with the equivalent mass-based limitation.
  5. Disposal of any other process wastes at concentrations of 50 ppm or greater must be in accordance with Subpart D of 40 CFR 761.
- *Reduction* - measures designed to reduce or eliminate human exposure to lead-based paint hazards through methods including interim controls and abatement (40 CFR 745.103) [**Reviewed March 2000**].
- *Regulated Asbestos-Containing Material (RACM)* - includes friable asbestos material; Category I nonfriable ACM that has become friable; Category I nonfriable ACM that has been subjected to grinding, casting, cutting, or abrading; and Category II nonfriable ACM that has a high probability of becoming crumbled, crushed, or pulverized (40 CFR 61.141).
- *Removal* - the taking out or the stripping of substantially all ACBM from a damaged area, a functional space, or a homogeneous area in a school building (40 CFR 763.83) [**Added March 2000**].
- *Remove* - to take out RACM from any structure (40 CFR 61.141).
- *Renovation* - altering in any way one or more structure components. Operations in which load-supporting structural members are wrecked or taken out are excluded (40 CFR 61.141).
- *Renovation* - the modification of any existing structure, or portion thereof, that results in the disturbance of painted surfaces, unless that activity is performed as part of an abatement as defined by 40 CFR 745.223. The term renovation includes (but is not limited to): The removal, modification or repair of painted surfaces or painted components (e.g., modification of painted doors, surface restoration, window repair, surface preparation activity (such as sanding, scraping, or other such activities that may generate paint dust)); the removal of building components (e.g., walls, ceilings, plumbing, windows); weatherization projects (e.g., cutting holes in painted surfaces to install blown-in insulation or to gain access to attics, planing thresholds to install weather-stripping), and interim controls that disturb painted surfaces. A renovation performed for the purpose of converting a building, or part of a building, into target housing or a child-occupied facility is a renovation under this subpart. The term renovation does not include minor repair and maintenance activities (40 CFR 745.83) [**Added June 1998; Reviewed March 2000; Revised July 2008**].
- *Renovator* - an individual who either performs or directs workers who perform renovations. A certified renovator is a renovator who has successfully completed a renovator course accredited by EPA or an EPA-authorized State or Tribal program (40 CFR 745.83) [**Added June 1998; Reviewed March 2000; Revised July 2008**].
- *Repair* - returning damaged ACBM to an undamaged condition or to an intact state so as to prevent fiber release (40 CFR 763.83) [**Added March 2000**].
- *Research and Development (R&D) for PCB Disposal* - demonstrations for commercial PCB disposal approvals, pre-demonstration tests, tests of major modifications to previously approved PCB disposal technologies, treatability studies for PCB disposal technologies which have not been approved, development of new disposal

technologies, and research on chemical transformation processes including, but not limited to, biodegradation (40 CFR 761.3) [**Added October 1998; Reviewed March 2000**].

- *Residential Building* - a building containing one or more residential dwellings (40 CFR 745.63) [**Added April 2001**].
- *Residential/Commercial Areas* - those areas where people live or reside, or where people work in other than manufacturing or farming industries. Residential areas include housing and the property on which housing is located, as well as playgrounds, roadways, sidewalks, parks, and other similar areas within a residential community. Commercial areas are typically accessible to both members of the general public and employees and include public assembly properties, institutional properties, stores, office buildings, and transportation centers (40 CFR 761.123) [**Added October 2001**].
- *Residential Dwelling* - for LBP this means (40 CFR 745.103) [**Reviewed March 2000**]:
  1. a single family dwelling, including attached structures such as porches and stoops, or
  2. a single family dwelling unit in a structure that contains more than one separate residential dwelling unit, and in which such unit is used or occupied, in whole or in part, as the residence of one or more persons.
- *Response Action* - a method, including removal, encapsulation, enclosure, repair, operations and maintenance, that protects human health and the environment from friable ACBM (40 CFR 763.83) [**Added March 2000**].
- *Responsible Party* - the owner of the PCB equipment, facility, or other source of PCBs or his/her designated agent (e.g., a facility manager or foreman). (40 CFR 761.123) [**Added October 2001**].
- *Retrofill* - to remove PCB or PCB-contaminated dielectric fluid and replace it with either PCB, PCB-contaminated, or non-PCB dielectric fluid (40 CFR 761.3) [**Reviewed March 2000**].
- *Risk Assessment* - an onsite investigation to determine and report the existence, nature, severity, and location of LBP hazards in residential dwellings, including (40 CFR 745.103) [**Reviewed March 2000**]:
  1. information gathering regarding the age and history of the housing and occupancy by children under the age of 6
  2. visual inspections
  3. limited wipe sampling or other environmental sampling techniques
  4. other activity as may be appropriate
  5. provision of a report explaining the results of the investigation.
- *Room* - a separate part of the inside of a building, such as a bedroom, living room, dining room, kitchen, bathroom, laundry room, or utility room. To be considered a separate room, the room must be separated from adjoining rooms by built-in walls or archways that extend at least 6 inches from an intersecting wall. Half walls or bookcases count as room separators if built-in. Movable or collapsible partitions or partitions consisting solely of shelves or cabinets are not considered built-in walls. A screened in porch that is used as a living area is a room (40 CFR 745.63) [**Added April 2001**].
- *Routine Maintenance Area* - an area, such as a boiler room or mechanical room, that is not normally frequented by students and in which maintenance employees or contract workers regularly conduct maintenance activities (40 CFR 763.83) [**Added March 2000**].
- *Rupture of a PCB Transformer* - a violent or nonviolent break in the integrity of a PCB Transformer caused by an overtemperature and/or overpressure condition that results in the release of PCBs (40 CFR 761.3) [**Reviewed March 2000**].
- *School* - any elementary or secondary school as defined in section 8801 of Title 20 (TSCA Section 202(12)) [**Added March 2000**].

- *School Building* (40 CFR 763.83) **[Added March 2000]**:
  1. Any structure suitable for use as a classroom, including a school facility such as a laboratory, library, school eating facility, or facility used for the preparation of food.
  2. Any gymnasium or other facility which is specially designed for athletic or recreational activities for an academic course in physical education.
  3. Any other facility used for the instruction or housing of students or for the administration of educational or research programs.
  4. Any maintenance, storage, or utility facility, including any hallway, essential to the operation of any facility described in this definition of “school building” under paragraphs (1), (2), or (3).
  5. Any portico or covered exterior hallway or walkway.
  6. Any exterior portion of a mechanical system used to condition interior space.
- *Seller* - any entity that transfers legal title to target housing, in whole or in part, in return for consideration, including but not limited to individuals, partnerships, corporations, trusts, government agencies, housing agencies, Indian Tribes, and nonprofit organizations. The term seller also includes (40 CFR 745.103) **[Reviewed March 2000]**:
  1. an entity that transfers shares in a cooperatively owned project, in return for consideration
  2. an entity that transfers its interest in a leasehold, in jurisdictions or circumstances where it is legally permissible to separate the fee title from the title to the improvement, in return for consideration.
- *Sewage Sludge* - sewage sludge as defined in 40 CFR 503.9(w) that contains < 50 ppm (on a dry weight basis) PCBs (40 CFR 761.3) **[Added October 1998; Reviewed March 2000]**.
- *Significantly Damaged Friable Miscellaneous ACM* - damaged friable miscellaneous ACM where the damage is extensive and severe (40 CFR 763.83) **[Reviewed March 2000]**.
- *Significantly Damaged Friable Surfacing ACM* - damaged friable surfacing ACM in a functional space where the damage is extensive and severe (40 CFR 763.83) **[Reviewed March 2000]**.
- *Small Quantities* - for research and development, any quantity of PCBs (a) that is originally packaged in one or more hermetically sealed containers of a volume of no more than five (5.0) milliliters, and (b) that is used only for purposes of scientific experimentation or analysis, or chemical research on, or analysis of, PCBs, but not for research or analysis for the development of a PCB product (40 CFR 761.3) **[Added October 2001]**.
- *Soil Sample* - a sample collected in a representative location using ASTM E1727, “Standard Practice for Field Collection of Soil Samples for Lead Determination by Atomic Spectrometry Techniques,” or equivalent method (40 CFR 745.63) **[Added April 2001]**.
- *Soil Washing* - the extraction of PCBs from soil using a solvent, recovering the solvent from the soil, separating the PCBs from the recovered solvent for disposal, and then disposal or reuse of the solvent (40 CFR 761.3) **[Added October 1998; Reviewed March 2000]**.
- *Spill* - both intentional and unintentional spills, leaks, and other uncontrolled discharges where the release results in any quantity of PCBs running off or about to run off the external surface of the equipment or other PCB source, as well as the contamination resulting from those releases. This policy applies to spills of 50 ppm or greater PCBs. The concentration of PCBs spilled is determined by the PCB concentration in the material spilled as opposed to the concentration of PCBs in the material onto which the PCBs were spilled. Where a spill of untested mineral oil occurs, the oil is presumed to contain greater than 50 ppm, but less than 500 ppm PCBs and is subject to the relevant requirements of this policy (40 CFR 761.123) **[Added October 2001]**.
- *Spill Area* - the area of soil on which visible traces of the spill can be observed plus a buffer zone of 1 foot beyond the visible traces. Any surface or object (e.g., concrete sidewalk or automobile) within the visible traces area or on which visible traces of the spilled material are observed is included in the spill area. This area represents the

minimum area assumed to be contaminated by PCBs in the absence of precleanup sampling data and is thus the minimum area which must be cleaned (40 CFR 761.123) [**Added October 2001**].

- *Spill Boundaries* - the actual area of contamination as determined by postcleanup verification sampling or by precleanup sampling to determine actual spill boundaries. USEPA can require additional cleanup when necessary to decontaminate all areas within the spill boundaries to the levels required in this policy (e.g., additional cleanup will be required if postcleanup sampling indicates that the area decontaminated by the responsible party, such as the spill area as defined in this section, did not encompass the actual boundaries of PCB contamination) (40 CFR 761.123) [**Added October 2001**].
- *Standard Wipe Sample* - a sample collected for chemical extraction and analysis using the standard wipe test as defined in 40 CFR 761.123. Except as designated elsewhere in part 761, the minimum surface area to be sampled shall be 100 cm<sup>2</sup> (40 CFR 761.3) [**Added October 1998; Reviewed March 2000**].
- *Standard Wipe Test* - for spills of high-concentration PCBs on solid surfaces, a cleanup to numerical surface standards and sampling by a standard wipe test to verify that the numerical standards have been met. This definition constitutes the minimum requirements for an appropriate wipe testing protocol. A standard-size template (10 centimeters (cm) x 10 cm) will be used to delineate the area of cleanup; the wiping medium will be a gauze pad or glass wool of known size which has been saturated with hexane. It is important that the wipe be performed very quickly after the hexane is exposed to air. USEPA strongly recommends that the gauze (or glass wool) be prepared with hexane in the laboratory and that the wiping medium be stored in sealed glass vials until it is used for the wipe test. Further, USEPA requires the collection and testing of field blanks and replicates (40 CFR 761.123) [**Added October 2001**].
- *Start Date* - the first day of any lead-based paint activities training course or lead-based paint abatement activity (40 CFR 745.223) [**Added July 2004**].
- *Start Date Provided to EPA* - the start date included in the original notification or the most recent start date provided to EPA in an updated notification (40 CFR 745.223) [**Added July 2004**].
- *Storage for Disposal* - temporary storage of PCBs that have been designated for disposal (40 CFR 761.3) [**Added October 2001**].
- *Strip* - to take off RACM from any part of a facility (40 CFR 61.141).
- *Structural Member* - any load-supporting member of a structure, such as beams and load-supporting walls; or any nonload-supporting member, such as ceilings and nonload-supporting walls (40 CFR 61.141).
- *Surfacing ACM* - surfacing material that is ACM (40 CFR 763.83) [**Added October 2001**].
- *Surfacing Material* - material in a school building that is sprayed-on, troweled-on, or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, or other purposes (40 CFR 763.83) [**Added October 2001**].
- *SW-846* - the document having the title "SW-846, Test Methods for Evaluating Solid Waste," which is available from either the National Technical Information Service (NTIS, U.S. Department of Commerce, 5285 Port Royal Rd., Springfield, VA 22161, telephone: (703) 487-4650 or the U.S. Government Printing Office (U.S. GPO, 710 North Capitol St., NW., Washington, DC 20401, telephone: (202) 783-3238 (40 CFR 761.3) [**Added October 1998**].
- *Target Housing* - any housing constructed prior to 1978, except housing for the elderly or persons with disabilities (unless any child who is less than 6 yr of age resides or is expected to reside in such housing) or any zero-bedroom dwelling (40 CFR 745.103 and 745.223) [**Reviewed March 2000**].

- *Thermal System Insulation* - material in a school building applied to pipes, fittings, boilers, breeching, tanks, ducts, or other interior structural components to prevent heat loss or gain, or water condensation, or for other purposes (40 CFR 763.83) **[Added October 2001]**.
- *Thermal System Insulation ACM* - thermal system insulation that is ACM (40 CFR 763.83) **[Added October 2001]**.
- *Totally Enclosed Manner* - any manner that will ensure no exposure of human beings or the environment to any concentration of PCBs (40 CFR 761.3) **[Added October 2001]**.
- *Training Hour* - at least 50 min of actual learning, including, but not limited to, time devoted to lecture, learning activities, small group activities, demonstrations, evaluations, and hands-on experience (40 CFR 745.83) **[Added July 2008]**.
- *Training Provider* - any organization or entity accredited under 40 CFR 745.225 to offer lead-based paint activities courses (40 CFR 745.223) **[Added July 2004]**.
- *Transfer Facility* - any transportation-related facility including loading docks, parking areas, and other similar areas where shipments of PCB waste are held during the normal course of transportation. Transport vehicles are not transfer facilities under this definition, unless they are used for the storage of PCB waste, rather than for actual transport activities. Storage areas for PCB waste at transfer facilities are subject to the storage facility standards of 40 CFR 761.65, but such storage areas are exempt from the approval requirements of 40 CFR 761.65(d) and the recordkeeping requirements of 40 CFR 761.180, unless the same PCB waste is stored there for a period of more than 10 consecutive days between destinations (40 CFR 761.3) **[Added October 2001]**.
- *TSCA PCB Coordinated Approval* - the process used to recognize other Federal or state waste management documents governing the storage, cleanup, treatment, and disposal of PCB wastes. It is the mechanism under TSCA for accomplishing review, coordination, and approval of PCB waste management activities which are conducted outside of the TSCA PCB approval process, but require approval under the TSCA PCB regulations at 40 CFR part 761 (40 CFR 761.3) **[Added October 1998; Reviewed March 2000]**.
- *Unit* - a particular building, structure, or cell used to manage PCB waste (including, but not limited to, a building used for PCB waste storage, a landfill, an industrial boiler, or an incinerator) (40 CFR 761.3) **[Added October 1998; Reviewed March 2000]**.
- *Vertical Containment* - a vertical barrier consisting of plastic sheeting or other impermeable material over scaffolding or a rigid frame, or an equivalent system of containing the work area. Vertical containment is required for some exterior renovations but it may be used on any renovation (40 CFR 745.83) **[Added October 2011]**.
- *Vibration* - the periodic motion of friable ACBM which may result in the release of asbestos fibers (40 CFR 763.83) **[Added October 2001]**.
- *Visible Emissions* - any emissions which are visually detectable without the aid of instruments, coming from RACM or asbestos-containing waste material, or from any asbestos milling, manufacturing, or fabricating operation. This does not include condensed water vapor (40 CFR 61.141).
- *Waste Oil* - used products primarily derived from petroleum, which include, but are not limited to, fuel oils, motor oils, gear oils, cutting oils, transmission fluids, hydraulic fluids, and dielectric fluids (40 CFR 761.3) **[Added October 2001]**.
- *Weighted Arithmetic Mean* - the arithmetic mean of sample results weighted by the number of subsamples in each sample. Its purpose is to give influence to a sample relative to the surface area it represents. A single surface sample is comprised of a single subsample. A composite sample may contain from two to four subsamples of the same area as each other and of each single surface sample in the composite. The weighted arithmetic mean is obtained by summing, for all samples, the product of the sample's result multiplied by the number of subsamples

in the sample, and dividing the sum by the total number of subsamples contained in all samples. For example, the weighted arithmetic mean of a single surface sample containing 60 micrograms/ft<sup>2</sup>, a composite sample (three subsamples) containing 100 micrograms/ft<sup>2</sup>, and a composite sample (4 subsamples) containing 110 micrograms/ft<sup>2</sup> is 100 micrograms/ft<sup>2</sup>. This result is based on the equation  $[60+(3*100)+(4*110)]/(1+3+4)$  (40 CFR 745.63) [Added April 2001].

- *Wet Disposable Cleaning Cloth* - a commercially available, pre-moistened white disposable cloth designed to be used for cleaning hard surfaces such as uncarpeted floors or counter tops (40 CFR 745.83) [Added July 2008].
- *Wet Mopping System* - a device with the following characteristics: A long handle, a mop head designed to be used with disposable absorbent cleaning pads, a reservoir for cleaning solution, and a built-in mechanism for distributing or spraying the cleaning solution onto a floor, or a method of equivalent efficacy (40 CFR 745.83) [Added July 2008].
- *Wet Weight* - reporting chemical analysis results by including either the weight, or the volume and density, of all liquids (40 CFR 761.3) [Added October 1998; Reviewed March 2000].
- *Window Trough* -, for a typical double-hung window, the portion of the exterior windowsill between the interior window sill (or stool) and the frame of the storm window. If there is no storm window, the window trough is the area that receives both the upper and lower window sashes when they are both lowered. The window trough is sometimes referred to as the window “well” (40 CFR 745.63) [Added April 2001].
- *Wipe Sample* - a sample collected by wiping a representative surface of known area, as determined by ASTM E1728, “Standard Practice for Field Collection of Settled Dust Samples Using Wipe Sampling Methods for Lead Determination by Atomic Spectrometry Techniques,” or equivalent method, with an acceptable wipe material as defined in ASTM E 1792, “Standard Specification for Wipe Sampling Materials for Lead in Surface Dust” (40 CFR 745.63) [Added April 2001].
- *Work Area* - the area that the certified renovator establishes to contain the dust and debris generated by a renovation (40 CFR 745.83) [Added July 2008].
- *Zero-Bedroom Dwelling* - any residential dwelling in which the living area is not separated from the sleeping area. The term includes efficiencies, studio apartments, dormitory housing, military barracks, and rentals of individual rooms in residential dwellings (40 CFR 745.103) [Reviewed March 2000].

## F. Records To Review

- Inspection, storage, maintenance, and disposal records for PCBs/PCB Items
- PCB Equipment inventory and sampling results
- Manifests and CODs
- Correspondence with regulatory agencies concerning noncompliance situations
- Annual reports
- Asbestos management plan and operating plan
- Notification to regulators concerning asbestos disposal
- Records of onsite disposal and transportation and offsite disposal of asbestos
- Regulatory inspection reports
- Documentation of asbestos sampling and analytical results
- Documentation of preventive measures or action
- Results of air sampling at the conclusion of response action
- Records of asbestos training program
- List of buildings insulated with asbestos or housing ACM
- Record of demolition or renovation projects in the past 5 yr that involved friable asbestos
- Decision documents/records of decision

- Administrative record
- Federal facility Master Plan Document
- Spill Prevention Control and Countermeasure (SPCC) Plan

**G. Physical Features To Inspect**

- PCB storage areas
- Equipment, fluids, and other items used or stored at the facility containing PCBs
- Pipe, spray-on, duct, and troweled cementitious insulation and boiler lagging
- Ceiling and floor tiles

## H. Guidance for Toxic Substances Management Checklist Users

	REFER TO CHECKLIST ITEMS:
PCB Management	
All Facilities	T1.1.1.US. and T1.1.2.US.
Missing, Risk Management, and Positive Checklist Items	T1.2.1.US. through T1.2.3.US
PCBs General	T1.10.1.US. through T1.10.3.US.
PCB Records	T1.15.1.US. through T1.15.6.US.
PCB Transformers	T1.20.1.US. through T1.20.10.US.
PCB Spills	T1.25.1.US. through T1.25.7US.
PCB Items	T1.30.1.US. through T1.30.9US.
PCBs in Research	T1.35.1.US. and T1.35.2.US
PCB Storage	T1.40.1.US. through T1.40.9.US.
PCB Transportation	T1.45.1.US. and T1.45.2.US.
PCB Disposal	T1.50.1.US. through T1.50.17US.
PCB Decontamination	T1.53.1.US through T1.53.6.US
PCB Import/Export	T1.55.1.US. through T1.55.7.US.
Asbestos Management	
All Facilities	T2.1.1.US. and T2.1.2.US
Missing, Risk Management, and Positive Checklist Items	T2.2.1.US. through T2.2.3.US
Renovation and Demolition of Asbestos Containing Structures	T2.5.1.US. through T2.5.9.US.
Asbestos Personnel Training	T2.10.1.US.
Asbestos Disposal	T2.15.1.US. through T2.15.4.US.
Asbestos in Schools	T2.20.1.US. through T2.20.12.US.
Radon Management	
All Facilities	T3.1.1.US.
Missing, Risk Management, and Positive Checklist Items	T3.2.1.US. through T3.2.3.US
Lead-Based Paint (LBP) Management	
All Facilities	T4.1.1.US.
Missing, Risk Management, and Positive Checklist Items	T4.2.1.US. through T4.2.3.US
Notifications	T4.10.1.US. through T4.10.5.US.
Training Requirements	T4.15.1.US. and T4.15.2.US.
Work Practice Standards	T4.20.1.US. through T4.20.8.US.

Appendix 11-1, *PCB Label Format*.

Appendix 11-2, Dielectric Fluid Trend Names and Manufacturers.

Appendix 11-2a, *PCBs Reclassification*

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**REFER TO  
CHECKLIST  
ITEMS:**

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Appendix 11-2b, Self-implementing On-site Cleanup and Disposal of  
Polychlorinated Biphenyl (PCB) Remediation Waste: Cleanup Levels and Site  
Cleanup

Appendix 11-3, *PCB Waste Disposal Guidance*.

Appendix 11-4, LBP Determinations.



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<b>PCB MANAGEMENT</b>  <b>T1.1</b> <b>All Facilities</b>  <b>T1.1.1.US.</b> The current status of any ongoing or unresolved consent orders, compliance agreements, notice of violations (NOVs), inter-agency agreements, or equivalent state enforcement actions is required to be examined (a finding under this checklist item will have the enforcement action/identifying information as the citation).  <b>T1.1.2.US.</b> PCB Concentrations must be established by certain methods (40 CFR 761.1(b)(4) and 761.2(b)). [Added October 1998; Revised October 2001].	<p>Determine if noncompliance issues have been resolved by reviewing a copy of the previous report, consent orders, compliance agreements, NOVs, interagency agreements, or equivalent state enforcement actions.</p> <p>Verify that PCB concentrations have been established one of the following ways:</p> <ul style="list-style-type: none"> <li>– testing the equipment</li> <li>– permanent label, mark, or other documentation from the manufacturer of the equipment indicating its PCB concentration at the time of manufacture</li> <li>– service records or other documentation indicating the PCB concentration of all fluids used in servicing the equipment since it was first manufactured.</li> </ul> <p>(NOTE: See the definition of PCB Concentration Assumptions for further clarification.)</p> <p>Verify that any person determining PCB concentrations for non-liquid PCBs does so on a dry weight basis.</p> <p>Verify that any person determining PCB concentrations for liquid PCBs does so on a wet weight basis and liquid PCBs containing more than 0.5 percent by weight non-dissolved material are analyzed as multi-phasic non-liquid/liquid mixtures.</p> <p>Verify that any person determining the PCB concentration of samples containing PCBs and non-dissolved non-liquid materials <math>\geq</math> 0.5 percent, separates the non-dissolved materials into non-liquid PCBs and liquid PCBs.</p> <p>Verify that, for multi-phasic non-liquid/liquid or liquid/liquid mixtures, the phases are separated before chemical analysis.</p>

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	<p>Verify that, following phase separation, the PCB concentration in each non-liquid phase is determined on a dry weight basis and the PCB concentration in each liquid phase are determined separately on a wet weight basis.</p> <p>Verify that any person disposing of multi-phasic non-liquid/liquid or liquid/liquid mixtures use the PCB disposal requirements that apply to the individual phase with the highest PCB concentration except where otherwise noted.</p> <p>(NOTE: Phases may be separated and disposed of using the PCB disposal requirements that apply to each separated, single-phase material.)</p>

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<b>PCB MANAGEMENT</b>  <b>T1.2</b> <b>Missing, Risk Management,</b> <b>and Positive Checklist Items</b>  <b>T1.2.1.US.</b> Facilities are required to comply with all applicable Federal regulatory requirements not contained in this checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of finding).  <b>T1.2.2.US.</b> Risk management techniques should be promoted in environmental efforts (MP) [Added April 2002].  <b>T1.2.3.US.</b> Facilities should go above and beyond statutory and regulatory compliance (MP) [Added April 2002].	<p>Determine if any new regulations have been issued since the finalization of TEAM.</p> <p>Determine if the facility has activities or facilities that are regulated, but not addressed in this checklist.</p> <p>Verify that the facility is in compliance with all applicable and newly issued regulations.</p> <p>Determine if risk management techniques are promoted in environmental efforts.</p> <p>Determine if the facility has gone above and beyond simply complying with environmental requirements.</p>



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<p><b>PCBs</b></p> <p><b>T1.10 General</b></p> <p><b>T1.10.1.US.</b> Checklist item deleted <b>[Deleted October 2001]</b>.</p> <p><b>T1.10.2.US.</b> Storage rooms and certain equipment that contains PCBs must be marked with an ML marking (40 CFR 761.40 and 761.45). <b>[Revised October 1999; Revised October 2001]</b>.</p>	<p>The contents of this checklist item have been incorporated into T1.15.1.US.</p> <p>(NOTE: 40 CFR 761 applies to all persons who manufacture, process, distribute in commerce, use, or dispose of PCBs or PCB Items. Substances that are regulated include, but are not limited to: dielectric fluids; solvents; oils; waste oils; heat transfer fluids; hydraulic fluids; paints or coatings; sludges; slurries; sediments; dredge spoils; soils; materials containing PCBs as a result of spills; and other chemical substances or combinations of substances, including impurities and byproducts and any byproduct, intermediate, or impurity manufactured at any point in a process. Requirements applicable to PCBs at concentrations &lt; 50 ppm also apply to contaminated surfaces at PCB concentrations <math>\leq 10</math> micrograms/100 cm<sup>2</sup>. Requirements applicable to PCBs at concentrations <math>\geq 50</math> ppm to &lt; 500 ppm also apply to contaminated surfaces at PCB concentrations <math>&gt; 10</math> micrograms/100 cm<sup>2</sup> to &lt; 100 micrograms/100 cm<sup>2</sup>. Requirements applicable to PCBs at concentrations <math>\geq 500</math> ppm also apply to contaminated surfaces at PCB concentrations <math>\geq 100</math> micrograms/100 cm<sup>2</sup>. See also the definition for PCB Concentration Assumptions (40 CFR 761.1(b)(1), 761.1(b)(3) and 761.2).)</p> <p>(NOTE: Marking Format is Large PCB Mark (ML) letters and striping, on a white or yellow background, sufficiently durable to equal or exceed the life of the PCB Article. The size shall be 15.25 cm (6 in.) on each side. If the article is too small to accommodate this size, a smaller label (Ms) may be used.)</p> <p>Verify that the following equipment is marked with an ML marking that can be easily read by any person inspecting or servicing the equipment (see Appendix 11-1 for a sample of the marking):</p> <ul style="list-style-type: none"> <li>– PCB Containers with PCBs in concentrations of 50 ppm to 500 ppm at the time of manufacture, at the time of distribution in commerce if not already marked, and at the time of removal from use if not already marked</li> <li>– PCB Transformers (500 ppm or greater)</li> <li>– PCB Large High-Voltage Capacitors at the time of manufacture, at the time of distribution in commerce if not already marked, and at the time of removal from use if not already marked</li> <li>– equipment containing a PCB Transformer (500 ppm or greater) or a PCB Large High-Voltage Capacitor at the time of manufacture, at the time of distribution in commerce if not already marked, and at the time of removal from use if not already marked</li> <li>– PCB Large Low-Voltage Capacitors at the time of removal from service</li> </ul>

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	<ul style="list-style-type: none"> <li>– electric motors using PCB coolants with a concentration 50 ppm to 500 ppm</li> <li>– hydraulic systems using PCB hydraulic fluid with concentrations 50 ppm to 500 ppm</li> <li>– heat transfer systems (other than PCB Transformers) using PCB concentrations 50 ppm to 500 ppm</li> <li>– PCB Article Containers containing any of the above</li> <li>– each storage area used to store PCBs and PCB Items for disposal</li> <li>– transport vehicles loaded with PCB Containers that contain &gt; 45 kg (99.4 lb) of liquid PCBs with PCBs at concentrations <math>\geq</math> 50 ppm or with one or more PCB Transformers with PCB concentrations of &gt; 500 ppm are marked on each end and side</li> <li>– vault doors, machinery room doors, fences, hallways, or means of access, other than a manhole or grate cover, to a PCB Transformer (500 ppm or greater)</li> <li>– voltage regulators which contain 1.36 kg (3 lb) or more of dielectric fluid with a PCB concentration of <math>\geq</math> 500 ppm (individually)</li> <li>– vault doors, machinery room doors, fences, hallways, or means of access, other than grates or manhole covers, to voltage regulators which contain 1.36 kg (3 lb) or more of dielectric fluid with a PCB concentration of <math>\geq</math> 500 ppm.</li> </ul> <p>Verify that, if one or more PCB Large High-Voltage Capacitors is installed in a protected location such as a pole, structure, or behind a fence, then the pole, structure, or fence is marked and a record or procedure identifying the PCB Capacitor is maintained.</p> <p>Verify that all PCB Equipment containing a PCB Small Capacitor is marked at the time of manufacture with the statement “This equipment contains PCB Capacitor(s)”.</p> <p>(NOTE: Marking requirements for small capacitors apply to equipment manufactured as of 1 January 1979.)</p> <p>Verify that each Large Low Voltage Capacitor, each Small Voltage Capacitor normally used in an alternating current circuit, and each fluorescent light ballast built between 1 July 1978 and 1 July 1998 that does not contain PCBs were marked at the time of manufacture with the statement “No PCBs”.</p> <p>Verify that all marks are placed in a position on the exterior of the PCB Items, storage units, or transport vehicles so that any person inspecting or servicing the marked PCB Items, storage units, or transport vehicles can easily read the marks.</p> <p>(NOTE: Marking of PCB-Contaminated Electrical Equipment (50 to 500 ppm) is not required.)</p> <p>Verify that, after 26 April 1999, all PCB Large Low Voltage Capacitors not previously marked, are marked individually.</p>

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<p><b>T1.10.3.US.</b> Generators, commercial storers, transporters, and disposers of PCB waste are required to have a USEPA identification number (40 CFR 761.202 through 761.205) <b>[Revised]</b></p>	<p>(NOTE: Inaccessible capacitors may be marked on the outside of the equipment instead of on each individual capacitor if one or more such Capacitors in a protected location such as on a power pole, or in a structure, or behind a fence, the pole, fence, or structure is marked.)</p> <p>Verify that any containers of chemical substances or mixtures that is manufactured and that contains &lt; 500 ppm PCB (0.05% on a dry weight basis), including PCB that is a byproduct or impurity, is marked according to any permit requirements contained in the USEPA exemption to manufacture.</p> <p>Verify that a record is maintained after 26 April 1999 of those PCB Large Low Voltage Capacitors in a protected location.</p> <p>Verify that, after 26 April 1999, all equipment containing a PCB Transformer or a PCB Large, High, or Low Voltage Capacitor is marked.</p> <p>Verify that the vault door, machinery room door, fence, hallway, or means of access, other than grates and manhole covers, to a PCB Transformer are marked with the ML mark.</p> <p>(NOTE: A mark other than the ML mark may be used if:</p> <ul style="list-style-type: none"> <li>– the program using an alternative mark was started prior to 15 August, 1985 and can be substantiated with documentation</li> <li>– prior to 15 August 1985, coordination between the transformer owner and primary fire department occurred, and the primary fire department knows, accepts, and recognizes what the alternative marks mean and this can be substantiated with documentation</li> <li>– the USEPA Regional Administrator was informed in writing of the use of the alternative mark by 3 October 1988</li> <li>– the USEPA Regional Administrator approved the use of an alternative mark.</li> </ul> <p>(NOTE: Appendix 11-2 contains a list of manufacturers that produced PCB-Contaminated dielectric fluid.)</p> <p>(NOTE: The annual document log/inventory should contain a list of all PCB equipment at the site.)</p> <p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>(NOTE: Some facilities are exempt from the notification requirement if they do not have a specified PCB storage area as regulated by 40 CFR 761.65 and just temporarily store before they transport for disposal.)</p>

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<b>October 1998; Revised October 2001].</b>	<p>Determine if the facility is a generator, commercial storer, transporter, or disposer of PCB waste.</p> <p>Verify that generators of PCB waste have a USEPA identification number before processing, storing, disposing of, transporting, or offering for transport PCB waste.</p> <p>Verify that transporters, disposers, or commercial storers of PCB waste have a USEPA identification number.</p> <p>(NOTE: A generator of PCB waste who is exempted from notification, or who notified the USEPA in a timely manner, but has not yet received a unique identification number shall be regarded as having received the identification number “40 CFR 761”.)</p> <p>(NOTE: A disposer of PCB waste who owns more than one disposal facility or mobile treatment unit shall accept waste unless the disposer has received an USEPA identification number for each facility or mobile unit.)</p> <p>Verify that, if required, Form 7710-53, Notification of PCB Waste Activity, was filed with USEPA by April 4, 1990, or prior to engaging in PCB waste handling activities and a USEPA identification number was obtained.</p> <p>(NOTE: When a facility has previously notified USEPA of its PCB waste handling activities using USEPA Form 7710-53 and those activities change, the facility must resubmit USEPA Form 7710-53 to reflect those changes no later than 30 days from when a change is made. Examples of when a PCB waste handler must renotify USEPA include, but are not limited to, the following: the company changes location of the facility; or the company had notified solely as engaging in a certain type of PCB waste handling activity and now wishes to engage in another PCB waste activity [e.g., previously only commercially stored PCB waste and now wishes to transport PCB waste].)</p>

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<p><b>T1.15</b></p> <p><b>PCB RECORDS</b></p> <p><b>T1.15.1.US.</b> A written annual document log must be prepared by 1 July of each calendar year, covering the previous year when at least 45 kg (99.4 lb) of PCBs contained in PCB Containers or one or more PCB Transformers (500 ppm or greater), or 50 or more PCB Large, High- or Low-Voltage Capacitors is used or stored at any time (40 CFR 761.180(a)) <b>[Revised October 1998; Revised October 2001; Revised October 2012].</b></p>	<p>(NOTE: See the first NOTE in T1.10.2.US for information on whom and what this checklist item applies to.)</p> <p>(NOTE: This requirement does not apply to a commercial storer or disposer of PCB waste.)</p> <p>Verify that the annual document log and annual records manifests, records of inspections and cleanups, certificates of disposal) are kept for at least 3 yr after PCBs and PCB items are no longer used or stored in the listed quantities.</p> <p>Verify the written annual document log includes the following:</p> <ul style="list-style-type: none"> <li>– the name, address, and USEPA identification number of the facility covered by the annual document log and the calendar year covered by the annual document log</li> <li>– the unique manifest number of every manifest generated by the facility during the calendar year</li> <li>– from each manifest and for unmanifested waste that may be stored at the facility, the following information <ul style="list-style-type: none"> <li>– for bulk PCB waste (e.g., in a tanker or truck), its weight in kilograms, the first date it was removed from service for disposal, the date it was placed in transport for offsite storage or disposal, and the date of disposal, if known</li> <li>– the serial number (if available) or other means of identifying each PCB Article (e.g., transformer or capacitor), the weight in kilograms of the PCB waste in each transformer or capacitor, the date it was removed from service for disposal, the date it was placed in transport for offsite storage or disposal, and the date of disposal, if known</li> <li>– a unique number identifying each PCB Container, a description of the contents of each PCB Container, such as liquid, soil, cleanup debris, etc., including the total weight of the material in kilograms in each PCB Container, the first date material placed in each PCB Container was removed from service for disposal, and the date each PCB Container was placed in transport for offsite storage or disposal, and the date of disposal (if known)</li> <li>– a unique number identifying each PCB Article Container, a description of the contents of each PCB Article Container, such as pipes, capacitors, electric motors, pumps, etc., including the total weight in kilograms of the content of each PCB Article Container, the first date a PCB Article placed in each PCB Article Container was removed from service for disposal, and the date the PCB Article Container was placed in transport for offsite storage or disposal, and the date of disposal (if known)</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– the total number by specific type of PCB Articles and the total weight in kilograms of PCBs in PCB Articles, the total number of PCB Article Containers and total weight in kilograms of the contents of PCB Article Containers, the total number of PCB Containers and the total weight in kilograms of the contents of PCB Containers, and the total weight in kilograms of bulk PCB waste that was placed into storage for disposal or disposed during the calendar year</li> <li>– the total number of PCB Transformers and total weight in kilograms of PCBs contained in the transformers remaining in service at the end of the calendar year</li> <li>– the total number of Large High or Low Voltage PCB Capacitors remaining in service at the end of the calendar year</li> <li>– the total weight in kilograms of any PCBs and PCB Items in PCB Containers, including the identification of container contents, remaining in service at the facility at the end of the calendar year</li> <li>– for any PCBs or PCB item received from or shipped to another facility owned or operated by the same generator, the following information: <ul style="list-style-type: none"> <li>– for bulk PCB waste (e.g., in a tanker or truck), its weight in kilograms, the first date it was removed from service for disposal, the date it was placed into transport for offsite storage or disposal, and the date of disposal, if known</li> <li>– the serial number (if available) or other means of identifying each PCB Article (e.g., transformer or capacitor), the weight in kilograms of the PCB waste in each transformer or capacitor, the date it was removed from service for disposal, the date it was placed in transport for offsite storage or disposal, and the date of disposal, if known</li> <li>– a unique number identifying each PCB Container, a description of the contents of each PCB Container, such as liquid, soil, cleanup debris, etc., including the total weight of the material in kilograms in each PCB Container, the first date material placed in each PCB Container was removed from service for disposal, and the date each PCB Container was placed in transport for offsite storage or disposal, and the date of disposal (if known)</li> <li>– a unique number identifying each PCB Article Container, a description of the contents of each PCB Article Container, such as pipes, capacitors, electric motors, pumps, etc., including the total weight in kilograms of the content of each PCB Article Container, the first date a PCB Article placed in each PCB Article Container was removed from service for disposal, and the date the PCB Article Container was placed in transport for offsite storage or disposal, and the date of disposal (if known.)</li> </ul> </li> <li>– the name, address, and telephone number of the person to whom an item was transferred, date of transfer, and the serial number of the item or the internal identification number, if a serial number is not available, whenever a PCB Item, excluding small capacitors, with a concentration of <math>\geq 50</math> ppm is distributed in commerce for reuse.</li> </ul>

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<p><b>T1.15.2.US.</b> Owners and operators of PCB chemical waste landfills shall keep records on water analysis and operational records, including burial coordinates, for 20 yr after disposal has ceased (40 CFR 761.180(d)) [<b>Reviewed March 2000</b>].</p> <p><b>T1.15.3.US.</b> Storage and disposal facilities for PCBs shall maintain specific records for 3 yr (40 CFR 761.180(f)) [<b>Reviewed March 2000</b>].</p> <p><b>T1.15.4.US.</b> Records will be maintained for equipment reclassification (40 CFR 761.180(g)) [<b>Added July 2001</b>].</p>	<p>(NOTE: In this context, PCB Voltage Regulators will be recorded as PCB Transformers.)</p> <p>Determine if the following information is provided by reviewing the annual document log:</p> <ul style="list-style-type: none"> <li>– all signed manifests generated or received during the calendar year</li> <li>– all CODs that have been generated or received during the calendar year.</li> </ul> <p>Verify that records on water analysis and operations are being kept for the required 20 yr in addition to the information required for disposers in 40 CFR 761.180(b) (see checklist item T1.15.6.US).</p> <p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>Verify that facilities which store or dispose of PCBs collect and maintain the following records for 3 yr in addition to the information required for disposers in 40 CFR 761.180(b) (see checklist item T1.15.6.US):</p> <ul style="list-style-type: none"> <li>– all documents, correspondence, and data that have been provided by any state or local government</li> <li>– all documents, correspondence, and data provided to the state or local governments by the facility</li> <li>– any applications and related correspondence concerning wastewater discharge permits, solid waste permits, building permits, or other permits and authorizations.</li> </ul> <p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>Verify that records are kept of the required reclassification procedures if the facility has reclassified electrical equipment:</p> <p>Verify that, where the reclassification procedures require testing, the records include copies of pre- and post-reclassification PCB concentration measurements from a laboratory using quality control and quality assurance procedures.</p> <p>Verify that the facility makes these reclassification records available promptly to USEPA or to any party possessing the equipment through sale, loan, lease, or for servicing.</p>

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<p><b>T1.15.5.US.</b> Certain records must be kept in relation to PCB cleanup (40 CFR 761.125(b)(3) and 761.125(c)(5)) [Added October 2001].</p>	<p>Verify that the facility retains the reclassification records for at least 3 yr after selling or disposing of the equipment.</p> <p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>Verify that after completing the cleanup of low concentration spills of &lt; 1 lb of PCBs (&lt; 270 gal of untested mineral oil), the cleanup is documented with records and certification containing the following:</p> <ul style="list-style-type: none"> <li>– identification of the source of the spill</li> <li>– estimated or actual date and time of the spill occurrence</li> <li>– the date and time cleanup was completed or terminated</li> <li>– a brief description of the spill location</li> <li>– precleanup sampling data used to establish the spill boundaries if required because of insufficient visible traces, and a brief description of the sampling methodology used</li> <li>– a brief description of the solid surfaces cleaned and of the double wash/rinse method used</li> <li>– approximate depth of the solid surface cleaned and the amount of soil removed</li> <li>– a certification statement signed by the responsible party stating the cleanup requirements have been met and that the information contained in the record is true to the best of his/her knowledge.</li> </ul> <p>Verify that after completing cleanup of high-concentration spills and low concentration spills involving 1 lb or more of PCBs by weight (270 gal or more of untested mineral oil), the cleanup is documented with records and certification containing the following:</p> <ul style="list-style-type: none"> <li>– identification of the source of the spill</li> <li>– estimated or actual date and time of the spill occurrence</li> <li>– the date and time cleanup was completed or terminated</li> <li>– a brief description of the spill location and the nature of the materials contaminated</li> <li>– precleanup sampling data used to establish the spill boundaries if required because of insufficient visible traces, and a brief description of the sampling methodology used</li> <li>– a brief description of the solid surfaces cleaned</li> <li>– approximate depth of soil excavation and the amount of soil removed</li> <li>– postcleanup verification sampling data, and, if not otherwise apparent from the documentation, a brief description of the sampling methodology and analytical techniques used.</li> </ul> <p>Verify that all records are maintained for 5 yr.</p>

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<p><b>T1.15.6.US.</b> Disposers and commercial storers of PCB waste are required to keep certain records (40 CFR 761.180(b)(1) through 761.180(b)(3), and 761.180(b)(5)) [Added <b>October 2001</b>].</p>	<p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>(NOTE: These requirements apply beginning 5 February 1990, to each owner or operator of a facility (including high efficiency boiler operations) used for the commercial storage or disposal of PCBs and PCB Items.)</p> <p>Verify that the written annual document log is prepared by July 1 for the previous calendar year (January through December).</p> <p>Verify that the written annual document log is maintained at each facility for at least 3 yr after the facility is no longer used for the storage or disposal of PCBs and PCB Items except that, in the case of chemical waste landfills, the annual document log is maintained at least 20 yr after the chemical waste landfill is no longer used for the disposal of PCBs and PCB Items.</p> <p>Verify that the annual records are maintained for the same period as the annual document log.</p> <p>Verify that the annual records and written annual document log are available at the facility for inspection by authorized representatives of the USEPA.</p> <p>(NOTE: All records and annual documents required to be prepared and maintained prior to 5 February 1990 shall continue to be maintained at the facility for the same time as the annual records and the annual document log.)</p> <p>Verify that the annual report is submitted by July 15 of each year for the preceding calendar year.</p> <p>Verify that, if a facility stops commercial PCB storage or disposal operations, the owner or operator of the facility provides at least 60 days advance written notice to the Regional Administrator for the region in which the facility is located of the date the facility intends to begin closure.</p> <p>Verify that the annual records include:</p> <ul style="list-style-type: none"> <li>– all signed manifests generated or received at the facility during the calendar year</li> <li>– all COD that have been generated or received by the facility during the calendar year</li> <li>– records of inspections and cleanups performed.</li> </ul> <p>Verify that the written annual document log includes the following:</p>

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	<ul style="list-style-type: none"> <li>– the name, address, and USEPA identification number of the storage or disposal facility covered by the annual document log and the calendar year covered by the annual document log</li> <li>– for each manifest generated or received by the facility during the calendar year, the unique manifest number and the name and address of the facility that generated the manifest and the following information               <ul style="list-style-type: none"> <li>– for bulk PCB waste (e.g., in a tanker or truck), its weight in kilograms, the first date PCB waste placed in the tanker or truck was removed from service for disposal, the date it was received at the facility, the date it was placed in transport for offsite disposal (if applicable), and the date of disposal, (if known)</li> <li>– the serial number or other means of identifying each PCB Article, not in a PCB Container or PCB Article Container, the weight in kilograms of the PCB waste in the PCB Article, the date it was removed from service for disposal, the date it was received at the facility, the date it was placed in transport for offsite disposal (if applicable), and the date of disposal (if known)</li> <li>– the unique number assigned by the generator identifying each PCB Container, a description of the contents of each PCB Container, such as liquid, soil, cleanup debris, etc., including the total weight of the PCB waste in kilograms in each PCB Container, the first date PCB waste placed in each PCB Container was removed from service for disposal, the date it was received at the facility, the date each PCB Container was placed in transport for offsite storage or disposal (as applicable), and the date the PCB Container was disposed of (if known)</li> <li>– the unique number assigned by the generator identifying each PCB Article Container, a description of the contents of each PCB Article Container, such as pipes, capacitors, electric motors, pumps, etc., including the total weight in kilograms of the PCB waste in each PCB Article Container, the first date a PCB Article placed in each PCB Article Container was removed from service for disposal, the date it was received at the facility, the date each PCB Article Container was placed in transport for offsite storage or disposal (as applicable), and the date the PCB Article Container was disposed of (if known)</li> <li>– disposers of PCB waste include the confirmed date of disposal for items</li> </ul> </li> <li>– for any PCB waste disposed at a facility that generated the PCB waste or any PCB waste that was not manifested to the facility, the following:               <ul style="list-style-type: none"> <li>– for bulk PCB waste (e.g., in a tanker or truck), its weight in kilograms, the first date PCB waste placed in the tanker or truck was removed from service for disposal, the date it was received at the facility, the date it was placed in transport for offsite disposal (if applicable), and the date of disposal, (if known)</li> <li>– the serial number or other means of identifying each PCB Article, not in a PCB Container or PCB Article Container, the weight in kilograms of the PCB waste in the PCB Article, the date it was removed from service for disposal, the date it was received at the facility, the date it was placed</li> </ul> </li> </ul>

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	<p>in transport for offsite disposal (if applicable), and the date of disposal (if known)</p> <ul style="list-style-type: none"> <li>– the unique number assigned by the generator identifying each PCB Container, a description of the contents of each PCB Container, such as liquid, soil, cleanup debris, etc., including the total weight of the PCB waste in kilograms in each PCB Container, the first date PCB waste placed in each PCB Container was removed from service for disposal, the date it was received at the facility, the date each PCB Container was placed in transport for offsite storage or disposal (as applicable), and the date the PCB Container was disposed of (if known)</li> <li>– the unique number assigned by the generator identifying each PCB Article Container, a description of the contents of each PCB Article Container, such as pipes, capacitors, electric motors, pumps, etc., including the total weight in kilograms of the PCB waste in each PCB Article Container, the first date a PCB Article placed in each PCB Article Container was removed from service for disposal, the date it was received at the facility, the date each PCB Article Container was placed in transport for offsite storage or disposal (as applicable), and the date the PCB Article Container was disposed of (if known)</li> <li>– disposers of PCB waste include the confirmed date of disposal for items</li> </ul> <p>Verify that the owner or operator of a PCB disposal facility (including one who disposes of his/her own waste and does not receive or generate manifests) or a commercial storage facility submits an annual report, which briefly summarizes the records and annual document log to the USEPA Regional Administrator of the USEPA Region in which the facility is located by July 15 of each year, beginning with 15 July 1991.</p> <p>Verify that the annual report contains the following:</p> <ul style="list-style-type: none"> <li>– the name, address, and USEPA identification number of the facility covered by the annual report for the calendar year</li> <li>– a list of the numbers of all signed manifests of PCB waste initiated or received by the facility during that year</li> <li>– the total weight in kilograms of bulk PCB waste, PCB waste in PCB Transformers, PCB waste in PCB Large High or Low Voltage Capacitors, PCB waste in PCB Article Containers, and PCB waste in PCB Containers in storage at the facility at the beginning of the calendar year, received or generated at the facility, transferred to another facility, or disposed of at the facility during the calendar year</li> <li>– the total number of PCB Transformers, the total number of PCB Large High or Low Voltage Capacitors, the total number of PCB Article Containers, and the total number of PCB Containers in storage at the facility at the beginning of the calendar year, received or generated at the facility, transferred to another facility, or disposed of at the facility during the calendar year</li> <li>– the total weight in kilograms of each of the following PCB categories: bulk PCB waste, PCB waste in PCB Transformers, PCB waste in PCB Large High</li> </ul>

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	<p>or Low Voltage Capacitors, PCB waste in PCB Article Containers, and PCB waste in PCB Containers remaining in storage for disposal at the facility at the end of the calendar year</p> <ul style="list-style-type: none"> <li>– the total number of PCB Transformers, the total number of PCB Large High or Low Voltage Capacitors, the total number of PCB Article Containers, and the total number of PCB Containers remaining in storage for disposal at the facility at the end of the calendar year</li> <li>– the requirement to submit annual reports to the USEPA Regional Administrator continues until the submission of the annual report for the calendar year during which the facility ceases PCB storage or disposal operations. Storage operations have not ceased until all PCB waste, including any PCB waste generated during closure, has been removed from the facility.</li> </ul> <p>(NOTE: PCB Voltage Regulators shall be recorded and reported as PCB Transformers.)</p>

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<p><b>T1.20</b></p> <p><b>PCB TRANSFORMERS</b></p> <p><b>T1.20.1.US.</b> PCB Transformers with PCBs of 500 ppm or greater that are in use or in storage for reuse shall not pose an exposure risk to food and feed (40 CFR 761.30(a)(1)(i)) <b>[Reviewed March 2000].</b></p> <p><b>T1.20.2.US.</b> PCB Transformers with concentrations of PCBs of 500 ppm or greater are subject to certain registration requirements (40 CFR 761.30(a)(1)(vi)) <b>[Revised October 1998; Reviewed March 2000].</b></p>	<p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>Determine if there are any PCB Transformers in use or in storage for reuse, that pose an exposure risk to food and feed, by reviewing the inventory.</p> <p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>Verify that all PCB Transformers, including those in storage for reuse, are registered with the USEPA, National Programs Division, Office of Pollution Prevention and Toxics with the following information:</p> <ul style="list-style-type: none"> <li>– name and address</li> <li>– contact name and telephone number</li> <li>– address where transformers are located, for mobile sources such as a ship provide the name of the ship</li> <li>– number of PCB Transformers and total weight in kilograms of PCBs contained in the transformers</li> <li>– whether any transformers at the location contain flammable dielectric fluid (optional)</li> <li>– signature of the owner, operator, or other authorized representative certifying the accuracy of the information submitted.</li> </ul> <p>(NOTE: A transformer owner who assumes a transformer is a PCB-Contaminated transformer, and discovers after 28 December 1998 that it is a PCB-Transformer, must register the newly-identified PCB Transformer, in writing, with the USEPA no later than 30 days after it is identified as such. This requirement does not apply to transformer owners who have previously registered with the USEPA PCB Transformers located at the same address as the transformer that they assumed to be PCB-Contaminated and later determined to be a PCB Transformer.</p> <p>(NOTE: A person who takes possession of a PCB Transformer after 28 December 1998 is not required to register or re-register the transformer with the USEPA.)</p> <p>Verify that records of each registration (e.g., a copy of the registration and the return receipt signed by USEPA) are retained with the required inspection records.</p>

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<p><b>T1.20.3.US.</b> Railroad transformers must not contain dielectric fluid with greater than 1000 ppm PCB and must be serviced according to specific requirements (40 CFR 761.30(b)(1) and 761.30(b)(2) [Citation Revised October 1998; Revised October 2001].</p>	<p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>Verify that railroad transformers do not exceed 1000 ppm PCB.</p> <p>Verify that servicing of a railroad transformer is only done with dielectric fluid containing &lt; 1000 ppm PCB.</p> <p>Verify that, if the coil is removed from the casing of a railroad transformer, it is refilled with dielectric fluid containing 50 ppm or less PCB.</p> <p>(NOTE: Dielectric fluid may be filtered through activated carbon or otherwise industrially processed for the purpose of reducing the PCB concentration in the fluid.)</p> <p>Verify that any PCB dielectric fluid used to service PCB railroad transformers is stored in accordance with the storage for disposal requirements of 40 CFR 761.65.</p> <p>Verify that after 1 July 1979, processing and distribution in commerce of PCBs for purposes of servicing railroad transformers is done only for persons who are granted an exemption under TSCA section 6(e)(3)(B).</p> <p>(NOTE: A PCB Transformer may be converted to a PCB-Contaminated Transformer or to a non-PCB Transformer by draining, refilling, and/or otherwise servicing the railroad transformer. In order to reclassify, the railroad transformer's dielectric fluid must contain &lt; 500 ppm (for conversion to PCB-Contaminated Transformer) or &lt; 50 ppm PCB (for conversion to a non-PCB Transformer) after a minimum of 3 mo of in-service use subsequent to the last servicing conducted for the purpose of reducing the PCB concentration in the transformer.)</p>
<p><b>T1.20.4.US.</b> Combustible materials, including, but not limited to paints, solvents, plastics, paper, and sawn wood, must not be stored by a PCB Transformer (40 CFR 761.30(a)(1)(viii)) [Reviewed March 2000].</p>	<p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>Verify that all combustible materials have been removed from the area within a PCB transformer enclosure (i.e., vault or partitioned area) and the area within 5 m of a PCB transformer or PCB transformer enclosure.</p>
<p><b>T1.20.5.US.</b> PCB Transformers of concentrations of 500 ppm or greater in use in or near commercial buildings are subject to certain requirements (40 CFR 761.30(a)(1)(ii) through 761.30(a)(1)(v) and 761.30(a)(1)(vii)) [Revised</p>	<p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>Determine if any transformers are located in or near commercial buildings by reviewing the inventory.</p> <p>Verify that no network PCB Transformers with higher secondary voltages (<math>\geq</math> than 480 V, including 480/277 V systems) are in or near commercial buildings.</p>

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<b>October 1998; Revised October 2001].</b>	<p>Verify that network PCB Transformers with higher secondary voltages that are removed from service are reclassified to PCB Contaminated or non-PCB status, placed into storage for disposal, or disposed.</p> <p>Verify that procedure/policy exists prohibiting installation of PCB Transformers that have been placed into storage for reuse or that have been removed from another location.</p> <p>(NOTE: Retrofilled mineral oil PCB Transformers may be installed for reclassification purposes. But, it must be tested 3 mo after installation and appropriately classified based on the results of testing the fluid within. If the PCB concentration remains at 500 ppm or &gt;, the transformer must be retrofilled again until the transformer can be classed a non-PCB or PCB-Contaminated or removed from service.)</p> <p>Verify that all higher secondary voltage radial PCB transformers in use in or near commercial buildings, and lower secondary voltage network PCB Transformers are equipped with electrical protection to avoid transformer ruptures caused by high current faults (i.e., current limiting fuses).</p> <p>Verify that all lower secondary voltage network PCB Transformers not located in sidewalk vaults (network transformers with secondary voltages below 480 volts), in use in or near commercial buildings have been removed from service.</p> <p>Verify that all lower secondary voltage radial PCB Transformers are equipped with electrical protection to detect sustained high current faults and provide for the complete deenergization of the transformer of the complete deenergization of the faulted phase of the transformer within several hundredths of a second.</p> <p>Verify that all radial PCB Transformers with higher secondary voltages (480 volts and above, including 480/277 volt systems) in use in or near commercial buildings are equipped with protection, including the following, to avoid transformer ruptures caused by sustained low current faults:</p> <ul style="list-style-type: none"> <li>– pressure and temperature sensors (or other equivalent technology which has been demonstrated to be effective in early detection of sustained low current faults)</li> <li>– disconnect equipment, which meets the following, to insure complete deenergization of the transformer in the event of a sensed abnormal condition (e.g., an overpressure or overtemperature condition in the transformer), caused by a sustained low current fault: <ul style="list-style-type: none"> <li>– operates automatically within 30 s to 1 min of the receipt of a signal indicating an abnormal condition from a sustained low current fault, or can be configured to allow for manual deenergization from a manned onsite control center upon the receipt of an audio or visual signal indicating an abnormal condition caused by a sustained low current fault</li> </ul> </li> </ul>

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<p><b>T1.20.6.US.</b> PCB transformers are required to be properly serviced (40 CFR 761.30(a)(2)) [Revised July 2001].</p>	<ul style="list-style-type: none"> <li>– manual deenergization from a manned onsite control center occurs within 1 min of the receipt of the audio or visual signal indicating an abnormal condition caused by a sustained low current fault</li> <li>– when automatic operation is selected and a circuit breaker is utilized for disconnection, it has the capability to be manually opened if necessary</li> <li>– the required enhanced electrical protective system for the detection of sustained low current faults and the complete and rapid deenergization of transformers is properly installed, maintained, and set sensitive enough (in accordance with good engineering practices) to detect sustained low current faults and allow for rapid and total deenergization prior to PCB Transformer rupture (either violent or non violent rupture) and release of PCBs.</li> </ul> <p>Verify that PCB Transformers in use in or near commercial buildings are registered with the building's owner and includes the following information:</p> <ul style="list-style-type: none"> <li>– specific location</li> <li>– principal constituent of the dielectric fluid</li> <li>– the type of transformer installation (e.g., 208/120 volt network, 208/120 volt radial).</li> </ul> <p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>Verify that transformers classified as PCB-Contaminated Electrical Equipment are serviced (including rebuilding) only with dielectric fluid containing less than 500 ppm PCB.</p> <p>(NOTE: PCB Transformers may be serviced (including topping off) with dielectric fluid at any PCB concentration.)</p> <p>Verify that there is no servicing (including rebuilding) of PCB Transformers that requires the removal of the transformer coil from the transformer casing.</p> <p>Verify that PCBs removed during any servicing activity are captured and either reused as dielectric fluid or disposed of in accordance with the requirements of 40 CFR 761.60 (see checklist items T1.25.7.US, T1.50.3.US, T1.50.6.US through T1.50.11.US).</p> <p>Verify that PCBs from PCB Transformers are not mixed with or added to dielectric fluid from PCB-Contaminated Electrical Equipment.</p> <p>Verify that, regardless of its PCB concentration, dielectric fluids containing less than 500 ppm PCB that are mixed with fluids that contain 500 ppm or greater PCB are not used as dielectric fluid in any electrical equipment.</p>

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	<p>(NOTE: The entire mixture of dielectric fluid must be considered to be greater than 500 ppm PCB and must be disposed of in an incinerator that meets the requirements in 40 CFR 761.70.)</p> <p>Verify that the following parameters are met if the facility reclassifies a PCB Transformer that has been tested and determined to have a concentration of 500 ppm PCBs to a PCB-Contaminated transformer (50 but less than 500 ppm) or to a non-PCB transformer (less than 50 ppm):</p> <ul style="list-style-type: none"> <li>– remove the free-flowing PCB dielectric fluid from the transformer, flushing is not required</li> <li>– either test the fluid or assume it contains 1,000 ppm PCBs</li> <li>– retrofit the transformer with fluid containing known PCB levels according to Appendix 11-2a</li> <li>– determine the transformer's reclassified status according Appendix 11-2a (NOTE: If following this process does not result in the reclassified status desired, the process may be repeated).</li> </ul> <p>Verify that the following parameters are met if the facility reclassifies a PCB-Contaminated transformer that has been tested and determined to have a concentration of 50 ppm but less than 500 ppm to a non-PCB transformer, as follows:</p> <ul style="list-style-type: none"> <li>– remove the free-flowing PCB dielectric fluid from the transformer, flushing is not required</li> <li>– either test the fluid or assume it contains 1,000 ppm PCBs</li> <li>– retrofit the transformer with fluid containing known PCB levels according to Appendix 11-2a</li> <li>– determine the transformer's reclassified status according Appendix 11-2a (NOTE: If following this process does not result in the reclassified status desired, the process may be repeated).</li> </ul> <p>(NOTE: If the PCB concentration of the fluid in a reclassified transformer has changed, causing the reclassified status to change, the transformer is regulated based on the actual concentration of the fluid. For example, a transformer that was reclassified to non-PCB status is regulated as a PCB-Contaminated transformer if you discover that the concentration of the fluid has increased to 50 but less than 500 ppm PCBs.)</p> <p>Verify that any dielectric fluid containing 50 ppm or greater PCB used for servicing transformers must be stored in accordance with the storage for disposal requirements of 40 CFR 761.65.</p> <p>(NOTE: Processing and distribution in commerce of PCBs for purposes of servicing transformers is permitted only for persons who are granted an exemption under TSCA 6(e)(3)(B).)</p>

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<p><b>T1.20.7.US.</b> Inspections must be performed once every 3 mo for all in use or stored for reuse PCB Transformers with &gt; 500 ppm PCB (40 CFR 761.30(a)(1)(ix) and 761.30(a)(1)(xii) through 761.30(a)(1)(xiv)) [Revised October 1999; Reviewed March 2000].</p>	<p>Verify that applicable transformers in use or stored for reuse are inspected at least once every 3 mo by reviewing inspection records.</p> <p>Verify that there are 30 days between inspections.</p> <p>(NOTE: These inspections may take place any time during the 3-month periods: January-March, April-June, July-September, and October-December as long as there is a minimum of 30 days between inspections. The visual inspection must include investigation for any leak of dielectric fluid on or around the transformer. The extent of the visual inspections will depend on the physical constraints of each transformer installation and should not require an electrical shutdown of the transformer being inspected.)</p> <p>Verify that the following information is recorded for each PCB Transformer inspection:</p> <ul style="list-style-type: none"> <li>– location of transformer</li> <li>– dates of each visual inspection</li> <li>– date when any leak was discovered</li> <li>– name of person conducting inspection</li> <li>– location and estimate of the dielectric fluid quantity for any leaks</li> <li>– date and description of any cleanup, containment, or repair performed</li> <li>– results of any containment daily inspections for transformers with uncorrected active leaks</li> <li>– registration of the PCB Transformer</li> <li>– records of transfer of ownership in compliance with 40 CFR 761.180(a)(2)(ix) (see checklist item T1.15.1.US.).</li> </ul> <p>(NOTE: Reduced visual inspections of at least once every 12 mo are allowed for PCB Transformers with either of the following:</p> <ul style="list-style-type: none"> <li>– impervious, undrained, secondary containment capacity of at least 100 percent of the total dielectric fluid volume of all transformers so contained</li> <li>– a PCB Transformer that has been tested and found to contain &lt; 60,000 ppm PCBs (after 3 mo of in-service use if the transformer has been serviced for purposes of reducing the PCB concentration).</li> </ul> <p>These inspections may take place any time during the calendar year as long as there is a minimum of 180 days between inspections.)</p> <p>(NOTE: Increased visual inspections of once a week are required for any PCB Transformer in use or stored for reuse that poses an exposure risk to food or feed.)</p> <p>Verify that records of inspection and maintenance are kept for 3 yr after disposal.</p>
<p><b>T1.20.8.US.</b> PCB Transformers with PCB concentrations of 500 ppm or</p>	<p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p>

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<p>greater found to be leaking during an inspection must be repaired or replaced to eliminate the source of the leak (40 CFR 761.30(a)(1)(x)) [Revised October 2001].</p> <p><b>T1.20.9.US.</b> When a PCB Transformer with concentrations of PCBs 500 ppm or greater is involved in a fire, the incident must be reported immediately to the NRC (40 CFR 761.30(a)(1)(xi)) [Revised October 2001].</p> <p><b>T1.20.10.US.</b> Mineral oil transformers that are tested and found to be contaminated with 500 PPM or greater must meet specific requirements (40 CFR 761.30(a)(1)(xv)) [Added October 1998; Revised October 2001].</p>	<p>Determine whether any PCB Transformers have been leaking.</p> <p>Verify that, if a PCB Transformer is found to have a leak that results in any quantity of PCBs running off or about to run off the external surface of the transformer, then the transformer is repaired or replaced to eliminate the source of the leak.</p> <p>Verify that cleanup and/or containment of released PCBs has been initiated within 48 h of its detection or as soon as possible.</p> <p>Verify that leaking PCB Transformers are inspected daily.</p> <p>Verify that cleaned up material is disposed of according to appropriate requirements.</p> <p>(NOTE: Until appropriate action is completed, any active leak of PCBs must be contained to prevent exposure of humans or the environment. Trenches, dikes, buckets, and pans are examples of proper containment measures.)</p> <p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>Determine if any PCB Transformers have been involved in any incident where sufficient heat and/or pressure was generated to result in the violent or nonviolent rupture of a PCB Transformer and the release of PCBs.</p> <p>Verify that the NRC was notified and the following measures were taken:</p> <ul style="list-style-type: none"> <li>– floor drains were blocked</li> <li>– water runoff was contained</li> <li>– control and treatment (prior to release) of any water used in subsequent cleanup operations.</li> </ul> <p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>Verify that mineral oil transformers that are tested and found to be contaminated with 500 ppm PCB or greater meet all the storage and handling requirements of 40 CFR 761.</p> <p>Verify that the following additional steps are taken:</p> <ul style="list-style-type: none"> <li>– fire-related incidents are reported immediately after discovery</li> <li>– mark the transformer within 7 days after discovery</li> <li>– mark the vault door, machinery room door, fence, hallway, or other means of access to the PCB Transformer within 7 days after discovery</li> </ul>

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	<ul style="list-style-type: none"> <li>– register the transformer in writing with the building owner within 30 days of the discovery</li> <li>– install electrical protective equipment on a radial PCB Transformer and a non-sidewalk vault, lower secondary voltage network PCB Transformer in or near a commercial building within 18 mo of discovery or by 1 October 1990, whichever is later</li> <li>– remove a non-sidewalk vault, lower secondary voltage network PCB Transformer in or near a commercial building, if electrical protective equipment is not installed, within 18 mo of discovery or by 1 October 1993, whichever is later</li> <li>– remove a lower secondary voltage network PCB Transformer located in a sidewalk vault in or near a commercial building, within 18 mo of discovery or by 1 October 1993, whichever is later</li> <li>– retrofit and reclassify a radial PCB Transformer or a lower or higher secondary voltage network PCB Transformer, located in other than a sidewalk vault in or near a commercial building, within 18 mo or by 1 October 1990, whichever is later</li> <li>– retrofit and reclassify a lower secondary voltage network PCB Transformer, located in a sidewalk vault, in or near a commercial building within 18 mo or by 1 October 1993, whichever is later</li> <li>– retrofit and reclassify a higher secondary voltage network PCB Transformer, located in a sidewalk vault, in or near a commercial building within 18 mo or by 1 October 1990, whichever is later.</li> </ul>

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<p><b>T1.25</b></p> <p><b>PCB SPILLS</b></p> <p><b>T1.25.1.US.</b> Certain spills of PCBs are required to be reported (40 CFR 761.50(a)(4), 761.120(a)(1), and 761.125(a)(1)) [<b>Revised October 1998; Revised October 2001</b>].</p>	<p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>(NOTE: Spills and other uncontrolled discharges of PCBs at concentrations of <math>\geq</math> 50 ppm constitute the disposal of PCBs.)</p> <p>Verify that the following reporting is done for all spills in excess of 50 ppm in addition to the reporting required under the CWA or CERCLA:</p> <ul style="list-style-type: none"> <li>– where a spill directly contaminates surface water, sewers, or drinking water supplies, notify the appropriate USEPA Regional office and obtain guidance for appropriate cleanup measures in the shortest possible time after discovery, but not later than 24 h after discovery</li> <li>– where a spill directly contaminates grazing lands or vegetable gardens, notify the appropriate USEPA Regional office and proceed with the immediate cleanup requirements in 40 CFR 761.125(b) and 761.125(c) (see checklist items T1.25.2.US and T1.25.3.US) depending on the source of the spill, in the shortest possible time after discovery, but not later than 24 h after discovery</li> <li>– when a spill is &gt; 10 lb PCBs by weight and does not directly contaminate surface water, sewers, drinking water supplies, grazing lands, or vegetable gardens, notify the appropriate USEPA Regional office and proceed to decontaminate the area according to TSCA policy in the shortest possible time after discovery, but not later than 24 h after discovery.</li> </ul> <p>(NOTE: When a spill is &lt; 10 lb PCBs by weight and does not directly contaminate surface water, sewers, drinking water supplies, grazing lands, or vegetable gardens, USEPA notification is not required. But, appropriate cleanup must occur.)</p> <p>(NOTE: Certain records must be kept in relation to PCB cleanup, see checklist item T1.15.5.US.)</p> <p>(NOTE: Under the CWA, all spills 1 lb or more by weight of PCBs must be reported to the NRC.)</p> <p>(NOTE: The USEPA has developed a Spill Cleanup Policy (see 40 CFR 761, Subpart G) which establishes criteria USEPA will use to determine the adequacy of the cleanup of spills resulting from the release of materials containing PCBs at concentrations of 50 ppm or greater which occur after 4 May 1987. The Spill Cleanup Policy does not apply to spills prior to 4 May 1987 because:</p> <ul style="list-style-type: none"> <li>– for old spills that have already been discovered, this policy is not intended to require additional cleanup where a party has already cleaned a spill according to the requirements imposed by USEPA Regional Offices. It is also not intended to interfere with ongoing litigation or enforcement action that brings</li> </ul>

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<p><b>T1.25.2.US.</b> Cleanup of low concentration spills of less than 1 lb of PCBs (less than 270 gal of untested mineral oil) must be done according to specific requirements (40 CFR 761.50(a)(4), 761.120(a)(1), 761.120(a)(2), 761.120(b) through 761.120(d), 761.125(a)(2), 761.125(a)(3), 761.125(b)(1), and 761.125(b)(2)) [Revised October 2001].</p>	<p>into issue PCB spill cleanups. The Spill Cleanup Policy may <u>not</u> be used to clean up an old spill and may only be used if cleanup begins within 24 to 48 h after the discovery of a fresh spill</p> <ul style="list-style-type: none"> <li>– USEPA recognizes that more recently discovered old spills will require site-by-site evaluation.)</li> </ul> <p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>(NOTE: Spills and other uncontrolled discharges of PCBs at concentrations of <math>\geq</math> 50 ppm constitute the disposal of PCBs.)</p> <p>(NOTE: The USEPA has developed a Spill Cleanup Policy (see 40 CFR 761, Subpart G) which establishes criteria USEPA will use to determine the adequacy of the cleanup of spills resulting from the release of materials containing PCBs at concentrations of 50 ppm or greater which occur after 4 May 1987. The Spill Cleanup Policy does not apply to spills prior to 4 May 1987 because:</p> <ul style="list-style-type: none"> <li>– for old spills that have already been discovered, this policy is not intended to require additional cleanup where a party has already cleaned a spill according to the requirements imposed by USEPA Regional Offices. It is also not intended to interfere with ongoing litigation or enforcement action that brings into issue PCB spill cleanups. The Spill Cleanup Policy may <u>not</u> be used to clean up an old spill and may only be used if cleanup begins within 24 to 48 h after the discovery of a fresh spill</li> <li>– USEPA recognizes that more recently discovered old spills will require site-by-site evaluation.)</li> </ul> <p>Verify that, when there is evidence of a leak or spill, but no visible traces, the boundaries of the spill are determined by using statistically based sampling scheme.</p> <p>Verify that solid surfaces are double washed/rinsed and all indoor, residential surfaces other than vault areas are cleaned to 10-micrograms/100 cm<sup>2</sup> by standard commercial wipe tests.</p> <p>Verify that all soil within the spill area (visible traces of soil and buffer of 1 lateral ft around the visible traces) is excavated and the ground restored to its original status by backfilling with clean soil (soil with &lt; 1 ppm PCBs).</p> <p>Verify that all concentrated soils, solvents, rags, and other materials resulting from the cleanup of PCBs are properly stored, labeled and disposed of in accordance with 40 CFR 761.50 through 761.79 (see checklist items T1.40.1.US through T1.40.6.US, T1.40.8.US, T1.40.9.US, T1.50.3.US, T1.50.6.US through T1.50.15.US, and T1.53.1.US through T1.53.6.US).</p>

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<p><b>T1.25.3.US.</b> Cleanup of high-concentration spills and low concentration spills involving 1 lb or more of PCBs by weight (270 gal or more of untested mineral oil) must be done according to specific requirements (40 CFR 761.50(a)(4), 761.120(a)(1), 761.120(a)(2), 761.120(b) through 761.120(d), 761.125(a)(2), 761.125(a)(3), and 761.125(c)(1) through 761.125(c)(4)) <b>[Revised October 2001]</b>.</p>	<p>(NOTE: Completion of a cleanup may be delayed beyond 48 h in cases of circumstances including, but not limited to: civil emergency, adverse weather conditions, lack of access to the site, and emergency operating conditions. The occurrence/discovery of the spill on the weekend or overtime costs are not considered acceptable reasons to delay response. Cleanup may only be delayed for the duration of the adverse condition.)</p> <p>(NOTE: The final numerical cleanup standards do not apply to spills directly into surface waters, drinking water, sewers, sewage treatment systems, grazing lands, and vegetable gardens.)</p> <p>(NOTE: The USEPA may impose more stringent or less stringent cleanup requirements on a case by case basis depending on conditions such as possibility of ground water contamination.)</p> <p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>(NOTE: Spills and other uncontrolled discharges of PCBs at concentrations of greater than/equal to 50 ppm constitute the disposal of PCBs.)</p> <p>(NOTE: The USEPA has developed a Spill Cleanup Policy (see 40 CFR 761, Subpart G) which establishes criteria USEPA will use to determine the adequacy of the cleanup of spills resulting from the release of materials containing PCBs at concentrations of 50 ppm or greater which occur after 4 May 1987. The Spill Cleanup Policy does not apply to spills prior to 4 May 1987 because:</p> <ul style="list-style-type: none"> <li>– for old spills that have already been discovered, this policy is not intended to require additional cleanup where a party has already cleaned a spill according to the requirements imposed by USEPA Regional Offices. It is also not intended to interfere with ongoing litigation or enforcement action that brings into issue PCB spill cleanups. The Spill Cleanup Policy may <u>not</u> be used to clean up an old spill and may only be used if cleanup begins within 24 to 48 h after the discovery of a fresh spill</li> <li>– USEPA recognizes that more recently discovered old spills will require site-by-site evaluation.)</li> </ul> <p>Verify that, when there is evidence of a leak or spill, but no visible traces, the boundaries of the spill are determined by using statistically based sampling scheme.</p> <p>Verify that the following actions are taken within 24 h (or within 48 h for PCB Transformer with PCB concentrations of greater than 500 ppm) of discovery of the spill:</p> <ul style="list-style-type: none"> <li>– notification of the USEPA regional office and the NRC</li> <li>– the area of the spill is cordoned off or otherwise identified to include the area with visible traces of the spill and a 3 ft buffer zone</li> </ul>

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	<ul style="list-style-type: none"> <li>– clearly visible signs are placed advising persons to avoid the area</li> <li>– the area of visible contamination is recorded and documented, identifying the extent and center of the spill</li> <li>– cleanup of visible traces of the fluid from hard surfaces is initiated</li> <li>– initiate removal of all visible traces of the spill on soil and other media such as gravel, sand, etc., is started</li> <li>– estimate and cordon off the area of suspect contamination if there has been a delay in reaching the site and there are insufficient traces of visible PCBs remaining.</li> </ul> <p>Verify that, if the spill occurs in an outdoor substation:</p> <ul style="list-style-type: none"> <li>– contaminated solid surfaces, impervious and non-impervious, are cleaned to a PCB concentration of 100 micrograms/cm<sup>2</sup> (as measured by standard wipe tests)</li> <li>– soil contaminated by the spill is cleaned to either 25 ppm PCBs by weight or 50 ppm PCBs by choice of the facility if a label to notice is placed in the area indicating the level of cleanup.</li> </ul> <p>(NOTE: At such times as outdoor electrical substations are converted to another use, the spill site will be cleaned up to the nonrestricted access requirements.)</p> <p>Verify that, if the spill occurs in a restricted access area other than an outdoor substation:</p> <ul style="list-style-type: none"> <li>– high-contact solid surfaces are cleaned to 10 micrograms/100 cm<sup>2</sup> (as measured by standard wipe tests)</li> <li>– low-contact, indoor, impervious solid surfaces are decontaminated to 10 micrograms/100 cm<sup>2</sup></li> <li>– low contact, indoor, nonimpervious surfaces are cleaned to either 10 micrograms or 100 micrograms/100 cm<sup>2</sup> and encapsulated at the option of the facility</li> <li>– low-contact, outdoor surfaces (both impervious and nonimpervious) are cleaned to 100 micrograms/100 cm<sup>2</sup></li> <li>– soil contaminated by the spill is cleaned to 25 ppm PCBs by weight</li> <li>– post-cleanup sampling is done.</li> </ul> <p>(NOTE: At such times as restricted access areas other than outdoor electrical substations are converted to another use, the spill site will be cleaned up to the nonrestricted access area requirements.)</p> <p>Verify that spills in nonrestricted access locations are decontaminated as follows:</p> <ul style="list-style-type: none"> <li>– furnishings, toys, and other easily replaceable household items are disposed of and replaced</li> </ul>

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<p><b>T1.25.4.US.</b> Postcleanup sampling is required in specific circumstances (40 CFR 761.120(a)(1) and 761.130) [Added October 2001; Revised January 2008].</p>	<ul style="list-style-type: none"> <li>– indoor solid surfaces and high-contact outdoor solid surfaces are cleaned to 10 micrograms/100 cm<sup>2</sup> (as measured by standard wipe tests)</li> <li>– indoor vault areas and low-contact, outdoor, impervious solid surfaces are decontaminated to 10 micrograms/100 cm<sup>2</sup></li> <li>– at the option of the facility, low-contact, outdoor, nonimpervious solid surfaces are cleaned to either 10 or 100 micrograms/100 cm<sup>2</sup> and encapsulated</li> <li>– soil is decontaminated to 10 ppm PCBs by weight provided that the soil is excavated to a minimum depth of 10 in. and replaced with clean soil</li> <li>– post-cleanup sampling is done.</li> </ul> <p>Verify that all concentrated soils, solvents, rags, and other materials resulting from the cleanup of PCBs are properly stored, labeled and disposed of in accordance with 40 CFR 761.50 through 761.79 (see checklist items T1.40.1.US through T1.40.6.US, T1.40.8.US, T1.40.9.US, T1.50.3.US, T1.50.6.US through T1.50.15.US, and T1.53.1.US through T1.53.6.US).</p> <p>(NOTE: Completion of a cleanup may be delayed beyond 48 h in cases of circumstances including, but not limited to: civil emergency, adverse weather conditions, lack of access to the site, and emergency operating conditions. The occurrence/discovery of the spill on the weekend or overtime costs are not considered acceptable reasons to delay response. Cleanup may only be delayed for the duration of the adverse condition.)</p> <p>(NOTE: The final numerical cleanup standards do not apply to spills directly into surface waters, drinking water, sewers, sewage treatment systems, grazing lands, and vegetable gardens.)</p> <p>(NOTE: The USEPA may impose more stringent or less stringent cleanup requirements on a case by case basis depending on conditions such as possibility of ground water contamination.)</p> <p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>Verify that postcleanup sampling is done after cleanup of high-concentration spills and low concentration spills involving 1 lb or more of PCBs by weight (270 gal or more of untested mineral oil) at the following:</p> <ul style="list-style-type: none"> <li>– outdoor electrical substations</li> <li>– other restricted access areas</li> <li>– nonrestricted access areas.</li> </ul> <p>(NOTE: The responsible party may use any statistically valid, reproducible, sampling scheme (either random samples or grid samples) provided that the requirements outlined here are satisfied.)</p>

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	<p>Verify that the sampling area is the greater of:</p> <ul style="list-style-type: none"> <li>– an area equal to the area cleaned plus an additional 1-ft boundary</li> <li>– an area 20 percent larger than the original area of contamination.</li> </ul> <p>Verify that the sampling scheme ensures 95 percent confidence against false positives.</p> <p>Verify that the number of samples is sufficient to ensure that areas of contamination of a radius of 2 ft or more within the sampling area will be detected, except that the minimum number of samples is 3 and the maximum number of samples is 40.</p> <p>Verify that the sampling scheme includes calculation for expected variability due to analytical error.</p> <p>(NOTE: USEPA recommends the use of a sampling scheme developed by the Midwest Research Institute (MRI) for use in USEPA enforcement inspections: “Verification of PCB Spill Cleanup by Sampling and Analysis.” Guidance for the use of this sampling scheme is available in the MRI report “Field Manual for Grid Sampling of PCB Spill Sites to Verify Cleanup.” Both the MRI sampling scheme and the guidance document are available from EPA’s PCB website at <a href="http://www.epa.gov/pcb">http://www.epa.gov/pcb</a> or from the Communications, Information and Resource Management Division, Office of Solid Waste (5305P), EPA, 1200 Pennsylvania Ave., NW, Washington DC 20460-0001. The major advantage of this sampling scheme is that it is designed to characterize the degree of contamination within the entire sampling area with a high degree of confidence while using fewer samples than any other grid or random sampling scheme. This sampling scheme also allows some sites to be characterized on the basis of composite samples.)</p> <p>(NOTE: USEPA may, at its discretion, take samples from any spill site. If USEPA’s sampling indicates that the remaining concentration level exceeds the required level, USEPA will require further cleanup.)</p> <p>(NOTE: The USEPA has developed a Spill Cleanup Policy (see 40 CFR 761, Subpart G) which establishes criteria USEPA will use to determine the adequacy of the cleanup of spills resulting from the release of materials containing PCBs at concentrations of 50 ppm or greater which occur after 4 May 1987. The Spill Cleanup Policy does not apply to spills prior to 4 May 1987 because:</p> <ul style="list-style-type: none"> <li>– for old spills that have already been discovered, this policy is not intended to require additional cleanup where a party has already cleaned a spill according to the requirements imposed by USEPA Regional Offices. It is also not intended to interfere with ongoing litigation or enforcement action that brings into issue PCB spill cleanups. The Spill Cleanup Policy may <u>not</u> be used to clean up an old spill and may only be used if cleanup begins within 24 to 48 h after the discovery of a fresh spill</li> </ul>

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<p><b>T1.25.5.US.</b> The collection and analyzing of samples to verify the cleanup and onsite disposal of PCB waste must be done according to specific parameters (40 CFR 761.61(a)(6)) [Added October 2001].</p>	<p>– USEPA recognizes that more recently discovered old spills will require site-by-site evaluation.)</p> <p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>Verify that any person collecting and analyzing samples to verify the cleanup and onsite disposal of bulk PCB remediation wastes and porous surfaces do so in accordance with Subpart O of 40 CFR 761.</p> <p>Verify that any person collecting and analyzing samples from non-porous surfaces does so in accordance with 40 CFR 761, Subpart P.</p> <p>Verify that any person collecting and analyzing samples from liquids does so in accordance with 40 CFR 761.269.</p> <p>(NOTE: Any person conducting interim sampling during PCB remediation waste cleanup to determine when to sample to verify that cleanup is complete, may use PCB field screening tests.)</p> <p>(NOTE: Where sample analysis results in a measurement of PCBs less than or equal to the levels specified in Appendix 11-2b of this document, self-implementing cleanup is complete.)</p>
<p><b>T1.25.6.US.</b> Caps for PCB cleanup sites are required to meet specific requirements (40 CFR 761.61(a)(7) and 761.61(a)(8)) [Added October 2001].</p>	<p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>(NOTE: A cap means, when referring to onsite cleanup and disposal of PCB remediation waste, a uniform placement of concrete, asphalt, or similar material of minimum thickness spread over the area where remediation waste was removed or left in place in order to prevent or minimize human exposure, infiltration of water, and erosion.)</p> <p>Verify that any cap is designed and constructed in accordance with 40 CFR 264.310(a), and complies with the permeability, sieve, liquid limit, and plasticity index parameters in 40 CFR 761.75(b)(1)(ii) through 761.75(b)(1)(v).</p> <p>Verify that a cap of compacted soil has a minimum thickness of 25 cm (10 in).</p> <p>Verify that a concrete or asphalt cap has a minimum thickness of 15 cm (6 in).</p> <p>Verify that the cap is of sufficient strength to maintain its effectiveness and integrity during the use of the cap surface that is exposed to the environment.</p>

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<p><b>T1.25.7.US.</b> PCBs resulting from the cleanup and removal of spills, leaks, or other uncontrolled discharges, must meet specific storage and disposal requirements (40 CFR 761.60(d)) <b>[Added October 2001]</b>.</p>	<p>Verify that a cap is not contaminated at a level greater than or equal to 1 ppm PCB per Aroclor™ (or equivalent) or per congener.</p> <p>Verify that repairs begin within 72 h of discovery for any breaches that would impair the integrity of the cap.</p> <p>Verify that, when there is a fence or cap, the fence or cap is maintained in perpetuity.</p> <p>Verify that, whenever a cap, or the procedures and requirements for a low occupancy area, are used, the owner of the site meets the following conditions:</p> <ul style="list-style-type: none"> <li>– within 60 days of completion of a cleanup activity, the owner of the property records, in accordance with state law, a notation on the deed to the property, or on some other instrument which is normally examined during a title search, that will in perpetuity notify any potential purchaser of the property: <ul style="list-style-type: none"> <li>– that the land has been used for PCB remediation waste disposal and is restricted to use as a low occupancy area</li> <li>– of the existence of the fence or cap and the requirement to maintain the fence or cap</li> <li>– the applicable cleanup levels left at the site, inside the fence, and/or under the cap</li> </ul> </li> <li>– within 60 days of completion of a cleanup activity, the owner of the property submits a certification to the USEPA Regional Administrator, signed by the owner, that he/she has recorded the required notation.</li> </ul> <p>(NOTE: The owner of a site being cleaned up may remove a fence or cap after conducting additional cleanup activities and achieving cleanup levels which do not require a cap or fence. The owner may remove the notice on the deed no earlier than 30 days after achieving the cleanup levels which do not require a fence or cap.)</p> <p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>Verify that PCBs resulting from the cleanup and removal of spills, leaks, or other uncontrolled discharges, are stored and disposed of in accordance with 40 CFR 761.60(a) (see checklist item T1.50.3.US).</p> <p>(NOTE: These regulations do not exempt any person from any actions or liability under other statutory authorities, including but not limited to the CWA, RCRA, and CERCLA of 1980.)</p>

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<p><b>T1.30</b></p> <p><b>PCB ITEMS</b></p> <p><b>T1.30.1.US.</b> PCBs may be used in heat transfer and hydraulic systems in a manner other than a totally enclosed manner at concentrations less than 50 ppm if specific requirements are met (40 CFR 761.30(d) through 761.30(e)) <b>[Revised October 1998; Reviewed March 2000].</b></p> <p><b>T1.30.2.US.</b> Electromagnets, switches, and voltage regulators may contain PCBs at any concentration if certain requirements are met (40 CFR 761.30(h)) <b>[Revised October 1998; Revised July 2001].</b></p>	<p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>Determine if testing has been conducted to demonstrate that heat transfer or hydraulic systems that formerly contained PCBs at a concentration greater than 50 ppm now contain less than 50 ppm PCB.</p> <p>Verify that no fluid containing greater than 50 ppm PCB is added to heat transfer or hydraulic systems and they are only serviced with fluids containing less than 50 ppm PCB.</p> <p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>(NOTE: PCBs at any concentration may be used in electromagnets, switches (including sectionalizers and motor starters), and voltage regulators and may be used for purposes of servicing this equipment (including rebuilding) for the remainder of their useful lives, except as outlined in this checklist item.)</p> <p>Verify that no electromagnets containing greater than 500 ppm are not used or use stored for reuse in a manner that poses an exposure risk to food or feed</p> <p>Verify that the use and storage for reuse of voltage regulators that contain 1.36 kg (3 lb) or more of dielectric fluid with a PCB concentration of <math>\geq</math> 500 ppm meet the following:</p> <ul style="list-style-type: none"> <li>– mark the regulator as required in 40 CFR 761.40 (see checklist item T1.10.2.US.)</li> <li>– report any fire-related incidents immediately to the NRC</li> <li>– conduct inspections as applicable to PCB Transformers</li> <li>– comply with the recordkeeping and reporting requirements of 40 CFR 761.180 (see checklist items T1.15.1.US through T1.15.4.US and T1.15.6.US).</li> </ul> <p>Verify that the owner of a voltage regulator that assumes it contains &lt;500 ppm PCBs and discovers by testing that it is contaminated at <math>\leq</math> 500 ppm PCBs does the following immediately upon discovery:</p> <ul style="list-style-type: none"> <li>– mark the regulator as required in 40 CFR 761.40 (see checklist item T1.10.2.US.)</li> <li>– report any fire-related incidents immediately to the NRC</li> <li>– conduct inspections as applicable to PCB Transformers</li> </ul>

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	<p>– comply with the recordkeeping and reporting requirements of 40 CFR 761.180 (see checklist items T1.15.1.US through T1.15.4.US and T1.15.6.US).</p> <p>Verify that no servicing (including rebuilding) of any electromagnet, switch, or voltage regulator with a PCB concentration of 500 ppm or greater which requires the removal and rework of the internal components is performed.</p> <p>Verify that electromagnets, switches, and voltage regulators classified as PCB-Contaminated Electrical Equipment are serviced (including rebuilding) only with dielectric fluid containing less than 500 ppm PCB.)</p> <p>Verify that PCBs removed during any servicing activity are captured and either reused as dielectric fluid or disposed of in accordance with the requirements of 40 CFR 761.60 (see checklist items T1.25.7.US, T1.50.3.US, T1.50.6.US through T1.50.11.US).</p> <p>Verify that PCBs from electromagnets switches, and voltage regulators with a PCB concentration of at least 500 ppm are not mixed with or added to dielectric fluid from PCB-Contaminated Electrical Equipment.</p> <p>Verify that, regardless of its PCB concentration, dielectric fluids containing less than 500 ppm PCB that are mixed with fluids that contain 500 ppm or greater PCB are not used as dielectric fluid in any electrical equipment.</p> <p>(NOTE: The entire mixture of dielectric fluid must be considered to be greater than 500 ppm PCB and must be disposed of in an incinerator that meets the requirements of 40 CFR 761.70.</p> <p>Verify that the following parameters are met if the facility reclassifies an electromagnet, switch, or voltage regulator that has been tested and determined to have a concentration of 500 ppm PCBs to PCB-Contaminated status (50 but &lt;500 ppm) or to non-PCB status (&lt;50 ppm):</p> <ul style="list-style-type: none"> <li>– remove the free-flowing PCB dielectric fluid from the electromagnet, switch, or voltage regulator, flushing is not required</li> <li>– either test the fluid or assume it contains 1,000 ppm PCBs.</li> <li>– retrofill the electromagnet, switch, or voltage regulator with fluid containing known PCB levels according to Table 2 in Appendix 11-2a</li> <li>– determine the electromagnet, switch, or voltage regulator's reclassified status according to Table 2 (NOTE: If following this process does not result in the reclassified status desired, the facility may repeat the process).</li> </ul> <p>Verify that the following parameters are met if the facility reclassifies a PCB-Contaminated electromagnet, switch, or voltage regulator that has been tested and determined to have a concentration of 50 ppm but &lt;500 ppm to a non-PCB status:</p>

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<p><b>T1.30.3.US.</b> Capacitors may contain PCBs at any concentration subject to certain requirements (40 CFR 761.30(l)) <b>[Reviewed March 2000]</b>.</p> <p><b>T1.30.4.US.</b> Circuit breakers, reclosers, and cable may contain PCBs at any concentration for remainder of their useful lives subject to certain conditions (40 CFR 761.30(m)) <b>[Revised October 2001]</b>.</p> <p><b>T1.30.5.US.</b> The continued use of porous surfaces contaminated with PCBs regulated for disposal by spills of liquid PCBs must meet specific parameters (40 CFR 761.30(p)) <b>[Added October</b></p>	<ul style="list-style-type: none"> <li>– remove the free-flowing PCB dielectric fluid from the electromagnet, switch, or voltage regulator, flushing is not required</li> <li>– either test the fluid or assume it contains 1,000 ppm PCBs.</li> <li>– retrofill the electromagnet, switch, or voltage regulator with fluid containing known PCB levels according to Table 2 in Appendix 11-2a</li> <li>– determine the electromagnet, switch, or voltage regulator's reclassified status according to Table 2 (NOTE: If following this process does not result in the reclassified status desired, the facility may repeat the process.</li> </ul> <p>Verify that any dielectric fluid containing 50 ppm or greater PCB used for servicing electromagnets, switches, or voltage regulators is stored in accordance with the storage for disposal requirements of 40 CFR 761.65.</p> <p>(NOTE: Processing and distribution in commerce of PCBs for purposes of servicing electromagnets, switches or voltage regulators is permitted only for persons who are granted an exemption under TSCA 6(e)(3)(B).)</p> <p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>Verify that all PCB Large, High- and Low-Voltage Capacitors that pose an exposure risk to food and feed have been removed.</p> <p>Verify that all PCB Large, High- and Low-Voltage Capacitors are in use only in restricted-access electrical substations, or in a contained and restricted-access indoor area.</p> <p>Verify that capacitors are free from leaks of dielectric PCBs.</p> <p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>Verify that any circuit breakers, reclosers, and cables used are serviced using only dielectric fluid that contains less than 50 ppm PCB and have been free from leaks.</p> <p>Verify that any circuit breaker, recloser or cable found to contain at least 50 ppm PCBs is serviced according to the requirements for electromagnets, switches, and voltage regulators in 40 CFR 761.30(h)(2) (see checklist item T1.30.2.US).</p> <p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>Verify that the following conditions are met when using porous surfaces contaminated by spills of liquid PCBs at concentrations &gt;10 micrograms/100 cm<sup>2</sup> for the remainder of the useful life of the surfaces and subsurface material:</p>



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<p><b>T1.30.7.US.</b> When using equipment, structures, other non-liquid or liquid materials that were contaminated with PCBs during manufacture, use, servicing, or because of spills from, or proximity to, PCBs <math>\geq 50</math> ppm, specific requirements must be met (40 CFR 761.30(u)) <b>[Added October 2001]</b>.</p>	<p>microscopy immersion oil, and as optical liquids in a manner other than a totally enclosed manner</p> <ul style="list-style-type: none"> <li>– PCBs may be used as immersion oil in fluorescence microscopy, in a manner other than a totally enclosed manner indefinitely.</li> <li>– PCBs may be used as optical liquids in a manner other than a totally enclosed manner indefinitely</li> <li>– PCBs may be used at any concentration in rectifiers for the remainder of the PCBs' useful life, and may use PCBs <math>&lt; 50</math> ppm in servicing (including rebuilding) rectifiers</li> </ul> <p>For additional activities which are authorized pursuant to section 6(e)(2)(B) of TSCA under 40 CFR 761.30.)</p> <p>Verify that no person blends or otherwise dilutes PCBs regulated for disposal, including PCB sewage sludge and sewage sludge not used pursuant to 40 CFR 257, 258, and 503, for purposes of use or to avoid disposal requirements.</p> <p>Verify that, except as explicitly provided in 40 CFR 761.50 through 761.79, no person disposes of regulated PCB wastes including, but not limited to, PCB remediation waste, PCB bulk product waste, PCBs, and PCB industrial sludges, into treatment works.</p> <p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>Verify that the following are met when using equipment, structures, other non-liquid or liquid materials that were contaminated with PCBs during manufacture, use, servicing, or because of spills from, or proximity to, PCBs <math>\geq 50</math> ppm, including those not otherwise authorized for use under 40 CFR 761:</p> <ul style="list-style-type: none"> <li>– the materials were decontaminated in accordance with a Toxic Substances Control Act (TSCA) PCB disposal approval issued under 40 CFR 761, Subpart D, 40 CFR 761.79, or applicable USEPA PCB spill cleanup policies in effect at the time of the decontamination</li> <li>– if not previously decontaminated, the materials now meet an applicable decontamination standard.</li> </ul> <p>Verify that materials decontaminated or meeting an applicable decontamination standard are not used or reused in direct contact with food, feed, or drinking water unless otherwise allowed under these regulations.</p> <p>(NOTE: Any person may use water containing PCBs at concentrations <math>\leq 0.5</math> micrograms/L PCBs without restriction. Any person may use water-containing PCBs at concentrations <math>&lt; 200</math> micrograms/L (i.e., 200 ppb PCBs) for non-contact use in a closed system where there are no releases (e.g., as a non-contact cooling water.)</p>

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<p><b>T1.30.8.US.</b> When PCBs are used in air compressor system; specific parameters must be met (40 CFR 761.30(s)) [Added October 2001].</p>	<p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>Verify that the concentration of PCBs in air compressor systems is &lt; 50 ppm.</p> <p>Verify that, if concentrations are &gt;= 50 ppm, the following are met:</p> <ul style="list-style-type: none"> <li>– all free-flowing liquids containing PCBs &gt;=50 ppm are removed from the air compressor crankcase and the crankcase is refilled with non-PCB liquid</li> <li>– other air compressor system components contaminated with PCBs &gt;=50 ppm, are decontaminated or disposed of</li> <li>– air compressor piping with a nominal inside diameter of &lt;2 in. is decontaminated by continuous flushing for 4 h, at no &lt; 300 gal/h.</li> </ul> <p>(NOTE: The requirements if PCBs are &gt;= 50 ppm must be completed by 30 August 1999, or within 1 yr of the date of discovery of PCBs at &gt;=50 ppm in the air compressor system, whichever is later. The USEPA Regional Administrator for the USEPA Region in which an air compressor system is located may, at his/her discretion and in writing, extend this timeframe.)</p>
<p><b>T1.30.9.US.</b> The use of PCBs in gas or liquid transmission systems must meet specific requirements (40 CFR 761.30(t)) [Added October 2001].</p>	<p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>Verify that PCBs used in intact and non-leaking gas or liquid transmission systems are at concentrations &lt;50 ppm PCBs.</p> <p>(NOTE: PCBs are authorized for use at concentrations &gt;=50 ppm in intact and non-leaking gas or liquid transmission systems not owned or operated by a seller or distributor of the gas or liquid transmitted in the system.)</p> <p>(NOTE: Any person may use PCBs at concentrations &gt;=50 ppm in intact and non-leaking gas or liquid transmission systems, with the written approval of the Director, Office of Solid Waste.)</p>



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	<p>instrumentation, clothing, etc.) are stored in compliance with 40 CFR 761.65(b) (see checklist items T1.40.1.US and T1.40.2.US) and disposed of according to the undiluted PCB concentration prior to treatment</p> <ul style="list-style-type: none"> <li>– use manifests for all R&amp;D PCB wastes being transported from the R&amp;D facility to an approved PCB storage or disposal facility. However, 40 CFR. 761.207 through 761.219 do not apply if the residuals or treated samples are returned either to the physical location where the samples were collected or a location where other regulated PCBs from the physical location where the samples were collected are being stored for disposal</li> <li>– package and ship all PCB wastes according to DOT requirements under 49 CFR 171 through 180</li> <li>– comply with the recordkeeping requirements of 40 CFR 761.180 (see checklist items T1.15.1.US through T1.15.4.US and T1.15.6.US).</li> </ul> <p>Verify that each written notification includes the USEPA identification number of the site where the R&amp;D for PCB disposal activities will be conducted, the quantity of PCBs to be treated, the type of R&amp;D technology to be used, the general physical and chemical properties of material being treated, and an estimate of the duration of the PCB activity.</p> <p>(NOTE: The USEPA Regional Administrator, the state environmental protection agency, and the local environmental protection agency may waive notification in writing prior to commencement of the research.)</p> <p>Verify that material limitations and time limitations are not exceeded without prior written approval from USEPA.</p> <p>(NOTE: Requests for approval to exceed the material limitations or time limitations for PCBs in R&amp;D for PCB disposal activities as specified in this section must be submitted in writing to the USEPA Regional Administrator for the USEPA Region in which the facility conducting R&amp;D for PCB disposal activities is located. Each request shall specify the quantity or concentration requested or additional time needed for disposal and include a justification for each increase. For extensions to the duration of the R&amp;D for PCB disposal activity, the request shall also include a report on the accomplishments and progress of the previously authorized R&amp;D for PCB disposal activity for which the extension is sought. The USEPA Regional Administrator may grant a waiver in writing for an increase in the volume of PCB material, the maximum concentration of PCBs, the total amount of pure PCBs, or the duration of the R&amp;D activity. Approvals will state all requirements applicable to the R&amp;D for PCB disposal activity.)</p> <p>(NOTE: The USEPA Regional Administrator for the USEPA Region in which an R&amp;D for PCB disposal activity is conducted may determine, at any time that an R&amp;D PCB disposal approval is required to ensure that any R&amp;D for PCB disposal activity does not present an unreasonable risk of injury to health or the environment.)</p>

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<p><b>T1.40</b></p> <p><b>PCB STORAGE</b></p> <p><b>T1.40.1.US.</b> PCBs and PCB Items at concentrations of 50 ppm or more that are to be stored before disposal must be stored in a facility meeting specific structural requirements (40 CFR 761.65(a) through 761.65(b)(1)) [Revised October 1998; Reviewed March 2000].</p>	<p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>Verify that the following provisions are present by inspecting the PCB storage area:</p> <ul style="list-style-type: none"> <li>– the roof and walls of the building in which the PCBs are stored are constructed so as to exclude rainfall from contacting PCBs and PCB items</li> <li>– an adequate floor that has continuous curbing with a minimum 6-in. high curb. The curbing will provide a containment volume equal to at least two times the internal volume of the largest PCB Article or PCB Container or 25 percent of the total internal volume of all PCB Articles or PCB Containers stored there, whichever is greater.</li> <li>– drains, valves, floor drains, expansion joints, sewer lines, or other openings that would allow liquids to flow from the curbed area are not present</li> <li>– floors and curbing are constructed of Portland cement, concrete, or a continuous, smooth, nonporous surface that prevents or minimizes penetration of the PCBs</li> <li>– location is not below a 100-yr flood water elevation</li> <li>– the storage area is marked with the label in Appendix 11-1.</li> </ul> <p>(NOTE: PCB/radioactive wastes are not required to be stored in an area with a minimum 6-in. high curbing. However, the floor and curbing must still provide a containment volume equal to at least two times the internal volume of the largest PCB Container or 25 percent of the total internal volume of all PCB Containers stored there, whichever is greater.)</p> <p>Verify that PCB waste is removed from storage and disposed of within 1 yr from the date it was determined to be PCB waste and the decision was made to dispose of it.</p> <p>(NOTE: This date is the date of removal from service for disposal and the point at which the 1-yr timeframe for disposal begins. PCB/radioactive waste removed from service for disposal is exempt from the 1-yr time limit provided a written record documents all attempts to secure disposal and the written record is available for review and the waste is managed in accordance with all other applicable Federal, state, and local laws and regulations for the management of radioactive material.)</p> <p>(NOTE: Any person storing PCB waste that is subject to the 1-yr time limit may provide written notification to the USEPA Regional Administrator for the Region in which the PCB waste is stored that their continuing attempts to dispose of or secure disposal for their waste within the 1-yr time limit have been unsuccessful. Upon receipt of the notice by the USEPA Regional Administrator, the time for</p>

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<p><b>T1.40.2.US.</b> PCBs and PCB Items may also be stored in other areas that do not comply with the storage area requirements when specific parameters are met (40 CFR 761.65(b)(2) and 761.65(c)(1)) [Revised October 1998; Reviewed March 2000].</p>	<p>disposal is automatically extended for 1 additional year (2 yr total) if the following conditions are met:</p> <ul style="list-style-type: none"> <li>– the notification is received by the USEPA Regional Administrator at least 30 days before the initial 1-yr time limit expires, and the notice identifies the storer, the types, volumes, and locations of the waste and the reasons for failure to meet the initial 1-yr time limit</li> <li>– a written record documenting all continuing attempts to secure disposal is maintained until the waste is disposed of</li> <li>– the required written record is available for inspection or submission if requested by USEPA</li> <li>– continuing attempts to secure disposal were initiated within 270 days after the time the waste was first subject to the 1-yr time limit requirement.</li> </ul> <p>Failure to initiate and continue attempts to secure disposal throughout the total time the waste is in storage shall automatically disqualify the notifier from receiving an automatic extension under this section.)</p> <p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>Verify that, if PCBs and PCB Items designated for disposal are stored in a storage unit that is not approved and does not meet design requirements, the unit meets one of the following conditions:</p> <ul style="list-style-type: none"> <li>– it is permitted to manage hazardous waste in containers, and spills of PCBs are properly cleaned up</li> <li>– it qualifies for interim status under section 3005 of RCRA to manage hazardous waste in containers, meets the requirements for containment at 40 CFR. 264.175, and spills of PCBs are properly cleaned up</li> <li>– it is permitted by a state authorized under section 3006 of RCRA to manage hazardous waste in containers, and spills of PCBs are properly cleaned up</li> <li>– it is approved or otherwise regulated pursuant to a State PCB waste management program no less stringent in protection of health or the environment than the applicable TSCA requirements</li> <li>– it is subject to a TSCA Coordinated Approval that includes provisions for storage of PCBs</li> <li>– it has a TSCA PCB waste management approval that includes provisions for storage.</li> </ul> <p>Verify that only the following PCB Items are stored and a notation is attached to the PCB Item or Container indicating the date the item was removed from service for storage in noncompliant storage areas used as a temporary 30-day storage area:</p> <ul style="list-style-type: none"> <li>– nonleaking PCB Articles and PCB Equipment</li> <li>– leaking PCB Articles and PCB Equipment placed in a nonleaking PCB Container that contains sufficient sorbent material to absorb liquid contained on the PCB Article or equipment</li> </ul>

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<p><b>T1.40.3.US.</b> Nonleaking and structurally undamaged PCB Large, High- Voltage Capacitors and PCB-contaminated Electric Equipment that have not been drained of free flowing dielectric fluid may be stored on pallets next to a storage area that complies with the storage area requirements (40 CFR 761.65(c)(2)) [Reviewed March 2000].</p>	<ul style="list-style-type: none"> <li>– PCB Containers in which nonliquid PCBs have been placed</li> <li>– PCB Containers containing liquid PCBs at a concentration <math>\geq 50</math> provided Spill, Prevention, Control, and Countermeasure (SPCC) plan has been prepared for the temporary storage area and the liquid PCB waste is in DOT authorized packaging or stationary bulk storage tanks.</li> </ul> <p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>Determine if available unfilled storage space in the storage area is equal to at least 10 percent of the volume of capacitors and electrical equipment stored outside.</p> <p>Verify that capacitors and equipment stored outside the storage facility are on pallets and inspected at least weekly.</p>
<p><b>T1.40.4.US.</b> Specific operational procedures are required at PCB storage units (40 CFR 761.65(c)(4), 761.65(c)(5), and 761.65(c)(8)) [Revised October 1998; Reviewed March 2000].</p>	<p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>Verify that the following practices are conducted at any area where PCBs or PCB Items are stored:</p> <ul style="list-style-type: none"> <li>– movable equipment used for handling PCBs and PCB Items that directly contact PCBs is not removed from storage unit unless decontaminated</li> <li>– inspections for leaks of all PCB Items in storage are done at least once every 30 days</li> <li>– any leaking PCB Items and their contents are immediately transferred to properly marked non-leaking containers and the spilled or leaked materials are immediately cleaned up and any spill absorbent material properly disposed</li> <li>– PCB Items are marked with the date when they are removed from service for disposal</li> <li>– PCB Items are positioned so that they can be located by the marked date</li> <li>– stationary storage containers for liquid PCBs have a record that includes quantity and date of each batch added to the container or removed from the container.</li> </ul>
<p><b>T1.40.5.US.</b> Containers used for the storage of PCBs must comply with the shipping container specification of the DOT (40 CFR 761.65(c)(6) and 761.65(c)(7)) [Revised</p>	<p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p>

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<b>October 1998; Reviewed March 2000].</b>	<p>Verify that any container used for the storage of liquid or non-liquid PCB waste is in accordance with the requirements in the DOT Hazardous Materials Regulations (HMR) at 49 CFR parts 171 through 180.</p> <p>Verify that PCB wastes not subject to the HMR (i.e., PCB wastes at concentrations of &lt;20 ppm or &lt;1 pound of PCBs regardless of concentration) are packaged in accordance with Packaging Group III, unless other hazards associated with the PCB waste cause it to require packaging in accordance with Packaging Groups I or II.</p> <p>(NOTE: For purposes of describing PCB waste not subject to DOT's HMR on a manifest, one may use the term "Non-DOT Regulated PCBs.")</p> <p>Verify that, if containers other than those meeting HMR performance standards are used for storage of PCB/radioactive waste, the following requirements are met:</p> <ul style="list-style-type: none"> <li>– containers are non-leaking</li> <li>– containers are designed to prevent the buildup of liquids if such containers are stored in an area meeting containment requirements as well as all other applicable State or Federal regulations or requirements for control of radioactive materials.</li> <li>– containers meet all regulations and requirements pertaining to nuclear criticality safety.</li> </ul> <p>(NOTE: Acceptable container materials currently include polyethylene and stainless steel provided that the container material is chemically compatible with the wastes being stored. Other containers may be used to store both liquid and non-liquid PCB/radioactive wastes if the users are able to demonstrate, to the appropriate Regional Administrator and other appropriate regulatory authorities (i.e., Nuclear Regulatory Commission, Department of Energy, or the Department of Transportation), that the use of such containers is protective of health and the environment as well as public health and safety.)</p> <p>(NOTE: The following DOT-specified containers that conform to the requirements of 49 CFR, chapter I, subchapter C in effect on 30 September 1991, may be used for storage and transportation activities that are not subject to DOT regulation, and may be used on a transitional basis as permitted at 49 CFR 171.14. For liquid PCBs: Specification 5 container without removable head, Specification 5B container without removable head, Specification 6D overpack with Specification 2S or 2SL polyethylene containers, or Specification 17E container. For non-liquid PCBs: Specification 5 container, Specification 5B container, or Specification 17C container.)</p> <p>(NOTE: Stationary storage containers for liquid PCBs can be larger than those specified in DOT Specs 5, 5B, or 17C may be used for nonliquid PCBs when such containers will provide as much protection against leaking and exposure to the environment as the DOT-specified containers.)</p>

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<p><b>T1.40.6.US.</b> Commercial storers of PCB Waste must have final storage approval (40 CFR 761.65(d)) <b>[Revised March 2000]</b>.</p>	<p>Verify that, if the containers larger than DOT-approved containers are used; an SPCC plan covering the containers storing PCBs has been prepared.</p> <p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>Verify that the commercial storer has final storage approval from the USEPA regional administrator for PCB waste.</p> <p>(NOTE: Commercial storers were required to file for final storage approval by 2 August 1990. After filing for final approval, they will operate under interim approval until a final decision is made on approval.)</p> <p>(NOTE: The following storage facilities may be exempt from this requirements for storage approval:</p> <ul style="list-style-type: none"> <li>– storage areas at transfer facilities unless the PCB waste is stored at the transfer facility for more than 10 consecutive days between destinations</li> <li>– storage areas at RCRA-permitted facilities if the facility proves to the regional administrator that the facility’s existing RCRA closure plan substantially meets the requirements for a TSCA closure plan</li> <li>– storage areas ancillary to a TSCA approved disposal facility if the disposal approval contain an expiration date and the current disposal approval’s closure and financial responsibility conditions specifically extend to storage areas ancillary to disposal.</li> <li>– storage areas where the storer is storing his/her own waste (i.e., not commercial storage).</li> </ul> <p><b>T1.40.7.US.</b> PCB Articles may be stored for reuse if specific parameters are met (40 CFR 761.35) <b>[Added October 1998; Reviewed March 2000]</b>.</p>
	<p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>Verify that PCB Articles are not stored in an area that is not designed, constructed, and operated in compliance with 40 CFR 761.65(b) (see checklist items T1.40.1.US and T1.40.2.US) for more than 5 yr after the date the Article was originally removed from use or 5 yr after 25 August 1998, whichever is later.</p> <p>Verify that, when storing PCB Articles in a noncompliant area, the following are met:</p> <ul style="list-style-type: none"> <li>– all applicable use and marking requirements are met</li> <li>– records including the following are kept, starting at the time the PCB Article is removed from use or 28 August 1998: <ul style="list-style-type: none"> <li>– the date of removal or 28 August 1998 if the removal date is not known</li> <li>– projected location and future use of the Article</li> <li>– the date the PCB Article is scheduled for repair, if applicable.</li> </ul> </li> </ul> <p>(NOTE: Storage for reuse may be done in a noncompliant area for more than 5 yr if written approval has been received from the USEPA Regional Administrator.)</p>

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<p><b>T1.40.8.US.</b> PCB household waste must be stored according to specific parameters (40 CFR 761.63) [Added October 1998; Reviewed March 2000].</p> <p><b>T1.40.9.US.</b> The storage of bulk PCB remediation waste or PCB bulk product waste must meet certain requirements (40 CFR 761.65(c)(9)) [Added October 1998; Reviewed March 2000].</p>	<p>(NOTE: A PCB Article may be stored for reuse indefinitely in:</p> <ul style="list-style-type: none"> <li>– a unit in compliance with 40 CFR 761.65(b) (see checklist items T1.40.1.US and T1.40.2.US)</li> <li>– a unit permitted to manage hazardous waste containers.)</li> </ul> <p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>Verify that PCB household waste stored in a unit regulated for storage of PCB waste is not commingled with PCB waste.</p> <p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>Verify that Bulk PCB remediation waste or PCB bulk product waste is not stored at the clean-up site or site of generation for more than 180 days.</p> <p>Verify that the following conditions are met:</p> <ul style="list-style-type: none"> <li>– the waste is placed in a pile designed and operated to control dispersal of the waste by wind, where necessary, by means other than wetting.</li> <li>– the waste does not generate leachate through decomposition or other reactions.</li> <li>– the storage site has: <ul style="list-style-type: none"> <li>– a liner that is designed, constructed, and installed to prevent any migration of wastes off or through the liner into the adjacent subsurface soil, groundwater, or surface water at any time during the active life (including the closure period) of the storage site</li> <li>– a liner constructed of materials that have appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the waste or leachate to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation</li> <li>– a liner placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the liner to prevent failure of the liner due to settlement, compression, or uplift</li> <li>– a liner installed to cover all surrounding earth likely to be in contact with the waste</li> <li>– an appropriate cover that covers all of the stored waste likely to be contacted by precipitation, and is secured so as not to be functionally disabled by winds expected under normal seasonal meteorological conditions at the storage site</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– a run-on control system designed, constructed, operated, and maintained such that:               <ul style="list-style-type: none"> <li>– it prevents flow onto the stored waste during peak discharge from at least a 25-yr storm</li> <li>– it collects and controls at least the water volume resulting from a 24-h, 25-yr storm.</li> </ul> </li> </ul> <p>Verify that collection and holding facilities (e.g., tanks or basins) are emptied or otherwise managed expeditiously after storms to maintain design capacity of the system.</p>



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<p><b>T1.45</b></p> <p><b>PCB TRANSPORTATION</b></p> <p><b>T1.45.1.US.</b> A generator who relinquishes control over PCB wastes by offering for transport by his own vehicle or by a vehicle owned by another person, PCB waste for commercial offsite storage or offsite disposal must prepare a manifest (40 CFR 761.207, 761.208(a), 761.209, 761.210, and 761.214(a)(1)). [Revised October 1998; Revised October 2001; Revised October 2012; Revised July 2015].</p>	<p>(NOTE: This checklist item applies only to PCB wastes as defined in 40 CFR 761.3 (see <i>Definitions</i>). This includes PCB wastes with PCB concentrations below 50 ppm where the PCB concentration below 50 ppm was the result of dilution; these PCB wastes are required under 40 CFR 761.1(b) to be managed as if they contained PCB concentrations of 50 ppm and above. An example of such a PCB waste is spill cleanup material containing &lt; 50 ppm PCBs when the spill involved material containing PCBs at a concentration of <math>\geq</math> 50 ppm. However, there is no manifest requirement for material currently below 50 ppm which derives from pre-18 April 1978, spills of any concentration, pre- 2July 1979, spills of &lt; 500 ppm PCBs, or materials decontaminated in accordance with 40 CFR 761.79..</p> <p>(NOTE: The requirements of this checklist item do not apply to the transport of PCB wastes on a public or private right-of-way within or along the border of contiguous property under the control of the same person, even if such contiguous property is divided by a public or private right-of-way.)</p> <p>Verify that a generator who transports, or offers for transport PCB waste for commercial off-site storage or off-site disposal, and commercial storage or disposal facility who offers for transport a rejected load of PCB waste, prepares a manifest on EPA Form 8700-22, and, if necessary, a continuation sheet, according to the instructions included in the appendix of 40 CFR 262.</p> <p>Verify that the generator specifies:</p> <ul style="list-style-type: none"> <li>– for each bulk load of PCBs, the identity of the PCB waste, the earliest date of removal from service for disposal, and the weight in kilograms of the PCB waste (Item 14--Special Handling Instructions box)</li> <li>– for each PCB Article Container or PCB Container, the unique identifying number, type of PCB waste ( e.g., soil, debris, small capacitors), earliest date of removal from service for disposal, and weight in kilograms of the PCB waste contained (Item 14--Special Handling Instructions box)</li> <li>– for each PCB Article not in a PCB Container or PCB Article Container, the serial number if available, or other identification if there is no serial number, the date of removal from service for disposal, and weight in kilograms of the PCB waste in each PCB Article (Item 14--Special Handling Instructions box)</li> </ul> <p>(NOTE: EPA Form 8700-22A is not required as the PCB manifest continuation sheet. In practice, form 8700-22A does not have adequate space to list required PCB-specific information for several PCB articles. However, if form 8700-22A fits the needs of the user community, the form is permissible.)</p> <p>(NOTE: PCB waste handlers should use the Part 262 appendix instructions as a guide, but should defer to the Part 761 manifest regulations whenever there is any</p>

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	<p>difference between the Part 761 requirements and the instructions in the appendix to Part 262.)</p> <p>(NOTE: PCBs are not regulated under RCRA, thus do not have a RCRA waste code. EPA does not require boxes 13 and 31 on forms 8700-22 and 8700-22A (if used), respectively, to be completed for shipments only containing PCB waste. However, some States track PCB wastes as State-regulated hazardous wastes, and assign State hazardous waste codes to these wastes. In such a case, the user should follow the State instructions for completing the waste code fields.)</p> <p>Verify that the generator designates on the manifest one facility which is approved to handle the PCB waste described on the manifest.</p> <p>(NOTE: A generator may also designate on the manifest one alternate facility which is approved to handle his PCB waste in the event an emergency prevents delivery of the waste to the primary designated facility.)</p> <p>Verify that, if the transporter is unable to deliver the PCB waste to the designated facility or the alternate facility, the generator either designates another facility or instructs the transporter to return the PCB waste.</p> <p>(NOTE: A generator may use manifests printed by any source so long as the source of the printed form has received approval from EPA to print the manifest. A registered source may be one of the following:</p> <ul style="list-style-type: none"> <li>– State agency</li> <li>– Commercial printer</li> <li>– PCB waste generator, transporter or, designated facility</li> <li>– PCB waste broker or other preparer who prepares or arranges shipments of PCB waste for transportation.</li> </ul> <p>Verify that the generator determines whether the generator state or the consignment state for a shipment regulates PCB waste as a State-regulated hazardous waste and whether the consignment state or generator state requires the generator to submit any copies of the manifest to these states.</p> <p>(NOTE: In cases where the generator must supply copies to either the generator's state or the consignment state, the generator is responsible for supplying legible photocopies of the manifest to these states.)</p> <p>Verify that the manifest consists of at least the number of copies which will provide the generator, each transporter, and the owner or operator of the designated facility with one copy each for their records and another copy to be returned to the generator.</p> <p>Verify that the generator:</p> <ul style="list-style-type: none"> <li>– signs the manifest certification by hand</li> </ul>

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<p><b>T1.45.2.US.</b> The generator must take action and/or submit an exception report in relationship to manifests (40 CFR 761.214(d), 761.217, and 761.219(b) through 761.219(d)) <b>[Revised October 1998; Reviewed</b></p>	<ul style="list-style-type: none"> <li>– obtains the handwritten signature of the initial transporter and date of acceptance on the manifest</li> <li>– retains one copy.</li> </ul> <p>Verify that the generator gives the transporter the remaining copies of the manifest.</p> <p>Verify that, for shipments of PCB waste within the United States solely by water (bulk shipments only), the generator sends three copies of the manifest dated and signed to the owner or operator of the designated facility.</p> <p>Verify that, for rail shipments of PCB waste within the United States which originate at the site of generation, the generator sends at least three copies of the manifest dated and signed to one of the following:</p> <ul style="list-style-type: none"> <li>– the next non-rail transporter, if any</li> <li>– the designated facility if transported solely by rail.</li> </ul> <p>Verify that, for rejected shipments of PCB waste that are returned to the generator by the designated facility, the generator:</p> <ul style="list-style-type: none"> <li>– signs either of the following: <ul style="list-style-type: none"> <li>– Item 20 of the new manifest if a new manifest is used for the returned shipment</li> <li>– Item 18c of the original manifest if the original manifest is used for the returned shipment</li> </ul> </li> <li>– provides the transporter a copy of the manifest</li> <li>– sends a copy of the manifest to the designated facility that returned the shipment to the generator within 30 days of delivery of the rejected shipment</li> <li>– retains at the generator's site a copy of each manifest for at least 3 yr from the date of delivery.</li> </ul> <p>Verify that a generator keeps a copy of each signed manifest for 3 yr or until he receives a signed copy from the designated facility which received the PCB waste.</p> <p>Verify that the signed copy must be retained as a record for at least 3 yr from the date the waste was accepted by the initial transporter.</p> <p>(NOTE: See the first NOTE in T1.10.2.US for information on whom and what this checklist item applies to.)</p> <p>Verify that a generator of PCB waste, who does not receive a copy of the manifest with the handwritten signature of the owner or operator of the designated facility within 35 days of the date the waste was accepted by the initial transporter, immediately contacts the transporter and/or the owner or operator of the designated facility to determine the status of the PCB waste.</p>

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<b>March 2000; Revised October 2012].</b>	<p>Verify that a generator of PCB waste subject to the manifesting requirements submits an Exception Report to the EPA Regional Administrator for the Region in which the generator is located if the generator has not received a copy of the manifest with the hand written signature of the owner or operator of the designated facility within 45 days of the date the waste was accepted by the initial transporter.</p> <p>Verify that the exception report is submitted to EPA no later than 45 days from the date on which the generator should have received the manifest.</p> <p>Verify that the Exception Report includes the following:</p> <ul style="list-style-type: none"> <li>– a legible copy of the manifest for which the generator does not have confirmation of delivery</li> <li>– a cover letter signed by the generator or his authorized representative explaining the efforts taken to locate the PCB waste and the results of those efforts.</li> </ul> <p>For rejected shipments of PCB waste that are forwarded to an alternate facility by a designated facility using a new manifest the generator must comply with the contact and reporting requirements in this checklist item for the shipment forwarding the material from the designated facility to the alternate facility instead of for the shipment from the generator to the designated facility.</p> <p>For purposes of the contact and reporting requirements for a shipment forwarding such waste to an alternate facility by a designated facility:</p> <ul style="list-style-type: none"> <li>– the copy of the manifest received by the generator must have the handwritten signature of the owner or operator of the alternate facility in place of the signature of the owner or operator of the designated facility</li> <li>– the 35- and 45-day timeframes begin the date the waste was accepted by the initial transporter forwarding the PCB waste shipment from the designated facility to the alternate facility.</li> </ul> <p>Verify that a generator keeps a copy of each Exception Report for a period of at least 3 yr from the due date of the report.</p> <p>Verify that a generator of PCB waste who manifests PCBs or PCB Items to a disposer of PCB waste submits a One-year Exception Report to the EPA Regional Administrator for the Region in which the generator or commercial storer is located no later than 45 days from the date the following occurs:</p> <ul style="list-style-type: none"> <li>– the generator or commercial storer transferred the PCBs or PCB Items to the disposer of PCB waste on a date within 9 mo from the date of removal from service for disposal of the affected PCBs or PCB Items, as indicated on the manifest or continuation sheet</li> <li>– the generator or commercial storer either has not received within 13 mo from the date of removal from service for disposal a Certificate of Disposal (COD)</li> </ul>

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	<p>confirming the disposal of the affected PCBs or PCB Items, or the generator or commercial storer receives a COD confirming disposal of the affected PCBs or PCB Items on a date more than 1 yr after the date of removal from service.</p> <p>Verify that the One-year Exception Report includes:</p> <ul style="list-style-type: none"> <li>– a legible copy of any manifest or other written communication relevant to the transfer and disposal of the affected PCBs or PCB Items</li> <li>– a cover letter signed by the submitter or an authorized representative explaining: <ul style="list-style-type: none"> <li>– the date(s) when the PCBs or PCB Items were removed from service for disposal</li> <li>– the date(s) when the PCBs or PCB Items were received by the submitter of the report, if applicable</li> <li>– the date(s) when the affected PCBs or PCB Items were transferred to a designated disposal facility</li> <li>– the identity of the transporters, commercial storers, or disposers known to be involved with the transaction</li> <li>– the reason, if known, for the delay in bringing about the disposal of the affected PCBs or PCB Items within 1 yr from the date of removal from service for disposal.</li> </ul> </li> </ul> <p>(NOTE: PCB/radioactive waste that is exempt from the 1-year storage for disposal time is also exempt from the One-year Exception reporting requirements.)</p>



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<p><b>T1.50</b></p> <p><b>PCB DISPOSAL</b></p> <p><b>T1.50.1.US.</b> For each shipment of manifested PCB waste that a disposal facility accepts, the owner or operator of the disposal facility must prepare a COD (40 CFR 761.218) [<b>Revised October 1998; Revised October 2001</b>].</p> <p><b>T1.50.2.US.</b> Checklist item deleted. [<b>Deleted October 1998</b>].</p> <p><b>T1.50.3.US.</b> PCB liquids removed from use must either be decontaminated or disposed of according to specific parameters (40 CFR 761.50(b)(1), and 761.60(a)(1) through 761.60(a)(3)) [<b>Revised October 1998; Revised October 2001</b>].</p>	<p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>Verify that a COD has been prepared containing the following information:</p> <ul style="list-style-type: none"> <li>– the identity of the disposal facility by name, address, and USEPA identification number</li> <li>– the identity of the PCB Waste affected by the COD including reference to the manifest number for the shipment</li> <li>– a statement certifying the fact of disposal of the identified PCB waste, including the date of disposal, and identifying the disposal process used</li> <li>– a certification as defined in 40 CFR 761.3.</li> </ul> <p>Verify that a copy of the COD was:</p> <ul style="list-style-type: none"> <li>– sent to the generator identified on the manifest within 30 days of the date that disposal of the PCB waste was completed unless another timeframe is agreed to</li> <li>– retained with the annual report.</li> </ul> <p>(NOTE: For information on the disposal of additional types of PCB wastes, see Appendix 11-3.)</p> <p>Checklist item deleted due to 29 June 1998 regulatory revision.</p> <p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>Verify that PCB liquids removed from use are either decontaminated or disposed of.</p> <p>(NOTE: For determining compliance with decontamination standards (40 CFR 761.79), see checklist items T1.53.1.US through T1.53.6.US.)</p> <p>Verify that, when using disposal, except as identified below, PCB liquids at concentration greater than or equal to 50 ppm are disposed of in an incinerator that meets the requirements of 40 CFR 761.70:</p> <ul style="list-style-type: none"> <li>– if mineral oil dielectric fluid with PCB concentrations at greater than or equal to 50 ppm and less than 500 ppm are disposed of in a high efficiency boiler, the boiler meets the requirements in 40 CFR 761.71(a)</li> </ul>

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<p><b>T1.50.4.US.</b> Checklist item deleted <b>[Deleted October 1998]</b>.</p> <p><b>T1.50.5.US.</b> Checklist item deleted <b>[Deleted October 1998]</b>.</p> <p><b>T1.50.6.US.</b> PCB Transformers with PCB concentrations of 500 ppm or greater shall be decontaminated or disposed of in either a USEPA approved incinerator or a chemical waste landfill (40 CFR 761.50(b)(2) and 761.60(b)(1)) <b>[Revised October 2001]</b>.</p> <p><b>T1.50.7.US.</b> PCB Capacitors must be decontaminated or disposed of in accordance with certain requirements (40 CFR 761.50(b)(2), 761.60(b)(2) and 761.60(b)(4)(ii)) <b>[Revised</b></p>	<ul style="list-style-type: none"> <li>– if liquids with PCB concentrations at greater than or equal to 50 ppm and less than 500 ppm other than mineral oil dielectric fluid are disposed of in a high efficiency boiler, the boiler meets the requirements in 40 CFR 761.71(b)</li> <li>– liquids from incidental sources, such as precipitation, condensation, leachate, or load separation with PCB concentrations at greater than or equal to 50 ppm and less than 500 ppm, are associated with PCB Articles or non-liquid PCB wastes are disposed of in a chemical waste landfill that complies with 40 CFR 761.75 and: <ul style="list-style-type: none"> <li>– disposal does not violate land disposal restriction regulations</li> <li>– information if provided to or obtained by the owner of operator of the chemical waste landfill that shows the liquids do not exceed 500 ppm and are not an ignitable waste.</li> </ul> </li> </ul> <p>(NOTE: For information on the disposal of additional types of PCB wastes, see Appendix 11-3.)</p> <p>Checklist item deleted due to 29 June 1998 regulatory revisions.</p> <p>Checklist item deleted due to 29 June 1998 regulatory revisions.</p> <p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>Determine if the PCB Transformers are being decontaminated or disposed of at a USEPA-approved incinerator or a chemical waste landfill.</p> <p>Verify that, if disposal is being done at a chemical waste landfill, the transformer is drained of all free-flowing liquids, filled with solvent, allowed to stand for at least 18 h, and then drained thoroughly.</p> <p>(NOTE: For determining compliance with decontamination standards (40 CFR 761.79), see checklist items T1.53.1.US through T1.53.6.US.)</p> <p>(NOTE: For information on the disposal of additional types of PCB wastes, see Appendix 11-3.)</p> <p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>Verify that disposal of PCB Capacitors was done as follows:</p> <ul style="list-style-type: none"> <li>– PCB Small Capacitors (less than 1.36 kg (3 lb) of PCBs) are disposed of in a solid waste landfill</li> </ul>

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<p><b>October 1998; Revised October 2001].</b></p> <p><b>T1.50.8.US.</b> PCB hydraulic machines containing PCBs at concentrations <math>\geq 50</math> ppm must be decontaminated or disposed of according to specific parameters (40 CFR 761.50(b)(2) and 761.60(b)(3)) <b>[Revised October 1999; Revised October 2001].</b></p>	<ul style="list-style-type: none"> <li>– PCB Large, High- or Low-Voltage Capacitors (greater than 1.36 kg (3 lb) of PCBs) containing more than 500 ppm are incinerated in a USEPA-approved incinerator.</li> </ul> <p>(NOTE: The Large, High- or Low-Voltage capacitors may be disposed of in a chemical waste landfill upon approval of the USEPA.)</p> <p>Verify that Large Capacitors that contain <math>\geq 50</math> ppm but <math>&lt; 500</math> ppm are disposed of in an approved disposal facility.</p> <p>Verify that capacitors in storage are placed in DOT-approved containers with absorbent material.</p> <p>(NOTE: For determining compliance with decontamination standards (40 CFR 761.79), see checklist items T1.53.1.US through T1.53.6.US.)</p> <p>(NOTE: For information on the disposal of additional types of PCB wastes, see Appendix 11-3.)</p> <p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>Determine if PCB hydraulic machines are going for disposal or being decontaminated.</p> <p>(NOTE: For determining compliance with decontamination standards (40 CFR 761.79), see checklist items T1.53.1.US through T1.53.6.US.)</p> <p>(NOTE: All heat transfer and hydraulic systems were to be serviced to below 50 ppm PCBs by 1 July 1984.)</p> <p>Verify that PCB hydraulic machines with PCB concentrations at <math>\geq 50</math> ppm, such as die casting machines, are disposed of by one of the following methods:</p> <ul style="list-style-type: none"> <li>– in accordance with decontamination standards and procedures in 40 CFR 761.79</li> <li>– in a facility that is permitted, licensed, or registered to manage municipal solid waste or nonmunicipal nonhazardous waste (excluding thermal treatment units)</li> <li>– in a scrap metal recovery oven or smelter operating in compliance with 40 CFR 761.72</li> <li>– in an approved disposal facility.</li> </ul> <p>Verify that all free-flowing liquid is removed from each machine and disposed of appropriately.</p>

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<p><b>T1.50.9.US.</b> PCB-Contaminated Electrical Equipment, except capacitors, must meet specific disposal requirements (40 CFR 761.50(b)(2) and 761.60(b)(4)) [Revised October 1999; Reviewed March 2000].</p>	<p>(NOTE: If the PCB liquid contains <math>\geq 1000</math> ppm, the hydraulic machine must be decontaminated or flushed with a solvent that contains <math>&lt; 50</math> ppm PCB.)</p> <p>(NOTE: For information on the disposal of additional types of PCB wastes, see Appendix 11-3.)</p> <p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>Verify that any person disposing of PCB-Contaminated Electrical Equipment, except capacitors, does so by removing all free-flowing liquid from the equipment.</p> <p>Verify that free-flowing liquid is disposed of as required under 761.60(a) (see checklist item T1.50.3.US.).</p> <p>Verify that the equipment is disposed of with no free-flowing liquids by one of the following methods:</p> <ul style="list-style-type: none"> <li>– in accordance with 40 CFR 761.79</li> <li>– in a facility that is permitted, licensed, or registered to manage municipal solid waste or nonmunicipal nonhazardous waste (excluding thermal treatment units)</li> <li>– in a scrap metal recovery oven or smelter operating in compliance with 40 CFR 761.72</li> <li>– in an approved disposal facility.</li> </ul> <p>Verify that any person disposing of Large Capacitors that contain <math>\geq 50</math> ppm but <math>&lt; 500</math> ppm PCBs does so in an approved disposal facility.</p> <p>(NOTE: For information on the disposal of additional types of PCB wastes, see Appendix 11-3.)</p>
<p><b>T1.50.10.US.</b> PCB Articles not otherwise addressed in this section shall be decontaminated or disposed of properly (40 CFR 761.50(b)(2), 761.60(b)(6)(i), 761.60(b)(6)(ii), 761.60(b)(6)(iv), and 761.60(b)(8)) [Revised October 1999; Citation Revised October 2001].</p>	<p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>Determine if PCB Articles are going for disposal or being decontaminated.</p> <p>(NOTE: For determining compliance with decontamination standards (40 CFR 761.79), see checklist items T1.53.1.US through T1.53.6.US.)</p> <p>Verify that PCB Articles with concentrations at 500 ppm or greater are disposed of in either:</p> <ul style="list-style-type: none"> <li>– a USEPA-approved incinerator</li> <li>– a chemical waste landfill if all free-flowing liquids have been removed.</li> </ul>

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<p><b>T1.50.11.US.</b> PCB Containers shall be disposed of properly (40 CFR 761.60(c)) [Reviewed March 2000].</p>	<p>Verify that PCB Articles with PCB concentration between 50 and 500 ppm are drained of all free-flowing liquid.</p> <p>Verify that free-flowing liquid is disposed of as required under 761.60(a) (see checklist item T1.50.3.US.).</p> <p>Verify that PCB-Contaminated Articles with no free-flowing liquids are disposed of by one of the following methods:</p> <ul style="list-style-type: none"> <li>– in accordance with 40 CFR 761.79</li> <li>– in a facility that is permitted, licensed, or registered to manage municipal solid waste or nonmunicipal nonhazardous waste (excluding thermal treatment units)</li> <li>– in a scrap metal recovery oven or smelter operating in compliance with 40 CFR 761.72</li> <li>– in an approved disposal facility.</li> </ul> <p>(NOTE: Storage for disposal of PCB-Contaminated Articles from which all free-flowing liquids have been removed is not regulated under 40 CFR 761.50 through 761.79.)</p> <p>(NOTE: Recordkeeping and reporting requirements in 40 CFR 761.180 through 761.218 does not apply to PCB-Contaminated Articles from which all free-flowing liquids have been removed.)</p> <p>Verify that persons disposing of PCB Articles wear or use protective clothing or equipment to protect against dermal contact or inhalation of PCBs or materials containing PCBs.</p> <p>(NOTE: For information on the disposal of additional types of PCB wastes, see Appendix 11-3.)</p> <p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>(NOTE: For determining compliance with decontamination standards (40 CFR 761.79), see checklist items T1.53.1.US through T1.53.6.US.)</p> <p>Verify that PCB Containers with concentrations of 500 ppm or greater are disposed of in one of the following ways:</p> <ul style="list-style-type: none"> <li>– in a USEPA-approved incinerator</li> <li>– in a chemical waste landfill, if first the container is drained of any liquid PCBs.</li> </ul> <p>Verify that PCB Containers used to contain only PCBs at concentrations less than 500 ppm are drained of PCB liquid prior to disposal as municipal solid waste.</p>

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<p><b>T1.50.12.US.</b> Certain disposal methods for PCBs are prohibited (40 CFR 761.50(a)(1) through 761.50(a)(3) and 761.50(a)(5)) [Added October 1998; Reviewed March 2000].</p> <p><b>T1.50.13.US.</b> Performance-based disposal of PCB bulk product waste must be in accordance with specific parameters (40 CFR 761.50(b)(4), 761.62(a) and 761.62(c)) [Revised October 1999; Reviewed March 2000; Revised July 2013].</p>	<p>Verify that prior to disposal, a PCB container with PCB concentrations at 50 ppm or greater is stored in a unit in compliance with 40 CFR 761.65 (see checklist items T1.40.1.US through T1.40.6.US and T1.40.9.US).</p> <p>(NOTE: For information on the disposal of additional types of PCB wastes, see Appendix 11-3.)</p> <p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>Verify that no open burning of PCBs is performed.</p> <p>Verify that liquid PCBs are not processed into nonliquid forms to circumvent high temperature incineration requirements.</p> <p>Verify that water containing PCBs are not discharged to a treatment works or to a navigable waters unless the PCB concentration is 3 micrograms/l (approximately 3 ppb), or unless the discharge is in accordance with a PCB discharge limit included in a permit.</p> <p>(NOTE: When land disposing of nonliquid PCBs, otherwise applicable sampling requirements may be avoided by presuming that the PCBs are <math>\geq</math> 500 ppm if no free-flowing liquids are present.)</p> <p>(NOTE: For information on the disposal of additional types of PCB wastes, see Appendix 11-3.)</p> <p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>(NOTE: The EPA Memorandum, <i>PCB Bulk Waste Reinterpretation</i>, dated 24 October 2012, “allows building material ‘coated or serviced’ with PCB bulk product waste [e.g., caulk, paint, mastics, sealants] at the time of designation for disposal as a PCB bulk product waste.”</p> <p>Verify that PCB bulk product waste is disposed of as follows when using performance-based disposal:</p> <ul style="list-style-type: none"> <li>– in an incinerator approved under 40 CFR 761.70</li> <li>– in a chemical waste landfill approved under 40 CFR 761.75</li> <li>– in a permitted hazardous waste landfill</li> <li>– under an approved alternate disposal method in accordance with the decontamination provisions of 40 CFR 761.79 (see checklist items T1.53.1.US through T1.53.6.US)</li> <li>– for metal surfaces in contact with PCBs, in accordance with the thermal decontamination provisions of 40 CFR. 761.79(c)(6)</li> <li>– in accordance with a TSCA PCB Coordinated Approval.</li> </ul>

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<p><b>T1.50.14.US.</b> Disposal of PCB bulk product waste in solid waste landfills must be in accordance with specific parameters (40 CFR 761.62(b) through 761.62(d)) [<b>Revised October 1999; Reviewed March 2000; Revised July 2013</b>].</p>	<p>Verify that, if bulk product waste is disposed of in a manner other than prescribed in 40 CFR 761.62(a) or 761.62(b), approval has been received from the USEPA Regional Administrator in the Region where the disposal site is located for disposal or storage occurring in a single USEPA Region; or the Director of the Office of Solid Waste, for disposal occurring in more than one USEPA Region.</p> <p>(NOTE: This applies to PCB Items where PCB Articles are no longer intact and nonleaking.)</p> <p>(NOTE: For information on the disposal of additional types of PCB wastes, see Appendix 11-3.)</p> <p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>(NOTE: The EPA Memorandum, <i>PCB Bulk Waste Reinterpretation</i>, dated 24 October 2012, “allows building material ‘coated or serviced’ with PCB bulk product waste [e.g., caulk, paint, mastics, sealants] at the time of designation for disposal as a PCB bulk product waste.”</p> <p>Verify that, when PCB bulk product waste is disposed of in a solid waste landfill, the landfill is facility permitted, licensed, or registered by a state as a municipal or nonmunicipal nonhazardous waste landfill.</p> <p>(NOTE: The following PCB bulk product waste may be disposed of in a facility permitted, licensed, or registered by a state as a municipal or nonmunicipal nonhazardous waste landfill:</p> <ul style="list-style-type: none"> <li>– plastics (such as plastic insulation from wire or cable; radio, television, and computer casings; vehicle parts; or furniture laminates); preformed or molded rubber parts and components; applied dried paints, varnishes, waxes or other similar coatings or sealants; caulking; Galbestos; nonliquid building demolition debris; or nonliquid PCB bulk product waste from the shredding of automobiles or household appliances from which PCB small capacitors have been removed (shredder fluff)</li> <li>– other sampled PCB bulk product waste that leaches PCBs at &lt;10 micrograms/L of water measured with a procedure used to simulate leachate generation.)</li> </ul> <p>Verify that, if disposal of offsite PCB bulk product waste is done at a waste management facility not having a commercial PCB storage or disposal approval, a written notice is provided to the facility a minimum of 15 days in advance of the first shipment from the same disposal waste stream.</p> <p>Verify that the written notice states that the PCB bulk product waste may include components containing PCBs at <math>\geq</math> 50 ppm based on analysis of the waste in the shipment or application of a general knowledge of the waste stream (or similar</p>

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	<p>material) that is known to contain PCBs at those levels, and that the PCB bulk product waste is known or presumed to leach <math>\geq 10</math> micrograms/l PCBs.</p> <p>Verify that, if materials other than those listed in the NOTE are disposed of in a facility that is permitted, licensed, or registered by a state to manage municipal solid waste or nonmunicipal nonhazardous waste, the following are met:</p> <ul style="list-style-type: none"> <li>– the PCB bulk product waste is segregated from organic liquids disposed of in the landfill unit</li> <li>– leachate is collected from the landfill unit and monitored for PCBs.</li> </ul> <p>Verify that, if materials other than those listed in the NOTE are disposed at a waste management facility not having a commercial PCB storage or disposal approval, a written notice to the facility a minimum of 15 days in advance of the first shipment from the same disposal waste stream and with each shipment thereafter.</p> <p>Verify that the written notice states that the PCB bulk product waste may include components containing PCBs at <math>\geq 50</math> ppm based on analysis of the waste in the shipment or application of a general knowledge of the waste stream (or similar material) that is known to contain PCBs at those levels, and that the PCB bulk product waste is known or presumed to leach <math>\geq 10</math> micrograms/l PCBs.</p> <p>Verify that, for any disposal of PCB bulk product waste, a written record is maintained of all sampling and analysis of PCBs or notifications made for 3 yr from the date of the waste's generation.</p> <p>Verify that any release of PCBs (including but not limited to leachate) from the landfill unit is cleaned up in accordance with 40 CFR 761.61.</p> <p>(NOTE: Bulk product waste as described in the NOTE may be disposed of as daily landfill cover as long as the daily cover remains in the landfill and is not released or dispersed by wind or other action or under asphalt as part of a road bed.)</p> <p>Verify that any person disposing of PCB bulk product waste maintains a written record of all sampling and analysis of PCBs or notifications for 3 yr from the date of the waste's generation.</p> <p>(NOTE: The requirements in Subpart C: <i>Marking of PCBs and PCB Items</i>, Subpart J: <i>General Record and Reports</i>, and Subpart K: <i>PCB Waste Disposal Records and Reports</i> do not apply to the wastes addressed in this checklist item.)</p> <p>Verify that, if bulk product waste is disposed of in a manner other than prescribed in 40 CFR 761.62(a) or 761.62(b), approval has been received from the USEPA Regional Administrator in the Region where the disposal site is located for disposal or storage occurring in a single USEPA Region; or the Director of the Office of Solid Waste, for disposal occurring in more than one USEPA Region.</p>

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<p><b>T1.50.15.US.</b> PCB household waste must be disposed of according to specific parameters (40 CFR 761.63) [Added October 1998; Reviewed March 2000].</p>	<p>(NOTE: For information on the disposal of additional types of PCB wastes, see Appendix 11-3.)</p> <p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>Verify that PCB household waste is managed in a facility permitted, licensed, or registered by a state to manage municipal or industrial solid waste, or in a facility with an approval to dispose of PCB bulk product waste.</p> <p>(NOTE: PCB household waste managed according to these parameters is not subject to any other requirements under 40 CFR 761.)</p> <p>(NOTE: For information on the disposal of additional types of PCB wastes, see Appendix 11-3.)</p>
<p><b>T1.50.16.US.</b> The use of waste oil that contains any detectable concentration of PCB as a sealant, coating, or dust control agent is prohibited (40 CFR 761.20(d)) [Added October 2001].</p>	<p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>Verify that waste oil that contains any detectable concentration of PCB is not used as a sealant, coating, or dust control agent.</p> <p>(NOTE: Prohibited uses include, but are not limited to, road oiling, general dust control, use as a pesticide or herbicide carrier, and use as a rust preventative on pipes.)</p> <p>(NOTE: For information on the disposal of additional types of PCB wastes, see Appendix 11-3.)</p>
<p><b>T1.50.17.US.</b> Marketers and burners of used oil who market (process or distribute in commerce) for energy recovery, used oil containing any quantifiable level of PCBs must meet specific requirements (40 CFR 761.20(e)) [Added October 2001].</p>	<p>(NOTE: See the first NOTE in T1.10.2.US for information on who and what this checklist item applies to.)</p> <p>(NOTE: these are in addition to the requirements found in 40 CFR 279.)</p> <p>Verify that used oil containing any quantifiable level of PCBs (2 ppm) is marketed only to:</p> <ul style="list-style-type: none"> <li>– qualified incinerators as defined in 40 CFR 761.3</li> <li>– marketers who market off-specification used oil for energy recovery only to other marketers who have notified USEPA of their used oil management activities, and who have an USEPA identification number where an identification number is required by 40 CFR 279.73</li> <li>– burners identified in 40 CFR 279.61(a)(1) and (2).</li> </ul> <p>(NOTE: Only burners in the automotive industry may burn used oil generated from automotive sources in used oil-fired space heaters provided the provisions of 40 CFR 279.23 are met. The USEPA Regional Administrator may grant a variance for</p>

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	<p>a boiler that does not meet the 40 CFR 279.61(a)(1) and (2) criteria after considering the criteria listed in 40 CFR 260.32 (a) through (f).)</p> <p>(NOTE: Used oil to be burned for energy recovery is presumed to contain quantifiable levels (2 ppm) of PCB unless the marketer obtains analyses (testing) or other information that the used oil fuel does not contain quantifiable levels of PCBs.)</p> <p>Verify that the person who first claims that a used oil fuel does not contain quantifiable level (2 ppm) PCBs obtains analyses or other information to support that claim.</p> <p>(NOTE: Testing to determine the PCB concentration in used oil may be conducted on individual samples, or in accordance with the testing procedures described in 40 CFR 761.60(g)(2). However, for purposes of 40 CFR 761, if any PCBs at a concentration of 50 ppm or greater have been added to the container or equipment, then the total container contents must be considered as having a PCB concentration of 50 ppm or greater for purposes of complying with the disposal requirements of 40 CFR 761.)</p> <p>(NOTE: Other information documenting that the used oil fuel does not contain quantifiable levels (2 ppm) of PCBs may consist of either personal, special knowledge of the source and composition of the used oil, or a certification from the person generating the used oil claiming that the oil contains no detectable PCBs.)</p> <p>Verify that used oil containing any quantifiable levels of PCB is burned at an approved facility for energy recovery only when such facilities are operating at normal operating temperatures (this prohibits feeding these fuels during either startup or shutdown operations).</p> <p>Verify that before a burner accepts from a marketer the first shipment of used oil fuel containing detectable PCBs (2 ppm), the burner provides the marketer a one-time written and signed notice certifying that:</p> <ul style="list-style-type: none"> <li>– the burner has complied with any notification requirements applicable to “qualified incinerators” (40 CFR 761.3) or to “burners” regulated under 40 CFR 279, Subpart G</li> <li>– the burner will burn the used oil only in an approved combustion facility and identify the class of burner he qualifies.</li> </ul> <p>Verify that marketers who first claim that the used oil fuel contains no detectable PCBs retains copies of the analysis or other information documenting his claim, and a copy of each certification notice received or prepared relating to transactions involving PCB-containing used oil.</p> <p>Verify that burners maintain a copy of each certification notice that he sends to a marketer.</p>

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<p><b>T1.53</b></p> <p><b>PCB DECONTAMINATION</b></p> <p><b>T1.53.1.US.</b> Decontamination is required to be done to certain standards (40 CFR 761.79(a), 761.79(b), and 761.79(f)) [Added October 2001].</p>	<p>(NOTE: Decontamination in accordance with these standards does not require a disposal approval under 40 CFR 761, Subpart D. Materials from which PCBs have been removed by decontamination may be distributed in commerce. Materials from which PCBs have been removed by decontamination may be used or reused. Materials from which PCBs have been removed by decontamination, not including decontamination waste and residuals, are unregulated for disposal.)</p> <p>Verify that any person decontaminating porous surfaces other than concrete and non-porous surfaces covered with a porous surface, such as paint or coating on metal, obtains an alternative decontamination approval.</p> <p>Verify that the following standards are met when using chopping (including wire chopping), distilling, filtering, oil/water separation, spraying, soaking, wiping, stripping of insulation, scraping, scarification or the use of abrasives or solvents may to remove or separate PCBs from liquids, concrete, or non-porous surfaces:</p> <ul style="list-style-type: none"> <li>– for water containing PCBs: <ul style="list-style-type: none"> <li>– less than 200 micrograms/l (i.e., 200 ppb PCBs) for non-contact use in a closed system where there are no releases</li> <li>– for water discharged to a treatment works or to navigable waters, less than 3 micrograms/l (approximately less than 3 ppb) or a PCB discharge limit included in a permit issued under section 307(b) or 402 of the Clean Water Act</li> <li>– less than or equal to 0.5 micrograms/l (i.e., approximately less than or equal to 0.5 ppb PCBs) for unrestricted use</li> </ul> </li> <li>– for organic liquids and non-aqueous inorganic liquids containing PCBs, less than 2 mg/kg (i.e., 2 ppm PCBs)</li> <li>– for non-porous surfaces in contact with liquid and non-liquid PCBs: <ul style="list-style-type: none"> <li>– for unrestricted use: <ul style="list-style-type: none"> <li>– for non-porous surfaces previously in contact with liquid PCBs at any concentration, where no free-flowing liquids are currently present, less than or equal to 10 micrograms/100 cm<sup>2</sup> as measured by a standard wipe test at selected locations</li> <li>– for non-porous surfaces in contact with non-liquid PCBs (including non-porous surfaces covered with a porous surface, such as paint or coating on metal), cleaning to Visual Standard No. 2, Near-White Blast Cleaned Surface Finish, of the National Association of Corrosion Engineers (NACE). Compliance with standard No. 2 is verified by visually inspecting all cleaned areas</li> </ul> </li> <li>– for disposal in a smelter meeting specified standards under 40 CFR 761.72:</li> </ul> </li> </ul>

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<p><b>T1.53.2.US.</b> When using self-implementing decontamination procedures, specific requirements must be met (40 CFR 761.79(c) and 761.79(f)(2)) <b>[Added October 2001]</b>.</p>	<ul style="list-style-type: none"> <li>– for non-porous surfaces previously in contact with liquid PCBs at any concentration, where no free-flowing liquids are currently present, less than 100 micrograms/100 cm<sup>2</sup> as measured by a standard wipe test at selected locations</li> <li>– for non-porous surfaces in contact with non-liquid PCBs (including non-porous surfaces covered with a porous surface, such as paint or coating on metal), cleaning to Visual Standard No. 3, Commercial Blast Cleaned Surface Finish, of NACE. Compliance with standard No. 3 is verified by visually inspecting all cleaned areas</li> <li>– for concrete, less than or equal to 10 micrograms/100 cm<sup>2</sup> as measured by a standard wipe test if the decontamination procedure is started within 72 h of the initial spill of PCBs to the concrete or portion thereof being decontaminated.</li> </ul> <p>Verify that confirmatory sampling is done as follows:</p> <ul style="list-style-type: none"> <li>– for liquids, sample in accordance with 40 CFR 761.269 and 761.272</li> <li>– for non-porous surfaces and concrete described, sample in accordance with Subpart P of 40 CFR 761.</li> </ul> <p>Verify that a written record of sampling is established and maintained for 3 yr from the date of any decontamination.</p> <p>Verify that the record shows sampling locations and analytical results and is retained at the site of the decontamination or a copy of the record is made available to USEPA in a timely manner, if requested.</p> <p>Verify that recordkeeping requirements are met under 40 CFR 761.180(a) (see checklist item T1.15.1.US).</p> <p>(NOTE: Self-implementing decontamination procedures are available as an alternative to the measurement-based decontamination methods.)</p> <p>Verify that PCB Containers are decontaminated by flushing the internal surfaces of the container three times with a solvent containing less than 50 ppm PCBs and each rinse uses a volume of the flushing solvent equal to approximately 10 percent of the PCB Container capacity.</p> <p>Verify that movable equipment contaminated by PCBs, tools, and sampling equipment is decontaminated by:</p> <ul style="list-style-type: none"> <li>– swabbing surfaces that have contacted PCBs with a solvent</li> <li>– a double wash/rinse in accordance with 40 CFR 761.360 through 761.378</li> <li>– another applicable decontamination procedure.</li> </ul>

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	<p>Verify that a non-porous surface in contact with free-flowing mineral oil dielectric fluid (MODEF) at levels <math>\leq 10,000</math> ppm PCBs, decontaminates as follows:</p> <ul style="list-style-type: none"> <li>– drain the free-flowing MODEF and allow the residual surfaces to drain for an additional 15 h</li> <li>– dispose of drained MODEF in accordance with 40 CFR 761.79(g)</li> <li>– soak the surfaces to be decontaminated in a sufficient amount of clean (containing less than 2 ppm PCBs) performance-based organic decontamination fluid (PODF) such that there is a minimum of 800 ml of PODF for each 100 cm<sup>2</sup> of contaminated or potentially contaminated surface for at least 15 h at greater than or equal to 20 °C</li> <li>– drain the PODF from the surfaces</li> <li>– dispose of the drained PODF in accordance with 40 CFR 761.79(g).</li> </ul> <p>(NOTE: Approved PODFs include kerosene, diesel fuel, terpene hydrocarbons, and mixtures of terpene hydrocarbons and terpene alcohols.)</p> <p>Verify that, when decontaminating a non-porous surface in contact with free-flowing MODEF containing greater than 10,000 ppm PCB in MODEF or askarel PCB (up to 70 percent PCB in a mixture of trichlorobenzenes and tetrachlorobenzenes), the following is done:</p> <ul style="list-style-type: none"> <li>– drain the free-flowing MODEF or askarel and allow the residual surfaces to drain for an additional 15 h</li> <li>– dispose of drained MODEF or askarel in accordance with 40 CFR 761.79(g)</li> <li>– soak the surfaces to be decontaminated in a sufficient amount of clean PODF (containing less than 2 ppm PCBs) such that there is a minimum of 800 mL of PODF for each 100 cm<sup>2</sup> of contaminated or potentially contaminated surface for at least 15 h at greater than or equal to 20 °C</li> <li>– drain the PODF from the surfaces</li> <li>– dispose of the drained PODF in accordance with 40 CFR 761.79(g)</li> <li>– resoak the surfaces to be decontaminated in a sufficient amount of clean PODF (containing less than 2 ppm PCBs) such that there is a minimum of 800 mL of PODF for each 100 cm<sup>2</sup> of surface for at least 15 h at greater than or equal to 20 °C</li> <li>– drain the PODF from the surfaces</li> <li>– dispose of the drained PODF in accordance with 40 CFR 761.79(g).</li> </ul> <p>Verify that the decontamination of piping and air lines in an air compressor system is done as follows:</p> <ul style="list-style-type: none"> <li>– before decontamination proceeds, disconnect or bypass the air compressors and air dryers from the piping and air lines and decontaminate the air compressors and air dryers separately</li> <li>– dispose of filter media and desiccant in the air dryers based on their existing PCB concentration</li> </ul>

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<p><b>T1.53.3.US.</b> Decontamination solvents are required to meet specific criteria (40 CFR 761.79(d)) [Added October 2001].</p>	<ul style="list-style-type: none"> <li>– test the connecting line and appurtenances of the system to assure that there is no leakage by introducing air into the closed system at from 90 to 100 psi. (NOTE: Only if there is a pressure drop of less than 5 psi in 30 minutes may decontamination take place.)</li> <li>– when there is no leakage, fill the piping and air lines with clean (containing less than 2 ppm PCBs) solvent (NOTE: Solvents include PODF, aqueous potassium hydroxide at a pH between 9 and 12, or water containing 5 percent sodium hydroxide by weight)</li> <li>– circulate the solvent to achieve turbulent flow through the piping and air lines in the air compressor system until the total volume of solvent circulated equals 10 times the total volume of the particular article being decontaminated, then drain the solvent</li> <li>– calculate the total volume of solvent circulated by multiplying the pump rate by the time of pumping</li> <li>– refill the system with clean solvent and repeat the circulation and drain process.</li> </ul> <p>Verify that, when using thermal processes to decontaminate metal surfaces in contact with PCBs, one of the following options is used:</p> <ul style="list-style-type: none"> <li>– surfaces in contact with liquid and non-liquid PCBs at concentrations less than 500 ppm may be decontaminated in a scrap metal recovery oven or smelter for purposes of disposal</li> <li>– surfaces in contact with liquid or non-liquid PCBs at concentrations greater than or equal to 500 ppm may be smelted in a smelter, but must first be decontaminated to a surface concentration of 100-micrograms/100 cm<sup>2</sup>.</li> </ul> <p>Verify that a written record documenting compliance with the self-implementing decontamination procedures, as outlined above, is retained for 3 yr after completion of the decontamination procedures (e.g., video recordings, photographs).</p> <p>Verify that, unless otherwise provided, the solubility of PCBs in any solvent used for purposes of decontamination under this section is 5 percent or more by weight.</p> <p>(NOTE: The solvent may be reused for decontamination so long as its PCB concentration is less than 50 ppm.)</p> <p>(NOTE: Solvents may be tested and validated for performance-based decontamination of non-porous surfaces contaminated with MODEF or other PCB liquids, in accordance with the self-implementing procedures. Specific conditions for the performance-based testing from this validation are determined in the validation study.)</p>

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<p><b>T1.53.4.US.</b> Any person conducting decontamination activities shall limit their exposure and take necessary measures to protect against direct release of PCBs to the environment from the decontamination area (40 CFR 761.79(e)) [Added October 2001].</p> <p><b>T1.53.5.US.</b> Decontamination waste and residues shall be disposed of at their existing PCB concentration unless otherwise specified (40 CFR 761.79(g)) [Added October 2001].</p> <p><b>T1.53.6.US.</b> Any person wishing to decontaminate material or perform sampling using an alternate method is required to apply in writing to the USEPA Regional Administrator (40 CFR</p>	<p>Verify that individuals conducting decontamination activities take necessary measures to protect against direct release of PCBs to the environment from the decontamination area.</p> <p>Verify that individuals participating in decontamination activities wear or use protective clothing or equipment to protect against dermal contact or inhalation of PCBs or materials containing PCBs.</p> <p>(NOTE: Distillation bottoms or residues and filter media are regulated for disposal as PCB remediation waste.)</p> <p>Verify that PCBs physically separated from regulated waste during decontamination are disposed of at their original concentration.</p> <p>Verify that hydrocarbon solvent used or reused for decontamination that contains less than 50 ppm PCB is burned and marketed in accordance with the requirements for used oil in 40 CFR. 761.20(e), disposed of in accordance with 40 CFR. 761.60(a) (see checklist item T1.50.3.US) , technologies approved under 40 CFR 761.60(e), or decontaminated.</p> <p>Verify that chlorinated solvent at any PCB concentration used for decontamination are disposed of in an incinerator in accordance with 40 CFR 761.70 or decontaminated.</p> <p>Verify that solvents greater than or equal to 50 ppm other than those described above are disposed of in accordance with 40 CFR. 761.60(a) (see checklist item T1.50.3.US) or decontaminated.</p> <p>Verify that non-liquid cleaning materials and personal protective equipment waste at any concentration, including non-porous surfaces and other non-liquid materials such as rags, gloves, booties, other disposable personal protective equipment, and similar materials resulting from decontamination are disposed of in accordance with 40 CFR 761.61(a)(5)(v).</p> <p>Verify that any person wishing to decontaminate material using an alternate method applies in writing to the USEPA Regional Administrator in the USEPA Region where the activity would take place, or the Director of the Office of Solid Waste, for the decontamination activity occurring in more than one USEPA Region.</p> <p>Verify that each application describes the material to be decontaminated and the proposed decontamination method, and demonstrates that the proposed method is capable of decontaminating the material to the applicable level.</p>

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761.79(h)) [Added October 2001].	<p>(NOTE: 40 CFR 761.79(h)(1) and 40 CFR 761.79(h)(2) are slightly different from one another. 40 CFR 761.79(h)(1) applies to alternatives to 40 CFR 761.79(b) measurement-based methods. 40 CFR 761.79(h)(2) applies to performance-based methods.)</p> <p>Verify that any person wishing to sample decontaminated material in an alternate manner applies in writing to the USEPA Regional Administrator in the USEPA Region where the activity would take place, or the Director of the Office of Solid Waste for decontamination activity occurring in more than one USEPA Region.</p> <p>Verify that each application contains a description of the material to be decontaminated, the nature and PCB concentration of the contaminating material (if known), the decontamination method, the proposed sampling procedure, and a justification for how the proposed sampling is equivalent to or more comprehensive than the usual required sampling procedure.</p> <p>(NOTE: USEPA will issue a written decision on each application for risk-based decontamination or sampling.</p> <p>Verify that nobody conducts decontamination or sampling using an alternate methodology prior to obtaining written approval from USEPA.</p>

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<b>T1.55</b>  <b>PCB IMPORT/ EXPORT</b>  <b>T1.55.1.US.</b> The import of PCB Items for disposal is subject to specific restrictions (40 CFR 761.91 and 761.93) [Added March 1996; Revised July 2014; Citation Revised July 2018].  <b>T1.55.2.US.</b> Checklist item deleted [Added March 1996; Deleted July 2014].  <b>T1.55.3.US.</b> Checklist item deleted [Added March 1996; Deleted July 2014].  <b>T1.55.4.US.</b> Checklist item deleted [Added March 1996; Deleted July 2014].  <b>T1.55.5.US.</b> Checklist item deleted [Added March 1996; Deleted July 2014].  <b>T1.55.6.US.</b> Checklist item deleted [Added March 1996; Deleted July 2014].  <b>T1.55.7.US.</b> No person may export PCBs or PCB Items for disposal without an exemption (40 CFR 761.97) [Revised October 1998].	<p>Verify that PCBs and PCB Items are not imported for disposal without an exemption issued under the authority of TSCA section 6(e)(3).</p> <p>(NOTE: For the determination of concentration for this regulation, PCBs and PCB Items of unknown concentrations are required to be treated as if they contain 50 ppm or greater.)</p> <p>(NOTE: None of these provisions affect or limit the applicability of any requirement applicable to transporters of PCB waste under regulations issued by the U.S. Department of Transportation (DOT) and set forth at 49 CFR parts 171-180.)</p> <p>Checklist item deleted.</p> <p>Checklist item deleted.</p> <p>Checklist item deleted.</p> <p>Checklist item deleted.</p> <p>Checklist item deleted.</p> <p>(NOTE: These requirements apply to the shipment of PCB Items into and out of the United States for disposal.)</p> <p>Verify that the facility is not exporting PCBs or PCB Items for disposal without an exemption.</p> <p>(NOTE: PCBs and PCB Items at concentrations less than 50 ppm (or &lt; 10 µg PCB/100 cm<sup>2</sup> if no free-flowing liquids are present) may be exported for disposal.)</p>

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	(NOTE: In relation to export for disposal, PCBs and PCB Items of unknown concentrations are to be treated as if they contain $\leq$ 50 ppm.)

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<b>ASBESTOS MANAGEMENT</b>  <b>T2.1 All Facilities</b>  <b>T2.1.1.US.</b> The current status of any ongoing or unresolved consent orders, compliance agreements, notice of violations (NOVs), inter-agency agreements, or equivalent state enforcement actions is required to be examined (a finding under this checklist item will have the enforcement action/identifying information as the citation).  <b>T2.1.2.US.</b> Operations in which asbestos-containing materials are spray applied must meet certain operational requirements (40 CFR 61.146) [Added January 2004].	<p>Determine if noncompliance issues have been resolved by reviewing a copy of the previous report, consent orders, compliance agreements, NOVs, interagency agreements, or equivalent state enforcement actions.</p> <p>(NOTE: These requirements do not apply to the spray-on application of materials where the asbestos fibers in the materials are encapsulated with a bituminous or resinous binder during spraying and the materials are not friable after drying.)</p> <p>Verify that, for spray-on application on buildings, structures, pipes, and conduits, materials are not used which contain more than 1 percent asbestos.</p> <p>Verify that, for spray-on application of materials that contain more than 1 percent asbestos on equipment and machinery, the following are done:</p> <ul style="list-style-type: none"> <li>– the Administrator is notified at least 20 days before beginning the spraying operation</li> <li>– no visible emissions are discharged to the outside air from spray-on application of the asbestos-containing material or use the methods specified by 40 CFR 61.152 (see checklist item T2.5.9.US) to clean emissions containing particulate asbestos material before they escape to, or are vented to, the outside air.</li> </ul> <p>(NOTE: The methodology used to determine if a materials contains more than 1 percent asbestos is found in appendix E, subpart E, 40 CFR 763, section 1, Polarized Light Microscopy.)</p>



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<b>ASBESTOS MANAGEMENT</b>  <b>T2.2 Missing. Risk Management, and Positive Checklist Items</b>  <b>T2.2.1.US.</b> Facilities are required to comply with all applicable Federal regulatory requirements not contained in this checklist (a finding under this check list item will have the citation of the applied regulation as a basis of finding).  <b>T2.2.2.US.</b> Risk management techniques should be promoted in environmental efforts (MP) [Added April 2002].  <b>T2.2.3.US.</b> Facilities should go above and beyond statutory and regulatory compliance (MP) [Added April 2002].	<p>Determine if any new regulations have been issued since the finalization of TEAM.</p> <p>Determine if the facility has activities or facilities that are Federally regulated, but not addressed in this checklist.</p> <p>Verify that the facility is in compliance with all applicable and newly issued regulations.</p> <p>Determine if risk management techniques are promoted in environmental efforts.</p> <p>Determine if the facility has gone above and beyond simply complying with environmental requirements.</p>



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<p><b>T2.5</b></p> <p><b>RENOVATION AND DEMOLITION OF ASBESTOS-CONTAINING STRUCTURES</b></p> <p><b>T2.5.1.US.</b> Certain notification requirements must be met when demolishing structures (40 CFR 61.145(a)(1), 61.145(a)(3), and 61.145(b)) [Revised October 1998].</p> <p><b>T2.5.2.US.</b> Facilities demolishing a structure with RACM of less than 80 linear meters (260 linear feet) on pipes and less than 15 m<sup>2</sup> (160 ft<sup>2</sup>) on other facility components and less than 1 m<sup>3</sup> (35 ft<sup>3</sup>) off facility</p>	<p>(NOTE: This applies to facilities that demolish structures containing at least 80 linear meters (260 linear feet) of RACM on pipes, or at least 15 m<sup>2</sup> (160 ft<sup>2</sup>) of RACM on other components or at least 1 m<sup>3</sup> (35 ft<sup>3</sup>) off facility components, and facilities renovating structures and stripping or removing at least 80 linear meters (260 linear feet) of RACM on pipes, or at least 15 m<sup>2</sup> (160 ft<sup>2</sup>) of friable asbestos on other facility components and at least 1 m<sup>3</sup> (35 ft<sup>3</sup>) off facility components.)</p> <p>Determine if the USEPA or state (if the state has primacy) has been provided with written notice of intent to demolish or renovate at least 10 working days before demolition begins and as early as possible before renovation begins.</p> <p>Verify that the written notice contains the following information:</p> <ul style="list-style-type: none"> <li>– name of the owner/operator and telephone number</li> <li>– name and address of facility</li> <li>– description of facility being renovated or demolished (size, age, prior use)</li> <li>– estimates of approximate amount (linear feet or surface area) of asbestos present in the structure</li> <li>– location of the structure</li> <li>– scheduled start and completion dates of renovation or demolition</li> <li>– nature of planned demolition or renovation methods to be used</li> <li>– procedures for asbestos emissions control</li> <li>– name and location of waste disposal site where asbestos will be disposed</li> <li>– whether or not it is a revised notification</li> <li>– certification that at least one trained person will supervise.</li> </ul> <p>(NOTE: Notifications following these guidelines must also be submitted for facilities being demolished under an order of a state or local governmental agency because the facility is structurally unsound and in danger of imminent collapse.)</p> <p>Verify that a written notice of intent to demolish has been submitted to the administrator at least 10 working days before demolition and includes:</p> <ul style="list-style-type: none"> <li>– the name and address of owner and operator</li> <li>– description of the facility being demolished including the size, age, and prior use</li> <li>– estimate of the approximate amount of friable asbestos present</li> <li>– location of the facility</li> </ul>

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<p>components are required to submit notification of demolition (40 CFR 61.145(a)(2) and 61.145(b)) [Revised February 1995].</p> <p><b>T2.5.3.US.</b> Facilities that demolish or renovate structures must meet certain emission control requirements (40 CFR 61.145(a)(1) through 61.145(a)(3) and 61.145(c)(1) through 61.145(c)(3)) [Revised February 1995].</p>	<ul style="list-style-type: none"> <li>– schedule</li> <li>– procedures to be used.</li> </ul> <p>(NOTE: This requirements applies to facilities that demolish structures which contain at least 80 linear meters (260 linear feet) of RACM on pipes, or at least 15 m<sup>2</sup> (160 ft<sup>2</sup>) of RACM on other facility components and facilities renovating structures and stripping or removing at least 80 linear meters (260 linear feet) of friable asbestos on pipes, or at least 15 m<sup>2</sup> (160 ft<sup>2</sup>) of friable asbestos on other facility components or 1 m<sup>3</sup> (35 ft<sup>3</sup>) or more off facility components.)</p> <p>Verify that all RACM is removed from facilities being demolished or renovated before any wrecking or dismantling unless:</p> <ul style="list-style-type: none"> <li>– it is a Category I nonfriable ACM that is not in poor condition and is not friable</li> <li>– the RACM is on a facility component that is encased in concrete or other similar material and is adequately wetted whenever exposed during demolition</li> <li>– it was not accessible for testing and is not discovered until after demolition began and, as a result of demolition, the materials cannot be safely removed</li> <li>– it is Category II nonfriable ACM and the probability is low that the materials will become crumbled, pulverized, or reduced to powder, during demolition.</li> </ul> <p>Verify that, when a facility component, that contains or is covered or coated with RACM, is being taken out of the facility in units or sections:</p> <ul style="list-style-type: none"> <li>– they are adequately wetted when RACM is exposed during cutting and disjoining operations</li> <li>– the units or sections are carefully lowered to ground level.</li> </ul> <p>Verify that RACM is adequately wetted when it is being stripped from facility components while it remains in place in the facility except in renovation operation where wetting would unavoidably damage equipment and the facility:</p> <ul style="list-style-type: none"> <li>– requests a determination from the administrator as to whether unavoidable damage would occur and supply administrator with the information needed to make the decision</li> <li>– uses one of the following emission control methods: <ul style="list-style-type: none"> <li>– a local exhaust ventilation and collection system</li> <li>– a glove bag system</li> <li>– leaktight wrapping to contain all RACM.</li> </ul> </li> </ul>

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<p><b>T2.5.4.US.</b> Emissions from facility components that have been taken out in units or in sections from facilities being demolished under state or local orders or facilities being demolished or renovated with at least 80 linear meters (260 linear feet) of RACM on pipes, or at least 15 m<sup>2</sup> (160 ft<sup>2</sup>) of RACM on other facility components or at least 1 m<sup>3</sup> (35 ft<sup>3</sup>) off facility components must be controlled (40 CFR 61.145(c)(4) and 61.145(c)(5)).</p>	<p>Verify that facility components are either stripped or contained in leaktight wrap pings.</p> <p>Verify that facility components removed from facility as units or in sections for stripping meet the following:</p> <ul style="list-style-type: none"> <li>– RACM is adequately wet during stripping operations</li> <li>– a local exhaust ventilation and collection system designed and operated to capture emissions is in use</li> <li>– the exhaust system exhibits no visible emissions to outside air.</li> </ul> <p>Verify that, when wetting operations are stopped because of the temperature, a record of the temperature is made and kept on file for 2 yr.</p> <p>(NOTE: For large facility components such as reactor vessels, large tanks, and steam generators, but not beams, stripping is not required if the following are met:</p> <ul style="list-style-type: none"> <li>– the component is removed, transported, stored, disposed of, or reused without disturbing the RACM</li> <li>– the component is encased in leaktight wrapping and labeled.)</li> </ul>
<p><b>T2.5.5.US.</b> Emissions from RACM that has been removed or stripped from facilities being demolished under state or local orders or facilities being demolished or renovated with at least 80 linear meters (260 linear feet) of RACM on pipes, or at least 15 m<sup>2</sup> (160 ft<sup>2</sup>) of RACM on other facility components or 1 m<sup>3</sup> (35 ft<sup>3</sup>) or greater off facility components must be controlled (40 CFR 61.145(c)(6)).</p>	<p>Verify that asbestos materials that have been removed or stripped meet the following:</p> <ul style="list-style-type: none"> <li>– materials are adequately wet, and remain wet until collected for disposal</li> <li>– materials are carefully lowered to the ground or lower floor (not dropped or thrown)</li> <li>– materials not removed as units or in sections are transported to the ground via dust-tight chutes or containers if they are removed more than 50 ft above ground level.</li> </ul>
<p><b>T2.5.6.US.</b> When the temperature at the point of wetting is below 0 degrees C (32 degrees F) and facilities are being demolished under state or local orders or facilities with at least 80 linear meters (260 linear feet) of RACM on pipes, or at least 15</p>	<p>Verify that facility components coated or covered with RACM materials are removed as units or in sections to the maximum extent possible.</p> <p>(NOTE: Wetting is not required at this temperature.)</p> <p>Verify that, when wetting operations are stopped because of freezing temperatures, the temperature is recorded in the areas containing the facility components at the beginning, middle, and end of each workday.</p>

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<p>m<sup>2</sup> (160 ft<sup>2</sup>) of RACM other facility components or at least 1 m<sup>3</sup> (35 ft<sup>3</sup>) off facility components are being demolished or renovated, specific exemptions and requirements apply (40 CFR 61.145(c)(7)).</p> <p><b>T2.5.7.US.</b> Facilities being demolished under state or local governmental agency orders shall have the portion of the facility containing friable asbestos adequately wetted during the wrecking operation (40 CFR 61.145(c)(9)).</p> <p><b>T2.5.8.US.</b> When a structure is demolished by intentional burning, all RACM, including Category I and II nonfriable ACM, must be removed (40 CFR 61.145(c)(10)).</p> <p><b>T2.5.9.US.</b> When air cleaning is used as a method for controlling emissions of asbestos to the outside air, the fabric filter collection systems are required to meet specific standards unless alternative equipment is authorized for use by the USEPA (40 CFR 61.152).</p>	<p>Verify that the temperature records are kept for 2 yr.</p> <p>Verify that in facilities being demolished under state or local governmental agency orders the portion of the facility that contains friable asbestos materials is adequately wetted during the wrecking operation.</p> <p>Verify that complex removal is done before burning.</p> <p>Verify that fabric filter collection systems meet the following requirements:</p> <ul style="list-style-type: none"> <li>– airflow permeability does not exceed 9 m<sup>3</sup>/min/m<sup>2</sup> (30 ft<sup>3</sup>/min/ft<sup>2</sup>) for woven fabrics or 11 m<sup>3</sup>/min/m<sup>2</sup> (35 ft<sup>3</sup>/min/ft<sup>2</sup>) for felted fabrics</li> <li>– the felted fabric weighs at least 475 g/m<sup>2</sup> (14 oz/yd<sup>2</sup>) and is at least 1.6 mm (1/16 in.) thick throughout</li> <li>– the use of synthetic fabrics containing fill yarn other than that which is spun is avoided.</li> </ul>

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<p><b>T2.10</b></p> <p><b>ASBESTOS PERSONNEL TRAINING</b></p> <p><b>T2.10.1.US.</b> No RACM shall be stripped, removed, or otherwise handled or disturbed unless at least one onsite representative trained in asbestos removal is present (40 CFR 61.145(c)(8)) [Revised June 1995].</p>	<p>Verify that a trained person is present.</p> <p>Verify that the individual receives refresher training every 2 yr.</p> <p>(NOTE: This applies to facilities that demolish structures containing at least 80 linear meters (260 linear feet) of RACM on pipes, or at least 15 m<sup>2</sup> (160 ft<sup>2</sup>) of RACM on other components or at least 1 m<sup>3</sup> (35 ft<sup>3</sup>) off facility components, and facilities renovating structures and stripping or removing at least 80 linear meters (260 linear feet) of RACM on pipes, or at least 15 m<sup>2</sup> (160 ft<sup>2</sup>) of friable asbestos on other facility components and at least 1 m<sup>3</sup> (35 ft<sup>3</sup>) off facility components.)</p>



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<p><b>T2.15</b></p> <p><b>ASBESTOS DISPOSAL</b></p> <p><b>T2.15.1.US.</b> Asbestos-containing waste materials are required to be disposed of properly (40 CFR 61.150(a) through 61.150(b)) <b>[Revised October 2003]</b>.</p>	<p>Verify that each owner or operator of any source covered under the provisions of 40 CFR 61.145 (see checklist items T2.5.1.US through T2.5.4.US and T2.5.6.US through T2.5.8.US) does not discharge any visible emissions to the outside air during the collection, processing (including incineration), packaging, or transporting of any asbestos-containing waste material generated by the source, or uses one of the following emission control and waste treatment methods:</p> <ul style="list-style-type: none"> <li>– adequately wet asbestos-containing waste material as follows: <ul style="list-style-type: none"> <li>– mix control device asbestos waste to form a slurry; adequately wet other asbestos-containing waste material</li> <li>– discharge no visible emissions to the outside air from collection, mixing, wetting, and handling operations, or use the methods specified by 40 CFR 61.152 (see checklist item T2.5.9.US) to clean emissions containing particulate asbestos material before they escape to, or are vented to, the outside air</li> <li>– after wetting, seal all asbestos-containing waste material in leak-tight containers while wet; or, for materials that will not fit into containers without additional breaking, put materials into leak-tight wrapping</li> <li>– for asbestos-containing waste in leak-tight containers or leak-tight wrapping, label the containers or wrapped materials using the following warning labels that are printed in letters of sufficient size and contrast so as to be readily visible and legible <div style="text-align: center;"> <p><b>DANGER</b></p> <p><b>CONTAINS ASBESTOS FIBERS</b></p> <p><b>AVOID CREATING DUST</b></p> <p><b>CANCER AND LUNG DISEASE HAZARD</b></p> </div> </li> </ul> </li> <li>– process asbestos-containing waste material to be transported off the facility site, label containers or wrapped materials with the name of the waste generator and the location at which the waste was generated.</li> <li>– process asbestos-containing waste material into nonfriable forms as follows: <ul style="list-style-type: none"> <li>– form all asbestos-containing waste material into nonfriable pellets or other shapes</li> <li>– discharge no visible emissions to the outside air from collection and processing operations, including incineration, or use the method specified by 40 CFR 61.152 (see checklist item T2.5.9.US) to clean emissions containing particulate asbestos material before they escape to, or are vented to, the outside air</li> <li>– for facilities demolished where the RACM is not removed prior to demolition or for facilities demolished according to 40 CFR 61.145(c)(9)</li> </ul> </li> </ul>

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<p><b>T2.15.2.US.</b> Asbestos-containing waste must be transported according to specific parameters (40 CFR 61.150(c) through 61.150(e)).</p> <p><b>T2.15.3.US.</b> Active waste disposal sites where ACM is being disposed are required to meet specific standards (40 CFR 61.154(a) through 61.154(e) and 61.154(i) through 61.154(j)) [Revised July 2001].</p>	<p>(see checklist item T2.5.7.US), adequately wet asbestos-containing waste material at all times after demolition and keep wet during handling and loading for transport to a disposal site (NOTE: Asbestos-containing waste materials covered by this paragraph do not have to be sealed in leak-tight containers or wrapping but may be transported and disposed of in bulk)</p> <ul style="list-style-type: none"> <li>– use an alternative emission control and waste treatment method that has received prior approval by the Administrator.</li> </ul> <p>(NOTE: As applied to demolition and renovation, the above requirements do not apply to Category I nonfriable ACM waste and Category II nonfriable ACM waste that did not become crumbled, pulverized, or reduced to powder.)</p> <p>Verify that all asbestos-containing waste material is deposited as soon as is practical by the waste generator at one of the following:</p> <ul style="list-style-type: none"> <li>– a waste disposal site operated in accordance with the provisions of 40 CFR 61.154 (see checklist items T2.15.3.US and T2.15.4.US)</li> <li>– an USEPA-approved site that converts RACM and asbestos-containing waste material into nonasbestos (asbestos-free) material.</li> </ul> <p>(NOTE: The requirements for depositing asbestos-containing waste material as soon as possible do not apply to Category I nonfriable ACM that is not RACM.)</p> <p>Verify that vehicles used to transport asbestos-containing waste material are marked indicating an asbestos dust hazard.</p> <p>Verify that, for all ACM transported off the facility, waste shipment records are maintained for at least 2 yr and a copy is provided to the waste disposal site.</p> <p>Verify that a procedure is in place to notify the local, state, or USEPA regional office if a copy of the waste shipment record is not returned to the waste generator within 35 days after the waste was accepted by the initial transporter.</p> <p>Determine if the facility is operating a landfill where asbestos is being disposed.</p> <p>Verify that there are no visible emissions from active asbestos-containing waste disposal sites, or that one of the following is done:</p> <ul style="list-style-type: none"> <li>– at the end of each operating day, or once in a 24 h period, the waste material is covered with either at least 15 cm (6 in.) of compacted nonasbestos-containing material</li> <li>– a resinous or petroleum based dust suppression agent is applied, waste crank case oil is not suitable for this purpose</li> <li>– an alternative method of control approved by the USEPA is used.</li> </ul>

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<p><b>T2.15.4.US.</b> Inactive waste disposal sites are required to meet specific standards (40 CFR 61.154(f) through 61.154(h) and 61.151).</p>	<p>Verify that unless a natural barrier exists deterring access by the general public, either the waste is properly covered by non-ACM daily or proper warning signs and fences are installed and maintained as follows:</p> <ul style="list-style-type: none"> <li>– warning signs are displayed at all entrances at intervals of 100 m (330 ft) or less along the property line of the site or the perimeter of the section of the site where ACM is deposited and are: <ul style="list-style-type: none"> <li>– posted in such a manner and location that a person can easily read the legend</li> <li>– conform to the requirements of 51 cm x 36 cm (20" x 14") upright format</li> <li>– display the following legend in the lower panel with letter sizes and styles of a visibility at least equal to those specified:</li> </ul> </li> </ul> <p style="margin-left: 40px;">Asbestos Waste Disposal Site (2.5 cm (1 inch) Sans Serif, Gothic or Block) Do Not Create Dust (1.9 cm (3/4 inch) Sans Serif, Gothic or Block.) Breathing Asbestos is Hazardous to Your Health (14 Point Gothic).</p> <ul style="list-style-type: none"> <li>– spacing between any two lines is at least equal to the height of the upper of the two lines.</li> <li>– the area is adequately fenced.</li> </ul> <p>Verify that copies of waste shipment records are maintained for 2 yr.</p> <p>Verify that until closure, a record is kept of the location, depth, and area of asbestos-containing waste on a map or diagram of the disposal area.</p> <p>Verify that upon closure, the administration receives a copy of all records.</p> <p>Verify that a procedure is in place to notify the administration in at least 45 days prior to excavating or disturbing deposited asbestos-containing waste material.</p> <p>Verify that inactive waste disposal sites meet one of the following:</p> <ul style="list-style-type: none"> <li>– no visible emissions are discharged</li> <li>– asbestos-containing waste material is covered with at least 15 cm (6 in.) of compacted non-ACM, and a vegetation cover is grown and maintained. (In desert areas where vegetation is difficult to maintain at least 8 cm (3 in.) additional of well-graded nonasbestos-containing crushed rock may be used instead.)</li> <li>– cover the asbestos-containing waste material with at least 60 cm (2 ft) of non-ACM and maintain the cover to prevent exposure.</li> </ul> <p>Verify that unless a natural barrier exists, warning signs and a fence are installed to deter public access.</p>

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	<p>Verify that warning signs are displayed at all entrances and at intervals of 100 m (328 ft) or less and are easily read indicating the area is an asbestos waste disposal site.</p> <p>Verify that a procedure is in place to notify the administrator in writing at least 45 days prior to excavating or disturbing any asbestos-contaminated waste material at an inactive waste disposal site.</p>

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<p><b>T2.20</b></p> <p><b>ASBESTOS IN SCHOOLS</b></p> <p><b>T2.20.1.US.</b> Each building that is leased, owned, or otherwise used as a school building will be inspected for asbestos and a report of the inspection generated (40 CFR 763.85) [Revised October 2001].</p>	<p>(NOTE: Any building that is leased or acquired on or after 12 October 1988, that is to be used as a school building must be inspected prior to use as a school building. If emergency use of a building as a school building is required, inspection will occur within 30 days.)</p> <p>Verify that all school buildings have been inspected for friable and nonfriable ACBM, including sampling, as required by an accredited inspector.</p> <p>Verify that, for each area of a school building, each person performing an inspection:</p> <ul style="list-style-type: none"> <li>– visually inspects the area to identify the locations of all suspected ACBM</li> <li>– touches all suspected ACBM to determine whether they are friable</li> <li>– identifies all homogeneous areas of friable suspected ACBM and all homogeneous areas of nonfriable suspected ACBM</li> <li>– assume that some or all of the homogeneous areas are ACM, and, for each homogeneous area that is not assumed to be ACM, collects and submits for analysis bulk samples</li> <li>– assesses friable material in areas where samples are collected, friable material in areas that are assumed to be ACBM, and friable ACBM identified during a previous inspection</li> <li>– record the following and submit a copy of such record for inclusion in the management plan within 30 days of the inspection: <ul style="list-style-type: none"> <li>– an inspection report with the date of the inspection signed by each accredited person making the inspection, state of accreditation, and if applicable, his or her accreditation number</li> <li>– an inventory of the locations of the homogeneous areas where samples are collected, exact location where each bulk sample is collected, dates that samples are collected, homogeneous areas where friable suspected ACBM is assumed to be ACM, and homogeneous areas where nonfriable suspected ACBM is assumed to be ACM</li> <li>– a description of the manner used to determine sampling locations, the name and signature of each accredited inspector who collected the samples, state of accreditation, and, if applicable, his or her accreditation number</li> <li>– a list of whether the homogeneous areas identified are surfacing material, thermal system insulation, or miscellaneous material</li> <li>– assessments made of friable material, the name and signature of each accredited inspector making the assessment, state of accreditation, and if applicable, his or her accreditation number.</li> </ul> </li> </ul>

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<p><b>T2.20.2.US.</b> Each inspection or reinspection is required to result in a written assessment of all friable known or assumed ACBM in the school</p>	<p>Verify that, in each school building, reinspection of all friable and nonfriable known or assumed ACBM is done every 3 yr by an accredited inspector after a management plan is in place.</p> <p>Verify that, for each area of a school building, each person performing a reinspection:</p> <ul style="list-style-type: none"> <li>– visually reinspects, and reassesses, the condition of all friable known or assumed ACBM</li> <li>– visually inspects material that was previously considered nonfriable ACBM and touches the material to determine whether it has become friable since the last inspection or reinspection</li> <li>– identifies any homogeneous areas with material that has become friable since the last inspection or reinspection</li> <li>– for each homogeneous area of newly friable material that is already assumed to be ACBM, bulk samples are collected and submitted for analysis</li> <li>– assesses the condition of the newly friable material in areas where samples are collected, and newly friable materials in areas that are assumed to be ACBM</li> <li>– reassesses the condition of friable known or assumed ACBM previously identified</li> <li>– records the following and submits a copy for inclusion in the management plan within 30 days of the reinspection: <ul style="list-style-type: none"> <li>– the date of the reinspection, the name and signature of the person making the reinspection, state of accreditation, and if applicable, his or her accreditation number, and any changes in the condition of known or assumed ACBM</li> <li>– the exact locations where samples are collected during the reinspection, a description of the manner used to determine sampling locations, the name and signature of each accredited inspector who collected the samples, state of accreditation, and, if applicable, his or her accreditation number</li> <li>– any assessments or reassessments made of friable material, the name and signature of the accredited inspector making the assessments, state of accreditation, and if applicable, his or her accreditation number.</li> </ul> </li> </ul> <p>(NOTE: Thermal system insulation that has retained its structural integrity and that has an undamaged protective jacket or wrap that prevents fiber release is treated as nonfriable and therefore is subject only to periodic surveillance and preventive measures as necessary.)</p> <p>Verify that an accredited inspector provides a written assessment of all friable known or assumed ACBM in the school building.</p> <p>Verify that each accredited inspector providing a written assessment signs and dates the assessment, provides their state of accreditation, and if applicable, accreditation</p>

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<p>building (40 CFR 763.88) [Revised October 2001].</p>	<p>number, and submits a copy of the assessment for inclusion in the management plan within 30 days of the assessment.</p> <p>Verify that the assessment classifies the ACBM and suspected ACBM assumed to be ACM into one of the following categories:</p> <ul style="list-style-type: none"> <li>– damaged or significantly damaged thermal system insulation ACM</li> <li>– damaged friable surfacing ACM</li> <li>– significantly damaged friable surfacing ACM</li> <li>– damaged or significantly damaged friable miscellaneous ACM</li> <li>– ACBM with potential for damage</li> <li>– ACBM with potential for significant damage</li> <li>– any remaining friable ACBM or friable suspected ACBM.</li> </ul> <p>(NOTE: The assessment may include the following considerations:</p> <ul style="list-style-type: none"> <li>– location and the amount of the material, both in total quantity and as a percentage of the functional space</li> <li>– condition of the material, specifying: <ul style="list-style-type: none"> <li>– type of damage or significant damage (e.g., flaking, blistering, water damage, or other signs of physical damage)</li> <li>– severity of damage (e.g., major flaking, severely torn jackets, as opposed to occasional flaking, minor tears to jackets)</li> <li>– extent or spread of damage over large areas or large percentages of the homogeneous area</li> </ul> </li> <li>– whether the material is accessible</li> <li>– the material's potential for disturbance</li> <li>– known or suspected causes of damage or significant damage (e.g., air erosion, vandalism, vibration, water)</li> <li>– preventive measures that might eliminate the reasonable likelihood of undamaged ACM from becoming significantly damaged.)</li> </ul> <p>(NOTE: The local education agency shall select a person accredited to develop management plans to review the results of each inspection, reinspection, and assessment for the school building and to conduct any other necessary activities in order to recommend in writing to the local education agency appropriate response actions. The accredited person shall sign and date the recommendation, provide his or her state of accreditation, and, if applicable, provide his or her accreditation number, and submit a copy for inclusion in the management plan.)</p>
<p><b>T2.20.3.US.</b> An asbestos management plan is required for each school building and submitted to the agency designated by the governor of</p>	<p>Verify that asbestos management plans have been submitted to an agency designated by the governor of the state in which the local education agency is located, and that they include all buildings that the local education agency leases, owns or otherwise uses as school buildings prior to their use as school buildings.</p>

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<p>the state (40 CFR 763.93) [Revised October 2001].</p>	<p>(NOTE: The plan may be submitted in stages that cover a portion of the school buildings under the authority of the local education agency.)</p> <p>Verify that the plan is kept current and up-to-date with ongoing operational and maintenance, periodic surveillance, inspection, reinspection and response action activities.</p> <p>Verify that the plan was developed by an accredited management planner and includes:</p> <ul style="list-style-type: none"> <li>– a list of the name and address of each school building and whether the building contains friable ACBM, nonfriable ACBM, and friable and nonfriable suspected ACBM assumed to be ACM</li> <li>– for each inspection done before 14 December 1987: <ul style="list-style-type: none"> <li>– date of the inspection</li> <li>– a blueprint, diagram or written description of each school building that identifies clearly each location and approximate square or linear footage of any homogeneous or sampling area where material was sampled for ACM, and, if possible, the exact locations where bulk samples were collected, and the dates of collection</li> <li>– a copy of the analyses of any bulk samples, dates of analyses, and a copy of any other laboratory reports pertaining to analyses</li> <li>– a description of any response actions or preventive measures taken to reduce asbestos exposure, including if possible, the names and addresses of all contractors involved, start and completion dates of the work, and results of any air samples analyzed during and upon completion of the work</li> <li>– descriptions of any assessments required to be made under 40 CFR 763.88, of material that was identified before 14 December 1987, as friable ACBM or friable suspected ACBM assumed to be ACM, and the name and signature, state of accreditation, and if applicable, accreditation number of each accredited person making the assessments</li> </ul> </li> <li>– for each inspection and reinspection: <ul style="list-style-type: none"> <li>– the date of the inspection or reinspection and the name and signature, state of accreditation and, if applicable, the accreditation number of each accredited inspector performing the inspection or reinspection</li> <li>– a blueprint, diagram, or written description of each school building that identifies clearly each location and approximate square or linear footage of homogeneous areas where material was sampled for ACM, the exact location where each bulk sample was collected, date of collection, homogeneous areas where friable suspected ACBM is assumed to be ACM, and where nonfriable suspected ACBM is assumed to be ACM</li> <li>– a description of the manner used to determine sampling locations, and the name and signature of each accredited inspector collecting samples, the state of accreditation, and if applicable, his or her accreditation number</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– a copy of the analyses of any bulk samples collected and analyzed, the name and address of any laboratory that analyzed bulk samples, a statement that the laboratory meets applicable requirements, the date of analysis, and the name and signature of the person performing the analysis</li> <li>– a description of assessments of all ACBM and suspected ACBM assumed to be ACM, and the name, signature, state of accreditation, and if applicable, accreditation number of each accredited person making the assessments.</li> <li>– the name, address, and telephone number of the person designated to ensure that the duties of the local education agency are carried out, and the course name, and dates and hours of training taken by that person to carry out the duties</li> <li>– the recommendations made to the local education agency regarding response actions, the name, signature, state of accreditation of each person making the recommendations, and if applicable, his or her accreditation number</li> <li>– a detailed description of preventive measures and response actions to be taken, including methods to be used, for any friable ACBM, the locations where such measures and action will be taken, reasons for selecting the response action or preventive measure, and a schedule for beginning and completing each preventive measure and response action.</li> <li>– with respect to the person or persons who inspected for ACBM and who will design or carry out response actions, except for operations and maintenance, with respect to the ACBM, one of the following statements: <ul style="list-style-type: none"> <li>– if the state has adopted a contractor accreditation program under section 206(b) of Title II of TSCA, a statement that the person(s) is accredited under such plan</li> <li>– a statement that the local education agency used (or will use) persons who have been accredited by another state which has adopted a contractor accreditation plan under section 206(b) of Title II of TSCA or is accredited by an USEPA-approved course under section 206(c) of Title II of TSCA.</li> </ul> </li> <li>– a detailed description in the form of a blueprint, diagrams, or in writing of any ACBM or suspected ACBM assumed to be ACM that remains in the school once response actions are undertaken. This description is updated as response actions are completed.</li> <li>– a plan for reinspection, a plan for operations and maintenance activities, and a plan for periodic surveillance, a description of the recommendation made by the management planner regarding additional cleaning as part of an operations and maintenance program, and the response of the local education agency to that recommendation</li> <li>– a description of steps taken to inform workers and building occupants, or their legal guardians, about inspections, reinspections, response actions, and post-response action activities, including periodic reinspection and surveillance activities that are planned or in progress</li> </ul>

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	<ul style="list-style-type: none"> <li>– an evaluation of the resources needed to complete response actions successfully and carry out reinspection, operations and maintenance activities, periodic surveillance and training</li> <li>– with respect to each consultant who contributed to the management plan, the name of the consultant and one of the following statements:               <ul style="list-style-type: none"> <li>– if the state has adopted a contractor accreditation plan under section 206(b) of Title II of TSCA, a statement that the consultant is accredited under such plan</li> <li>– a statement that the contractor is accredited by another state which has adopted a contractor accreditation plan under section 206(b) of Title II of TSCA, or is accredited by an USEPA-approved course developed under section 206(c) of Title II of TSCA.</li> </ul> </li> </ul> <p>(NOTE: A local education agency may require each management plan to contain a statement signed by an accredited management plan developer that such person has prepared or assisted in the preparation of such plan or has reviewed such plan, and that such plan is in compliance. Such statement may not be signed by a person who, in addition to preparing or assisting in preparing the management plan, also implements (or will implement) the management plan.)</p> <p>Verify that the management plans are available, without cost or restriction, for inspection by representatives of USEPA and the state, the public, including teachers, other school personnel and their representatives, and parents.</p> <p>Verify that each local education agency maintains in its administrative office a complete, updated copy of a management plan for each school under its administrative control or direction. The management plans shall be available, during normal business hours, without cost or restriction, for inspection by representatives of USEPA and the state, the public, including teachers, other school personnel and their representatives, and parents.</p> <p>(NOTE: The local education agency may charge a reasonable cost to make copies of management plans. A management plan must be available for inspection without cost or restriction to workers before work begins in an area of the school building.).</p> <p>(NOTE: The local education agency shall notify, in writing, any relevant parent, teacher or employee organizations, of the availability of the plans and shall include in the plans: a description of the steps taken to notify such organizations and dated copies of the notifications.)</p> <p>Verify that each school maintains in its administrative office a complete, updated copy of the management plan for that school.</p> <p>Verify that each management plan contains a true and correct statement, signed by the individual designated by the local education agency, which certifies that the general, local education agency responsibilities have been met or will be met.</p>

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<p><b>T2.20.4.US.</b> Response actions are required to be selected and implemented in a timely manner and according to specific guidelines (40 CFR 763.90) [Revised October 2001].</p>	<p>Verify that, if damaged or significantly damaged thermal system insulation ACM is present in the building, the local education agency will:</p> <ul style="list-style-type: none"> <li>– at least repair the damaged area</li> <li>– remove the damaged material if it is not feasible, due to technological difficulties, to repair the damage</li> <li>– maintain all thermal system insulation ACM and its coverings in an intact state and undamaged condition.</li> </ul> <p>Verify that, if damaged friable surfacing ACM or damaged friable miscellaneous ACM is present, the local education agency selects from the following response actions:</p> <ul style="list-style-type: none"> <li>– encapsulation</li> <li>– enclosure</li> <li>– removal</li> <li>– repair.</li> </ul> <p>Verify that, if significantly damaged friable surfacing ACM or significantly damaged friable miscellaneous ACM is present in a building, the local education agency:</p> <ul style="list-style-type: none"> <li>– immediately isolates the functional space and restricts access unless isolation is not needed to protect human health and the environment</li> <li>– removes the material in the functional space or, depending on whether enclosure or encapsulation is sufficient to protect human health and the environment, enclose or encapsulate.</li> </ul> <p>Verify that, if any friable surfacing ACM, thermal system insulation ACM, or friable miscellaneous ACM that has potential for damage is present in the building, an appropriate operations and maintenance (O&amp;M) program is implemented.</p> <p>Verify that, if any friable surfacing ACM, thermal insulation ACM, or friable miscellaneous ACM that has potential for significant damage is present, the local education agency:</p> <ul style="list-style-type: none"> <li>– implements an appropriate O&amp;M program</li> <li>– institutes preventative measures to eliminate the reasonable likelihood that the ACM or its covering will become significantly damaged, deteriorated, or delaminated</li> <li>– removes the material as soon as possible if appropriate preventative measures cannot be effectively implemented and isolates the area and restricts access is necessary to avoid an imminent and substantial endangerment to human health and the environment, unless other response actions are determined to protect human health or the environment.</li> </ul>

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<p><b>T2.20.5.US.</b> An accredited person must be designated by the local education agency to perform specific tasks and functions (40 CFR 763.84(g) and 763.88(d)) <b>[Reviewed March 2000]</b>.</p> <p><b>T2.20.6.US.</b> An operations, maintenance and repair program is required to be developed whenever any friable ACBM is present or assumed to be present in a building that is leased, owned, or otherwise used as a school building (40 CFR 763.91(a) through 763.91(e)) <b>[Revised January 2001]</b>.</p>	<p>Verify that response actions including removal, encapsulation, enclosure, or repair, other than small-scale, short-duration repairs, are designed and conducted by persons accredited to design and conduct response actions.</p> <p>Verify that, at the conclusion of any action to remove, encapsulate, or enclose ACBM or material assumed to be ACBM, a person designated by the local education agency visually inspects each functional space where the action was conducted to determine whether the action has been properly completed.</p> <p>Verify that the person designated by the local education agency collects air samples using aggressive sampling as described in Appendix A of 40 CFR 763, Subpart E to monitor air for clearance after each removal, encapsulation, and enclosure project involving ACBM, except for projects that are of small-scale, short-duration.</p> <p>Verify that the local education agency arranges for air samples to be analyzed for asbestos using laboratories accredited by the National Institute of Standards and Technology (NIST) or, under circumstances described in 40 CFR 763.80 through 763.98, laboratories enrolled in the American Industrial Hygiene Association Proficiency Analytical Testing Program for phase contrast microscopy (PCM).</p> <p>Verify that the person designated to ensure that requirements concerning asbestos in school are implemented correctly is trained in the following:</p> <ul style="list-style-type: none"> <li>– health effects of asbestos</li> <li>– detection, identification, and assessment of ACM</li> <li>– options for controlling ACM</li> <li>– asbestos management programs</li> <li>– relevant state and federal regulations.</li> </ul> <p>(NOTE: Any material identified as nonfriable ACBM or nonfriable assumed ACBM must be treated as friable ACBM when the material is about to become friable as a result of activities performed in the school building.)</p> <p>Verify that local education agencies comply with either the OSHA Asbestos Construction Standard at 29 CFR 1926.1101, or the Asbestos Worker Protection Rule at 40 CFR 763.120, whichever is applicable (see text of regulations).</p> <p>Verify that, unless the building was cleaned using equivalent methods within the previous 6 mo, all areas of a school building where friable ACBM, damaged or significantly damaged thermal system insulation ACM, or friable suspected ACBM assumed to be ACM are present was cleaned at least once after the completion of the inspection required by 40 CFR 763.85(a) (see checklist item T2.20.1.US) and</p>

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<p><b>T2.20.7.US.</b> Warning labels must be attached immediately adjacent to any friable and nonfriable ACM and suspected ACM assumed to be ACM located in routine maintenance areas (such as boiler rooms) at each school building (40 CFR 763.95) [Reviewed March 2000].</p> <p><b>T2.20.8.US.</b> All members of the school maintenance and custodial staff who might work in a building that contains ACM are required</p>	<p>before the initiation of any response action, other than O&amp;M activities or repair, according to the following procedures:</p> <ul style="list-style-type: none"> <li>– HEPA-vacuum or steam-clean all carpets</li> <li>– HEPA-vacuum or wet-clean all other floors and all other horizontal surfaces.</li> <li>– dispose of all debris, filters, mopheads, and cloths in sealed, leak-tight containers.</li> </ul> <p>Verify that the following actions are taken during any O&amp;M activities disturbing friable asbestos:</p> <ul style="list-style-type: none"> <li>– entry is restricted into the area by persons other than those needed to perform the maintenance project (this can be done by isolating the area or by scheduling)</li> <li>– signs are posted to prevent entry by unauthorized persons</li> <li>– air-handling systems are shutoff or temporarily modified and other sources of air movement are restricted</li> <li>– whatever work practices are required to prohibit the spread of any released fibers are used</li> <li>– all fixtures or other components are cleaned in the immediate work area</li> <li>– the asbestos debris and other cleaning materials are placed in a sealed, leak-tight container.</li> </ul> <p>Verify that response actions for any maintenance activities disturbing friable ACM, other than small-scale, short-duration maintenance are designed by persons accredited to design response actions and conducted by persons accredited to conduct response actions.</p> <p>Verify that label are in place in the following areas:</p> <ul style="list-style-type: none"> <li>– where friable ACM was responded to by any means other than removal</li> <li>– where there is ACM for which no response action was carried out.</li> </ul> <p>Verify that labels are displayed in highly visible places and remain posted until the ACM that is labeled is removed.</p> <p>Verify that the label reads,</p> <p><b>CAUTION: ASBESTOS. HAZARDOUS. DO NOT DISTURB WITHOUT PROPER TRAINING AND EQUIPMENT.</b></p> <p>Verify that the school maintenance and custodial staff has been trained.</p> <p>Verify that new personnel are trained within 60 days after start of employment.</p>

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<p>to receive at least 2 h of awareness training whether or not they are required to work with ACBM (40 CFR 763.92(a)(1)) <b>[Reviewed March 2000]</b>.</p> <p><b>T2.20.9.US.</b> School maintenance and custodial staff that conduct any activities that will result in the disturbance of ACBM are required to received an additional 14 h of training (40 CFR 763.92(a)(2)) <b>[Revised June 1998; Reviewed March 2000]</b>.</p> <p><b>T2.20.10.US.</b> Records pertaining to asbestos in schools are required to be maintained in a central location in the administrative office of the school (40 CFR 763.94) <b>[Revised October 2001]</b>.</p>	<p>Verify that the training has included:</p> <ul style="list-style-type: none"> <li>– information regarding asbestos and the various uses and forms</li> <li>– information on the health effects associated with asbestos exposure</li> <li>– locations of all ACBM identified throughout each school building in which they work</li> <li>– recognition of damaged, deterioration, and location of the management plan.</li> <li>– name and telephone number of the person designated to carry out responsibilities for asbestos management.</li> </ul> <p>Verify that staff has received additional training that includes:</p> <ul style="list-style-type: none"> <li>– descriptions of the proper methods of handling ACBM</li> <li>– information on the use of respiratory protection as contained in the USEPA/NIOSH <i>Guide to Respiratory Protection for the Asbestos Abatement Industry</i></li> <li>– the requirements found in 40 CFR 763.91 and Appendices A, B, C, and D of 40 CFR 763 Subpart E (763.80 through 763.99)</li> <li>– abatement requirements in 40 CFR 763.120 through 763.126 and 40 CFR 61.140 through 61.157</li> <li>– OSHA regulations contained in 29 CFR 1926.58</li> <li>– hands-on training in the use of respiratory protection, other personal protection measures, and good work practices.</li> </ul> <p>Verify that required records are maintained in a centralized location in the administrative office of both the school and the local education agency as part of the management plan.</p> <p>Verify that records for each homogeneous area where all ACBM has been removed are retained for 3 yr after the next reinspection, or for an equivalent period.</p> <p>Verify that, for each preventive measure and response action taken for friable and nonfriable ACBM and friable and nonfriable suspected ACBM assumed to be ACM, the local education agency provides:</p> <ul style="list-style-type: none"> <li>– a detailed written description of the measure or action, including methods used, the location where the measure or action was taken, reasons for selecting the measure or action, start and completion dates of the work, names and addresses of all contractors involved, and if applicable, their state of accreditation, and accreditation numbers, and if ACBM is removed, the name and location of storage or disposal site of the ACM</li> <li>– the name and signature of any person collecting any air sample required to be collected at the completion of certain response actions, the locations where samples were collected, date of collection, the name and address of the laboratory analyzing the samples, the date of analysis, the results of the</li> </ul>

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<p><b>T2.20.11.US.</b> In the event of a fiber release episode at the school, certain actions are required (40 CFR 763.91(f)) [Added January 2001].</p>	<p>analysis, the method of analysis, the name and signature of the person performing the analysis, and a statement that the laboratory is compliant.</p> <p>Verify that, for each person required to be trained, the local education agency provides the person's name and job title, the date that training was completed by that person, the location of the training, and the number of hours completed in such training.</p> <p>Verify that, for each time that periodic surveillance is performed, the local education agency records the name of each person performing the surveillance, the date of the surveillance, and any changes in the conditions of the materials.</p> <p>Verify that, for each time that cleaning is performed, the local education agency records the name of each person performing the cleaning, the date of such cleaning, the locations cleaned, and the methods used to perform such cleaning.</p> <p>Verify that, for each time that operations and maintenance activities under are performed, the local education agency records the name of each person performing the activity, the start and completion dates of the activity, the locations where such activity occurred, a description of the activity including preventive measures used, and if ACBM is removed, the name and location of storage or disposal site of the ACM.</p> <p>Verify that, for each time that major asbestos activity is performed, the local education agency provides the name and signature, state of accreditation, and if applicable, the accreditation number of each person performing the activity, the start and completion dates of the activity, the locations where such activity occurred, a description of the activity including preventive measures used, and if ACBM is removed, the name and location of storage or disposal site of the ACM.</p> <p>Verify that, for each fiber release episode, the local education agency provides the date and location of the episode, the method of repair, preventive measures or response action taken, the name of each person performing the work, and if ACBM is removed, the name and location of storage or disposal site of the ACM.</p> <p>Verify that the following procedures are followed in the event of a minor fiber release episode (i.e., the falling or dislodging of 3 square or linear feet or less of friable ACBM):</p> <ul style="list-style-type: none"> <li>– thoroughly saturate the debris using wet methods</li> <li>– clean the area, as described in 40 CFR 763.91(e) (see checklist item T2.20.6.US.)</li> <li>– place the asbestos debris in a sealed, leak-tight container</li> <li>– repair the area of damaged ACM with materials such as asbestos-free spackling, plaster, cement, or insulation, or seal with latex paint or an encapsulant, or immediately have the appropriate response action implemented as required by 40 CFR 763.90 (see checklist item T2.20.4.US).</li> </ul>

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<p><b>T2.20.12.US.</b> Periodic surveillance is required at least once every 6 mo after a management plan is in effect (40 CFR 763.92(b), 763.90(a) and 763.90(b)(2)) [<b>Added October 2001</b>].</p>	<p>Verify that the following procedures are followed in the event of a major fiber release episode (i.e., the falling or dislodging of more than 3 square or linear feet of friable ACBM):</p> <ul style="list-style-type: none"> <li>– restrict entry into the area and post signs to prevent entry into the area by persons other than those necessary to perform the response action</li> <li>– shut off or temporarily modify the air-handling system to prevent the distribution of fibers to other areas in the building.</li> </ul> <p>Verify that the response action for any major fiber release episode is designed by persons accredited to design response actions and conducted by persons accredited to conduct response actions.</p> <p>Verify that, at least once every 6 mo after a management plan is in effect; each local education agency conducts periodic surveillance in each building that it leases, owns, or otherwise uses as a school building that contains ACBM or is assumed to contain ACBM.</p> <p>Verify that individuals performing periodic surveillance:</p> <ul style="list-style-type: none"> <li>– visually inspected all areas that are identified in the management plan as ACBM or assumed ACBM</li> <li>– record the date of the surveillance, his or her name, and any changes in the condition of the materials</li> <li>– submits to the person designated to carry out general local education agency responsibilities a copy of the surveillance record for inclusion in the management plan.</li> </ul> <p>(NOTE: The local education agency must select and implement, in a timely manner, the appropriate response action, consistent with the written assessment, that protects human health and the environment in the least burdensome manner, considering local circumstances and economic concerns.)</p>

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<b>RADON MANAGEMENT</b>  <b>T3.1</b> <b>All Facilities</b>  <b>T3.1.1.US.</b> The current status of any ongoing or unresolved consent orders, compliance agreements, notice of violation (NOVs), interagency agreements, or equivalent state enforcement actions is required to be examined (a finding under this checklist item will have the enforcement action/ identifying information as the citation).	Determine if noncompliance issues have been resolved by reviewing a copy of the previous report, consent orders, compliance agreements, NOVs, interagency agreements, or equivalent state enforcement actions.



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<b>RADON MANAGEMENT</b>  <b>T3.2</b> <b>Missing, Risk Management, and Positive Checklist Items</b>  <b>T3.2.1.US.</b> Facilities are required to comply with all applicable Federal regulatory requirements not contained in this checklist (a finding under this check list item will have the citation of the applied regulation as a basis of finding).  <b>T3.2.2.US.</b> Risk management techniques should be promoted in environmental efforts (MP) [Added April 2002].  <b>T3.2.3.US.</b> Facilities should go above and beyond statutory and regulatory compliance (MP) [Added April 2002].	<p>Determine if any new regulations have been issued since the finalization of TEAM.</p> <p>Determine if the facility has activities or facilities that are regulated, but not addressed in this checklist.</p> <p>Verify that the facility is in compliance with all applicable and newly issued regulations.</p> <p>Determine if risk management techniques are promoted in environmental efforts.</p> <p>Determine if the facility has gone above and beyond simply complying with environmental requirements.</p>



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<b>LEAD-BASED PAINT MANAGEMENT</b>  <b>T4.1</b> <b>All Facilities</b>  <b>T4.1.1.US.</b> The current status of any ongoing or unresolved consent orders, compliance agreements, notice of violations (NOVs), inter-agency agreements, or equivalent state enforcement actions is required to be examined (a finding under this checklist item will have the enforcement action/identifying information as the citation).	Determine if noncompliance issues have been resolved by reviewing a copy of the previous report, consent orders, compliance agreements, NOVs, interagency agreements, or equivalent state enforcement actions.



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<b>LEAD-BASED PAINT (LBP) MANAGEMENT</b>  <b>T4.2 Missing, Risk Management, and Positive Checklist Items</b>  <b>T4.2.1.US.</b> Facilities are required to comply with all applicable Federal regulatory requirements not contained in this checklist (a finding under this check list item will have the citation of the applied regulation as a basis of finding).  <b>T4.2.2.US.</b> Risk management techniques should be promoted in environmental efforts (MP) [Added April 2002].  <b>T4.2.3.US.</b> Facilities should go above and beyond statutory and regulatory compliance (MP) [Added April 2002].	<p>Determine if any new regulations have been issued since the finalization of TEAM.</p> <p>Determine if the facility has activities or facilities that are regulated, but not addressed in this checklist.</p> <p>Verify that the facility is in compliance with all applicable and newly issued regulations.</p> <p>Determine if risk management techniques are promoted in environmental efforts.</p> <p>Determine if the facility has gone above and beyond simply complying with environmental requirements.</p>



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<p><b>LEAD-BASED PAINT (LBP) MANAGEMENT</b></p> <p><b>T4.10 Notification Requirements</b></p> <p><b>T4.10.1.US.</b> The lessor is responsible for informing lessees of target housing (see definitions) of the presence of any known LBP and/or LBP hazards according to specific parameters (40 CFR 745.100, 745.101, 745.107, 745.113(b), and 745.113(c)) <b>[Revised June 1998; Reviewed March 2000]</b>.</p>	<p>(NOTE: The disclosure requirements do not imply a positive obligation on the lessor to conduct any evaluation or reduction activities.)</p> <p>Verify that in the disclosure process the lessor provides the following prior to signature on a lease:</p> <ul style="list-style-type: none"> <li>– a copy of a USEPA approved lead hazard information pamphlet</li> <li>– the presence of any known LBP and/or LBP hazards in the target housing being leased</li> <li>– any additional information available concerning the known LBP and/or LBP hazards such as the basis for determination that LBP or LBP hazards exist, the location of the LBP or LBP hazards, and the condition of the painted surfaces</li> <li>– copies of records or reports available pertaining to LBP or LBP hazards in the target housing, including reports regarding common areas</li> <li>– records or reports regarding other residential dwelling in multifamily target housing if the information is a part of an evaluation or reduction of LBP and/or LBP hazard in the target housing as a whole.</li> </ul> <p>Verify that the contracts to lease target housing include an attachment containing the following elements in the language of the contract:</p> <ul style="list-style-type: none"> <li>– a lead warning statement (appropriate language can be found in 40 CFR 745.113)</li> <li>– a statement by the lessor disclosing the presence of known LBP or LBP hazards in the target housing, or a statement indicating no knowledge of the presence of LBP and/or LBP hazards</li> <li>– any additional information available concerning the known LBP and/or LBP hazards such as the basis for determination that LBP or LBP hazards exist, the location of the LBP or LBP hazards and the condition of the painted surfaces</li> <li>– a list of records/reports available to the lessor pertaining to the LBP and/ LBP hazards that have been provided to the purchaser</li> <li>– a statement by the lessee indicating the above items have been received</li> <li>– signatures of lessees, agents, lessors certifying the accuracy of the statements</li> <li>– a statement (when one or more agents are involved) that: <ul style="list-style-type: none"> <li>– the agent has informed the lessor of the lessor obligations under 42 U.S.C. 4852 d</li> <li>– the agent is aware of his/her duty to ensure compliance with the requirements of 40 CFR 745.</li> </ul> </li> </ul>

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<p><b>T4.10.2.US.</b> The seller is responsible for informing purchasers of target housing of the presence of any known LBP and/or LBP hazards according to specific parameters (40 CFR 745.100, 745.101, 745.107, 745.110, 745.113(a), and 745.113(c)) [Revised June 1998; Reviewed March 2000].</p>	<p>Verify that the lessor retains a copy of the contract attachments for no less than 3 yr from the start of the leasing period.</p> <p>(NOTE: The following are exempted from these notification requirements:</p> <ul style="list-style-type: none"> <li>– sales of target housing at foreclosure</li> <li>– leases of target housing that have been found to be LBP free by an inspector certified under the Federal certification program or under a Federally accredited state or tribal certification program</li> <li>– short-term leases of 100 days or less where no lease renewal or extension can occur</li> <li>– renewal of existing leases in target housing where all required LBP disclosures have previously occurred (renewal includes both renegotiation of existing lease terms and/or ratification of a new lease).)</li> </ul> <p>(NOTE: These requirements take effect as follows:</p> <ul style="list-style-type: none"> <li>– for owners of more than four residential dwellings, 6 September 1996</li> <li>– for owners of one to four residential dwellings, 6 December 1996.)</li> </ul> <p>(NOTE: The disclosure requirements do not imply a positive obligation on the seller to conduct any evaluation or reduction activities.)</p> <p>Determine if the facility is in the process of selling any target housing.</p> <p>Verify that in the disclosure process the seller provides the following to the purchaser prior to the purchaser being obligated under any contract:</p> <ul style="list-style-type: none"> <li>– a copy of a USEPA approved lead hazard information pamphlet</li> <li>– the presence of any known LBP and/or LBP hazards in the target housing being sold</li> <li>– any additional information available concerning the known LBP and/or LBP hazards such as the basis for determination that LBP or LBP hazards exist, the location of the LBP or LBP hazards, and the condition of the painted surfaces</li> <li>– copies of records or reports available pertaining to LBP or LBP hazards in the target housing, including reports regarding common areas</li> <li>– records or reports regarding other residential dwelling in multifamily target housing if the information is a part of an evaluation or reduction of LBP and/or LBP hazard in the target housing as a whole.</li> </ul> <p>(NOTE: Before a purchaser is obligated under any contract to purchase target housing, the seller has to permit the purchaser a 10-day period to conduct a risk assessment or inspection for the presence of LBP and/or LBP hazards. A different period of time may be used if both parties mutually agree in writing. A purchaser may waive this opportunity, but must do so in writing.)</p>

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<p><b>T4.10.3.US.</b> Specific notifications must be issued prior to the renovation of any residential unit of target housing, including child-occupied facilities (40 CFR</p>	<p>Verify that the contracts to sell target housing include an attachment containing the following elements in the language of the contract:</p> <ul style="list-style-type: none"> <li>– a lead warning statement (appropriate language can be found in 40 CFR 745.113)</li> <li>– a statement by the seller disclosing the presence of known LBP or LBP hazards in the target housing, or a statement indicating no knowledge of the presence of LBP and/or LBP hazards</li> <li>– any additional information available concerning the known LBP and/or LBP hazards such as the basis for determination that LBP or LBP hazards exist, the location of the LBP or LBP hazards, and the condition of the painted surfaces</li> <li>– a list of records/reports available to the seller pertaining to the LBP and/or LBP hazards that have been provided to the purchaser</li> <li>– a statement by the purchaser indicating the above items have been received</li> <li>– a statement by the purchaser that they have either: <ul style="list-style-type: none"> <li>– received the opportunity to conduct a risk assessment or inspection</li> <li>– waived the opportunity</li> </ul> </li> <li>– signatures of sellers, agents, purchasers certifying the accuracy of the statements</li> <li>– a statement (when one or more agents are involved) that: <ul style="list-style-type: none"> <li>– the agent has informed the lessor of the lessor obligations under 42 U.S.C. 4852 d, and</li> <li>– the agent is aware of his/her duty to ensure compliance with the requirements of 40 CFR 745.</li> </ul> </li> </ul> <p>Verify that the seller retains a copy of the contract attachments for no less than 3 yr from the start of the leasing period.</p> <p>(NOTE: The following are exempted from these notification requirements:</p> <ul style="list-style-type: none"> <li>– sales of target housing at foreclosure</li> <li>– leases of target housing that have been found to be LBP free by an inspector certified under the Federal certification program or under a Federally accredited state or tribal certification program</li> <li>– short-term leases of 100 days or less where no lease renewal or extension can occur</li> <li>– renewal of existing leases in target housing where all required LBP disclosures have previously occurred (renewal includes both renegotiation of existing lease terms and/or ratification of a new lease).)</li> </ul> <p>Verify that, no more than 60 days before beginning renovation activities in any residential dwelling unit of target housing, the firm performing the renovation provides the owner of the unit with the pamphlet, and complies with one of the following:</p>

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<p>745.82(a), 745.82(b), and 745.84) [Added June 1998; Reviewed March 2000; Revised July 2008; Revised July 2010; Revised October 2011].</p>	<ul style="list-style-type: none"> <li>– obtains, from the owner, a written acknowledgment that the owner has received the pamphlet</li> <li>– obtain a certificate of mailing at least 7 days prior to the renovation.</li> </ul> <p>Verify that, if the owner does not occupy the dwelling unit, in addition to the above requirements, the firm provides an adult occupant of the unit with the pamphlet, and complies with one of the following:</p> <ul style="list-style-type: none"> <li>– obtains, from the adult occupant, a written acknowledgment that the occupant has received the pamphlet; or certify in writing that a pamphlet has been delivered to the dwelling and that the firm performing the renovation has been unsuccessful in obtaining a written acknowledgment from an adult occupant</li> <li>– obtain a certificate of mailing at least 7 days prior to the renovation.</li> </ul> <p>Verify that certification of pamphlet delivery includes the address of the unit undergoing renovation, the date and method of delivery of the pamphlet, names of the persons delivering the pamphlet, reason for lack of acknowledgment (e.g., occupant refuses to sign, no adult occupant available), the signature of a representative of the firm performing the renovation, and the date of signature.</p> <p>Verify that, no more than 60 days before beginning renovation activities in common areas of multi-unit target housing, the firm performing the renovation:</p> <ul style="list-style-type: none"> <li>– provides the owner with the pamphlet, and complies with one of the following: <ul style="list-style-type: none"> <li>– obtains, from the owner, a written acknowledgment that the owner has received the pamphlet</li> <li>– obtain a certificate of mailing at least 7 days prior to the renovation</li> </ul> </li> <li>– complies with one of the following: <ul style="list-style-type: none"> <li>– notifies in writing, or ensure written notification of, each affected unit and make the pamphlet available upon request prior to the start of renovation.</li> <li>– while the renovation is ongoing, post informational signs describing the general nature and locations of the renovation and the anticipated completion date</li> </ul> </li> <li>– prepare, sign, and date a statement describing the steps performed to notify all occupants of the intended renovation activities and to provide the pamphlet</li> <li>– if the scope, locations, or expected starting and ending dates of the planned renovation activities change after the initial notification, and the firm provided written initial notification to each affected unit, the firm performing the renovation provides further written notification to the owners and occupants providing revised information on the ongoing or planned activities.</li> </ul> <p>Verify that, if written notification is used, it is accomplished by distributing a written notice to each affected unit describing the general nature and locations of the planned renovation activities; the expected starting and ending dates; and a</p>

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	<p>statement of how the occupant can obtain the pamphlet and a copy of required records, at no charge, from the firm performing the renovation.</p> <p>Verify that, if signs are posted, they are posted in areas where they are likely to be seen by the occupants of all of the affected units and are accompanied by a posted copy of the pamphlet or information on how interested occupants can review a copy of the pamphlet or obtain a copy from the renovation firm at no cost to occupants.</p> <p>(NOTE: The signs must also include information on how interested occupants can review a copy of the required records required or obtain a copy from the renovation firm at no cost to the occupants.)</p> <p>Verify that, if subsequent notification is required due to a change in scope, dates, locations, etc., the subsequent notification is provided before the firm performing the renovation initiates work beyond that which was described in the original notice.</p> <p>Verify that, no more than 60 days before beginning renovation activities in any child-occupied facility, the firm performing the renovation provides the owner of the building with the pamphlet, and complies with one of the following:</p> <ul style="list-style-type: none"> <li>– obtains, from the owner, a written acknowledgment that the owner has received the pamphlet</li> <li>– obtains a certificate of mailing at least 7 days prior to the renovation.</li> </ul> <p>Verify that, if the child-occupied facility is not the owner of the building, an adult representative of the child-occupied facility is provided with the pamphlet, and the renovation firm complies with one of the following:</p> <ul style="list-style-type: none"> <li>– obtains, from the adult representative, a written acknowledgment that the adult representative has received the pamphlet; or certifies in writing that a pamphlet has been delivered to the facility and that the firm performing the renovation has been unsuccessful in obtaining a written acknowledgment from an adult representative</li> <li>– obtains a certificate of mailing at least 7 days prior to the renovation.</li> </ul> <p>Verify that certification of pamphlet delivery to a child-occupied facility includes the address of the child-occupied facility undergoing renovation, the date and method of delivery of the pamphlet, names of the persons delivering the pamphlet, reason for lack of acknowledgment (e.g., representative refuses to sign), the signature of a representative of the firm performing the renovation, and the date of signature.</p> <p>Verify that, no more than 60 days before beginning renovation activities in any child-occupied facility, the firm performing the renovation provides the parents and guardians of children using the child-occupied facility with the pamphlet and information describing the general nature and locations of the renovation and the anticipated completion date, and information on how interested parents or guardians</p>

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	<p>of children frequenting the child-occupied facility can review a copy of required records, by complying with one of the following:</p> <ul style="list-style-type: none"> <li>– mail or hand-deliver the pamphlet and the renovation information to each parent or guardian of a child using the child-occupied facility</li> <li>– while the renovation is ongoing, posting informational signs describing the general nature and locations of the renovation and the anticipated completion date</li> <li>– prepare, sign, and date a statement describing the steps performed to notify all parents and guardians of the intended renovation activities and to provide the pamphlet.</li> </ul> <p>Verify that, when posting sign, they are in areas where they can be seen by the parents or guardians of the children frequenting the child-occupied facility and are accompanied by a posted copy of the pamphlet or information on how interested parents or guardians can review a copy of the pamphlet or obtain a copy from the renovation firm at no cost to the parents or guardians.</p> <p>(NOTE: The signs must also include information on how interested parents or guardians of children frequenting the child-occupied facility can review a copy of the records required by 40 CFR 745.86(c) and (d) or obtain a copy from the renovation firm at no cost to the parents or guardians.)</p> <p>Verify that all written acknowledgements:</p> <ul style="list-style-type: none"> <li>– include a statement recording the owner or occupant's name and acknowledging receipt of the pamphlet prior to the start of renovation, the address of the unit undergoing renovation, the signature of the owner or occupant as applicable, and the date of signature</li> <li>– be either a separate sheet or part of any written contract or service agreement for the renovation</li> <li>– be written in the same language as the text of the contract or agreement for the renovation or, in the case of non-owner occupied target housing, in the same language as the lease or rental agreement or the pamphlet.</li> </ul> <p>(NOTE: The information distribution requirements in this checklist item do not apply to emergency renovations, which are renovation activities that were not planned but result from a sudden, unexpected event (such as non-routine failures of equipment) that, if not immediately attended to, presents a safety or public health hazard, or threatens equipment and/or property with significant damage. Interim controls performed in response to an elevated blood lead level in a resident child are also emergency renovations.)</p> <p>(NOTE: This checklist item applies to all renovations performed for compensation in target housing and child-occupied facilities, except for the following:</p> <ul style="list-style-type: none"> <li>– renovations in target housing or child-occupied facilities in which a written determination has been made by a certified inspector or risk assessor that the</li> </ul>

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<p><b>T4.10.4.US.</b> Certain records are required to be kept in relation to notification of LBP renovations (40 CFR 745.81(a)(4)(ii), 745.82(a) and 745.86) [Added June 1998; Reviewed March 2000; Revised July 2008; Revised July 2010; Revised October 2011].</p>	<p>components affected by the renovation are free of paint or other surface coatings that contain lead equal to or in excess of 1.0 milligrams/per square centimeter (mg/cm<sup>2</sup>) or 0.5% by weight, where the firm performing the renovation has obtained a copy of the determination</p> <ul style="list-style-type: none"> <li>– renovations in target housing or child-occupied facilities in which a certified renovator, using an EPA recognized test kit and following the kit manufacturer's instructions, has tested each component affected by the renovation and determined that the components are free of paint or other surface coatings that contain lead equal to or in excess of 1.0 mg/cm<sup>2</sup> or 0.5% by weight. If the components make up an integrated whole, such as the individual stair treads and risers of a single staircase, the renovator is required to test only one of the individual components, unless the individual components appear to have been repainted or refinished separately</li> <li>– renovations in target housing or child-occupied facilities in which a certified renovator has collected a paint chip sample from each painted component affected by the renovation and a laboratory recognized by EPA pursuant to section 405(b) of TSCA as being capable of performing analyses for lead compounds in paint chip samples has determined that the samples are free of paint or other surface coatings that contain lead equal to or in excess of 1.0 mg/cm<sup>2</sup> or 0.5% by weight. If the components make up an integrated whole, such as the individual stair treads and risers of a single staircase, the renovator is required to test only one of the individual components, unless the individual components appear to have been repainted or refinished separately.)</li> </ul> <p>(NOTE: On or after 6 July 2010, all renovations must be performed in accordance with the work practice standards in 40 CFR 745.85 and the following recordkeeping requirements in target housing or child-occupied facilities, unless the renovation qualifies for an exception:</p> <ul style="list-style-type: none"> <li>– reports certifying that a determination had been made by a certified inspector that lead-based paint is not present on the components affected by the renovation</li> <li>– any signed and dated statements received from owner-occupants documenting that the requirements of 40 CFR 745.85 (see checklist items T4.20.7.US and T4.20.8.US) do not apply. )</li> </ul> <p>Verify that firms performing renovations retain and, if requested, make available to EPA all records necessary to demonstrate compliance with requirements related to residential property renovation for a period of 3 yr following completion of the renovation.</p> <p>(NOTE: This 3-yr retention requirement does not supersede longer obligations required by other provisions for retaining the same documentation, including any applicable State or Tribal laws or regulations.)</p> <p>Verify that the following records are retained, as applicable:</p>

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	<ul style="list-style-type: none"> <li>– records or reports certifying that a determination had been made that lead-based paint was not present on the components affected by the renovation, including:               <ul style="list-style-type: none"> <li>– reports prepared by a certified inspector or certified risk assessor</li> <li>– records prepared by a certified renovator after using EPA-recognized test kits, including an identification of the manufacturer and model of any test kits used, a description of the components that were tested including their locations, and the result of each test kit used</li> <li>– records prepared by a certified renovator after collecting paint chip samples, including a description of the components that were tested including their locations, the name and address of the NLLAP-recognized entity performing the analysis, and the results for each sample</li> </ul> </li> <li>– signed and dated acknowledgments of receipt</li> <li>– certifications of attempted delivery</li> <li>– certificates of mailing</li> <li>– records of notification activities performed regarding common area renovations and renovations in child-occupied facilities</li> <li>– documentation of compliance with the requirements of 40 CFR 745.85, including documentation that a certified renovator was assigned to the project, that the certified renovator provided on-the-job training for workers used on the project, that the certified renovator performed or directed workers who performed all of the tasks described in 40 CFR 745.85(a), and that the certified renovator performed the post-renovation cleaning verification.</li> </ul> <p>Verify that signed and dated statement received from owner-occupants documenting that 40 CFR 745.85 (see checklist items T4.20.7.US and T4.20.8.US) does not apply include a declaration that the renovation will occur in the owner's residence, a declaration that no children under age 6 reside there, a declaration that no pregnant woman resides there, a declaration that the housing is not a child-occupied facility, the address of the unit undergoing renovation, the owner's name, an acknowledgment by the owner that the work practices to be used during the renovation will not necessarily include all of the lead-safe work practices contained in EPA's renovation, repair, and painting rule, the signature of the owner, and the date of signature.</p> <p>Verify that the statements are written in the same language as the text of the renovation contract, if any.</p> <p>Verify that, if the renovation firm was unable to comply with all of the requirements of this rule due to an emergency, the firm has documented the nature of the emergency and the provisions of the rule that were not followed, including a copy of the certified renovator's training certificate, and a certification by the certified renovator assigned to the project that:</p> <ul style="list-style-type: none"> <li>– training was provided to workers (topics must be identified for each worker)</li> </ul>

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	<ul style="list-style-type: none"> <li>– warning signs were posted at the entrances to the work area</li> <li>– if test kits were used, that the specified brand of kits was used at the specified locations and that the results were as specified</li> <li>– if paint chip samples were collected, that the samples were collected at the specified locations, that the specified NLLAP-recognized laboratory analyzed the samples, and that the results were as specified</li> <li>– the work area was contained by: <ul style="list-style-type: none"> <li>– removing or covering all objects in the work area (interiors)</li> <li>– closing and covering all HVAC ducts in the work area (interiors)</li> <li>– closing all windows in the work area (interiors) or closing all windows in and within 20 ft of the work area (exteriors)</li> <li>– closing and sealing all doors in the work area (interiors) or closing and sealing all doors in and within 20 ft of the work area (exteriors)</li> <li>– covering doors in the work area that were being used to allow passage but prevent spread of dust</li> <li>– covering the floor surface, including installed carpet, with taped-down plastic sheeting or other impermeable material in the work area 6 ft beyond the perimeter of surfaces undergoing renovation or a sufficient distance to contain the dust, whichever is greater (interiors) or covering the ground with plastic sheeting or other disposable impermeable material anchored to the building extending 10 ft beyond the perimeter of surfaces undergoing renovation or a sufficient distance to collect falling paint debris, whichever is greater, unless the property line prevents 10 ft of such ground covering, weighted down by heavy objects (exteriors)</li> <li>– installing (if necessary) vertical containment to prevent migration of dust and debris to adjacent property (exteriors)</li> </ul> </li> <li>– waste was contained on-site and while being transported off-site</li> <li>– the work area was properly cleaned after the renovation by: <ul style="list-style-type: none"> <li>– picking up all chips and debris, misting protective sheeting, folding it dirty side inward, and taping it for removal</li> <li>– cleaning the work area surfaces and objects using a HEPA vacuum and/or wet cloths or mops (interiors)</li> </ul> </li> <li>– the certified renovator performed the post-renovation cleaning verification (the results of which must be briefly described, including the number of wet and dry cloths used).</li> </ul> <p>Verify that, when the final invoice for the renovation is delivered, or within 30 days of the completion of the renovation, whichever is earlier, the renovation firm provides information pertaining to compliance to the following persons:</p> <ul style="list-style-type: none"> <li>– the owner of the building; and, if different,</li> <li>– an adult occupant of the residential dwelling, if the renovation took place within a residential dwelling, or an adult representative of the child-occupied facility, if the renovation took place within a child-occupied facility.</li> </ul>

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	<p>Verify that, when performing renovations in common areas of multi-unit target housing, renovation firms post the required information or instructions on how interested occupants can obtain a copy of this information.</p> <p>Verify that this information is posted in areas where it is likely to be seen by the occupants of all of the affected units.</p> <p>(NOTE: Information required to be provided by may be provided by completing the sample form titled "Sample Renovation Recordkeeping Checklist" or a similar form containing the required test kit information and the required training and work practice compliance information.)</p> <p>Verify that, if dust clearance sampling is performed in lieu of cleaning verification, the renovation firm provides, when the final invoice for the renovation is delivered or within 30 days of the completion of the renovation, whichever is earlier, a copy of the dust sampling report to:</p> <ul style="list-style-type: none"> <li>– the owner of the building; and, if different</li> <li>– an adult occupant of the residential dwelling, if the renovation took place within a residential dwelling, or an adult representative of the child-occupied facility, if the renovation took place within a child-occupied facility.</li> </ul> <p>(NOTE: When performing renovations in common areas of multi-unit target housing, renovation firms must post these dust sampling reports or information on how interested occupants of the housing being renovated can obtain a copy of the report. This information must be posted in areas where they are likely to be seen by the occupants of all of the affected units.)</p> <p>(NOTE: This checklist item applies to all renovations performed for compensation in target housing and child-occupied facilities, except for the following:</p> <ul style="list-style-type: none"> <li>– renovations in target housing or child-occupied facilities in which a written determination has been made by a certified inspector or risk assessor that the components affected by the renovation are free of paint or other surface coatings that contain lead equal to or in excess of 1.0 milligrams/per square centimeter (mg/cm<sup>2</sup>) or 0.5% by weight, where the firm performing the renovation has obtained a copy of the determination</li> <li>– renovations in target housing or child-occupied facilities in which a certified renovator, using an EPA recognized test kit and following the kit manufacturer's instructions, has tested each component affected by the renovation and determined that the components are free of paint or other surface coatings that contain lead equal to or in excess of 1.0 mg/cm<sup>2</sup> or 0.5% by weight. If the components make up an integrated whole, such as the individual stair treads and risers of a single staircase, the renovator is required to test only one of the individual components, unless the individual components appear to have been repainted or refinished separately</li> <li>– renovations in target housing or child-occupied facilities in which a certified renovator has collected a paint chip sample from each painted component</li> </ul>

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<p><b>T4.10.5.US.</b> EPA must be notified prior to LBP abatement (40 CFR 745.65(d), 745.227(e)(4)) [Added July 2004].</p>	<p>affected by the renovation and a laboratory recognized by EPA pursuant to section 405(b) of TSCA as being capable of performing analyses for lead compounds in paint chip samples has determined that the samples are free of paint or other surface coatings that contain lead equal to or in excess of 1.0 mg/cm<sup>2</sup> or 0.5% by weight. If the components make up an integrated whole, such as the individual stair treads and risers of a single staircase, the renovator is required to test only one of the individual components, unless the individual components appear to have been repainted or refinished separately.)</p> <p>Verify that a certified firm notifies EPA of lead-based paint abatement activities as follows:</p> <ul style="list-style-type: none"> <li>– the original notification is received by EPA at least 5 business days before the start date of any lead-based paint abatement activities</li> <li>– notification for lead-based paint abatement activities required in response to an elevated blood lead level (EBL) determination, or Federal, State, Tribal, or local emergency abatement order is received by EPA no later than the start date of the lead-based paint abatement activities</li> <li>– if the start date and/or location provided to EPA changes, an updated notification is received by EPA on or before the start date provided to EPA and documentation showing evidence of an EBL determination or a copy of the Federal/State/Tribal/local emergency abatement order is included in the written notification to take advantage of this abbreviated notification period</li> <li>– updated notification is provided to EPA for lead-based paint abatement activities that will begin on a date other than the start date specified in the original notification, as follows: <ul style="list-style-type: none"> <li>– for lead-based paint abatement activities beginning prior to the start date provided to EPA an updated notification is received by EPA at least 5 business days before the new start date included in the notification</li> <li>– for lead-based paint abatement activities beginning after the start date provided to EPA, an updated notification is received by EPA on or before the start date provided to EPA</li> </ul> </li> <li>– updated notification is provided to EPA for any change in location of lead-based paint abatement activities at least 5 business days prior to the start date provided to EPA</li> <li>– updated notification is provided to EPA when lead-based paint abatement activities are canceled, or when there are other significant changes including, but not limited to, when the square footage or acreage to be abated changes by more than 20% and the updated notification is received by EPA on or before the start date provided to EPA, or if work has already begun, within 24 h of the change.</li> </ul> <p>(NOTE: Notification for lead-based paint abatement activities required in response to an elevated blood lead level (EBL) determination, or Federal, State, Tribal, or local emergency abatement order should be received by EPA as early as possible before the start date of the lead-based paint abatement activities.)</p>

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	<p>Verify that the following are included in each notification:</p> <ul style="list-style-type: none"> <li>– notification type (original, updated, cancellation)</li> <li>– date when lead-based paint abatement activities will start</li> <li>– date when lead-based paint abatement activities will end (approximation using best professional judgment)</li> <li>– firm's name, EPA certification number, address, telephone number</li> <li>– type of building (e.g., single family dwelling, multi-family dwelling, child-occupied facilities) on/in which abatement work will be performed</li> <li>– property name (if applicable)</li> <li>– property address including apartment or unit number(s) (if applicable) for abatement work</li> <li>– documentation showing evidence of an EBL determination or a copy of the Federal/State/Tribal/local emergency abatement order, if using the abbreviated time period</li> <li>– name and EPA certification number of the project supervisor</li> <li>– approximate square footage/acreage to be abated</li> <li>– brief description of abatement activities to be performed</li> <li>– name, title, and signature of the representative of the certified firm who prepared the notification</li> <li>– notification must be accomplished using written notification, or electronically using the Agency's Central Data Exchange (CDX).</li> </ul> <p>(NOTE: Written notification can be accomplished using either the sample form titled "Notification of Lead-Based Paint Abatement Activities" or similar form containing the required information. All written notifications must be delivered by U.S. Postal Service, fax, commercial delivery service, or hand delivery (persons submitting notification by U.S. Postal Service are reminded that they should allow 3 additional business days for delivery in order to ensure that EPA receives the notification by the required date). Instructions and sample forms can be obtained from the NLIC at 1-800-424-LEAD(5323), or on the Internet at <a href="http://www.epa.gov/lead">http://www.epa.gov/lead</a>.)</p> <p>(NOTE: These requirements apply:</p> <ul style="list-style-type: none"> <li>– to all individuals and firms engaged in LBP activities except persons who perform these activities within residential dwellings that they own, unless one of the following circumstances is present: <ul style="list-style-type: none"> <li>– the residential dwelling is occupied by a person or persons other than the owner or the owners immediate family while these activities are being performed</li> <li>– a child residing in the building has been identified as having an EBL</li> </ul> </li> <li>– only in those states or Indian Country that do not have an authorized State or Tribal program (40 CFR 744.220(b)).)</li> </ul>

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	<p>(NOTE: The work practice standards in do not apply when treating paint-lead hazards of less than:</p> <ul style="list-style-type: none"> <li>– 2 ft2 of deteriorated lead-based paint per room or equivalent</li> <li>– 20 ft2 of deteriorated paint on the exterior building</li> <li>– 10 percent of the total surface area of deteriorated paint on an interior or exterior type of component with a small surface area.)</li> </ul>



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<p><b>LEAD-BASED PAINT (LBP) MANAGEMENT</b></p> <p><b>T4.15</b>  <b>Training Requirements</b></p> <p><b>T4.15.1.US.</b> All LBP activities are required to be performed by certified individuals or firms (40 CFR 745.220(b), 745.226(a)(3), 745.226(a)(5), 745.226(e), 745.226(f)(1), and 745.233) [Revised October 1999; Reviewed March 2000; Revised July 2008].</p> <p><b>T4.15.2.US.</b> Training programs for LBP activities are required to be accredited (40 CFR 745.220(b) and 745.225) [Revised October 1996; Reviewed March 2000; Revised July 2008].</p>	<p>Verify that all LBP activities are performed by USEPA or State/Tribal authorized program certified individuals or firms.</p> <p>(NOTE: Certification is available for inspectors, risk assessors, supervisors, project designers, abatement workers, renovators, and dust samplers.)</p> <p>(NOTE: Renovators certification must be completed by 22 April 2010 in order to perform renovations involving LBP.)</p> <p>Verify that recertification is done:</p> <ul style="list-style-type: none"> <li>– every 3 yr if the individual completed a training course with a course test and hands-on assessment</li> <li>– every 5 yr if the individual completed a training course with a proficiency test.</li> </ul> <p>(NOTE: It shall be a violation of TSCA for an individual or firm to conduct any of the LBP activities described in 40 CFR 745.227 (see checklist items T4.20.1.US. through T4.20.4.US.) after 1 March 2000, if that individual has not been certified by USEPA to do so.)</p> <p>(NOTE: These requirements apply:</p> <ul style="list-style-type: none"> <li>– to all individuals and firms engaged in LBP activities except persons who perform these activities within residential dwellings that they own, unless one of the following circumstances is present: <ul style="list-style-type: none"> <li>– the residential dwelling is occupied by a person or persons other than the owner or the owners immediate family while these activities are being performed</li> <li>– a child residing in the building has been identified as having an elevated blood lead level (EBL)</li> </ul> </li> <li>– only in those States or Indian Country that do not have an authorized state or Tribal program (40 CFR 744.220(b)).)</li> </ul> <p>Determine if the facility provides training in LBP inspection, assessment, removal, abatement, renovation, or dust sampling.</p> <p>Verify that the training is USEPA accredited.</p> <p>(NOTE: Training programs may first apply to EPA for accreditation of their lead-based paint activities courses or refresher courses on or after 31 August 1998. Training programs may first apply to EPA for accreditation of their renovator or dust sampling technician courses or refresher courses on or after 22 April 2009.)</p>

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	<p>(NOTE: These requirements apply:</p> <ul style="list-style-type: none"> <li>– to all individuals and firms engaged in LBP activities except persons who perform these activities within residential dwellings that they own, unless one of the following circumstances is present: <ul style="list-style-type: none"> <li>– the residential dwelling is occupied by a person or persons other than the owner or the owners immediate family while these activities are being performed</li> <li>– a child residing in the building has been identified as having an elevated blood lead level (EBL)</li> </ul> </li> <li>– only in those States or Indian Country that do not have an authorized state or Tribal program (40 CFR 744.220(b)).)</li> </ul>

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<b>LEAD-BASED PAINT (LBP) MANAGEMENT</b>  <b>T4.20 Work Practice Standards</b>  <b>T4.20.1.US.</b> If inspections for LBP are conducted, they must be done according to specific methodologies (40 CFR 745.65(d), 745.227(a)(1), 745.227(b), 745.227(f), and 745.227(i)) [Revised October 1999; Revised April 2001; Revised April 2002].	<p>(NOTE: These requirements apply:</p> <ul style="list-style-type: none"> <li>– to all individuals and firms engaged in LBP activities except persons who perform these activities within residential dwellings that they own, unless one of the following circumstances is present:             <ul style="list-style-type: none"> <li>– the residential dwelling is occupied by a person or persons other than the owner or the owners immediate family while these activities are being performed</li> <li>– a child residing in the building has been identified as having an EBL</li> </ul> </li> <li>– only in those states or Indian Country that do not have an authorized State or Tribal program (40 CFR 744.220(b)).)</li> </ul> <p>(NOTE: The work practice standards in do not apply when treating paint-lead hazards of less than:</p> <ul style="list-style-type: none"> <li>– 2 ft<sup>2</sup> of deteriorated lead-based paint per room or equivalent</li> <li>– 20 ft<sup>2</sup> of deteriorated paint on the exterior building</li> <li>– 10 percent of the total surface area of deteriorated paint on an interior or exterior type of component with a small surface area.)</li> </ul> <p>Verify that inspections are done by USEPA or State/Tribal authorized program certified inspectors.</p> <p>Verify that inspections were performed according to a documented methodology (i.e., HUD Guidelines) and include testing of:</p> <ul style="list-style-type: none"> <li>– in a residential dwelling and child-occupied facility, each component with a distinct painting history and each exterior component with a distinct painting history is tested for LBP, except for components determined to have been replaced after 1978 or to not contain LBP at all</li> <li>– in a multi-family dwelling or child-occupied facility, each component with a distinct painting history in every common area, except those components determined to have been replaced after 1978 or to not contain LBP.</li> </ul> <p>Verify that an inspection report is prepared that includes the following:</p> <ul style="list-style-type: none"> <li>– date of each inspection</li> <li>– address of building</li> <li>– date of construction</li> <li>– apartment numbers (if applicable)</li> <li>– name, address, and telephone number of the owner or owners of each residential dwelling or child-occupied facility</li> </ul>

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<p><b>T4.20.2.US.</b> If lead hazard screens are conducted, they are required to be done according to specific methodologies (40 CFR 745.65(d), 745.227(a)(1), 745.227(c), 745.227(f), and 745.227(i)) [Revised October 1996; Revised April 2001; Revised April 2002].</p>	<ul style="list-style-type: none"> <li>– name, signature, and certification number of each certified inspector and/or risk assessor conducting testing</li> <li>– name, address, and telephone number of the certified firm employing each inspector and/or risk assessor, if applicable</li> <li>– each testing method and device and/or sampling procedures used for paint analysis, including quality control data and, if used, the serial number of any x- ray fluorescence (XRF) device</li> <li>– specific location of each painted component tested for the presence of LBP</li> <li>– the results of the inspection expressed in terms appropriate to the sampling method used.</li> </ul> <p>(NOTE: See Appendix 11-4 for information on determining whether or not LBP, a paint-lead hazard, a dust-lead hazard, or a soil-lead hazard is present.)</p> <p>Verify that all required reports or plans are maintained by the certified firm or individual who prepared the report for no fewer than 3 yr and the certified firm or individual provides copies of these reports to the building owner who contracted for its services.</p> <p>(NOTE: These requirements apply:</p> <ul style="list-style-type: none"> <li>– to all individuals and firms engaged in LBP activities except persons who perform these activities within residential dwellings that they own, unless one of the following circumstances is present: <ul style="list-style-type: none"> <li>– the residential dwelling is occupied by a person or persons other than the owner or the owners immediate family while these activities are being performed</li> <li>– a child residing in the building has been identified as having an EBL</li> </ul> </li> <li>– only in those states or Indian Country that do not have an authorized State or Tribal program (40 CFR 744.220(b)).)</li> </ul> <p>(NOTE: The work practice standards in do not apply when treating paint-lead hazards of less than:</p> <ul style="list-style-type: none"> <li>– 2 ft2 of deteriorated lead-based paint per room or equivalent</li> <li>– 20 ft2 of deteriorated paint on the exterior building</li> <li>– 10 percent of the total surface area of deteriorated paint on an interior or exterior type of component with a small surface area.)</li> </ul> <p>Verify that lead hazard screens are only done by a person certified by the USEPA as a risk assessor.</p> <p>Verify that lead hazard screens were performed according to a documented methodology and included:</p> <ul style="list-style-type: none"> <li>– background information is collected on the physical characteristics of the residential dwelling or child-occupied facility and occupant use patterns that may cause LBP exposure to one or more children age 6 yr or under</li> </ul>

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	<ul style="list-style-type: none"> <li>– a visual inspection of the residential dwelling or child-occupied facility is conducted to determine if deteriorated paint is present and locate at least two dust sampling locations</li> <li>– each surface with deteriorated paint which is determined, using documented methodologies, to be in poor condition and to have a distinct painting history is tested for the presence of lead</li> <li>– in residential dwellings two composite dust samples are collected, one from the floors and the other from the windows, in rooms, hallways, or stairwells where one or more children age 6 and under are most likely to come in contact with dust</li> <li>– in multi-family dwellings and child-occupied facilities in addition to floor and window samples, composite dust samples are collected from common areas where one or more children, age 6 and under, are most likely to come into contact with dust.</li> </ul> <p>(NOTE: Sampling and testing methodologies are prescribed by the USEPA.)</p> <p>Verify that a lead hazard screen report is produced which contains the following:</p> <ul style="list-style-type: none"> <li>– date of each screening</li> <li>– address of building</li> <li>– date of construction</li> <li>– apartment numbers (if applicable)</li> <li>– name, address, and telephone number of the owner or owners of each residential dwelling or child-occupied facility</li> <li>– name, signature, and certification number of each risk assessor conducting testing</li> <li>– name, address, and telephone number of the certified firm employing each risk assessor, if applicable</li> <li>– name, address, and telephone number of each recognized laboratory conducting analysis of collected samples</li> <li>– results of the visual inspection</li> <li>– each testing method and device and/or sampling procedures employed for paint analysis</li> <li>– specific location of each painted component tested for the presence of LBP</li> <li>– all data collected from onsite testing, including quality control data and, if used, the serial number of any XRF device all results of laboratory analysis on collected paint, soil, and dust samples</li> <li>– any other sampling results</li> <li>– any background information</li> <li>– recommendations.</li> </ul> <p>Verify that any paint chip, dust, or soil samples collected are collected by persons certified by the USEPA and analyzed by a USEPA recognized laboratory.</p>

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<p><b>T4.20.3.US.</b> If risk assessments for LBP are conducted, they are required to be done according to specific methodologies (40 CFR 745.65(d), 745.227(a)(1), 745.227(d), 745.227(f), 745.227(g), and 745.227(i)) [Revised October 1996; Revised April 2001; Revised April 2002; Revised July 2004].</p>	<p>(NOTE: See Appendix 11-4 for information on determining whether or not LBP, a paint-lead hazard, a dust-lead hazard, or a soil-lead hazard is present.)</p> <p>Verify that all required reports or plans are maintained by the certified firm or individual who prepared the report for no fewer than 3 yr and the certified firm or individual provides copies of these reports to the building owner who contracted for its services.</p> <p>(NOTE: These requirements apply:</p> <ul style="list-style-type: none"> <li>– to all individuals and firms engaged in LBP activities except persons who perform these activities within residential dwellings that they own, unless one of the following circumstances is present: <ul style="list-style-type: none"> <li>– the residential dwelling is occupied by a person or persons other than the owner or the owners immediate family while these activities are being performed</li> <li>– a child residing in the building has been identified as having an EBL</li> </ul> </li> <li>– only in those states or Indian Country that do not have an authorized State or Tribal program (40 CFR 744.220(b)).)</li> </ul> <p>(NOTE: The work practice standards in do not apply when treating paint-lead hazards of less than:</p> <ul style="list-style-type: none"> <li>– 2 ft2 of deteriorated lead-based paint per room or equivalent</li> <li>– 20 ft2 of deteriorated paint on the exterior building</li> <li>– 10 percent of the total surface area of deteriorated paint on an interior or exterior type of component with a small surface area.)</li> </ul> <p>Verify that risk assessments are only done by a person certified by the USEPA as a risk assessor.</p> <p>Verify that risk assessments were performed according to a documented methodology (i.e., HUD Guidelines), and include:</p> <ul style="list-style-type: none"> <li>– background information is collected on the physical characteristics of the residential dwelling or child-occupied facility and occupant use patterns that may cause LBP exposure to one or more children age 6 yr or under</li> <li>– a visual inspection of the residential dwelling or child-occupied facility is conducted to determine if deteriorated paint is present, assess the extent and causes of deterioration, and other potential LBP hazards</li> <li>– testing the following surfaces for lead which are determined, using documented methodologies, to have a distinct painting history: <ul style="list-style-type: none"> <li>– each friction surface or impact surface with visibly deteriorated paint</li> <li>– all other surfaces with visibly deteriorated paint</li> </ul> </li> <li>– in residential dwellings, dust samples (either composite or single-surface samples) from the interior window sill(s) and floor are collected and analyzed</li> </ul>

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	<p>for lead concentration in all living areas where one or more children, age 6 and under, are most likely to come into contact with dust</p> <ul style="list-style-type: none"> <li>– for multi-family dwellings and child-occupied facilities, the following samples taken and in addition, interior window sill and floor dust samples (either composite or single-surface samples) are collected and analyzed for lead concentration in common areas adjacent to the sample residential dwelling or child- occupied facility and other common areas where one or more children, age 6 and under, are likely to come into contact with dust: <ul style="list-style-type: none"> <li>– each friction surface or impact surface with visibly deteriorated paint</li> <li>– all other surfaces with visibly deteriorated paint</li> </ul> </li> <li>– for child-occupied facilities, interior window sill and floor dust samples (either composite or single-surface samples) are collected and analyzed for lead concentration in each room, hallway or stairwell utilized by one or more children, age 6 and under, and in other common areas in the child-occupied facility where one or more children, age 6 and under, are likely to come into contact with dust</li> <li>– soil samples are collected and analyzed for lead concentration in exterior play areas where bare soil is present and the rest of the yard (i.e., non-play areas) where bare soil is present.</li> </ul> <p>(NOTE: Sampling and testing methodologies are prescribed by the USEPA.)</p> <p>Verify that a risk assessment report is produced which contains the following:</p> <ul style="list-style-type: none"> <li>– date of assessment</li> <li>– address of building</li> <li>– date of construction</li> <li>– apartment numbers (if applicable)</li> <li>– name, address, and telephone number of the owner or owners of each building</li> <li>– name, signature, and certification number of each risk assessor conducting testing</li> <li>– name, address, and telephone number of the certified firm employing each risk assessor, if applicable</li> <li>– name, address, and telephone number of each recognized laboratory conducting analysis of collected samples</li> <li>– results of the visual inspection</li> <li>– each testing method and device and/or sampling procedures employed for paint analysis</li> <li>– specific location of each painted component tested for the presence of LBP</li> <li>– all data collected from onsite testing, including quality control data and, if used, the serial number of any XRF device</li> <li>– all results of laboratory analysis on collected paint, soil, and dust samples</li> <li>– any other sampling results</li> <li>– any background information</li> <li>– results of previous inspections or analyses to the extent they are used as a part of the hazard determination</li> </ul>

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<p><b>T4.20.4.US.</b> LBP abatement is required to be done according to specific methodologies (40 CFR 745.65(d), 745.227(e)(1) through 745.227(e)(3), 745.227(e)(6), 745.227(e)(7), and 745.227(e)(9)) <b>[Revised October 1996; Revised April 2001; Revised April 2002; Revised July 2004].</b></p>	<ul style="list-style-type: none"> <li>– a description of the location, type, and severity of identified LBP hazards and any other potential lead hazards</li> <li>– a description of interim controls and/or abatement options for each identified LBP hazard and a suggested prioritization for addressing each hazard.</li> </ul> <p>Verify that if the report suggests using encapsulation or enclosure, a maintenance schedule and monitoring schedule is recommended in the report.</p> <p>Verify that any paint chip, dust, or soil samples collected are collected by persons certified by the USEPA and analyzed by a USEPA recognized laboratory.</p> <p>Verify that composite dust samples consist of at least two subsamples, every component that is being tested is included in the sampling, and composite dust samples do not consist of subsamples from more than one type of component.</p> <p>(NOTE: See Appendix 11-4 for information on determining whether or not LBP, a paint-lead hazard, a dust-lead hazard, or a soil-lead hazard is present.)</p> <p>Verify that all required reports or plans are maintained by the certified firm or individual who prepared the report for no fewer than 3 yr and the certified firm or individual provides copies of these reports to the building owner who contracted for its services.</p> <p>(NOTE: These requirements apply:</p> <ul style="list-style-type: none"> <li>– to all individuals and firms engaged in LBP activities except persons who perform these activities within residential dwellings that they own, unless one of the following circumstances is present: <ul style="list-style-type: none"> <li>– the residential dwelling is occupied by a person or persons other than the owner or the owners immediate family while these activities are being performed</li> <li>– a child residing in the building has been identified as having an EBL</li> </ul> </li> <li>– only in those states or Indian Country that do not have an authorized State or Tribal program (40 CFR 744.220(b)).)</li> </ul> <p>(NOTE: The work practice standards in do not apply when treating paint-lead hazards of less than:</p> <ul style="list-style-type: none"> <li>– 2 ft<sup>2</sup> of deteriorated lead-based paint per room or equivalent</li> <li>– 20 ft<sup>2</sup> of deteriorated paint on the exterior building</li> <li>– 10 percent of the total surface area of deteriorated paint on an interior or exterior type of component with a small surface area.)</li> </ul> <p>(NOTE: See Appendix 11-4 for information on determining whether or not LBP, a paint-lead hazard, a dust-lead hazard, or a soil-lead hazard is present.)</p> <p>Verify that abatement is conducted only by an individual certified by EPA.</p>

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<p><b>T4.20.5.US.</b> A written occupant protection plan must be developed for all abatement projects (40 CFR 745.65(d))</p>	<p>Verify that each abatement project has a certified supervisor that is onsite during all work site preparation and during the post-abatement cleanup of work areas.</p> <p>Verify that, when abatement activities are being conducted, the supervisor is either onsite or available by telephone, pager, or answering service and able to be present at the work site in not more than 2 h.</p> <p>Verify that the certified supervisor and the certified firm employing that supervisor ensure that all abatement activities are conducted according to the requirements of this section and all other Federal, State and local requirements.</p> <p>Verify that the following constraints are followed during the abatement:</p> <ul style="list-style-type: none"> <li>– there is no open-flame burning or torching of LBP</li> <li>– machine sanding or grinding or abrasive blasting of LBP is not done unless used with HEPA exhaust control which removes particles of 0.3 microns or larger from the area at 99.97 percent or greater efficiency</li> <li>– dry scrapings are done only in conjunction with heat guns or around electrical outlets or when treating defective paint spots totaling no more than 2 ft<sup>2</sup> in any one room, hallway or stairwell or totaling no more than 20 ft<sup>2</sup> on exterior surfaces</li> <li>– operating a heat gun on LBP is done only at temperatures below 1100 °F.</li> </ul> <p>Verify that soil abatement is done by removing the soil, the soil is replaced by soil with a lead concentration as close to local background as practicable, but no greater than 400 ppm and the soil that is removed is not used as top soil at another residential property or child-occupied facility.</p> <p>Verify that, is soil is not removed during soil abatement, the soil is permanently covered.</p> <p>(NOTE: In a multi-family dwelling with similarly constructed and maintained residential dwelling, random sampling for the purposes of clearance may be done if:</p> <ul style="list-style-type: none"> <li>– the certified individuals who abate or clean the residential dwelling do not know which residential dwellings will be selected for random sampling</li> <li>– a sufficient number of residential dwellings are selected to provide a 95 percent level of confidence that no more than 5 percent or 50 of the residential dwellings (whichever is smaller) in the randomly sampled population exceed the appropriate clearance levels.)</li> </ul> <p>Verify that a written occupant protection plan is developed for all abatement projects</p> <p>Verify that the occupant protection plan is unique to each residential dwelling or child-occupied facility and is developed prior to the abatement.</p>

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<p style="text-align: center;"><b>REGULATORY REQUIREMENTS:</b></p>	<p style="text-align: center;"><b>REVIEWER CHECKS:</b>  <b>December 2018</b></p>
<p>and 745.227(e)(5)) [Added July 2004].</p> <p><b>T4.20.6.US.</b> Certain post-abatement clearance procedures must be performed only by a certified inspector or risk assessor (40 CFR 745.65(d), 745.227(e)(8), 745.227(e)(10), and 745.227(i)) [Added July 2004].</p>	<p>Verify that the occupant protection plan describes the measures and management procedures that will be taken during the abatement to protect the building occupants from exposure to any lead-based paint hazards.</p> <p>Verify that a certified supervisor or project designer prepares the occupant protection plan.</p> <p>Verify that the following post-abatement clearance procedures are performed by a certified inspector or risk assessor:</p> <ul style="list-style-type: none"> <li>– a visual inspection to determine if deteriorated paint and visible dust, debris, or residue are present</li> <li>– elimination of deteriorated paint and visible dust, debris, or residue before clearance continues</li> <li>– following the visual inspection and any post-abatement cleanup, clearance sampling for lead in dust is done (NOTE: Clearance sampling may be conducted by employing single-surface sampling or composite sampling techniques.)</li> <li>– clearance sampling for dust are done using documented methodologies that incorporate adequate quality control procedures</li> <li>– clearance sampling for lead contaminated dust are taken a minimum of 1 h after completion of final post-abatement cleanup activities</li> <li>– after conducting an abatement with containment between abated and unabated areas, one dust sample is taken from: <ul style="list-style-type: none"> <li>– one interior window sill</li> <li>– one window trough (if present)</li> <li>– the floors of each of no less than four rooms, hallways or stairwells within the containment area (NOTE: If there are less than four rooms, hallways or stairwells within the containment area, then all rooms, hallways or stairwells are sampled</li> <li>– the floor outside the containment area.</li> </ul> </li> <li>– after conducting an abatement with no containment: <ul style="list-style-type: none"> <li>– two dust samples are taken from each of no less than four rooms, hallways or stairwells in the residential dwelling or child-occupied facility.</li> <li>– one dust sample is taken from one interior window sill and window trough (if present)</li> <li>– one dust sample is taken from the floor of each room, hallway or stairwell selected. (NOTE: If there are less than four rooms, hallways or stairwells within the residential dwelling or child-occupied facility then all rooms, hallways or stairwells are sampled.)</li> </ul> </li> <li>– for an exterior paint abatement, a visible inspection is performed to identify dust and paint chips.</li> </ul>

<p align="center"><b>COMPLIANCE CATEGORY:</b>  <b>TOXIC SUBSTANCES MANAGEMENT</b>  <b>U.S. TEAM GUIDE</b></p>	
<p align="center"><b>REGULATORY REQUIREMENTS:</b></p>	<p align="center"><b>REVIEWER CHECKS:</b>  <b>December 2018</b></p>
<p><b>T4.20.7.US.</b> Renovations must be performed by certified firms using certified renovators according to specific work practices (40 CFR 745.81(a)(4)(ii), 745.82(a) through 745.82(b), and 745.85(a)) <b>[Added July</b></p>	<p>Verify that the certified inspector or risk assessor compares the residual lead level (as determined by the laboratory analysis) from each single surface dust sample with clearance levels for lead in dust on floors, interior window sills, and window troughs or from each composite dust sample with the applicable clearance levels for lead in dust on floors, interior window sills, and window troughs divided by half the number of subsamples in the composite sample.</p> <p>Verify that, if the residual lead level in a single surface dust sample equals or exceeds the applicable clearance level or if the residual lead level in a composite dust sample equals or exceeds the applicable clearance level divided by half the number of subsamples in the composite sample, the components represented by the failed sample are recleaned and retested.</p> <p>(NOTE: The clearance levels for lead in dust are 40 micrograms/ft<sup>2</sup> for floors, 250 micrograms/ft<sup>2</sup> for interior window sills, and 400 micrograms/ft<sup>2</sup> for window troughs.)</p> <p>Verify that an abatement report is prepared by a certified supervisor or project designer and contains the following information:</p> <ul style="list-style-type: none"> <li>– start and completion dates</li> <li>– the name and address of each certified firm conducting the abatement and the name of each supervisor assigned to the abatement project</li> <li>– the occupant protection plan</li> <li>– the name, address, and signature of each certified risk assessor or inspector conducting clearance sampling and the date of clearance testing</li> <li>– the results of clearance testing and all soil analyses and the name of each recognized laboratory that conducted the analyses</li> <li>– a detailed written description of the abatement, including abatement methods used, locations of rooms and/or components where abatement occurred, reason for selecting particular abatement methods for each component, and any suggested monitoring or encapsulants or enclosures.</li> </ul> <p>Verify that all required reports or plans are maintained by the certified firm or individual who prepared the report for no fewer than 3 yr and the certified firm or individual provides copies of these reports to the building owner who contracted for its services.</p> <p>(NOTE: On or after 6 July 2010 all renovations must be performed in accordance with the work practice standards in 40 CFR 745.85 in target housing or child-occupied facilities, unless the renovation qualifies for an exception identified further down in this checklist item.)</p> <p>Verify that renovations are performed by certified firms using certified renovators.</p>

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<b>2008; Revised July 2010; Revised October 2011].</b>	<p>Verify that renovators post signs clearly defining the work area and warning occupants and other persons not involved in renovation activities to remain outside of the work area.</p> <p>Verify that, to the extent practicable, these signs are in the primary language of the occupants.</p> <p>Verify that these signs are posted before beginning the renovation and remain in place and readable until the renovation and the post-renovation cleaning verification have been completed.</p> <p>(NOTE: If warning signs have been posted in accordance with 24 CFR 35.1345(b)(2) or 29 CFR 1926.62(m), additional signs are not required.)</p> <p>Verify that before beginning the renovation, the renovator isolates the work area so that no dust or debris leaves the work area while the renovation is being performed.</p> <p>Verify that the firm maintains the integrity of the containment by ensuring that any plastic or other impermeable materials are not torn or displaced, and taking any other steps necessary to ensure that no dust or debris leaves the work area while the renovation is being performed.</p> <p>Verify that the firm ensures that containment is installed in such a manner that it does not interfere with occupant and worker egress in an emergency.</p> <p>Verify that, for interior renovations, the firm:</p> <ul style="list-style-type: none"> <li>– removes all objects from the work area, including furniture, rugs, and window coverings, or cover them with plastic sheeting or other impermeable material with all seams and edges taped or otherwise sealed</li> <li>– closes and covers all ducts opening in the work area with taped-down plastic sheeting or other impermeable material</li> <li>– closes windows and doors in the work area by covering doors with plastic sheeting or other impermeable material</li> <li>– covers the floor surface, including installed carpet, with taped-down plastic sheeting or other impermeable material in the work area 6 ft beyond the perimeter of surfaces undergoing renovation or a sufficient distance to contain the dust, whichever is greater</li> <li>– uses precautions to ensure that all personnel, tools, and other items, including the exteriors of containers of waste, are free of dust and debris before leaving the work area.</li> </ul> <p>(NOTE: Floor containment measures may stop at the edge of the vertical barrier when using a vertical containment system consisting of impermeable barriers that extend from the floor to the ceiling and are tightly sealed at joints with the floor, ceiling and walls.)</p>

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	<p>Verify that doors used as an entrance to the work area are covered with plastic sheeting or other impermeable material in a manner that allows workers to pass through while confining dust and debris to the work area.</p> <p>Verify that, for exterior renovations, the firm:</p> <ul style="list-style-type: none"> <li>– closes all doors and windows within 20 ft of the renovation</li> <li>– closes all doors and windows within 20 feet of the renovation on the same floor as the renovation, and closes all doors and windows on all floors below that are the same horizontal distance from the renovation on multi-story buildings</li> <li>– ensures that doors within the work area that will be used while the job is being performed are covered with plastic sheeting or other impermeable material in a manner that allows workers to pass through while confining dust and debris to the work area</li> <li>– covers the ground with plastic sheeting or other disposable impermeable material extending 10 ft beyond the perimeter of surfaces undergoing renovation or a sufficient distance to collect falling paint debris, whichever is greater, unless the property line prevents 10 ft of such ground covering.</li> <li>– if the renovation will affect surfaces within 10 ft of the property line, the renovation firm erects vertical containment or equivalent extra precautions in containing the work area to ensure that dust and debris from the renovation does not contaminate adjacent buildings or migrate to adjacent properties (NOTE: Vertical containment or equivalent extra precautions in containing the work area may also be necessary in other situations in order to prevent contamination of other buildings, other areas of the property, or adjacent buildings or properties.</li> </ul> <p>(NOTE: Ground containment measures may stop at the edge of the vertical barrier when using a vertical containment system.)</p> <p>(NOTE: The following work practices are prohibited or restricted during a renovation:</p> <ul style="list-style-type: none"> <li>– open-flame burning or torching of painted surfaces is prohibited</li> <li>– the use of machines designed to remove paint or other surface coatings through high speed operation such as sanding, grinding, power planing, needle gun, abrasive blasting, or sandblasting, is prohibited on painted surfaces unless such machines have shrouds or containment systems and are equipped with a HEPA vacuum attachment to collect dust and debris at the point of generation.</li> <li>– machines designed to remove paint or other surface coatings through high speed operation such as sanding, grinding, power planing, needle gun, abrasive blasting, or sandblasting are operated so that no visible dust or release of air occurs outside the shroud or containment system</li> <li>– operating a heat gun on painted surfaces is permitted only at temperatures below 1,100 °F.)</li> </ul>

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	<p>Verify that waste from renovation activities is contained to prevent releases of dust and debris before the waste is removed from the work area for storage or disposal.</p> <p>Verify that, if a chute is used to remove waste from the work area, it is covered.</p> <p>Verify that at the conclusion of each work day and at the conclusion of the renovation, waste that has been collected from renovation activities is stored under containment, in an enclosure, or behind a barrier that prevents release of dust and debris out of the work area and prevents access to dust and debris.</p> <p>Verify that when the firm transports waste from renovation activities, the firm contains the waste to prevent release of dust and debris.</p> <p>Verify that, after the renovation has been completed, the firm cleans the work area until no dust, debris or residue remains.</p> <p>Verify that, for interior and exterior renovations, the firm:</p> <ul style="list-style-type: none"> <li>– collects all paint chips and debris and, without dispersing any of it, seal this material in a heavy-duty bag</li> <li>– removes the protective sheeting and mist the sheeting before folding it, fold the dirty side inward, and either tape shut to seal or seal in heavy-duty bags</li> <li>– keeps in place sheeting used to isolate contaminated rooms from non-contaminated rooms until after the cleaning and removal of other sheeting</li> <li>– disposes of the sheeting as waste.</li> </ul> <p>Verify that for interior renovations, the firm cleans all objects and surfaces in the work area and within 2 ft of the work area in the following manner, cleaning from higher to lower:</p> <ul style="list-style-type: none"> <li>– clean the walls starting at the ceiling and working down to the floor by either vacuuming with a HEPA vacuum or wiping with a damp cloth</li> <li>– thoroughly vacuum all remaining surfaces and objects in the work area, including furniture and fixtures, with a HEPA vacuum equipped with a beater bar when vacuuming carpets and rugs</li> <li>– wipe all remaining surfaces and objects in the work area, except for carpeted or upholstered surfaces, with a damp cloth</li> <li>– mop uncarpeted floors thoroughly, using a mopping method that keeps the wash water separate from the rinse water, such as the 2-bucket mopping method, or using a wet mopping system.</li> </ul> <p>(NOTE: This checklist item applies to all renovations performed for compensation in target housing and child-occupied facilities, except for the following:</p> <ul style="list-style-type: none"> <li>– renovations in target housing or child-occupied facilities in which a written determination has been made by a certified inspector or risk assessor that the components affected by the renovation are free of paint or other surface coatings that contain lead equal to or in excess of 1.0 milligrams/per square</li> </ul>

<p style="text-align: center;"><b>COMPLIANCE CATEGORY:</b>  <b>TOXIC SUBSTANCES MANAGEMENT</b>  <b>U.S. TEAM GUIDE</b></p>	
<p style="text-align: center;"><b>REGULATORY REQUIREMENTS:</b></p>	<p style="text-align: center;"><b>REVIEWER CHECKS:</b>  <b>December 2018</b></p>
<p><b>T4.20.8.US.</b> Post-renovation cleaning verification must meet specific parameters (40 CFR 745.81(a)(4)(ii), 745.82(a) through 745.82(b), 745.85(b) through 745.85(d)) [Added July 2008; Revised July 2010; Revised October 2011].</p>	<p>centimeter (mg/cm<sup>2</sup>) or 0.5% by weight, where the firm performing the renovation has obtained a copy of the determination</p> <ul style="list-style-type: none"> <li>– renovations in target housing or child-occupied facilities in which a certified renovator, using an EPA recognized test kit and following the kit manufacturer's instructions, has tested each component affected by the renovation and determined that the components are free of paint or other surface coatings that contain lead equal to or in excess of 1.0 mg/cm<sup>2</sup> or 0.5% by weight. If the components make up an integrated whole, such as the individual stair treads and risers of a single staircase, the renovator is required to test only one of the individual components, unless the individual components appear to have been repainted or refinished separately</li> <li>– renovations in target housing or child-occupied facilities in which a certified renovator has collected a paint chip sample from each painted component affected by the renovation and a laboratory recognized by EPA pursuant to section 405(b) of TSCA as being capable of performing analyses for lead compounds in paint chip samples has determined that the samples are free of paint or other surface coatings that contain lead equal to or in excess of 1.0 mg/cm<sup>2</sup> or 0.5% by weight. If the components make up an integrated whole, such as the individual stair treads and risers of a single staircase, the renovator is required to test only one of the individual components, unless the individual components appear to have been repainted or refinished separately.)</li> </ul> <p>(NOTE: Emergency renovations other than interim controls are exempt from the requirements in 40 CFR 745.85 to the extent necessary to respond to the emergency. Emergency renovations are not exempt from the cleaning requirements of 40 CFR 745.85(a)(5), which must be performed by certified renovators or individuals.)</p> <p>(NOTE: On or after 6 July 2010, all renovations must be performed in accordance with the work practice standards in 40 CFR 745.85 and the associated recordkeeping requirements in 40 CFR 745.86(b)(1) and (b)(6) in target housing or child-occupied facilities, unless the renovation qualifies for an exception identified further down in this checklist item.)</p> <p>(NOTE: Activities that do not disturb paint, such as applying paint to walls that have already been prepared, are not regulated by this checklist item if they are conducted after post-renovation cleaning verification has been performed.)</p> <p>Verify that, for interiors, a certified renovator performs a visual inspection to determine whether dust, debris or residue is still present.</p> <p>Verify that, if dust, debris or residue is present, these conditions are removed by re-cleaning and the performing another visual inspection.</p> <p>Verify that, after a successful visual inspection, a certified renovator verifies that each windowsill in the work area has been adequately cleaned, using the following procedures:</p>

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	<ul style="list-style-type: none"> <li>– wipes the windowsill with a wet disposable cleaning cloth that is damp to the touch, if the cloth matches or is lighter than the cleaning verification card, the windowsill has been adequately cleaned</li> <li>– if the cloth does not match and is darker than the cleaning verification card, re-clean the windowsill and then either use a new cloth or fold the used cloth in such a way that an unused surface is exposed, and wipe the surface again. if the cloth matches or is lighter than the cleaning verification card, that windowsill has been adequately cleaned</li> <li>– if the cloth does not match and is darker than the cleaning verification card, wait for 1 h or until the surface has dried completely, whichever is longer</li> <li>– after waiting for the windowsill to dry, wipe the windowsill with a dry disposable cleaning cloth; after this wipe, the windowsill has been adequately cleaned.</li> </ul> <p>Verify that uncarpeted floors and countertops within the work area are wiped with a wet disposable cleaning cloth.</p> <p>Verify that floors are wiped using an application device with a long handle and a head to which the cloth is attached.</p> <p>Verify that the cloth remains damp at all times while it is being used to wipe the surface for post-renovation cleaning verification.</p> <p>(NOTE: If the surface within the work area is greater than 40 square feet, the surface within the work area must be divided into roughly equal sections that are each less than 40 square feet.)</p> <p>Verify that each section is wiped separately with a new wet disposable cleaning cloth.</p> <p>(NOTE: If the cloth used to wipe each section of the surface within the work area matches the cleaning verification card, the surface has been adequately cleaned.)</p> <p>Verify that, if the cloth used to wipe a particular surface section does not match the cleaning verification card, that section of the surface is re-cleaned and then a new wet disposable cleaning cloth is used to wipe that section again.</p> <p>(NOTE: If the cloth matches the cleaning verification card, that section of the surface has been adequately cleaned.)</p> <p>Verify that, if the cloth used to wipe a particular surface section does not match the cleaning verification card after the surface has been re-cleaned, the renovator waits for 1 h or until the entire surface within the work area has dried completely, whichever is longer.</p>

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	<p>Verify that, after waiting for the entire surface within the work area to dry, each section of the surface that has not yet achieved post-renovation cleaning verification is wiped with a dry disposable cleaning cloth.</p> <p>(NOTE: After this wipe, that section of the surface has been adequately cleaned.)</p> <p>Verify that, when the work area passes the post-renovation cleaning verification, the warning signs are removed.</p> <p>Verify that, for exteriors, a certified renovator performs a visual inspection to determine whether dust, debris or residue is still present on surfaces in and below the work area, including windowsills and the ground.</p> <p>Verify that, if dust, debris or residue is present, these conditions are eliminated and another visual inspection is performed.</p> <p>Verify that, when the area passes the visual inspection, the warning signs are removed.</p> <p>(NOTE: Cleaning verification need not be performed if the contract between the renovation firm and the person contracting for the renovation or another Federal, State, Territorial, Tribal, or local law or regulation requires:</p> <ul style="list-style-type: none"> <li>– the renovation firm to perform dust clearance sampling at the conclusion of a renovation</li> <li>– the dust clearance samples are required to be collected by a certified inspector, risk assessor or dust sampling technician</li> <li>– the renovation firm is required to re-clean the work area until the dust clearance sample results are below the clearance standards in 40 CFR 745.227(e)(8) or any applicable State, Territorial, Tribal, or local standard.)</li> </ul> <p>(NOTE: This checklist item applies to all renovations performed for compensation in target housing and child-occupied facilities, except for the following:</p> <ul style="list-style-type: none"> <li>– renovations in target housing or child-occupied facilities in which a written determination has been made by a certified inspector or risk assessor that the components affected by the renovation are free of paint or other surface coatings that contain lead equal to or in excess of 1.0 milligrams/per square centimeter (mg/cm<sup>2</sup>) or 0.5% by weight, where the firm performing the renovation has obtained a copy of the determination</li> <li>– renovations in target housing or child-occupied facilities in which a certified renovator, using an EPA recognized test kit and following the kit manufacturer's instructions, has tested each component affected by the renovation and determined that the components are free of paint or other surface coatings that contain lead equal to or in excess of 1.0 mg/cm<sup>2</sup> or 0.5% by weight. If the components make up an integrated whole, such as the individual stair treads and risers of a single staircase, the renovator is required to test only one of the individual components, unless the individual components appear to have been repainted or refinished separately</li> </ul>

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	<p>– renovations in target housing or child-occupied facilities in which a certified renovator has collected a paint chip sample from each painted component affected by the renovation and a laboratory recognized by EPA pursuant to section 405(b) of TSCA as being capable of performing analyses for lead compounds in paint chip samples has determined that the samples are free of paint or other surface coatings that contain lead equal to or in excess of 1.0 mg/cm<sup>2</sup> or 0.5% by weight. If the components make up an integrated whole, such as the individual stair treads and risers of a single staircase, the renovator is required to test only one of the individual components, unless the individual components appear to have been repainted or refinished separately.)</p> <p>(NOTE: Emergency renovations other than interim controls are exempt from the requirements in 40 CFR 745.85 to the extent necessary to respond to the emergency. Emergency renovations are not exempt from the cleaning verification requirements of 40 CFR 745.85(b).)</p>

**Appendix 11-1**

**PCB Label Format  
(40 CFR 761.45)**

**CAUTION**

**Contains**

**PCBS  
(Polychlorinated Biphenyls)**

A toxic environmental contaminant requiring  
special handling and disposal in accordance with  
U.S. Environmental Protection Agency Regulations  
40 CFR 761 -- For disposal information contact  
the nearest U.S. EPA Office

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In case of accident or spill, call toll free the U.S.  
Coast Guard National Response Center  
800-424-8802

Also Contact: \_\_\_\_\_

Tel No. \_\_\_\_\_



## Appendix 11-2

### Dielectric Fluid Trade Names and Manufacturers

#### 1. U.S. Manufactured Dielectrics:

<b>Name</b>	<b>Manufacturer</b>
Aroclor	Monsanto
Aroclor B	Mallory
Sbestol	American Corporation
Askarel Hevi-Duty	Hevi-Duty Corporation
Askarel *	Ferranti-Packard, Ltd.
Askarel	Universal Mfg. Co.
Chlorextol	Allis-Chalmers
Chlorinol	Sparagoe Electric
Chlorphen	Jard Company
Diaclor	Sangamo Electric
Dykanol	Cornell Dubilier
Elemex	McGraw Edison
Eucarel	Electric Utilities Co.
Hyvol	Aerovox
Inerteen	Westinghouse Electric
No-Flamol	Wagner Electric
Pyranol	General Electric
Saf-T-Kuhl	Kuhlman Electric

\* Generic name used for insulating liquids in capacitors and transformers.

2. Foreign Manufactured Dielectrics:

<b>Name</b>	<b>Manufacturer</b>
Clophen	Bayer (Germany)
Fenclo	Caffaro (Italy)
Kennechlor	Mitsubishi (Japan)
Phenoclor	Prodelec (France)
DK	Caffaro (Italy)
Pyralene	Prodelec (France)
Solvol	USSR
Santotherm	Mitsubishi (Japan)

3. Transformers that list other dielectrics or do not bear a manufacturer's identification or service plate on the transformer: if the transformer contains any of the dielectrics (commonly referred to as askarels), it is to be certified as a PCB Transformer containing in excess of 500 ppm PCB and no laboratory testing is necessary.

## Appendix 11-2a

### PCBs Reclassification (40 CFR 761.30(b)(2)(v)(A) and 761.3(h)(2)(v)(A)) [Added July 2001]

**Table 1: Transformers**

If test results show the PCB concentration (ppm) in the transformer prior to retrofit is...	And you retrofit the transformer with dielectric fluid containing ...	And you ....	And test results show the PCB concentration (ppm) after refill is ...	Then the transformer's reclassified status is...
1,000 (or untested)	<50 ppm PCBs	operate the transformer electrically under loaded conditions for at least 90-continuous days after retrofit, then test the fluid for PCBs	50 but < 500	PCB-contaminated
	<50 ppm PCBs	operate the transformer electrically under loaded conditions for at least 90-continuous days after retrofit, then test the fluid for PCBs	< 50	non-PCB
500 but <1,000	<50 ppm PCBs	test the fluid for PCBs at least 90 days after retrofit	>= 50 but < 500	PCB-contaminated
	<50 ppm PCBs	test the fluid for PCBs at least 90 days after retrofit	< 50	non-PCB
50 but <500	>= 2 but < 50 ppm PCBs	Test the fluid for PCBs at least 90 days after retrofit	< 50	Non-PCB
	< 2 ppm PCBs	No need to test	Not applicable	Non-PCB

**Table 2: Reclassification of Electromagnets, Switches, or Voltage Regulators**

<b>If test results show the PCB concentration (ppm) in the equipment prior to retrofill is...</b>	<b>And you retrofill the equipment with dielectric fluid containing ...</b>	<b>And you ....</b>	<b>And test results show the PCB concentration (ppm) after refill is ...</b>	<b>Then the electromagnet, switch, or voltage regulator's reclassified status is...</b>
1,000 (or untested)	<50 ppm PCBs	operate the equipment electrically under loaded conditions for at least 90-continuous days after retrofill, then test the fluid for PCBs	50 but < 500	PCB-contaminated
	<50 ppm PCBs	operate the equipment electrically under loaded conditions for at least 90-continuous days after retrofill, then test the fluid for PCBs	< 50	non-PCB
500 but <1,000	<50 ppm PCBs	test the fluid for PCBs at least 90 days after retrofill	>= 50 but < 500	PCB-contaminated
	<50 ppm PCBs	test the fluid for PCBs at least 90 days after retrofill	< 50	non-PCB
50 but <500	>= 2 but < 50 ppm PCBs	Test the fluid for PCBs at least 90 days after retrofill	< 50	Non-PCB
	< 2 ppm PCBs	No need to test	Not applicable	Non-PCB

## Appendix 11-2b

### **Self-implementing On-site Cleanup and Disposal of Polychlorinated Biphenyl (PCB) Remediation Waste: Cleanup Levels and Site Cleanup (40 CFR 761.61(a)(4) and 761.61(a)(5)) [Added October 2001]**

#### Cleanup Levels

Cleanup levels are based on the kind of material and the potential exposure to PCBs left after cleanup is completed.

Bulk PCB remediation waste includes, but is not limited to, the following non-liquid PCB remediation waste: soil, sediments, dredged materials, muds, PCB sewage sludge, and industrial sludge.

- The cleanup level for bulk PCB remediation waste in high occupancy areas is  $\leq 1$  ppm without further conditions. High occupancy areas where bulk PCB remediation waste remains at concentrations  $>1$  ppm and  $\leq 10$  ppm shall be covered with a cap meeting the requirements of 40 CFR 761.61(a)(7) and 761.61(a)(8).
- The cleanup level for bulk PCB remediation waste in low occupancy areas is  $\leq 25$  ppm unless otherwise specified.
- Bulk PCB remediation wastes may remain at a cleanup site at concentrations  $>25$  ppm and  $\leq 50$  ppm if the site is secured by a fence and marked with a sign including the ML mark
- Bulk PCB remediation wastes may remain at a cleanup site at concentrations  $>25$  ppm and  $\leq 100$  ppm if the site is covered with a cap meeting the requirements of 40 CFR 761.61(a)(7) and 761.61(a)(8).

Non-porous surfaces.

- In high occupancy areas, the surface PCB cleanup standard is  $\leq 10$   $\mu\text{g}/100$   $\text{cm}^2$  of surface area.
- In low occupancy areas, the surface cleanup standard is  $100$   $\mu\text{g}/100$   $\text{cm}^2$  of surface area. Select sampling locations in accordance with Subpart P of 40 CFR 761 or an approved sampling plan.

Porous surfaces.

- In both high and low occupancy areas, any person disposing of porous surfaces must do so based on the levels for Bulk PCB Remediation Waste.

Liquids.

- In both high and low occupancy areas, cleanup levels are the concentrations specified in 40 CFR 761.79(b)(1) and (b)(2). The decontamination standard for water containing PCBs is:
  - less than  $200$   $\mu\text{g}/\text{L}$  (i.e.,  $200$  ppb PCBs) for non-contact use in a closed system where there are no releases;
  - For water discharged to a treatment works or to navigable waters,  $<3$   $\mu\text{g}/\text{L}$  (approximately  $<3$  ppb) or a PCB discharge limit included in a permit issued under section 307(b) or 402 of the Clean Water Act; or
  - $\leq 0.5$   $\mu\text{g}/\text{L}$  (i.e., approximately  $\leq 0.5$  ppb PCBs) for unrestricted use.
- The decontamination standard for organic liquids and non-aqueous inorganic liquids containing PCBs is  $< 2$   $\text{mg}/\text{kg}$  (i.e.,  $2$  ppm PCBs).

Change in the land use for a cleanup site.

- Where there is an actual or proposed change in use of an area cleaned up to the levels of a low occupancy area, and the exposure of people or animal life in or at that area could reasonably be expected to increase, resulting in a change in status from a low occupancy area to a high occupancy area, the owner of the area shall clean up the area in accordance with the high occupancy area cleanup levels

## Cleanup Processes

### Bulk PCB Remediation Waste:

Any person cleaning up bulk PCB remediation waste onsite using a soil washing process may do so without USEPA approval, if:

- A non-chlorinated solvent is used.
- The process occurs at ambient temperature.
- The process is not exothermic.
- The process uses no external heat.
- The process has secondary containment to prevent any solvent from being released to the underlying or surrounding soils or surface waters.
- Solvent disposal, recovery, and/or reuse is in accordance with relevant provisions of issued approvals.

Bulk PCB remediation waste may be sent offsite for decontamination or disposal provided the waste is either dewatered onsite or transported offsite in containers meeting the requirements of the DOT Hazardous Materials Regulations (HMR) at 49 CFR 171 through 180.

Removed water shall be disposed of as PCB liquid.

Offsite disposal of dewatered bulk PCB remediation waste shall be done as follows:

- Unless sampled and analyzed for disposal, the bulk PCB remediation waste shall be assumed to contain  $\geq 50$  ppm PCBs.
- Bulk PCB remediation wastes with a PCB concentration of  $< 50$  ppm shall be disposed of in a facility permitted, licensed, or registered by a state to manage municipal solid waste
- Bulk PCB remediation wastes with a PCB concentration  $\geq 50$  ppm shall be disposed of in a hazardous waste landfill permitted by USEPA under section 3004 of RCRA, or by a state authorized under section 3006 of RCRA, or a PCB disposal facility approved under 40 CFR 761.
- Provide written notice, including the quantity to be shipped and highest concentration of PCBs (using extraction USEPA Method 3500B/3540C or Method 3500B/3550B followed by chemical analysis using USEPA Method 8082 in SW-846 or methods validated under Subpart Q of 40 CFR 761) at least 15 days before the first shipment of bulk PCB remediation waste from each cleanup site by the generator, to each offsite facility where the waste is destined for an area not subject to a TSCA PCB Disposal Approval.

Non-porous surfaces.

PCB remediation waste non-porous surfaces shall be cleaned onsite or offsite for disposal onsite, disposal offsite, or use, as follows:

- For onsite disposal, non-porous surfaces shall be cleaned onsite or offsite to the levels required under 40 CFR 761.61(a)(4)(ii) using:
- Procedures approved under 40 CFR 761.79
- Technologies approved under 40 CFR 761.60(e)
- Procedures or technologies approved under 40 CFR 761.61(c) disposal approval

For offsite disposal, non-porous surfaces:

- Having surface concentrations  $< 100$  micrograms/100 cm<sup>2</sup> shall be disposed of in accordance with 761.61(a)(5)(i)(B)(2)(ii). Metal surfaces may be thermally decontaminated in accordance with 40 CFR 761.79(c)(6)(i).
- Having surface concentrations  $\geq 100$  micrograms/100 cm<sup>2</sup> shall be disposed of in a hazardous waste landfill permitted by USEPA under section 3004 of RCRA, by a state authorized under section 3006 of RCRA, or a PCB disposal facility approved under 40 CFR 761. Metal surfaces may be thermally decontaminated in accordance with 40 CFR 761.79(c)(6)(ii).

For use, non-porous surfaces shall be decontaminated onsite or offsite to the standards specified in 40 CFR 761.79(b)(3) or in accordance with 40 CFR 761.79(c).

Porous surfaces.

Porous surfaces shall be disposed onsite or offsite as bulk PCB remediation waste according to 40 CFR 761.61(a)(5)(i) or decontaminated for use according to 40 CFR 761.79(b)(4) as applicable.

Liquids.

Any person disposing of liquid PCB remediation waste shall either:

- Decontaminate the waste to the levels specified in 40 CFR 761.79(b)(1) or 761.79(b)(2)
- Dispose of the waste in accordance with paragraph (b) of 40 CFR 761.61 or an approval issued under paragraph (c) of 40 CFR 761.61.

Cleanup wastes.

Any person generating the following wastes during and from the cleanup of PCB remediation waste shall dispose of or reuse them using one of the following methods:

- Non-liquid cleaning materials and personal protective equipment waste at any concentration, including non-porous surfaces and other non-liquid materials such as rags, gloves, booties, other disposable personal protective equipment, and similar materials resulting from cleanup activities shall either be decontaminated in accordance with 40 CFR 761.79(b) or 761.79(c) or be disposed of in: a facility permitted, licensed, or registered by a state to manage municipal solid waste subject to 40 CFR 258; or a facility permitted, licensed, or registered by a state to manage non-municipal non-hazardous waste subject to 40 CFR 257.5 through 257.30; a hazardous waste landfill permitted by USEPA or a state under section 3006 of RCRA to accept PCB waste; or a PCB disposal facility approved under 40 CFR 761.

Cleaning solvents, abrasives, and equipment may be reused after decontamination in accordance with 40 CFR 761.79.



### Appendix 11-3

**PCB Wastes Disposal Guidance**  
**(40 CFR 761.50(b))**  
**[Added October 1998; Revised October 2001]**

Waste	Applicable Standard	Checklist Item number
PCB liquids	Disposal - 40 CFR 761.60(a)  Decontamination - 40 CFR 761.79	T1.50.2.US. through T1.50.5.US.  T1.53.1.US through T1.53.6.US
PCB Item containing an intact and non-leaking PCB Article	Disposal - 40 CFR 761.60(b)  Decontamination - 40 CFR 761.79	T1.50.6.US. through T1.50.10.US.  T1.53.1.US through T1.53.6.US
PCB Item containing a PCB Article which is not intact and non-leaking	Disposal - 40 CFR 761.62(a) or 761.62(c)	T1.50.14.US.
Fluorescent light ballasts containing PCBs only in an intact and non-leaking PCB Small Capacitor	Disposal - 40 CFR 761.60(b)(2)(ii)	T1.50.7.US and T1.50.9.US
Fluorescent light ballasts containing PCBs in the potting material	Disposal - 40 CFR 761.62	T1.50.14.US. and T1.50.15.US.
PCB Remediation Waste, including PCB sewage sludge	Cleanup and Disposal - 40 CFR 761.61	T1.25.5.US, T1.25.6.US, Appendix 11-2b
PCB Bulk Product Waste	Disposal - 40 CFR 761.62	T1.50.14.US. and T1.50.15.US.
PCB Household Waste	Disposal - 40 CFR 761.63	T1.50.16.US.
PCB R&D Waste	Disposal - 40 CFR 761.64	
PCB/Radioactive Waste	Disposal must be done taking into account both its PCB concentration and radioactive properties	

<b>Waste</b>	<b>Applicable Standard</b>	<b>Checklist Item number</b>
Porous Surfaces on which PCBs have been spilled and meeting the definition of remediation waste.	Disposal - 40 CFR 761.61(a)(5)(iii)	Appendix 11-2b
Porous surfaces which are part of manufactured non-liquid products containing PCBs and meeting the definition of PCB bulk product waste	Disposal - 40 CFR 761.62	T1.50.14.US. and T1.50.15.US.
Concrete surfaces on which PCBs have been spilled	Decontamination - 40 CFR 761.79(b)(4) is started within 72 h of the initial spill	T1.53.1.US
Porous non-liquid PCBs in contact with non-porous surfaces, such as underground metal fuel tanks coated with fire retardant resin or pitch.	Decontaminate - 40 CFR 761.79(b)(3) for purposes of unrestricted use or disposal in a smelter.	T1.53.1.US

## **Appendix 11-4**

### **LBP Determinations (40 CFR 745.277(h)) [Added April 2001]**

Lead-based paint is present:

- On any surface that is tested and found to contain lead equal to or in excess of 1.0 milligrams per square centimeter or equal to or in excess of 0.5% by weight; and
- On any surface like a surface tested in the same room equivalent that has a similar painting history and that is found to be lead-based paint.

A paint-lead hazard is present:

- On any friction surface that is subject to abrasion and where the lead dust levels on the nearest horizontal surface underneath the friction surface (e.g., the window sill or floor) are equal to or greater than the dust hazard levels identified in Sec. 745.227(b);
- On any chewable lead-based paint surface on which there is evidence of teeth marks;
- Where there is any damaged or otherwise deteriorated lead-based paint on an impact surface that is caused by impact from a related building component (such as a door knob that knocks into a wall or a door that knocks against its door frame; and
- If there is any other deteriorated lead-based paint in any residential building or child-occupied facility or on the exterior of any residential building or child-occupied facility.

A dust-lead hazard is present in a residential dwelling or child occupied facility:

- In a residential dwelling on floors and interior window sills when the weighted arithmetic mean lead loading for all single surface or composite samples of floors and interior window sills are equal to or greater than 40 micrograms/ft<sup>2</sup> for floors and 250 micrograms/ft<sup>2</sup> for interior window sills, respectively;
- On floors or interior window sills in an unsampled residential dwelling in a multi-family dwelling, if a dust-lead hazard is present on floors or interior window sills, respectively, in at least one sampled residential unit on the property; and
- On floors or interior windowsills in an unsampled common area in a multi-family dwelling, if a dust-lead hazard is present on floors or interior windowsills, respectively, in at least one sampled common area in the same common area group on the property.

A soil-lead hazard is present:

- In a play area when the soil-lead concentration from a composite play area sample of bare soil is equal to or greater than 400 ppm; or
- In the rest of the yard when the arithmetic mean lead concentration from a composite sample (or arithmetic mean of composite samples) of bare soil from the rest of the yard (i.e., non-play areas) for each residential building on a property is equal to or greater than 1,200 ppm.



## SECTION 12

### WASTEWATER MANAGEMENT U.S. TEAM Guide, December 2018

#### A. Applicability

This section includes regulations, responsibilities, and compliance requirements associated with wastewater discharge. Wastewater discharge can include any of the following:

1. sanitary or industrial wastewater discharge directly to a receiving stream
2. sanitary or industrial wastewater discharge to a publicly owned treatment works (POTW)
3. sanitary or industrial wastewater discharge to a Federally owned treatment works (FOTW) or other non-Agency treatment facility
4. stormwater runoff from operational areas to a receiving stream or water body
5. industrial wastewater or stormwater drained to an industrial waste reservoir.

Most facilities have wastewater discharge of one kind or another, and therefore this section will be applicable. Assessors are required to review state and local regulations and, if applicable, the appropriate Agency Supplement, to perform a comprehensive assessment.

Select portions of this section (i.e., Review of Federal Legislation, State and Local Regulations, Key Compliance Requirements, Key Terms and Definitions, Typical Records to Review, Typical Physical Features to Inspect, and the Checklist) have been reviewed by USEPA personnel from the Office of Enforcement and Compliance Assurance (OECA) and USEPA's Office of General Counsel. USEPA's comments and suggestions for changes have been incorporated in this version of the TEAM Guide. USEPA did not review all portions of this section. USEPA also did not review and comment on items pertaining to federal Executive Orders, DOT regulations, OSHA regulations or any other area outside of Title 40 of the Code of Federal Regulations (CFR). Portions that have been added or revised as a result of this review are identified as being reviewed, revised, or added in October 2001, for example **[Added October 2001]**.

#### B. Federal Legislation

- *The Federal Water Pollution Control Act*. This act, commonly known as the Clean Water Act (CWA), as amended February 4, 1987, 33 U.S. Code (USC) 1251-1387, Public Law (PL) 100-4, governs the control of water pollution in the nation. The act's primary objective is to restore and maintain the chemical, physical, and biological integrity of the nation's surface waters. The CWA regulates "priority" pollutants, including various toxic pollutants; "conventional" pollutants, such as biochemical oxygen demand, total suspended solids, fecal coliform, oil and grease, and pH; and "non-conventional" pollutants, including any pollutant not identified as either conventional or priority **[Revised October 2001]**.
- *The Federal Facility Compliance Act (FFCA)*. This act, dated 6 October 1992, amends the *Solid Waste Disposal Act* (SWDA) and addresses requirements for Federally owned treatment works (FOTW) under 42 USC 6939(e) (PL 102-386). The FFCA establishes a conditional domestic sewage exclusion for industrial discharges to an FOTW. This allows an FOTW to accept hazardous wastes, provided that certain conditions are met and the wastes are not acutely hazardous.
- EO 12088, *Federal Compliance with Pollution Standards*. This EO, dated 13 October 1978, requires Federally owned and operated facilities to comply with applicable Federal, state, and local pollution control standards. It makes the head of each executive agency responsible for ensuring that the agencies, facilities, programs, and activities the Agency funds meet applicable Federal, state, and local environmental requirements for correcting situations that are not in compliance with such requirements. In addition, the EO requires that each agency ensure that sufficient funds for environmental compliance are included in the agency budget. Sections 1-4, "Pollution Control Plan" was revoked by EO 13148 **[Revised October 2002]**.

### C. State/Local Regulations

- For information on regulations in specific states, see the State Supplements to TEAM Guide.

States normally have wastewater discharge legislation and regulations that require permitting similar to the National Pollutant Discharge Elimination System (NPDES) program. The state is often delegated authority to administer the NPDES permits for discharges within their state. These permits are often joint permits issued pursuant to both Federal and state legislation. In some cases, the state will not administer the NPDES program and will issue a state permit even though the U.S. Environmental Protection Agency (USEPA) has issued an NPDES permit. The states and the USEPA normally cooperate in the permit issuance process to insure that the two permits are consistent, but there may be differences in monitoring requirements and the number of pollutants limited. These requirements normally do not conflict, but may require additional sampling and dual reporting.

States also have more stringent requirements for wastewater treatment plant operations. Many states have wastewater treatment plant (WWTP) operator licensing and certification programs that require that an operator pass an exam and have a required amount of experience.

Local entities (counties, cities) may also have enforceable wastewater discharge limitations that regulate discharges to a POTW. Local limitations often include pH, temperature, and concentrations of various organic and inorganic compounds. Major industrial operations which discharge to an offsite POTW will be subjected to pretreatment permits issued by the POTW, state, or USEPA as appropriate.

### D. Key Compliance Requirements

- NPDES Permits – The CWA regulates both direct and indirect discharges. The NPDES program (CWA Section 402) controls direct discharges into navigable waters. Direct discharges or "point source" discharges are from such sources as pipes and sewers. These include discharges of municipal wastewater, as well as storm water conveyed through a municipal separate storm water system. A municipality may have several different types of sources whose discharges are controlled by its NPDES permit including a wastewater treatment plant, combined sewer overflow, municipal storm water discharge, and an emerging area, sanitary sewer overflow.

NPDES permits, issued by either USEPA or an authorized state (USEPA has authorized 43 states and the U.S. Virgin Islands to administer the NPDES program), contain technology-based and/or water quality-based limits and establish pollutant monitoring requirements. Each municipality that intends to discharge into the nation's waters must obtain a permit prior to initiating its discharge. A permit applicant must provide quantitative analytical data identifying the types of pollutants present in the facility's effluent. The permit then sets the conditions and effluent limitations on the facility discharges.

An NPDES permit may also include discharge limits based on federal or state water quality criteria or standards that were designed to protect designated uses of surface waters, such as supporting aquatic life or recreation. These standards, unlike the technological standards, generally do not take into account technological feasibility or costs. Water quality criteria and standards vary from state to state and from site to site, depending on the use classification of the receiving water body. Most states follow USEPA guidelines, which propose aquatic life and human health criteria for many of the 126 priority pollutants.

Local governments that own and operate wastewater treatment plants are required to apply for and obtain an NPDES permit. Permittees are required to manage and maintain their operations according to the parameters of the permit. This management includes: taking sample and measurements, maintaining records of results and data submitted to the permitting authority, and reporting noncompliance (40 CFR 122) **[Revised October 2001]**.

- Centralized Waste Treatment (CWT) Facilities – CWTs are required to meet the requirements of 40 CFR Part 403 if discharging to another POTW. They are also required to monitor wastewater discharges and meet contaminant parameters from (40 CFR 437) **[Added April 2001]**:

treatment and recovery of hazardous or non-hazardous industrial metal-bearing wastes, oily wastes and organic-bearing wastes received from off-site

the treatment of CWT wastewater.

- Combined Sewer Systems - USEPA's 1994 *Combined Sewer Overflow (CSO) Control Policy* provides recommended NPDES permit conditions for municipalities with combined sewer systems. These provisions, which are typically implemented by the permitting authority, include requirements for meeting the nine minimum controls to reduce the frequency and water quality impacts of CSO events and to establish a long-term control plan to address capital improvements to the system. Local governments that operate and maintain a combined collection system must abide by these requirements, which are included as part of the NPDES permit **[Added October 2001]**.
- Sanitary Sewer Overflows - sanitary sewer overflows (SSOs) are discharges of untreated sewage from a separate sanitary sewer collection system prior to the headworks of a sewage treatment plant. These systems are designed to collect and convey sewage from households and businesses and wastewater from industries to sewage treatment plants, for treatment in accordance with CWA requirements prior to discharge to waters of the United States. SSO discharges to water of the United States are prohibited by the CWA unless authorized by a NPDES permit **[Added October 2001]**.
- Stormwater Discharges - in 1987, Congress amended the CWA and required USEPA to establish a program to address storm water discharges. In response, USEPA promulgated the NPDES storm water regulations. Implemented in two phases, the first phase requires local governments that operate large (serving a population greater than 250,000) or medium (serving a population from 100,000 to 250,000) municipal separate storm water systems to apply for and obtain an NPDES storm water permit. During the second phase, local governments operating regulated small municipal separate storm water systems are required to submit to USEPA a Notice of Intent (NOI) to be covered under a national general storm water permit **[Added October 2001; Revised April 2009]**.

In addition to requiring storm water permits for collection systems, the CWA may also require local government operations to obtain or be covered by storm water permits. Such operations may include construction activities (e.g., roads, buildings) or storage of chemicals or hazardous materials.

All stormwater discharges associated with industrial and construction activities that discharge to Municipal Separate Storm Sewer Systems (MS4s), or directly into waters of the United States are required to obtain either:

1. individual NPDES storm water permit coverage, or
2. coverage under the state or EPA's general permit

Specifically, a facility must obtain permit coverage for industrial activities if the activity falls under:

1. one of the 11 categories of Industrial Storm Water Activities, including construction, that result in storm water discharge to Municipal Separate Storm Sewer Systems (MS4s), or directly to waters of the United States, or
2. one of the 30 Industrial Sectors listed for the Multi-Sector General Permit.

These industrial activities are defined by either the facilities certain Standard Industrialization Classification, or a general description of the facilities industrial activities.

Construction activities (including other land-disturbing activities) that disturb one to five acres are regulated under the NPDES storm water program Phase II requirements. Activities that disturb more than 5 acres are regulated by Phase I requirements. The Phase II requirements also include smaller sites that are part of a larger common plan of development or sale. Sites less than 1 acre, if determined by local authorities to pose a significant risk to local watersheds, can also be required to get an NPDES permit.

- Pretreatment Program - the pretreatment program controls the indirect discharge of pollutants to POTWs by "industrial users," and prohibits the discharge of certain types of pollutants to a POTW. The goals are to protect municipal wastewater treatment plants from damage that may occur when hazardous, toxic, or other wastes are discharged into a sewer system and to protect the quality of sludge generated by these plants. For example, any

pollutant that would cause pass through or interference must not be discharged into a treatment works, either POTW or FOTW. No pollutants shall be introduced into a treatment works that create a fire or explosion hazard, cause corrosive structural damage, have a pH below 5.0, or are solid or viscous enough to cause obstructions. Treatment works must be notified immediately of any discharge, including any slug loadings that could cause problems to the treatment works (40 CFR 403.5).

Although discharges to a POTW are regulated primarily by the POTW itself, rather than the state or USEPA, USEPA has developed technology-based standards, known as “categorical pretreatment standards,” for certain industrial users of POTWs. Different standards apply to existing and new sources within each industry category.

Local governments that own and operate POTWs must meet the requirements for a pretreatment program under the CWA. In addition to the categorical standards mentioned above, a POTW develops another kind of pretreatment standard, “local limits,” to assist the POTW in achieving the effluent limitations in its NPDES permit. The program may include requirements for industrial users to treat waste prior to its discharge to the sanitary sewer and/or to develop a slug plan. The POTW’s pretreatment program must be approved by the Approval Authority (state or USEPA). In association with the pretreatment program, POTWs are required to develop and implement an enforcement response plan and maintain a list of significant industrial users (40 CFR 403.12(f)) **[Revised October 2001]**.

- Operation and Maintenance of an FOTW/POTW - Treatment plant supervisors are required to maintain operating logs and records that are posted daily and are neat and legible. Treatment plants are required to be operated in accordance with all design parameters (40 CFR 403.12(f)).
- Effluent Limitations for Steam Electric Power Generating Sources - Steam electric power generating sources must meet point source effluent limitations. Of special concern is the discharge of free available chlorine and total residual chlorine. Additionally there must be no discharge of polychlorinated biphenyls (PCB). There are additional standards depending on if the source is a new or an existing source (40 CFR 423).
- Effluent Limits for Electroplating Point Sources - Existing electroplating operations that introduce pollutants into a POTW resulting from the electroplating of common metals are subject to pretreatment standards that vary depending upon the level of discharge and the nature of the metals used (40 CFR 413).
- Effluent Limitation for Metal Finishing Point Sources - Shops performing electroplating, electroless plating, anodizing, coating, chemical etching and milling, and printed circuit board manufacturing are subject to certain best available technology (BAT) point source effluent limitations, which include the self-monitoring of cyanide. Existing metal finishing point sources introducing pollutants into POTWs are subject to certain pretreatment standards. New metal finishing point sources introducing pollutants into POTWs are subject to certain performance and pretreatment standards (40 CFR 433).
- Effluent Limitations for Transportation Cleaning Equipment – This regulation sets standards for discharges resulting from cleaning the interior of tanks used to transport chemical, petroleum or food grade cargos. These requirements do not apply to facilities that clean only the exteriors of transportation equipment. Operations that may be subject to these requirements typically are reported under a wide variety of Standard Industrial Classification (SIC) codes. Several of the most common SIC codes include: SIC 7699, SIC 4741, or SIC 4491 (1987 SIC Manual). These requirements are not applicable to the following discharges:
  1. wastewaters associated with tank cleanings operated in conjunction with other industrial, commercial, or POTW operations, provided that the cleaning is limited to tanks that previously contained raw materials, by-products, or finished products that are associated with the facility's onsite processes
  2. wastewaters resulting from cleaning the interiors of drums, intermediate bulk containers, or closed-top hoppers
  3. wastewater from a facility that discharges less than 100,000 gal/yr of transportation equipment cleaning process wastewater (40 CFR 442).
- Discharge Limits for Hospitals - Hospital are required to limit the quantity and quality of their discharges. The following are restricted: BOD<sub>5</sub>, TSS, and pH (40 CFR 460).

- Discharge Limits for Photo Labs - Photo labs that process more than 150 m<sup>2</sup> per day of film must limit their discharges for silver, CN, and pH (40 CFR 459).
- Discharges from Armed Forces Vessels. Numerous types of discharges incidental to the normal operation of Armed Forces vessels must have a marine pollution control device (MPCD) to mitigate adverse impacts on the marine environment. This requirement applies to the owners and operators of Armed Forces vessels, except where the Secretary of Defense finds that compliance with this part is not in the interest of the national security of the United States. This requirement does not apply to vessels while they are under construction, vessels in drydock, amphibious vehicles, or vessels under the jurisdiction of the Department of Transportation other than those of the Coast Guard. These requirements are not applicable beyond the contiguous zone (40 CFR 1700.1 through 1700.5).
- Sewage Sludge Management - the CWA and associated regulations govern land application and land disposal of sludge generated from municipal wastewater treatment. The Section 503 regulations establish provisions for sludge quality, application rates, and environmental conditions under which land application is permitted. The regulations also specify management methods, monitoring, and recordkeeping for both disposal and land application facilities. Local governments that produce sludge from their wastewater treatment operations are subject to the Section 503 regulations [**Revised October 2001**].
- Land Application of Sewage Sludge - sludge that is generated during the treatment of domestic sludge in a POTW is required to be managed according to certain parameters for pathogen control and vector attraction reduction (40 CFR 503.30 through 503.33), pollutant concentrations, pollutant loading rates, ceiling concentrations, and annual pollutant loading rates for the following situations [**Revised October 2001**]:
  1. bulk sewage sludge or sewage sludge sold or given away in a bag or other container,
  2. the application of bulk sewage sludge to agricultural land, forest, a public contact site, or a reclamation site,
  3. the application of bulk sewage sludge to a lawn or home garden,
  4. the application of domestic septage to agricultural land, forest, or a reclamation site, or
  5. the application of sewage sludge to an active sewage sludge unit.

These regulations implement requirements for both the preparation and the application of the sewage sludge and requirements for monitoring, reporting, and recordkeeping (40 CFR 503.10 through 503.18).
- Surface Disposal of Sewage Sludge - active sewage sludge units are subject to operational requirements based on their location and design. Operational requirements include monitoring the sludge for specific pollutants, runoff management, leachate management, covering the sludge, and meeting pathogen and vector attraction reduction requirements (40 CFR 503.30 through 503.33). Records are required to be kept on how all of these requirements are met and the results of sampling for 5 yr (40 CFR 503.20 through 503.28) [**Revised October 2001**].
- Incineration of Sewage Sludge - sewage sludge incinerators are required to meet emissions limitations for beryllium, mercury, hydrocarbons. The sludge being fed to the incinerator is required to meet specific limitation for arsenic, cadmium, chromium, and nickel. Detailed operational records are required to be kept for 5 yr. Types of information to be maintained include: the stack emissions, the constituents of the sludge being fed to the incinerator, combustion temperatures, air pollution control device operating parameters, sewage sludge feed rate, the stack height, the dispersion factor for the site, and calibration and maintenance logs (40 CFR 503.40 through 503.48) [**Revised October 2001**].

## E. Key Compliance Definitions

- *Active Sewage Sludge Unit* - a sewage sludge unit that has not closed (40 CFR 503.21(a)) [**Reviewed October 2001**].
- *Adjacent* - means bordering, contiguous, or neighboring [see definition of *Neighboring*] a water identified in paragraphs (1) through (5) of the definition for “Waters of the United States,” including waters separated by constructed dikes or barriers, natural river berms, beach dunes, and the like. For purposes of adjacency, an open

water such as a pond or lake includes any wetlands within or abutting its ordinary high water mark. Adjacency is not limited to waters located laterally to a water identified in paragraphs (1) through (5) of the definition for “Waters of the United States.” Adjacent waters also include all waters that connect segments of a water identified in paragraphs (1) through (5) or are located at the head of a water identified in paragraphs (1) through (5) of the definition for “Waters of the United States,” and are bordering, contiguous, or neighboring such water. Waters being used for established normal farming, ranching, and silviculture activities. This definition is effective 6 February 2020 (33 U.S.C. 1344(f)) are not adjacent (40 CFR 122.2 and 401.11(l)(3)(i)) **[Added July 2015; Revised April 2018]**.

- *Aerobic Digestion* - the biochemical decomposition of organic matter in sewage sludge into CO<sub>2</sub> and water by microorganisms in the presence of air (40 CFR 503.31(a)) **[Reviewed October 2001]**.
- *Agricultural Land* - land on which a food crop, a feed crop, or a fiber crop is grown. This includes range land and land used as pasture (40 CFR 503.11(a)) **[Reviewed October 2001]**.
- *Agronomic Rate* - the whole sludge application rate (dry weight basis) designed (40 CFR 503.11(b)) **[Reviewed October 2001]**:
  1. To provide the amount of nitrogen needed by the food crop, feed crop, fiber crop, cover crop, or vegetation grown on the land.
  2. To minimize the amount of nitrogen in the sewage sludge that passes below the root zone of the crop or vegetation grown on the land to the groundwater.
- *Air Pollution Control Device* - one or more processes used to treat the exit gas from a sewage sludge incinerator stack (40 CFR 503.41) **[Added October 2001]**.
- *Alternative Effluent Limitations or Pretreatment Standards* - effluent limitations determined on a case-by-case basis under section 402(a)(1) of the CWA or pretreatment standards developed as local limits by the control authority under 40 CFR 403.6(c) that apply to the discharge of wastewater subject to this provision. The permit writer (or control authority) will calculate these limitations or standards using a “building block” approach or the “combined waste stream formula.” Under this approach, the permit writer (or control authority) will develop flow-weighted effluent limitations or standards for the treated combined waste stream by applying the limitations or standards in 40 CFR subchapter N that would otherwise apply to a particular waste stream received from off-site if the waste stream were treated and discharged from the facility at which it was generated (40 CFR 437.2) **[Added April 2001]**.
- *Amalgam Process Wastewater* - any wastewater generated and discharged by a dental discharger through the practice of dentistry that may contain dental amalgam (40 CFR 441.20) **[Added July 2017]**.
- *Amalgam Separator* - a collection device designed to capture and remove dental amalgam from the amalgam process wastewater of a dental facility (40 CFR 441.20) **[Added July 2017]**.
- *Anaerobic Digestion* - the biochemical decomposition of organic matter in sewage sludge into methane gas and CO<sub>2</sub> by microorganisms in the absence of air (40 CFR 503.31(b)) **[Reviewed October 2001]**.
- *Analytical Methods* - the parameters that are regulated or referenced in this part and listed with approved methods of analysis in Table 1B at 40 CFR 136.3 are defined as follows (40 CFR 412.2(j)) **[Added July 2005]**:
  1. Ammonia (as N) means ammonia reported as nitrogen.
  2. BOD<sub>5</sub> means 5-day biochemical oxygen demand.
  3. Nitrate (as N) means nitrate reported as nitrogen.
  4. Total dissolved solids means nonfilterable residue.
- *Animal Feeding Operation* - a lot or facility (other than an aquatic animal production facility) where the following conditions are met (40 CFR 122.23(b)(1) and 122.23(b)(2)) **[Added October 2001]**:

1. animals (other than aquatic animals) have been, are, or will be stabled or confined and fed or maintained for a total of 45 days or more in any 12-mo period, and
  2. crops, vegetation forage growth, or post-harvest residues are not sustained in the normal growing season over any portion of the lot or facility.
  3. Two or more animal feeding operations under common ownership are considered, for the purposes of NPDES regulations, to be a single animal feeding operation if they adjoin each other or if they use a common area or system for the disposal of wastes.
- *Annual Pollutant Loading Rate* - the maximum amount of a pollutant that can be applied to a unit area of land during a 365 day period (40 CFR 503.11(c)) **[Reviewed October 2001]**.
  - *Annual Whole Sludge Application Rate* - the maximum amount of sewage sludge (dry weight basis) that can be applied to a unit area of land during a 365 day period (40 CFR 503.11(d)) **[Reviewed October 2001]**.
  - *Apply Sewage Sludge or Sewage Sludge Applied to the Land* - means land application of sewage sludge (40 CFR 503.9(a)) **[Reviewed October 2001]**.
  - *Approval Authority* - the Director in an NPDES state with an approved state pretreatment program and the appropriate Regional Administrator in a non-NPDES state or NPDES state without an approved state pretreatment program (40 CFR 403.3(c)) **[Added October 2001]**.
  - *Approved Dosage* - the dose of a drug that has been found to be safe and effective under the conditions of a new animal drug application (40 CFR 451.2) **[Added October 2004]**.
  - *Approved POTW Pretreatment Program or Program or POTW Pretreatment Program* - a program administered by a POTW that meets the criteria established in this regulation (40 CFR 403.8 and 403.9) and which has been approved by the USEPA or authorized regulatory agency in accordance with 40 CFR 403.11 of this regulation (40 CFR 403.3(d)) **[Added October 2001]**.
  - *Approved Program or Approved State* - a state or interstate program which has been approved or authorized by USEPA under 40 CFR 123 (40 CFR 122.2) **[Added October 2001]**.
  - *Aquatic Animal Containment System* - a culture or rearing unit such as a raceway, pond, tank, net or other structure used to contain, hold or produce aquatic animals. The containment system includes structures designed to hold sediments and other materials that are part of a wastewater treatment system (40 CFR 451.2) **[Added October 2004]**.
  - *Aquifer* - a geologic formation, group of geologic formations, or a portion of a geologic formation capable of yielding groundwater to wells or springs (40 CFR 503.21(b)) **[Reviewed October 2001]**.
  - *Armed Forces Vessel* - a vessel owned or operated by the DOD or the United States Coast Guard, other than vessels that are time or voyage chartered by the Armed Forces, vessels of the U.S. Army Corps of Engineers, or vessels that are memorials or museums (40 CFR 1700.3) **[Added July 1999]**.
  - *Auxiliary Fuel* - fuel used to augment the fuel value of sewage sludge. This includes, but is not limited to, natural gas, fuel oil, coal, gas generated during anaerobic digestion of sewage sludge, and municipal solid waste (not to exceed 30 percent of the dry weight of sewage sludge and auxiliary fuel together). Hazardous wastes are not auxiliary fuel (40 CFR 503.41) **[Added October 2001]**.
  - *Average Daily Concentration* - the arithmetic mean of the concentration of a pollutant in milligrams per kilogram of sewage sludge (dry weight basis) in the samples collected and analyzed in a month (40 CFR 503.41) **[Added October 2001]**.

- *Average Monthly Discharge Limitation* - the highest allowable average of “daily discharges” over a calendar month, calculated as the sum of all “daily discharges” measured during a calendar month divided by the number of “daily discharges” measured during that month (40 CFR 122.2) [**Added October 2001**].
- *Average Weekly Discharge Limitation* - the highest allowable average of “daily discharges” over a calendar week, calculated as the sum of all “daily discharges” measured during a calendar week divided by the number of “daily discharges” measured during that week (40 CFR 122.2) [**Added October 2001**].
- *Base Flood* - a flood that has a one percent chance of occurring in any given year (i.e., a flood with a magnitude equaled once in 100 yr) (40 CFR 503.9(b)) [**Reviewed October 2001**].
- *Best Management Practices (“BMPs”)* - schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of “waters of the United States.” BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage (40 CFR 122.2) [**Added October 2001**].
- *Best Management Practices (BMPs)* - schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to implement the prohibitions listed in 40 CFR 403.5(a)(1) and (b). BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw materials storage (40 CFR 403.3(e)) [**Added January 2006**].
- *Bioaccumulative* - the opposite of not bioaccumulative (40 CFR 1700.3) [**Added April 2017**].
- *Biodegradable* - the following for purposes of the standards (40 CFR 1700.3) [**Added April 2017**]:
  1. Regarding environmentally acceptable lubricants and greases, biodegradable means lubricant formulations that contain at least 90% (weight in weight concentration or w/w) or grease formulations that contain at least 75% (w/w) of a constituent substance or constituent substances (only stated substances present above 0.10% must be assessed) that each demonstrate either the removal of at least 70% of dissolved organic carbon, production of at least 60% of the theoretical carbon dioxide, or consumption of at least 60% of the theoretical oxygen demand within 28 days. Test methods include: Organization for Economic Co-operation and Development Test Guidelines 301 A-F, 306, and 310, ASTM 5864, ASTM D-7373, OCSPP Harmonized Guideline 835.3110, and International Organization for Standardization 14593:1999. For lubricant formulations, the 10% (w/w) of the formulation that need not meet the above biodegradability requirements, up to 5% (w/w) may be non-biodegradable, but not bioaccumulative, while the remaining 5-10% must be inherently biodegradable. For grease formulations, the 25% (w/w) of the formulation that need not meet the above biodegradability requirement, the constituent substances may be either inherently biodegradable or non-biodegradable, but may not be bioaccumulative. Test methods to demonstrate inherent biodegradability include: OECD Test Guidelines 302C (>70% biodegradation after 28 days) or OECD Test Guidelines 301 A-F (>20% but <60% biodegradation after 28 days).
  2. Regarding cleaning products, biodegradable means products that demonstrate either the removal of at least 70% of dissolved organic carbon, production of at least 60% of the theoretical carbon dioxide, or consumption of at least 60% of the theoretical oxygen demand within 28 days. Test methods include: Organization for Economic Cooperation and Development Test Guidelines 301 A-F, 306, and 310, and International Organization for Standardization 14593:1999.
  3. Regarding biocidal substances, biodegradable means a compound or mixture that yields 60% of theoretical maximum carbon dioxide and demonstrate a removal of at least 70% of dissolved organic carbon within 28 days as described in EPA 712-C-98-075 (OPPTS 835.3100 Aerobic Aquatic Biodegradation).
- *Blowdown* - the minimum discharge of recirculating water for the purpose of discharging materials contained in the water, the further buildup of which would cause concentrations in amounts exceeding limits established by best engineering practice (40 CFR 401.11(p) and 40 CFR 423.11(j)).

- *Bottom Ash* - means the ash, including boiler slag, which settles in the furnace or is dislodged from furnace walls. Economizer ash is included in this definition when it is collected with bottom ash (40 CFR 423.11(f)) **[Added October 2003; Revised October 2017]**.
- *Bulk Sewage Sludge* - sewage sludge that is not sold or given away in a bag or other container for application to the land (40 CFR 503.11(e)) **[Reviewed October 2001]**.
- *Bypass* - the intentional diversion of waste streams from any portion of a treatment facility (40 CFR 122.41(m)(1)(i) and 40 CFR 403.17) **[Added October 2001]**.
- *Centralized Waste Treatment (CWT) Facility* - any facility that treats (for disposal, recycling or recovery of material) any hazardous or non-hazardous industrial wastes, hazardous or non-hazardous industrial wastewater, and/or used material received from off-site. "CWT facility" includes both a facility that treats waste received exclusively from off-site and a facility that treats wastes generated on-site as well as waste received from off-site. For example, an organic chemical manufacturing plant may, in certain circumstances, be a CWT facility if it treats industrial wastes received from offsite as well as industrial waste generated at the organic chemical manufacturing plant. CWT facilities may also include re-refiners and may be owned by the federal government (40 CFR 437.2) **[Added April 2001]**.
- *Centralized Waste Treatment Wastewater* - any wastewater generated as a result of CWT activities. CWT wastewater sources may include, but are not limited to: liquid waste receipts, solubilization water, used oil emulsion-breaking wastewater, tanker truck/drum/roll-off box washes, equipment washes, air pollution control scrubber blow-down, laboratory-derived wastewater, on-site landfill wastewaters, and contaminated stormwater (40 CFR 437.2) **[Added April 2001]**.
- *Chemical Cargos* – these include, but are not limited to, the following: latex, rubber, plastics, plasticizers, resins, soaps, detergents, surfactants, agricultural chemicals and pesticides, hazardous waste, organic chemicals including: alcohols, aldehydes, formaldehydes, phenols, peroxides, organic salts, amines, amides, other nitrogen compounds, other aromatic compounds, aliphatic organic chemicals, glycols, glycerines, and organic polymers; refractory organic compounds including: ketones, nitriles, organo-metallic compounds containing chromium, cadmium, mercury, copper, zinc; and inorganic chemicals including: aluminum sulfate, ammonia, ammonium nitrate, ammonium sulfate, and bleach. Cargos that are not considered to be food grade or petroleum cargos are considered to be chemical cargos (40 CFR 442.2) **[Added October 2000]**.
- *Chemical Metal Cleaning Waste* - any wastewater resulting from the cleaning of any metal process equipment with chemical compounds, including, but not limited to, boiler tube cleaning (40 CFR 423.11(c)).
- *Class I Sludge Management Facility* - any POTW identified under 40 CFR 403.8(a) as being required to have an approved pretreatment program (including such POTWs located in a state that has elected to assume local program responsibilities pursuant to 40 CFR 403.10(e)) and any other treatment works treating domestic sewage classified as a Class I sludge management facility by the USEPA or authorized regulatory agency, in the case of approved state programs, because of the potential for its sludge use or disposal practices to adversely affect public health and the environment (40 CFR 122.2)**[Reviewed October 2001]**.
- *Class I Sludge Management Facility* - any publicly owned treatment works (POTW), as defined in 40 CFR 501.2, required to have an approved pretreatment program under 40 CFR 403.8(a) (including any POTW located in a State that has elected to assume local program responsibilities pursuant to 40 CFR 403.10(e)) and any treatment works treating domestic sewage, as defined in 40 CFR 122.2, classified as a Class I sludge management facility by the USEPA Regional Administrator, or, in the case of approved State programs, the Regional Administrator in conjunction with the State Director, because of the potential for its sewage sludge use or disposal practice to affect public health and the environment adversely (40 CFR 503.9(c)) **[Reviewed October 2001]**.
- *Class A Sewage Sludge* - when one of the following methods is used, sludge is considered Class A with respect to pathogens (40 CFR 503.32(a)(3)) **[Reviewed October 2001]**:

1. Alternative 1: Either the density of fecal coliform in the sewage sludge shall be less than 1000 most probable number/gram (MPN/g) of total solids (dry weight basis), or the density of *Salmonella* sp. bacteria in the sewage sludge shall be less than 3 MPN/4 g of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in 40 CFR 503.10(b), 503.10(c), 503.10(e), or 503.10(f).

The temperature of the sewage sludge that is used or disposed shall be maintained at a specific value for a period of time. When the percent solids of the sewage sludge is 7 percent or higher, the temperature of the sewage sludge shall be 50 degrees C or higher; the time period shall be 20 min or longer; and the temperature and time period shall be determined using the following equation, except when small particles of sewage sludge are heated by either warmed gases or an immiscible liquid.

$$D = \frac{131,700,000}{10^{0.1400t}} \text{ Eq (2)}$$

Where, D = time in days and t = temperature in °C.

When the percent solids of the sewage sludge is 7 percent or higher and small particles of sewage sludge are heated by either warmed gases or an immiscible liquid, the temperature of the sewage sludge shall be 50 degrees C or higher; the time period shall be 15 s or longer; and the temperature and time period shall be determined using the above equation.

When the percent solids of the sewage sludge is less than 7 percent and the time period is at least 15 s, but less than 30 min, the temperature and time period shall be determined using the above equation.

When the percent solids of the sewage sludge is less than 7 percent; the temperature of the sewage sludge is 50 degrees C or higher; and the time period is 30 min or longer, the temperature and time period shall be determined using the below equation.

$$D = \frac{50,070,000}{10^{0.1400t}} \text{ Eq(3)}$$

Where, D = time in days and t = temperature in °C.

2. Alternative 2: Either the density of fecal coliform in the sewage sludge is less than 1000 MPN/g of total solids (dry weight basis), or the density of *Salmonella* sp. bacteria in the sewage sludge shall be less than 3 MPN/4 g of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in 40 CFR 503.10(b), 503.10(c), 503.10(e), or 503.10(f).

The pH of the sewage sludge that is used or disposed shall be raised to above 12 and shall remain above 12 for 72 h.

The temperature of the sewage sludge shall be above 52 degrees C for 12 h or longer during the period that the pH of the sewage sludge is above 12.

At the end of the 72 h period during which the pH of the sewage sludge is above 12, the sewage sludge shall be air dried to achieve a percent solids in the sewage sludge greater than 50 percent.

3. Alternative 3: Either the density of fecal coliform in the sewage sludge shall be less than 1000 MPN/g of total solids (dry weight basis), or the density of *Salmonella* sp. bacteria in sewage sludge shall be less than 3 MPN/4 g of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in 40 CFR 503.10(b), 503.10(c), 503.10(e), or 503.10(f).

The sewage sludge shall be analyzed prior to pathogen treatment to determine whether the sewage sludge contains enteric viruses.

When the density of enteric viruses in the sewage sludge prior to pathogen treatment is less than one plaque-forming unit per 4 g of total solids (dry weight basis), the sewage sludge is Class A with respect to enteric viruses until the next monitoring episode for the sewage sludge.

When the density of enteric viruses in the sewage sludge prior to pathogen treatment is equal to or greater than one plaque-forming unit per 4 g of total solids (dry weight basis), the sewage sludge is Class A with respect to enteric viruses when the density of enteric viruses in the sewage sludge after pathogen treatment is less than one plaque-forming unit per 4g of total solids (dry weight basis) and when the values or ranges of values for

the operating parameters for the pathogen treatment process that produces the sewage sludge that meets the enteric virus density requirement are documented.

After the enteric virus reduction is demonstrated for the pathogen treatment process, the sewage sludge continues to be Class A with respect to enteric viruses when the values for the pathogen treatment process operating parameters are consistent with the values or ranges of values documented.

The sewage sludge shall be analyzed prior to pathogen treatment to determine whether the sewage sludge contains viable helminth ova.

When the density of viable helminth ova in the sewage sludge prior to pathogen treatment is less than 1 per 4 g of total solids (dry weight basis), the sewage sludge is Class A with respect to viable helminth ova until the next monitoring episode for the sewage sludge.

When the density of viable helminth ova in the sewage sludge prior to pathogen treatment is equal to or greater than 1 per 4 g of total solids (dry weight basis), the sewage sludge is Class A with respect to viable helminth ova when the density of viable helminth ova in the sewage sludge after pathogen treatment is less than 1 per 4 g of total solids (dry weight basis) and when the values or ranges of values for the operating parameters for the pathogen treatment process that produces the sewage sludge that meets the viable helminth ova density requirement are documented.

After the viable helminth ova reduction is demonstrated for the pathogen treatment process, the sewage sludge continues to be Class A with respect to viable helminth ova when the values for the pathogen treatment process operating parameters are consistent with the values or ranges of values documented.

4. Alternative 4: Either the density of fecal coliform in the sewage sludge shall be less than 1000 MPN/g of total solids (dry weight basis), or the density of *Salmonella* sp. bacteria in the sewage sludge shall be less than 3 MPN/4 g of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in 40 CFR 503.10(b), 503.10(c), 503.10(e), or 503.10(f).

The density of enteric viruses in the sewage sludge shall be less than 1 plaque-forming unit per 4 g of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in 40 CFR 503.10(b), 503.10(c), 503.10(e), or 503.10(f), unless otherwise specified by the permitting authority.

The density of viable helminth ova in the sewage sludge shall be less than 1 per 4 g of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in 40 CFR 503.10(b), 503.10(c), 503.10(e), or 503.10(f), unless otherwise specified by the permitting authority.

5. Alternative 5: Either the density of fecal coliform in the sewage sludge shall be less than 1000 MPN/g of total solids (dry weight basis), or the density of *Salmonella* sp. bacteria in the sewage sludge shall be less than 3 MPN/4 g of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or given away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in 40 CFR 503.10(b), 503.10(c), 503.10(e), or 503.10(f).

Sewage sludge that is used or disposed shall be treated in one of the Processes to Further Reduce Pathogens described in appendix B of 40 CFR 503.

6. Alternative 6: Either the density of fecal coliform in the sewage sludge shall be less than 1000 MPN/g of total solids (dry weight basis), or the density of *Salmonella* sp. bacteria in the sewage sludge shall be less than 3 MPN/4 g of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or given away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in 40 CFR 503.10(b), 503.10(c), 503.10(e), or 503.10(f).

Sewage sludge that is used or disposed shall be treated in a process that is equivalent to a Process to Further Reduce Pathogens, as determined by the permitting authority.

- *Class B Sewage Sludge* - when one of the following methods is used, it is considered Class B with respect to pathogens (40 CFR 503.32(b)(2)) [**Reviewed October 2001**].

1. Alternative 1: Seven samples of the sewage sludge that is used or disposed shall be collected. The geometric mean of the density of fecal coliform in the samples must be less than either 2 million MPN/g of total solids (dry weight basis) or 2 million colony forming units/g (CFU/g) of total solids (dry weight basis).
  2. Alternative 2: Sewage sludge that is used or disposed shall be treated in one of the processes to significantly reduce pathogens described in appendix B of 40 CFR 503.
  3. Alternative 3: Sewage sludge that is used or disposed is to be treated in a process that is equivalent to a process to significantly reduce pathogens, as determined by the permitting authority.
- *Closed-top Hopper* - a completely enclosed storage vessel used to transport dry bulk cargos, either by truck, rail, or barge. Closed-top hoppers are not designed or constructed to carry liquid cargos and are typically used to transport grain, soybeans, soy meal, soda ash, lime, fertilizer, plastic pellets, flour, sugar, and similar commodities or cargos. The cargos transported come in direct contact with the hopper interior. Closed-top hoppers are also commonly referred to as dry bulk hoppers (40 CFR 442.2) **[Added October 2000]**.
  - *CN,A* - cyanide amenable to chlorination (40 CFR 413.02).
  - *CN,T* - cyanide, total (40 CFR 413.02).
  - *Co-permittee* - a permittee to a NPDES permit that is only responsible for permit conditions relating to the discharge for which it is operator (40 CFR 122.26(b)(1)) **[Added January 2000; Reviewed October 2001]**.
  - *Coal Pile Runoff* - the rainfall runoff from or through any coal storage pile (40 CFR 423.11(m)) **[Added October 2003]**.
  - *Concentrated Animal Feeding Operation* - an animal feeding operation which meets the criteria in appendix B of 40 CFR 122, or which the Director designates as such (40 CFR 122.23(b)(3)) **[Added October 2001]**.
  - *Concentrated Aquatic Animal Production Facility* - a hatchery, fish farm, or other facility which meets the criteria 40 CFR 122 Appendix C, or which the Director designates (40 CFR 122.24(b) and 451.2) **[Added October 2001; Revised October 2004]**.
  - *Contaminate an Aquifer* - to introduce a substance that causes the maximum contaminant level for nitrate in 40 CFR 141.62(b) to be exceeded in the ground water or that causes the existing concentration of nitrate in ground water to increase when the existing concentration of nitrate in the ground water exceeds the maximum contaminant level for nitrate in 40 CFR 141.62(b) (40 CFR 503.21) **[Revised October 1999]**.
  - *Contaminated Groundwater* - water below the land surface in the zone of saturation which has been contaminated by activities associated with waste disposal (40 CFR 445.2(a)) **[Added April 2000]**.
  - *Contaminated Stormwater* - stormwater which comes in direct contact with landfill wastes, the waste handling and treatment areas, or landfill wastewater. Some specific areas of a landfill that may produce contaminated stormwater include (but are not limited to): the open face of an active landfill with exposed waste (no cover added); the areas around wastewater treatment operations; trucks, equipment, or machinery that has been in direct contact with the waste; and waste dumping areas (40 CFR 445.2(b)) **[Added April 2000]**.
  - *Contaminated Stormwater* - stormwater which comes in direct contact with CWT wastes, the waste handling and treatment areas, or other centralized waste treatment wastewater (40 CFR 437.2) **[Added April 2001]**.
  - *Contiguous Zone* - the entire zone established by the United States under Article 24 of the Convention on the Territorial Sea and the Contiguous Zone (40 CFR 122.2) **[Added October 2001]**.
  - *Continuous Discharge* - a discharge which occurs without interruption throughout the operating hours of the facility, except for infrequent shutdowns for maintenance, process changes, or other similar activities (40 CFR 122.2) **[Reviewed October 2001; Citation Revised April 2012]**.

- *Control Authority* - refers to (40 CFR 403.3(f) and 441.20) **[Revised July 2017]**:
  1. The POTW if the POTW's Pretreatment Program Submission has been approved in accordance with the requirements of 40 CFR 403.11; or
  2. The Approval Authority if the Submission has not been approved.
- *Control Efficiency* - the mass of a pollutant in the sewage sludge fed to an incinerator minus the mass of that pollutant in the exit gas from the incinerator stack divided by the mass of the pollutant in the sewage sludge fed to the incinerator (40 CFR 503.41) **[Added October 2001]**.
- *Conventional Pollutants* - the following comprise the list of conventional pollutants designated pursuant to section 304(a)(4) of the Act (40 CFR 401.16) **[Added October 2001]**:
 

Biochemical oxygen demand (BOD)  
 Total suspended solids (nonfilterable) (TSS)  
 pH  
 Fecal coliform  
 Oil and grease
- *Corrosion Preventive Coating* - the application of removable oily or organic solutions to protect metal surfaces against corrosive environments. Corrosion preventive coatings include, but are not limited to: petrolatum compounds, oils, hard dry-film compounds, solvent-cutback petroleum-based compounds, emulsions, water-displacing polar compounds, and fingerprint removers and neutralizers. Corrosion preventive coating does not include electroplating, or chemical conversion coating operations (40 CFR 438.2) **[Added July 2003]**.
- *Cover* - soil or other material used to cover sewage sludge placed on an active sewage sludge unit (40 CFR 503.21(d)) **[Reviewed October 2001]**.
- *Cover Crop* - a small grain crop, such as oats, wheat, or barley, not grown for harvest (40 CFR 503.9(d)) **[Reviewed October 2001]**.
- *Cumulative Pollutant Loading Rate* - the maximum amount of an inorganic pollutant that can be applied to an area of land (40 CFR 503.11(f)) **[Reviewed October 2001]**.
- *Daily Discharge* - the discharge of a pollutant measured during a calendar day or any 24-h period that reasonably represents the calendar day for purposes of sampling (40 CFR 122.2) **[Reviewed October 2001]**.
- *Density of Microorganisms* - the number of microorganisms per unit mass of total solids (dry weight) in the sewage sludge (40 CFR 503.31(c)) **[Reviewed October 2001]**.
- *Dental Amalgam* - an alloy of elemental mercury and other metal(s) that is used in the practice of dentistry (40 CFR 441.20) **[Added July 2017]**.
- *Dental Discharger* - a facility where the practice of dentistry is performed, including, but not limited to, institutions, permanent or temporary offices, clinics, home offices, and facilities owned and operated by Federal, state or local governments, that discharges wastewater to a publicly owned treatment works (POTW) (40 CFR 441.20) **[Added July 2017]**.
- *Designated Project Area* - the portions of the waters of the United States within which the permittee or permit applicant plans to confine the cultivated species, using a method or plan or operation (including, but not limited to, physical confinement) which, on the basis of reliable scientific evidence, is expected to ensure that specific individual organisms comprising an aquaculture crop will enjoy increased growth attributable to the discharge of pollutants, and be harvested within a defined geographic area (40 CFR 122.25(b)(2)) **[Added October 2001]**.
- *Direct Discharge* - the discharge of a pollutant (40 CFR 122.2) **[Reviewed October 2001]**.

- *Discharge* - when used without qualification means the “discharge of a pollutant” (40 CFR 122.2) **[Added April 2012]**.
- *Discharge*- includes, but is not limited to, any spilling, leaking, pouring, pumping, emitting, emptying, or dumping (33 CFR 159.3) **[Added January 2012]**.
- *Discharge Incidental to the Normal Operation of a Vessel* - a discharge, including, but not limited to: graywater, bilgewater, cooling water, weather deck runoff, ballast water, oil water separator effluent, and any other pollutant discharge from the operation of a marine propulsion system, shipboard maneuvering system, crew habitability system, or installed major equipment, such as an aircraft carrier elevator or a catapult, or from a protective, preservative, or absorptive application to the hull of a vessel; and a discharge in connection with the testing, maintenance, and repair of any of the aforementioned systems whenever the vessel is waterborne, including pierside. A discharge incidental to normal operation does not include (40 CFR 1700.3) **[Added July 1999]**:
  1. sewage
  2. a discharge of rubbish, trash, or garbage
  3. a discharge of air emissions resulting from the operation of a vessel propulsion system, motor driven equipment, or incinerator
  4. a discharge that requires a National Pollutant Discharge Elimination System (NPDES) permit under the *Clean Water Act*; or
  5. a discharge containing source, special nuclear, or byproduct materials regulated by the *Atomic Energy Act*.
- *Discharge Monitoring Report (“DMR”)* - the USEPA uniform national form, including any subsequent additions, revisions, or modifications for the reporting of self-monitoring results by permittees. DMRs must be used by “approved states” as well as by USEPA. USEPA will supply DMRs to any approved state upon request. The USEPA national forms may be modified to substitute the state Agency name, address, logo, and other similar information, as appropriate, in place of USEPA’s (40 CFR 122.2) **[Added October 2001]**.
- *Discharge of a Pollutant* - this means (40 CFR 122.2) **[Added October 2001]**:
  1. any addition of any “pollutant” or combination of pollutants to “waters of the United States” from any “point source,” or
  2. any addition of any pollutant or combination of pollutants to the waters of the “contiguous zone” or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation.

This definition includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a state, municipality, or other person which do not lead to a treatment works; and discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works. This term does not include an addition of pollutants by any “indirect discharger.”
- *Discharge of Pollutant* - the addition of any pollutant to navigable waters from any point source and any addition of any pollutant to the waters of the contiguous zone or the ocean zone or the ocean from any point source, other than from a vessel or other floating craft (40 CFR 401.11(h)) **[Reviewed October 2001]**.
- *Discharger* - a facility that discharges wastewater directly to waters of the United States or introduces wastewater to a publicly-owned treatment works (40 CFR 437.2) **[Added April 2001]**.
- *Dispersion Factor* - the ratio of the increase in the ground level ambient air concentration for a pollutant at or beyond the property line of the site where the sewage sludge incinerator is located to the mass emission rate for the pollutant from the incinerator stack (40 CFR 503.41) **[Added October 2001]**.
- *Displacement* - the relative movement of any two sides of a fault measured in any direction (40 CFR 503.21(e)) **[Reviewed October 2001]**.

- *Domestic Septage* - either liquid or solid material removed from a septic tank, cesspool, portable toilet, Type III marine sanitation device, or similar treatment works that receives only domestic sewage. Domestic septage does not include liquid or solid material removed from a septic tank, cesspool, or similar treatment works that receive either commercial wastewater or industrial wastewater and does not include grease removed from a grease trap at a restaurant (40 CFR 257.2).
- *Domestic Sewage* - waste and wastewater from humans or household operations that is discharged to or otherwise enters a treatment works (40 CFR 503.9(g)) **[Reviewed October 2001]**.
- *Drug* - any substance defined as a drug in section 201(g)(1) of the *Federal Food, Drug and Cosmetic Act* (21 U.S.C. 321) (40 CFR 451.2) **[Added October 2004]**.
- *Drums* - metal or plastic cylindrical containers with either an open-head or a tight-head (also known as bung-type top) used to hold liquid, solid, or gaseous commodities or cargos which are in direct contact with the container interior. Drums typically range in capacity from 30 to 55 gal (40 CFR 442.2) **[Added October 2000]**.
- *Dry* - not producing a wastewater (40 CFR 437.2) **[Added April 2001]**.
- *Dry Lot* - a facility for growing ducks in confinement with a dry litter floor cover and no access to swimming areas (40 CFR 412.21(a)) **[Added July 2005]**.
- *Effluent Limitation* - any restriction imposed by the Director on quantities, discharge rates, and concentrations of “pollutants” which are “discharged” from “point source” into “waters of the United States,” the waters of the “contiguous zone,” or the ocean (40 CFR 122.2) **[Added October 2001]**.
- *Effluent Limitations* - any restriction established by the Administrator on quantities, rates, and concentrations of chemical, physical, biological, and other constituents which are discharged from point sources, other than new sources, into navigable waters, the waters of the contiguous zone, or the ocean (40 CFR 401.11(i)).
- *Environmentally Acceptable Lubricants* - lubricants that are biodegradable, minimally-toxic, and not bioaccumulative as defined in this subpart. The following labeling programs and organizations meet the definition of being environmentally acceptable lubricants: Blue Angel, European Ecolabel, Nordic Swan, the Swedish Standards SS 155434 and 155470, Safer Choice, and the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR) requirements (40 CFR 1700.3) **[Added April 2017]**.
- *Environmentally Sensitive Area* - an area of environmental importance which is in or adjacent to navigable waters (49 CFR 194.5).
- *Equivalent System* - a wastewater treatment system that is demonstrated in literature, treatability tests or self-monitoring data to remove a similar level of pesticide active ingredient (PAI) or priority pollutants as the applicable appropriate pollution control technology listed in Table 10 to 40 CFR 455 (40 CFR 455.10) **[Added October 2001]**.
- *Equivalent Treatment* - a wastewater treatment system that achieves comparable pollutant removals to the applicable treatment technology selected as the basis for the limitations and pretreatment standards. Comparable removals may be demonstrated through literature, treatability tests, or self-monitoring data (40 CFR 437.2) **[Added April 2001]**.
- *Excluded CWTs* – The requirements in 40 CFR Part 437 do not apply to the following discharges of wastewater from a CWT facility (40 CFR 437.1(b) through 40 CFR 437.1(d)) **[Added April 2001]**:
  1. wastewater from the treatment of wastes that are generated on-site when the wastes generated on-site are otherwise subject to another part of subchapter N

2. wastewater from the treatment of wastes that are generated off-site if the discharger demonstrates one of the following:
  - a. that the off-site wastes are generated at a facility that is subject to the same provisions in 40 CFR subchapter N as non-CWT wastes generated at the CWT facility
  - b. that the off-site wastes are of similar nature and the treatment of such wastes are compatible with the treatment of non-CWT wastes generated and treated at the CWT
3. wastewater from the treatment of wastes received from off-site via conduit (e.g., pipelines, channels, ditches, trenches, etc.) from the facility that generates the wastes unless the resulting wastewaters are commingled with other wastewaters subject to this provision. A facility that acts as a waste collection or consolidation center is not a facility that generates wastes
4. wastewater from product stewardship activities, the treatment of sanitary wastes and wastes of domestic origin including chemical toilet wastes, septage, and restaurant wastes or thermal drying of POTW biosolids. Product stewardship activities for purposes of this provision are limited to the following activities at a manufacturing facility: acceptance for treatment or recovery of its unused products, shipping and storage containers with product residues and off-spec products
5. wastewater from solids recovery operations so long as the wastes recovered are from non-industrial sources, and recovery of the wastes does not generate a wastewater or leach appreciable metal or organic chemicals or petroleum-based oil and grease into the water. Examples of solids recovery operations to which this subpart would not apply include, but are not limited to, the recycling of aluminum cans, glass and plastic bottles
6. wastewater from scrap metal processing or auto salvage operations
7. wastewater from transfer stations or municipal recycling centers
8. wastewater from the treatment of, or recovery of material from, animal or vegetable fats/oils from grease traps or interceptors generated by facilities engaged in food service activities
9. wastewater from the treatment of, or recovery of material from, off-site wastes generated by facilities engaged only in food processing
10. wastewater from facilities that are subject to 40 CFR 442. Wastewater resulting from the treatment of off-site wastewater generated in cleaning transportation equipment (or on-site wastewater generated in cleaning equipment) along with other off-site wastes (subject to this part) not generated in cleaning transportation equipment is, however, subject to 40 CFR 437
11. wastewater resulting from solvent recovery operations if the solvent recovery operations involve the separation of solvent mixtures by distillation
12. wastewater from facilities that are engaged exclusively in centralized silver recovery from used photographic or x-ray materials activities. The discharge resulting from centralized silver recovery from used photographic or x-ray materials that is treated at a CWT facility along with other off-site waste streams (subject to 40 CFR 437) is subject to 40 CFR 437
13. Wastewater from facilities that accept off-site wastes only for treatability studies, research and development, or chemical or physical analysis. The wastewater resulting from treatability studies, research and development, or chemical or physical analysis that is treated at a CWT facility along with other off-site waste streams.

The following activities are also excluded from the requirements of 40 CFR 437:

1. “Dry” fuel blending operations, “dry” waste solidification/stabilization operations, “dry” used oil filter or oily absorbents recycling operations, or “dry” high temperature metals recovery operations. However, this part does apply to wastewater discharges from a CWT resulting from any of these operations that do produce wastewater
2. the discharge of marine generated wastes including wash water from equipment and tank cleaning, ballast water, bilge water, and other wastes generated (while operating on inland, coastal, or open waters or while berthed) as part of routine ship maintenance and operation as long as they are treated and discharged at the ship servicing facility where it is off-loaded. The discharges resulting from the treatment of marine generated wastes that are off-loaded and subsequently sent to a centralized waste treatment facility at a separate location are, however, subject to 40 CFR 437
3. discharge of wastewater from land treatment units or land application operations
4. discharge of wastewater from facilities that are engaged exclusively in landfilling activities and/or the treatment of landfill wastewaters (whether generated on or off-site). The discharge resulting from the

treatment of landfill wastewater, whether generated on-site or off-site, treated at CWT facilities along with other off-site waste is, however, subject to 40 CFR 437

5. discharge of wastewater from facilities that are engaged exclusively in incineration activities. The discharge resulting from the treatment of off-site wastewater generated in the incineration of industrial waste that is treated at a CWT facility along with other off-site waste streams (subject to 40 CFR 437) is subject to 40 CFR 437.

The provisions 40 CFR 437 are not applicable to any metals treatment and recovery wastewater discharges which are subject to the secondary metals provisions of 40 CFR 421, the Nonferrous Metals Manufacturing Point Source Category. These secondary metals subcategories are Subpart C (Secondary Aluminum Smelting Subcategory), Subpart F (Secondary Copper Subcategory), Subpart L (Secondary Silver Subcategory), Subpart M (Secondary Lead Subcategory), Subpart P (Primary and Secondary Germanium and Gallium Subcategory), Subpart Q (Secondary Indium Subcategory), Subpart R (Secondary Mercury Subcategory), Subpart T (Secondary Molybdenum and Vanadium Subcategory), Subpart V (Secondary Nickel Subcategory), Subpart X (Secondary Precious Metals Subcategory), Subpart Z (Secondary Tantalum Subcategory), Subpart AA (Secondary Tin Subcategory), Subpart AB (Primary and Secondary Titanium Subcategory), Subpart AC (Secondary Tungsten and Cobalt Subcategory), and Subpart AD (secondary Uranium Subcategory).

- *Excursion* - an unintentional and temporary incident in which the pH value of discharge wastewater exceeds the range set forth in the applicable effluent limitations guidelines (40 CFR 401.17(c)) **[Added October 2001]**.
- *Excluded Sludge* - The following are types of sludge and activities which are exempted from meeting the requirements outlined in 40 CFR 503**[Reviewed October 2001]**:
  1. processes used to treat domestic sewage or processes used to treat sewage sludge prior to final use except for the standards on pathogen and vector reduction in 40 CFR 503.32 and 503.33
  2. sewage sludge co-fired in an incinerator with other wastes or for the incinerator in which sewage sludge and other wastes are co-fired
  3. sludge generated at an industrial facility during the treatment of industrial wastewater, including sewage sludge generated during the treatment of industrial wastewater combined with domestic sewage
  4. sewage sludge determined to be hazardous
  5. sewage sludge with a concentration of PCBs equal to greater than 50 mg/kg of total solids (dry weight basis)
  6. ash generated during the firing of sewage sludge in a sewage sludge incinerator
  7. grit (i.e., sand, gravel, cinders, or other material with high specific gravity) or screenings (e.g., relatively large materials such as rags) generated during preliminary treatment of domestic sewage in a treatment works
  8. sludge generated during the treatment of either surface water or groundwater used for drinking water
  9. commercial septage, industrial septage, a mixture of domestic septage and commercial septage, or a mixture of domestic septage and industrial septage (40 CFR 503.6).
- *Existing Source* - any source which is not a new source or a new discharger (40 CFR 122.29(a)(3)) **[Added October 2001]**.
- *Existing Vessel* - includes any vessel, the construction of which was initiated before 30 January 1975 (33 CFR 159.3) **[Added January 2012]**.
- *Extralabel Drug Use* - a drug approved under the Federal Food, Drug and Cosmetic Act that is not used in accordance with the approved label directions, see 21 CFR 530 (40 CFR 451.2) **[Added October 2004]**.
- *Facilities or Equipment* - buildings, structures, process or production equipment or machinery which form a permanent part of the new source and which will be used in its operation, if these facilities or equipment are of such value as to represent a substantial commitment to construct. It excludes facilities or equipment used in connection with feasibility, engineering, and design studies regarding the source or water pollution treatment for the source (40 CFR 122.29(a)(5)) **[Added October 2001]**.

- *Facility* - all contiguous property owned, operated, leased, or under the control of the same person or entity (40 CFR 445.2(d)) **[Added April 2000]**.
- *Facility or Activity* - any NPDES “point source” or any other facility or activity (including land or appurtenances thereto) that is subject to regulation under the NPDES program (40 CFR 122.2) **[Added October 2001]**.
- *Fault* - a fracture or zone of fractures in any materials along which strata on one side are displaced with respect to strata on the other side (40 CFR 503.21(f)) **[Reviewed October 2001]**.
- *Fecal Coliform* - the bacterial count (Parameter 1) at 40 CFR 136.3 in Table 1A, which also cites the approved methods of analysis (40 CFR 412.2(c)) **[Added July 2005]**.
- *Federally Owned Treatment Work (FOTW)* - a facility that is owned and operated by a department, agency, or instrumentality of the Federal Government treating wastewater, a majority of which is domestic sewage, prior to discharge in accordance with a permit issued under section 402 of the *Federal Water Pollution Control Act* (42 USC 6939e(d)).
- *Federally-protected Waters* - waters within 12 mi of the United States that are also part of any of the following (40 CFR 1700.3) **[Added April 2017]**:
  1. Marine sanctuaries designated under the National Marine Sanctuaries Act (16 U.S.C. 1431 et seq.) or Marine National Monuments designated under the Antiquities Act of 1906;
  2. A unit of the National Wildlife Refuge System, including Wetland Management Districts, Waterfowl Production Areas, National Game Preserves, Wildlife Management Areas, and National Fish and Wildlife Refuges;
  3. National Wilderness Areas; and
  4. Any component designated under the National Wild and Scenic Rivers System.
- *Feed Crops* - crops produced primarily for consumption by animals (40 CFR 503.9(j)) **[Reviewed October 2001]**.
- *Fiber Crops* - crops such as flax and cotton (40 CFR 503.9(k)) **[Reviewed October 2001]**.
- *Final Cover* - the last layer of soil or other material placed on a sewage sludge unit at closure (40 CFR 503.21(g)) **[Reviewed October 2001]**.
- *Flow-through System* - a system designed to provide a continuous water flow to waters of the United States through chambers used to produce aquatic animals. Flow-through systems typically use rearing units that are either raceways or tank systems. Rearing units referred to as raceways are typically long, rectangular chambers at or below grade, constructed of earth, concrete, plastic, or metal to which water is supplied by nearby rivers or springs. Rearing units comprised of tank systems use circular or rectangular tanks and are similarly supplied with water to raise aquatic animals. The term does not include net pens (40 CFR 451.2) **[Added October 2004]**.
- *Fluidized Bed Incinerator* - an enclosed device in which organic matter and inorganic matter in sewage sludge are combusted in a bed of particles suspended in the combustion chamber gas (40 CFR 503.41) **[Added October 2001]**.
- *Fly Ash* - the ash that is carried out of the furnace by a gas stream and collected by a capture device such as a mechanical precipitator, electrostatic precipitator, or fabric filter. Economizer ash is included in this definition when it is collected with fly ash. Ash is not included in this definition when it is collected in wet scrubber air pollution control systems whose primary purpose is particulate removal (40 CFR 423.11(e)) **[Added October 2003; Revised October 2017]**.
- *Food Grade Cargos* - edible and non-edible food products. Specific examples of food grade cargos include, but are not limited to, the following: alcoholic beverages, animal by-products, animal fats, animal oils, caramel,

caramel coloring, chocolate, corn syrup and other corn products, dairy products, dietary supplements, eggs, flavorings, food preservatives, food products that are not suitable for human consumption, fruit juices, honey, lard, molasses, non-alcoholic beverages, sweeteners, tallow, vegetable oils, and vinegar (40 CFR 442.2) **[Added October 2000]**.

- *Forest* - a tract of land thick with trees and underbrush (40 CFR 503.11(g)) **[Reviewed October 2001]**.
- *Fuel Blending* - the process of combining waste, wastewater, or used material for the purpose of regenerating a fuel for reuse. However, fuel blending may be loosely applied to any process where recovered hydrocarbons are combined as a fuel product where some pretreatment operations generate wastewater (40 CFR 437.2) **[Added April 2001]**.
- *General Permit* - an NPDES “permit” issued under 40 CFR 122.28 authorizing a category of discharges under the CWA within a geographical area (40 CFR 122.2) **[Added October 2001]**.
- *Hazardous Material* - any hazardous material as defined in 49 CFR 171.8 (40 CFR 1700.3) **[Added April 2017]**.
- *Heel* - any material remaining in a tank following unloading, delivery, or discharge of the transported cargo. Heels may also be referred to as container residue, residual materials or residuals (40 CFR 442.2) **[Added October 2000]**.
- *High Temperature Metals Recovery* - a metals recovery process in which solid forms of metal-containing materials are processed with a heat-based pyrometallurgical technology to produce a metal product (40 CFR 437.2) **[Added April 2001]**.
- *High Tide Line* - the line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm. This definition is effective 6 February 2020 (33 CFR 40 CFR 122.2(c)(7) and 401.11(l)(3)(vii)) **[Added July 2015; Revised April 2018]**.
- *Holocene Time* - the most recent epoch of the Quaternary period, extending from the end of the Pleistocene epoch to the present (40 CFR 503.21(h)) **[Reviewed October 2001]**.
- *Hourly Average* - the arithmetic mean of all measurements taken during an hour. At least two measurements must be taken during the hour (40 CFR 503.41) **[Added October 2001]**.
- *Illicit Discharge* - any discharge to a municipal separate storm sewer that is not composed entirely of storm water except discharges pursuant to a NPDES permit (other than the NPDES permit for discharges from the municipal separate storm sewer) and discharges resulting from fire fighting activities (40 CFR 122.26(b)(2)) **[Added January 2000; Reviewed October 2001]**.
- *Incineration* - the combustion of organic matter and inorganic matter in sewage sludge by high temperatures in an enclosed device (40 CFR 503.41) **[Added October 2001]**.
- *Incinerator Operating Combustion Temperature* - the arithmetic mean of the temperature readings in the hottest zone of the furnace recorded in a day (24 h) when the temperature is averaged and recorded at least hourly during the hours the incinerator operates in a day (40 CFR 503.41) **[Added October 2001]**.

- *Incorporated Place* - the District of Columbia, or a city, town, township, or village that is incorporated under the laws of the state in which it is located (40 CFR 122.26(b)(3)) [**Added January 2000; Reviewed October 2001**].
- *Indirect Discharge* - the introduction of pollutants into a POTW from any nondomestic source regulated under section 307(b), (c), or (d) of the act (40 CFR 403.3(i)) [**Reviewed October 2001; Citation Revised January 2006**].
- *Indirect Discharger* - a nondomestic discharger introducing “pollutants” to a “publicly owned treatment works” (40 CFR 122.2) [**Added October 2001**].
- *Industrial Activities* - in relation to stormwater runoff, the following activities are considered to be engaging in “industrial activity” (40 CFR 122.26(b)(14)(i) through 122.26(b)(14)(xi)) [**Revised January 2000, Revised January 2010; Revised April 2012; Revised January 2013**]:
  1. facilities subject to stormwater effluent limitations guidelines, new source performance standards under 40 CFR subchapter N;
  2. facilities classified as the following Standard Industrial Classification (SIC)
    - a. SIC 24: Lumber and Wood Products, Industry Group 241 that are rock crushing, gravel washing, log sorting, or log storage facilities operated in connection with silvicultural activities defined in 40 CFR 122.27(b)(2) – (3) and Industry groups 242 through 2439
    - b. SIC 26: Manufacturing of Paper and Allied Products (except 265 [Paperboard Containers and Boxes] and 267 [Converted Paper And Paperboard Products] ),
    - c. SIC 28: Manufacturing of Chemicals and Allied Products (except 283 [Drugs]),
    - d. SIC 29: Petroleum Refining and Related Industries
    - e. SIC 311: Leather Tanning and Finishing
    - f. SIC 32: Manufacturing of Stone, Clay, Glass, and Concrete Products (except 323 [Glass Products Made of Purchased Glass]),
    - g. SIC 33: Primary Metal Industries
    - h. SIC 3441: Fabricated Structural Metal
    - i. SIC 373: Ship and Boat Building And Repairing
 (not included are all other types of silviculture facilities)
  3. facilities classified as SICs 10 through 14 (mineral industry) including active or inactive mining operations and oil and gas explorations, production, processing, or treatment operations, or transmission facilities that discharge storm water contaminated by contact with or that has come into contact with, any overburden, raw material, intermediate product, finished products, by-products or waste products located on the site of such operations:
    - a. SIC 10: Metal Mining
    - b. SIC 11: (not identified)
    - c. SIC 12: Coal Mining
    - d. SIC 13: Oil and Gas Extraction
    - e. SIC 14: Mining And Quarrying Of Nonmetallic Minerals, Except Fuels
  4. hazardous waste treatment, storage, or disposal facilities (TSDFs), including those that are operating under interim status or a permit under Resource Conservation and Recovery Act (RCRA), Subpart C;
  5. landfills, land application sites, and open dumps that receive or have received industrial wastes, including those sites that are subject to Federal regulation;
  6. facilities involved in the recycling of materials, including metal scrapyards, battery reclaimers, salvage yards, and automobile junkyards, including but not limited to those classified as:
    - a. SIC 5015: Wholesale Trade of Used Motor Vehicle Parts
    - b. SIC 5093: Establishments primarily engaged in assembling, breaking up, sorting, and wholesale distribution of scrap and waste materials.
  7. steam electric power generating facilities, including coal handling sites;
  8. transportation facilities classified as the following SICs 40, 41, 42 (except 4221-25, 43, 44, 45, and 5171) that have vehicle maintenance shops, equipment cleaning operations, or airport de-icing operations:
    - a. SIC 40: Railroad Transportation
    - b. SIC 41: Local And Suburban Transit And Interurban Highway Passenger Transportation

- c. SIC 42: Motor Freight Transportation And Warehousing (except 4221-25)
  - d. SIC 43: United States Postal Service
  - e. SIC 44: Water Transportation
  - f. SIC 45: Transportation By Air
  - g. SIC 5171: Establishments primarily engaged in the wholesale distribution of crude petroleum and petroleum products, including liquefied petroleum gas, from bulk liquid storage facilities.
9. treatment works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludges that are located within the confines of the facility with a design flow of 1.0 mgd or more, or required to have an approved pretreatment program. Not included are farmlands, domestic gardens, or lands used for sludge management where sludge is beneficially reused and which are not physically located in the confines of the facility, or areas that are in compliance with section 405 of the CWA;
10. construction activity including clearing, grading and excavation, except operations that result in the disturbance of less than 5 acres of total land area. Construction activity also includes the disturbance of less than 5 acres of total land area that is a part of a larger common plan of development or sale if the larger common plan will ultimately disturb 5 acres or more;
11. facilities under the following SICs:
- a. SIC 20: Manufacturing Food and Kindred Products
  - b. SIC 21: Manufacturing Tobacco Products
  - c. SIC 22: Manufacturing Textile Mill Products
  - d. SIC 23: Manufacturing Apparel And Other Finished Products Made From Fabrics And Similar Materials
  - e. SIC 2434: Manufacturing Wood Kitchen Cabinets
  - f. SIC 25: Manufacturing Furniture and Fixtures
  - g. SIC 265: Manufacturing Paperboard Containers And Boxes
  - h. SIC 267: Manufacturing Converted Paper And Paperboard Products,
  - i. SIC 27: Printing, Publishing, And Allied Industries
  - j. SIC 283: Manufacturing Drugs
  - k. SIC 285: Manufacturing Paints, Varnishes, Lacquers, Enamels
  - l. SIC 30: Manufacturing Rubber And Miscellaneous Plastics Products
  - m. SIC 31: Manufacturing Leather and Leather Products (except 311 [Leather Tanning and Finishing]),
  - n. SIC 323: Manufacturing Glass Products Made of Purchased Glass
  - o. SIC 34: Manufacturing Fabricated Metal Products, Except Machinery And Transportation Equipment (except 3441 [Fabricated Structural Metal]),
  - p. SIC 35: Manufacturing Industrial And Commercial Machinery And Computer Equipment
  - q. SIC 36: Manufacturing Electronic And Other Electrical Equipment And Components, Except Computer Equipment
  - r. SIC 37: Manufacturing Transportation Equipment (except 373 [Ship And Boat Building And Repairing]),
  - s. SIC 38: Manufacturing Measuring, Analyzing, And Controlling Instruments; Photographic, Medical And Optical Goods; Watches And Clocks
  - t. SIC 39: Miscellaneous Manufacturing Industries
  - u. SIC 4221-25 (related to warehousing and storage).

NOTE: See [http://www.osha.gov/pls/imis/sic\\_manual.html](http://www.osha.gov/pls/imis/sic_manual.html) for additional information on SIC codes.

- *Industrial User* - a source of indirect discharge (40 CFR 403.3(j)) [**Reviewed October 2001; Citation Revised January 2006**].
- *Industrial Wastewater* - wastewater generated in a commercial or industrial process (40 CFR 503.9(n)) [**Reviewed October 2001**].
- *Infeasible* – not technologically possible, or not economically practicable and achievable in light of best industry practices (40 CFR 450.11(b)) [**Added April 2014**].

- *Integrated Facility* - a facility that performs electroplating as only one of several operations necessary for manufacture of a product at a single physical location and has significant quantities of process wastewater from nonelectroplating sources (40 CFR 413.02).
- *Interference* - a discharge which, alone or in conjunction with one or more discharges from other sources inhibits or disrupts the POTW and causes a violation of any requirement of the POTW's NPDES permit (40 CFR 403.3(k)) **[Reviewed October 2001; Citation Revised January 2006]**.
- *Intermediate Bulk Container ("IBC" or "Tote")* - a completely enclosed storage vessel used to hold liquid, solid, or gaseous commodities or cargos which are in direct contact with the container interior. IBCs may be loaded onto flat beds for either truck or rail transport, or onto ship decks for water transport. IBCs are portable containers with 450 L (119 gal) to 3000 L (793 gal) capacity. IBCs are also commonly referred to as totes or tote bins (40 CFR 442.2) **[Added October 2000]**.
- *Intermodal Tank Container* - a completely enclosed storage vessel used to hold liquid, solid, or gaseous commodities or cargos which come in direct contact with the tank interior. Intermodal tank containers may be loaded onto flat beds for either truck or rail transport, or onto ship decks for water transport. Containers larger than 3000 L capacity are considered intermodal tank containers. Containers smaller than 3000 liters capacity are considered IBCs (40 CFR 442.2) **[Added October 2000]**.
- *Investigational New Animal drug (INAD)* - a drug for which there is a valid exemption in effect under section 512(j) of the *Federal Food, Drug, and Cosmetic Act*, 21 U.S.C. 360b(j), to conduct experiments (40 CFR 451.2) **[Added October 2004]**.
- *Job Shop* - a facility which owns not more than 50 percent (annual area basis) of the materials undergoing metal finishing (40 CFR 433.11).
- *Land Application* - the spraying or spreading of sewage sludge onto the land surface; the injection of sewage sludge below the land surface; or the incorporation of sewage sludge into the soil so that the sewage sludge can either condition the soil or fertilize crops or vegetation grown in the soil (40 CFR 503.11(h)) **[Reviewed October 2001]**.
- *Land Application Area* - land under the control of an CAFO owner or operator, whether it is owned, rented, or leased, to which manure, litter, or process wastewater from the production area is or may be applied (40 CFR 412.2(e)) **[Added July 2005]**.
- *Land With a High Potential for Public Exposure* - land that the public uses frequently. This includes, but is not limited to, a public contact site and a reclamation site located in a populated area (e.g., a construction site located in a city) (40 CFR 503.31(d)) **[Reviewed October 2001]**.
- *Land With a Low Potential for Public Exposure* - land the public uses infrequently. This includes, but is not limited to, agricultural land, forest, and a reclamation site located in an unpopulated area (e.g., a strip mine located in a rural area) (40 CFR 503.31(e)) **[Reviewed October 2001]**.
- *Landfill Directly Associated With An Industrial or Commercial Operation* - this means (40 CFR 445.2(c)) **[Added April 2000]**:
  1. A landfill located on the same site as industrial or commercial operations; and
  2. A landfill not located on the same site as the industrial or commercial operations (offsite), but "wholly-owned" by the industrial or commercial facility and primarily dedicated to receiving waste from the related industrial or commercial facility.
- *Landfill Unit* - an area of land or an excavation in which wastes are placed for permanent disposal, that is not a land application or land treatment unit, surface impoundment, underground injection well, waste pile, salt dome

formation, a salt bed formation, an underground mine, or a cave as these terms are defined in 40 CFR 257.2, 258.2 and 264.10 (40 CFR 445.2(e)) **[Added April 2000]**.

- *Landfill Wastewater* - all wastewater associated with, or produced by, landfilling activities except for sanitary wastewater, non-contaminated storm water, contaminated groundwater, and wastewater from recovery pumping wells. Landfill wastewater includes, but is not limited to, leachate, gas collection condensate, drained free liquids, laboratory derived wastewater, contaminated stormwater and contact washwater from washing truck, equipment, and railcar exteriors and surface areas which have come in direct contact with solid waste at the landfill facility (40 CFR 445.2(f)) **[Added April 2000]**.
- *Large Municipal Separate Storm Sewer System* - all municipal separate storm sewers that are either (40 CFR 122.26(b)(4)) **[Added January 2000]**:
  1. Located in an incorporated place with a population of 250,000 or more as determined by the 1990 Decennial Census by the Bureau of Census (Table 1 of Appendix 12-0); or
  2. Located in the counties listed in Table 3 of Appendix 12-0, except municipal separate storm sewers that are located in the incorporated places, townships or towns within such counties; or
  3. Owned or operated by a municipality other than those described in paragraph 1 or 2 of this definition and that are designated by the Director as part of the large or medium municipal separate storm sewer system due to the interrelationship between the discharges of the designated storm sewer and the discharges from municipal separate storm sewers described under paragraph 1 or 2 of this definition. In making this determination, the Director may consider the following factors:
    - a. Physical interconnections between the municipal separate storm sewers;
    - b. The location of discharges from the designated municipal separate storm sewer relative to discharges from municipal separate storm sewers described in paragraph 1 of this definition;
    - c. The quantity and nature of pollutants discharged to waters of the United States;
    - d. The nature of the receiving waters; and
    - e. Other relevant factors; or
  4. The Director may, upon petition, designate as a large municipal separate storm sewer system, municipal separate storm sewers located within the boundaries of a region defined by a stormwater management regional authority based on a jurisdictional, watershed, or other appropriate basis that includes one or more of the systems described in paragraphs 1, 2, or 3 of this definition.
- *Leachate Collection System* - a system or device installed immediately above a liner that is designed, constructed, maintained, and operated to collect and remove leachate from a sewage sludge unit (40 CFR 503.21(i)) **[Reviewed October 2001]**.
- *Liner* - soil or synthetic material that has a hydraulic conductivity of  $1 \times 10^{-7}$  cm/s [ $3 \times 10^{-8}$  in./s] or less (40 CFR 503.21(j)) **[Reviewed October 2001]**.
- *Low Volume Waste Sources* – taken collectively as if from one source, wastewater from all sources except those for which specific limitations or standards are otherwise established in this part. Low volume waste sources include, but are not limited to, the following: Wastewaters from ion exchange water treatment systems, water treatment evaporator blowdown, laboratory and sampling streams, boiler blowdown, floor drains, cooling tower basin cleaning wastes, recirculating house service water systems, and wet scrubber air pollution control systems whose primary purpose is particulate removal. Sanitary wastes, air conditioning wastes, and wastewater from carbon capture or sequestration systems are not included in this definition (40 CFR 423.11(b)) **[Added October 2003; Revised October 2017]**.
- *Lower Explosive Limit for Methane Gas* - the lowest percentage of methane gas in air, by volume, that propagates a flame at 25 degrees C [77 degrees F] and atmospheric pressure (40 CFR 503.21(k)) **[Reviewed October 2001]**.
- *Major Municipal Separate Storm Sewer Outfall* - a municipal separate storm sewer outfall that discharges from a single pipe with an inside diameter of 36 in. or more or its equivalent (discharge from a single conveyance other than circular pipe which is associated with a drainage area of more than 50 acres); or for municipal separate storm

sewers that receive storm water from lands zoned for industrial activity (based on comprehensive zoning plans or the equivalent), an outfall that discharges from a single pipe with an inside diameter of 12 in. or more or from its equivalent (discharge from other than a circular pipe associated with a drainage area of 2 acres or more). (40 CFR 122.26(b)(5)) [Added January 2000; Reviewed October 2001].

- *Major Facility* - any NPDES “facility or activity” classified as such by the USEPA, or, in the case of “approved state programs,” the USEPA in conjunction with the state authorized regulatory agency (40 CFR 122.2) [Added October 2001].
- *Major Outfall* - a major municipal separate storm sewer outfall (40 CFR 122.26(b)(6)) [Added January 2000; Reviewed October 2001].
- *Management Practice (MP)* - practices that, although not mandated by law, are encouraged to promote safe operating procedures.
- *Marine Generated Waste* - any waste, wastewater, and/or used material generated as part of the normal maintenance and operation of a ship, boat, or barge operating on inland, coastal, or open waters, or while berthed (40 CFR 437.2) [Added April 2001].
- *Marine Pollution Control Device (MPCD)* - any equipment or management practice installed or used on an Armed Forces vessel that is designed to receive, retain, treat, control, or discharge a discharge incidental to the normal operation of a vessel, and that is determined by the Administrator and Secretary to be the most effective equipment or management practice to reduce the environmental impacts of the discharge consistent with the considerations in CWA section 312(n)(2)(B) (40 CFR 1700.3) [Added July 1999].
- *Marine Sanitation Device and Device* - includes any equipment for installation on board a vessel which is designed to receive, retain, treat, or discharge sewage, and any process to treat such sewage (33 CFR 159.3) [Added January 2012].
- *Maximum Daily Discharge Limitation* - the highest allowable “daily discharge” (40 CFR 122.2) [Added October 2001].
- *Medium Municipal Separate Storm Sewer System* - all municipal separate storm sewers that are either (40 CFR 122.26(b)(7)) [Added January 2000; Revised July 2000]:
  1. Located in an incorporated place with a population of 100,000 or more but less than 250,000, as determined by the 1990 Decennial Census by the Bureau of Census (see Table 2 of Appendix 12-0)); or
  2. Located in the counties listed in Table 4 of Appendix 12-0, except municipal separate storm sewers that are located in the incorporated places, townships, or towns within such counties; or
  3. Owned or operated by a municipality other than those described in paragraphs 1 or 2 and that are designated by the Director as part of the large or medium municipal separate storm sewer system due to the interrelationship between the discharges of the designated storm sewer and the discharges from municipal separate storm sewers described under paragraphs 1 or 2. In making this determination the Director may consider the following factors:
    - a. Physical interconnections between the municipal separate storm sewers;
    - b. The location of discharges from the designated municipal separate storm sewer relative to discharges from municipal separate storm sewers described in paragraph 1 of this definition;
    - c. The quantity and nature of pollutants discharged to waters of the United States;
    - d. The nature of the receiving waters;
    - e. Other relevant factors; or
  4. The Director may, upon petition, designate as a medium municipal separate storm sewer system, municipal separate storm sewers located within the boundaries of a region defined by a storm water management regional authority based on a jurisdictional, watershed, or other appropriate basis that includes one or more of the systems described in paragraphs 1, 2, or 3 of this definition.

- *Metal-Bearing Operations* - one or more of the following: abrasive jet machining; acid pickling neutralization; acid treatment with chromium; acid treatment without chromium; alcohol cleaning; alkaline cleaning neutralization; alkaline treatment with cyanide; anodizing with chromium; anodizing without chromium; carbon black deposition; catalyst acid pre-dip; chemical conversion coating without chromium; chemical milling (or chemical machining); chromate conversion coating (or chromating); chromium drag-out destruction; cyanide drag-out destruction; cyaniding rinse; electrochemical machining; electroless catalyst solution; electroless plating; electrolytic cleaning; electroplating with chromium; electroplating with cyanide; electroplating without chromium or cyanide; electropolishing; galvanizing/hot dip coating; hot dip coating; kerfing; laminating; mechanical and vapor plating; metallic fiber cloth manufacturing; metal spraying (including water curtain); painting-immersion (including electrophoretic, ``E-coat"); photo imaging; photo image developing; photoresist application; photoresist strip; phosphor deposition; physical vapor deposition; plasma arc machining; plastic wire extrusion; salt bath descaling; shot tower--lead shot manufacturing; soldering; solder flux cleaning; solder fusing; solder masking; sputtering; stripping (paint); stripping (metallic coating); thermal infusion; ultrasonic machining; vacuum impregnation; vacuum plating; water shedder; wet air pollution control; wire galvanizing flux; and numerous sub-operations within those listed in this paragraph. In addition, process wastewater also results from associated rinses that remove materials that the preceding processes deposit on the surface of the workpiece. These metal-bearing operations are defined in appendix C of 40 CFR 438 (40 CFR 438.2(d)) [Added July 2003].
- *Metal-bearing Wastes* - wastes and/or used materials from manufacturing or processing facilities or other commercial operations that contain significant quantities of metal pollutants, but not significant quantities of oil and grease (generally less than 100 mg/L). Examples of these wastes are spent electroplating baths and sludges, metal-finishing rinse water and sludges, chromate wastes, blow-down water and sludges from air pollution control, spent anodizing solutions, incineration air pollution control wastewaters, waste liquid mercury, cyanide containing wastes greater than 136 mg/L, and waste acids and bases with or without metals (40 CFR 437.2) [Added April 2001].
- *Metal Cleaning Wastes* - any wastewater resulting from cleaning (with or without chemical cleaning compounds) any metal process equipment including, but not limited to, boiler tube cleaning, boiler fireside cleaning, and air preheater cleaning (40 CFR 423.11(d)).
- *Minimally-toxic* - a substance must pass either OECD 201, 202, and 203 for acute toxicity testing, or OECD 210 and 211 for chronic toxicity testing. For purposes of the standards, equivalent toxicity data for marine species, including methods ISO/DIS 10253 for algae, ISO TC147/SC5/W62 for crustacean, and OSPAR 2005 for fish, may be substituted for OECD 201, 202, and 203. If a substance is evaluated for the formulation and main constituents, the LC50 of fluids must be at least 100 mg/L and the LC50 of greases, two-stroke oils, and all other total loss lubricants must be at least 1000 mg/L. If a substance is evaluated for each constituent substance, rather than the complete formulation and main compounds, then constituents comprising less than 20% of fluids can have an LC50 between 10-100 mg/L or a no-observed-effect concentration (NOEC) between 1-10 mg/L, constituents comprising less than 5% of fluids can have an LC50 between 1-10 mg/L or a NOEC between 0.1-1 mg/L, and constituents comprising less than 1% of fluids, can have an LC50 less than 1 mg/L or a NOEC between 0-0.1 mg/L (40 CFR 1700.3) [Added April 2017].
- *Mobile Unit* - a specialized mobile self-contained van, trailer, or equipment used in providing dentistry services at multiple locations (40 CFR 441.20) [Added July 2017].
- *Multi-year Phosphorus Application* - phosphorus applied to a field in excess of the crop needs for that year. In multi-year phosphorus applications, no additional manure, litter, or process wastewater is applied to the same land in subsequent years until the applied phosphorus has been removed from the field via harvest and crop removal (40 CFR 412.4(b)(3)) [Added July 2005].
- *Multiple Waste Stream CWT Facility* - a CWT facility which accepts waste in more than one CWT subcategory (metals, oils, or organics) and combines any portion of these different subcategory wastes at any point prior to the compliance discharge sampling location (40 CFR 437.2) [Added April 2001].

- *Municipal Separate Storm Sewer* - a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) (40 CFR 122.26(b)(8)) **[Added January 2000]**:
  1. Owned or operated by a state, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to state law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under state law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States;
  2. Designed or used for collecting or conveying stormwater;
  3. Which is not a combined sewer; and
  4. Which is not part of a POTW as defined at 40 CFR 122.2.
- *Municipal Separate Storm Sewer System (MS4)* – all separate storm sewers that are defined as “large,” or “medium,” or “small” municipal separate storm sewer systems as defined or as designated by the Administrator. See also the definitions for “large municipal separate storm sewer,” “major municipal separate storm sewer,” “medium municipal separate storm sewer,” and “small municipal separate storm sewer” (40 CFR 122.26(b)(18) and 122.26(b)(19)) **[Added April 2012]**.
- *Municipality* - a city, town, borough, county, parish, district, association, or other public body created by or under state law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of CWA (40 CFR 122.2) **[Added October 2001]**.
- *Municipality* - a city, town, borough, county, parish, district, association, or other public body (including an intermunicipal agency of two or more of the foregoing entities: created by or under state law; an Indian tribe or an authorized Indian tribal organization having jurisdiction over sewage sludge management; or a designated and approved management agency under section 208 of the CWA, as amended. The definition includes a special district created under state law, such as a water district, sewer district, sanitary district, utility district, drainage district, or similar entity, or an integrated waste management facility as defined in section 201(e) of the CWA, as amended, that has as one of its principal responsibilities the treatment, transport, use, or disposal of sewage sludge (40 CFR 503.9(o)) **[Reviewed October 2001]**.
- *NPDES Permit* - a permit granted by USEPA to a direct discharger which permits wastewater discharge to a watercourse in accordance with the conditions of the permit (40 CFR 403.3(n)) **[Reviewed October 2001; Citation Revised January 2006]**.
- *NPDES Permit Exclusions* - the following discharges do not require a NPDES permit (40 CFR 122.3) **[Revised January 2007; Revised July 2008]**:
  1. any discharge of sewage from vessels, effluent from properly functioning marine engines, laundry, shower, and galley sink wastes, or any other discharge incidental to the normal operation of a vessel. This exclusion does not apply to rubbish, trash, garbage, or other such materials discharged overboard; nor to other discharges when the vessel is operating in a capacity other than as a means of transportation such as when used as an energy or mining facility, a storage facility or a seafood processing facility, or when secured to a storage facility or a seafood processing facility, or when secured to the bed of the ocean, contiguous zone or waters of the United States for the purpose of mineral or oil exploration or development
  2. discharges of dredged or fill material into waters of the United States which are regulated under section 404 of CWA
  3. the introduction of sewage, industrial wastes or other pollutants into POTW by indirect dischargers. Plans or agreements to switch to this method of disposal in the future do not relieve dischargers of the obligation to have and comply with permits until all discharges of pollutants to waters of the United States are eliminated. This exclusion does not apply to the introduction of pollutants to privately owned

- treatment works or to other discharges through pipes, sewers, or other conveyances owned by a state, municipality, or other party not leading to treatment works
4. any discharge in compliance with the instructions of an On-Scene Coordinator pursuant to 40 CFR 300 (The National Oil and Hazardous Substances Pollution Contingency Plan) or 33 CFR 153.10(e) (Pollution by Oil and Hazardous Substances)
  5. any introduction of pollutants from non point-source agricultural and silvicultural activities, including storm water runoff from orchards, cultivated crops, pastures, range lands, and forest lands, but not discharges from concentrated animal feeding operations, discharges from concentrated aquatic animal production facilities, discharges to aquaculture projects, and discharges from silvicultural point sources
  6. return flows from irrigated agriculture
  7. discharges into a privately owned treatment works, except as the Director may otherwise require under 40 CFR 122.44(m)
  8. The application of pesticides consistent with all relevant requirements under FIFRA (i.e., those relevant to protecting water quality), in the following two circumstances:
    - a. The application of pesticides directly to waters of the United States in order to control pests. Examples of such applications include applications to control mosquito larvae, aquatic weeds, or other pests that are present in waters of the United States.
    - b. The application of pesticides to control pests that are present over waters of the United States, including near such waters, where a portion of the pesticides will unavoidably be deposited to waters of the United States in order to target the pests effectively; for example, when insecticides are aerially applied to a forest canopy where waters of the United States may be present below the canopy or when pesticides are applied over or near water for control of adult mosquitoes or other pests.
  9. Discharges from a water transfer. Water transfer means an activity that conveys or connects waters of the United States without subjecting the transferred water to intervening industrial, municipal, or commercial use. This exclusion does not apply to pollutants introduced by the water transfer activity itself to the water being transferred.
- *National Pollutant Discharge Elimination System (NPDES)* - the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, 318, and 405 of CWA. The term includes an “approved program” (40 CFR 122.2) [**Added October 2001**].
  - *National Pretreatment Standard* - any regulation containing pollutant discharge limits promulgated by the USEPA (40 CFR 403.3(l)) [**Reviewed October 2001; Citation Revised January 2006**].
  - *Navigable Waters* - waters of the United States, including the territorial seas. This definition is effective 6 February 2020 (40 CFR 401.11(l)) [**Revised July 2015; Revised April 2018**]
  - *Neighboring* - this term means (40 CFR 122.2 and 401.11(l)(3)(ii)) [**Added July 2015**]:
    1. all waters located within 100 ft of the ordinary high water mark of a water identified in paragraphs (1) through (5) of the definition for “Waters of the United States.” The entire water is neighboring if a portion is located within 100 ft of the ordinary high water mark;
    2. All waters located within the 100-year floodplain of a water identified in paragraphs (1) through (5) of the definition for “Waters of the United States” and not more than 1,500 ft from the ordinary high water mark of such water. The entire water is neighboring if a portion is located within 1,500 feet of the ordinary high water mark and within the 100-year floodplain;
    3. All waters located within 1,500 ft of the high tide line of a water identified in paragraphs (1) or (3) of the definition for “Waters of the United States,” and all waters within 1,500 ft of the ordinary high water mark of the Great Lakes. The entire water is neighboring if a portion is located within 1,500 ft of the high tide line or within 1,500 ft of the ordinary high water mark of the Great Lakes.
  - *Net Pen System* - a stationary, suspended or floating system of nets, screens, or cages in open waters of the United States. Net pen systems typically are located along a shore or pier or may be anchored and floating offshore. Net

pens and submerged cages rely on tides and currents to provide a continual supply of high-quality water to the animals in production (40 CFR 451.2) [**Added October 2004**].

- *New Animal Drug Application* – this is defined in 512(b)(1) of the *Federal Food, Drug, and Cosmetic Act* (21 U.S.C 360b(b)(1)) (40 CFR 451.2) [**Added October 2004**].
- *New Discharger* - any building, structure, facility, or installation (40 CFR 122.2) [**Added October 2001**]:
  1. from which there is or may be a “discharge of pollutants;”
  2. that did not commence the “discharge of pollutants” at a particular “site” prior to 13 August 1979;
  3. which is not a “new source;” and
  4. which has never received a finally effective NDPEs permit for discharges at that “site.”

This definition includes an “indirect discharger” which commences discharging into “waters of the United States” after 13 August 1979. It also includes any existing mobile point source (other than an offshore or coastal oil and gas exploratory drilling rig or a coastal oil and gas developmental drilling rig) such as a seafood processing rig, seafood processing vessel, or aggregate plant, that begins discharging at a “site” for which it does not have a permit; and any offshore or coastal mobile oil and gas exploratory drilling rig or coastal mobile oil and gas developmental drilling rig that commences the discharge of pollutants after 13 August 1979, at a “site” under USEPA’s permitting jurisdiction for which it is not covered by an individual or general permit and which is located in an area determined by the USEPA or authorized regulatory agency in the issuance of a final permit to be an area of biological concern. In determining whether an area is an area of biological concern, the USEPA or authorized regulatory agency shall consider the factors specified in 40 CFR 125.122(a)(1) through 122.25(a)(10). An offshore or coastal mobile exploratory drilling rig or coastal mobile developmental drilling rig will be considered a “new discharger” only for the duration of its discharge in an area of biological concern.

- *New Source* – any building, structure, facility, or installation from which there is or may be a “discharge of pollutants,” the construction of which is commenced (40 CFR 122.2) [**Added April 2012**].
  1. after promulgation of standards of performance under section 306 of CWA which are applicable to such source, or
  2. after proposal of standards of performance in accordance with section 306 of CWA which are applicable to such source, but only if the standards are promulgated in accordance with section 306 within 120 days of their proposal.
- *New Source* - any building, structure, facility or installation from which there is or may be a discharge of pollutants, the construction of which commenced after the publication of proposed Pretreatment Standards under section 307(c) of the Act which will be applicable to such source if such Standards are thereafter promulgated in accordance with that section, provided that (40 CFR 403.3(m)) [**Added October 2001; Revised January 2006**]:
  1. The building, structure, facility or installation is constructed at a site at which no other source is located; or
  2. The building, structure, facility or installation totally replaces the process or production equipment that causes the discharge of pollutants at an existing source; or
  3. The production or wastewater generating processes of the building, structure, facility or installation are substantially independent of an existing source at the same site. In determining whether these are substantially independent, factors such as the extent to which the new facility is integrated with the existing plant, and the extent to which the new facility is engaged in the same general type of activity, as the existing source should be considered.

Construction on a site at which an existing source is located results in a modification rather than a New Source if the construction does not create a new building, structure, facility or installation meeting the criteria of paragraphs 2 or 3 above, but otherwise alters, replaces, or adds to existing process or production equipment.

Construction of a new source has commenced if the owner or operator has:

1. begun, or caused to begin as part of a continuous onsite construction program:

- a. any placement, assembly, or installation of facilities or equipment; or
    - b. significant site preparation work including clearing, excavation, or removal of existing buildings, structures, or facilities which is necessary for the placement, assembly, or installation of new source facilities or equipment; or
  - 2. entered into a binding contractual obligation for the purchase of facilities or equipment that is intended to be used in its operation within a reasonable time. Options to purchase or contracts which can be terminated or modified without substantial loss, and contracts for feasibility, engineering, and design studies do not constitute a contractual obligation.
- *New Source* - any building, structure, facility, or installation from where there is or may be the discharge of pollutants, the construction of which is commenced after the publication of proposed regulations prescribing a standards of performance under section 306 of the CWA, which will be applicable to such source as such standards is thereafter promulgated in accordance with section 306 of the act (40 CFR 401.11(e)) **[Reviewed October 2001]**.
  - *New Source* - any building, structure, facility or installation from which there is or may be a discharge of pollutants, the construction of which commenced after the publication of proposed Pretreatment Standards under section 307(c) of the Act which will be applicable to such source if such Standards are thereafter promulgated in accordance with that section, provided that (40 CFR 403.3(m)) **[Added October 2001]**:
    - 1. The building, structure, facility or installation is constructed at a site at which no other source is located; or
    - 2. The building, structure, facility or installation totally replaces the process or production equipment that causes the discharge of pollutants at an existing source; or
    - 3. The production or wastewater generating processes of the building, structure, facility or installation are substantially independent of an existing source at the same site. In determining whether these are substantially independent, factors such as the extent to which the new facility is integrated with the existing plant, and the extent to which the new facility is engaged in the same general type of activity, as the existing source should be considered.

Construction on a site at which an existing source is located results in a modification rather than a new source if the construction does not create a new building, structure, facility or installation meeting the criteria of paragraphs b or c but otherwise alters, replaces, or adds to existing process or production equipment.

Construction of a new source has commenced if the owner or operator has:

    - 1. begun, or caused to begin as part of a continuous onsite construction program:
      - a. any placement, assembly, or installation of facilities or equipment; or
      - b. significant site preparation work including clearing, excavation, or removal of existing buildings, structures, or facilities which is necessary for the placement, assembly, or installation of new source facilities or equipment; or
    - 2. entered into a binding contractual obligation for the purchase of facilities or equipment that are intended to be used in its operation within a reasonable time. Options to purchase or contracts which can be terminated or modified without substantial loss, and contracts for feasibility, engineering, and design studies do not constitute a contractual obligation.
  - *New Source* – as related to concentrated animal feeding operations (CAFOs), this is defined at 40 CFR 122.2. New source criteria are defined at 40 CFR 122.29(b). (40 CFR 412.2(f)) **[Added July 2005]**.
  - *New Vessel* - includes any vessel, the construction of which is initiated on or after 30 January 1975 (33 CFR 159.3) **[Added January 2012]**.
  - *No Exposure* - all industrial materials and activities are protected by a storm resistant shelter to prevent exposure to rain, snow, snowmelt, and/or runoff. Industrial materials or activities include, but are not limited to, material handling equipment or activities, industrial machinery, raw materials, intermediate products, by-products, final products, or waste products. Material handling activities include the storage, loading and unloading,

transportation, or conveyance of any raw material, intermediate product, final product or waste product (40 CFR 122.26(g)) [Added January 2000; Reviewed October 2001].

- *No-discharge Zone* - an area of specified waters established pursuant to 40 CFR 1700.1 through 40 CFR 1700.14 into which one or more specified discharges incidental to the normal operation of Armed Forces vessels, whether treated or untreated, are prohibited (40 CFR 1700.3) [Added July 1999].
- *Noncontact Cooling Water* - the water that is contained in a leak-free system, i.e., no contact with any gas, liquid, or solid other than the container for transport; the water shall have no net poundage addition of any pollutant over intake water levels (40 CFR 401.44(o)) [Reviewed October 2001].
- *Non-contaminated Stormwater* - stormwater which does not come in direct contact with CWT wastes, the waste handling and treatment areas, or other CWT wastewater (40 CFR 437.2) [Added April 2001].
- *Non-contaminated Stormwater* - stormwater which does not come in direct contact with landfill wastes, the waste handling and treatment areas, or landfill wastewater. Non-contaminated stormwater includes storm water which flows off the cap, cover, intermediate cover, daily cover, and/or final cover of the landfill (40 CFR 445.2(g)) [Added April 2000].
- *Non-Conventional Pollutants* - parameters that are neither conventional pollutants as defined in 40 CFR 401.16, nor toxic pollutants as defined in 40 CFR 401.15 (see Appendix A of this document) (40 CFR 439.1(k)) [Added October 2001].
- *Non-process Wastewater* - sanitary wastewater, non-contact cooling water, water from laundering, and non-contact storm water. Non-process wastewater for this part also includes wastewater discharges from non-industrial sources such as residential housing, schools, churches, recreational parks, shopping centers as well as wastewater discharges from gas stations, utility plants, and hospitals (40 CFR 438.2(e)) [Added July 2003].
- *Not Bioaccumulative* - any of the following: The partition coefficient in the marine environment is  $\log K_{ow} < 3$  or  $> 7$  using test methods OECD 117 and 107; molecular mass  $> 800$  Daltons; molecular diameter  $> 1.5$  nanometer; bioconcentration factor (BCF) or bioaccumulation factor (BAF) is  $< 100$  L/kg, using OECD 305, OCSPP 850.1710 or OCSPP 850.1730, or a field-measured BAF; or polymer with molecular weight (MW) fraction below 1,000 g/mol is  $< 1\%$  (40 CFR 1700.3) [Added April 2017].
- *O&G (as HEM)* - total recoverable oil and grease measured as n-hexane extractable material (40 CFR 438.2) [Added July 2003].
- *Ocean/Sea Tanker* - a self or non-self-propelled vessel constructed or adapted to transport liquid, solid or gaseous commodities or cargos in bulk in cargo spaces (or tanks) through oceans and seas, where the commodity or cargo carried comes in direct contact with the tank interior. There are no maximum or minimum vessel or tank volumes (40 CFR 442.2) [Added October 2000].
- *Offsite* - outside the boundaries of a facility (40 CFR 445.2(h)) [Added April 2000].
- *Off-site* - outside the boundaries of a facility (40 CFR 437.2) [Added April 2001].
- *Oily Absorbent Recycling* - the process of recycling oil-soaked or contaminated disposable rags, paper, or pads for the purpose of regenerating a fuel for reuse (40 CFR 437.2) [Added April 2001].
- *Oily Operations* - one or more of the following: abrasive blasting; adhesive bonding; alkaline cleaning for oil removal; alkaline treatment without cyanide; aqueous degreasing; assembly/disassembly; burnishing; calibration; corrosion preventive coating; electrical discharge machining; floor cleaning (in process area); grinding; heat treating; impact deformation; iron phosphate conversion coating; machining; painting-spray or brush (including water curtains); polishing; pressure deformation; solvent degreasing; steam cleaning; testing (e.g., hydrostatic,

dye penetrant, ultrasonic, magnetic flux); thermal cutting; tumbling/barrel finishing/mass finishing/vibratory finishing; washing (finished products); welding; wet air pollution control for organic constituents; and numerous sub-operations within those listed in this paragraph. In addition, process wastewater also results from associated rinses that remove materials that the preceding processes deposit on the surface of the workpiece. These oily operations are defined in appendix B (40 CFR 438.2(f)) **[Added July 2003]**.

- *Oily Wastes* - wastes and/or used materials that contain oil and grease (generally at or in excess of 100 mg/L) from manufacturing or processing facilities or other commercial operations. Examples of these wastes are used oils, oil-water emulsions or mixtures, lubricants, coolants, contaminated groundwater clean-up from petroleum sources, used petroleum products, oil spill clean-up, bilge water, rinse/wash waters from petroleum sources, interceptor wastes, off-specification fuels, underground storage tank remediation waste, and tank clean out from petroleum or oily sources (40 CFR 437.2) **[Added April 2001]**.
- *Once Through Cooling Water* - water passed through the main cooling condensers in one or two passes for the purpose of removing waste heat (40 CFR 423.11(g)) **[Added October 2003]**.
- *On-site* - within the boundaries of a facility. A facility may encompass land areas that are bisected by public thoroughfares but are under the control of a common owner (40 CFR 437.2) **[Added April 2001]**.
- *Onsite* - within the boundaries of a facility (40 CFR 445.2(i)) **[Added April 2000]**.
- *Onsite* - within the contiguous and non-contiguous established boundaries of a facility (40 CFR 442.2) **[Added October 2000]**.
- *Ordinary High Water Mark* - that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas. This definition is effective 6 February 2020 (40 CFR 122.2 and 401.11(l)(3)(vi)) **[Added July 2015; Revised April 2018]**.
- *Organic Wastes* - wastes and/or used materials that contain organic pollutants, but not a significant quantity of oil and grease (generally less than 100 mg/L) from manufacturing or processing facilities or other commercial operations. Examples of these wastes are landfill leachate, contaminated groundwater clean-up from non-petroleum sources, solvent-bearing wastes, off-specification organic product, still bottoms, byproduct glycols, wastewater from paint washes, wastewater from adhesives and/or epoxies, wastewater from chemical product operations, and tank clean-out from organic, non-petroleum sources (40 CFR 437.2) **[Added April 2001]**.
- *Other Container* - either an open or closed receptacle. This includes, but is not limited to, a bucket, a box, a carton, and a vehicle or trailer with a load capacity of 1 metric ton (1.1 short tons) or less (40 CFR 503.11(j)) **[Reviewed October 2001]**.
- *Outfall* - a point source as defined by 40 CFR 122.2 at the point where a municipal separate storm sewer discharges to waters of the United States and does not include open conveyances connecting two municipal separate storm sewers, or pipes, tunnels or other conveyances which connect segments of the same stream or other waters of the United States and are used to convey waters of the United States (40 CFR 122.26(b)(9)) **[Added January 2000; Reviewed October 2001]**.
- *Overburden* - any material of any nature, consolidated or unconsolidated, that overlies a mineral deposit, excluding topsoil or similar naturally-occurring surface materials that are not disturbed by mining operations (40 CFR 122.26(b)(10)) **[Added January 2000; Reviewed October 2001]**.
- *Overflow* - the discharge of manure or process wastewater resulting from the filling of wastewater or manure storage structures beyond the point at which no more manure, process wastewater, or storm water can be contained by the structure (40 CFR 412.2(g)) **[Added July 2005]**.

- *Owner or Operator* - the owner or operator of any “facility or activity” subject to regulation under the NPDES program (40 CFR 122.2) **[Added October 2001]**.
- *pH* - the logarithm of the reciprocal of the hydrogen ion concentration (40 CFR 503.31(g)) **[Reviewed October 2001]**.
- *Pass Through* - a discharge which exits the POTW into waters in quantities or concentrations which, alone or in conjunction with one or more discharges from other sources, is a cause of a violation of any requirement of the POTW’s NPDES permit (40 CFR 403.3(p)) **[Reviewed October 2001; Citation Revised January 2006]**.
- *Pasture* - land on which animals feed directly on feed crops such as legumes, grasses, grain stubble, or stover (40 CFR 503.11(k)) **[Reviewed October 2001]**.
- *Pathogenic Organisms* - disease-causing organisms. These include, but are not limited to, certain bacteria, protozoa, viruses, and viable helminth ova (40 CFR 503.31(f)) **[Reviewed October 2001]**.
- *Performance Test Combustion Temperature* - the arithmetic mean of the average combustion temperature in the hottest zone of the furnace for each of the runs in a performance test (40 CFR 503.41) **[Added October 2001]**.
- *Permit* - an authorization, license, or equivalent control document issued by USEPA or an “approved state” to implement the requirements of this 40 CFR 122 and 40 CFR 123 and 124. “Permit” includes an NPDES “general permit” (40 CFR 122.28). Permit does not include any permit which has not yet been the subject of final agency action, such as a “draft permit” or a “proposed permit” (40 CFR 122.2) **[Added October 2001]**.
- *Permitting Authority* - either USEPA or a state with an USEPA-approved sludge management program (40 CFR 503.9(p)) **[Added October 2001]**.
- *Person* - an individual, association, partnership, corporation, municipality, state or Federal agency, or an agent or employee thereof (40 CFR 122.2 and 503.9(q)) **[Reviewed October 2001]**.
- *Person In Charge (PIC)* - the single individual named master of the vessel or placed in charge of the vessel, by the U.S. Department of Defense or by the Department in which the U.S. Coast Guard is operating, as appropriate, and who is responsible for the operation, manning, victualing, and supplying of the vessel of the Armed Forces. Examples of a PIC include, but are not limited to (40 CFR 1700.3) **[Added April 2017]**:
  1. A Commanding Officer, Officer in Charge, or senior commissioned officer on board the vessel;
  2. A civilian, military, or U.S. Coast Guard person assigned to a shore command or activity that has been designated as the PIC for one or more vessels, such as a group of boats or craft;
  3. A Tugmaster, Craftmaster, Coxswain, or other senior enlisted person onboard the vessel;
  4. A licensed civilian mariner onboard a Military Sealift Command vessel; or
  5. A contracted commercial person at a shore installation that is not part of the Armed Forces but as identified by the U.S. Department of Defense or the Department in which the U.S. Coast Guard is operating.
- *Person Who Prepares Sewage Sludge* - either the person who generates sewage sludge during the treatment of domestic sewage in a treatment works or the person who derives a material from sewage sludge (40 CFR 503.9(r)) **[Reviewed October 2001]**.
- *Petroleum Cargos* - products of the fractionation or straight distillation of crude oil, redistillation of unfinished petroleum derivatives, cracking, or other refining processes. For purposes of this rule, petroleum cargos also include products obtained from the refining or processing of natural gas and coal. For purposes of this rule, specific examples of petroleum products include but are not limited to: asphalt; benzene; coal tar; crude oil; cutting oil; ethyl benzene; diesel fuel; fuel additives; fuel oils; gasoline; greases; heavy, medium, and light oils; hydraulic fluids, jet fuel; kerosene; liquid petroleum gases (LPG) including butane and propane; lubrication oils; mineral spirits; naphtha; olefin, paraffin, and other waxes; tall oil; tar; toluene; xylene; and waste oil (40 CFR 442.2) **[Added October 2000]**.

- *Pipeline* - an open or closed conduit used for the conveyance of material. A pipeline includes a channel, pipe, tube, trench, or ditch, or fixed delivery system (40 CFR 437.2) [**Added April 2001**].
- *Place Sewage Sludge or Sewage Sludge Placed* - means disposal of sewage sludge on a surface disposal site (40 CFR 503.9(s)) [**Reviewed October 2001**].
- *Point Source* – any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural stormwater runoff (40 CFR 122.2) [**Added April 2012**].
- *Point Source* - any discernible confined and discrete conveyance including but not limited to a pipe, ditch, channel, or conduit from which pollutants are or may be discharged (40 CFR 401.11(d)).
- *Pollutant* - dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 et seq.)), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. It does not mean:
  1. sewage from vessels; or
  2. water, gas, or other material which is injected into a well to facilitate production of oil or gas, or water derived in association with oil and gas production and disposed of in a well, if the well used either to facilitate production or for disposal purposes is approved by authority of the state in which the well is located, and if the state determines that the injection or disposal will not result in the degradation of ground or surface water resources.

Note: Radioactive materials covered by the Atomic Energy Act are those encompassed in its definition of source, byproduct, or special nuclear materials. Examples of materials not covered include radium and accelerator-produced isotopes. See *Train v. Colorado Public Interest Research Group, Inc.*, 426 U.S. 1 (1976) (40 CFR 122.2) [**Added October 2001**].
- *Pollutant* - dredged spoil, solid waste, incinerator residue, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. It does not mean (40 CFR 401.11(f)) [**Added October 2001**]:
  1. sewage from vessels; or
  2. water, gas, or other material which is injected into a well to facilitate production of oil or gas, or water derived in association with oil and gas production and disposed of in a well, if the well, used either to facilitate production or for disposal purposes is approved by authority of the state in which the well is located, and if such state determines that such injection or disposal will not result in the degradation of ground or surface water resources.
- *Pollutant* - an organic substance, an inorganic substance, a combination of organic and inorganic substances, or a pathogenic organism that, after discharge and upon exposure, ingestion, inhalation, or assimilation into an organism either directly from the environment or indirectly by ingestion through the food chain, could, on the basis of information available to the Administrator of USEPA, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunction in reproduction), or physical deformations in either organisms or offspring of the organisms (40 CFR 503.9(t)) [**Added October 2001**].
- *Pollutant Limit* - a numerical value that describes the amount of a pollutant allowed per unit amount of sewage sludge (e.g., milligrams per kilogram of total solids); the amount of a pollutant that can be applied to a unit area of land (e.g., kilograms per hectare); or the volume of a material that can be applied to a unit area of land (e.g., gallons per acre) (40 CFR 503.9(u)) [**Added October 2001**].

- *Pollution Prevention Allowable Discharge* - the quantity of/concentrations of pollutants in wastewaters being discharged to publicly owned treatment works after a facility has demonstrated compliance with the Pollutant Management Plan provisions in 40 CFR 442.15(b), 442.16(b), 442.25(b), or 442.26(b) (40 CFR 442.2) [**Added October 2000**].
- *Prerinse/Presteam* - a rinse, typically with hot or cold water, performed at the beginning of the cleaning sequence to remove residual material from the tank interior (40 CFR 442.2) [**Added October 2000**].
- *Presolve Wash* - the use of diesel, kerosene, gasoline, or any other type of fuel or solvent as a tank interior cleaning solution (40 CFR 442.2) [**Added October 2000**].
- *Pretreatment* - the reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater prior to or in lieu of discharging or otherwise introducing such pollutants into a POTW (40 CFR 403.3(s)) [**Reviewed October 2001; Citation Revised January 2006**].
- *Primary Industry Category* - any industry category listed in the NRDC settlement agreement (Natural Resources Defense Council et al. v. Train, 8 E.R.C. 2120 (D.D.C. 1976), modified 12 E.R.C. 1833 (D.D.C. 1979)); also listed in appendix A of 40 CFR 122 (see Appendix B of this document) (40 CFR 122.2) [**Added October 2001**].
- *Privately Owned Treatment Works* - any device or system which is used to treat wastes from any facility whose operator is not the operator of the treatment works, and not a "POTW" (40 CFR 122.2) [**Added October 2001**].
- *Process Wastewater* - any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product (40 CFR 122.2) [**Added April 2012**].
- *Process Wastewater* - wastewater as defined at 40 CFR parts 122 and 401, and includes wastewater from air pollution control devices (40 CFR 438.2(g)) [**Added July 2003**].
- *Process Wastewater* - any water which during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, or waste product (40 CFR 401.44(q)).

NOTE: Process wastewater also results from associated rinses that remove materials that the preceding processes deposit on the surface of the workpiece.

- *Process Wastewater* - water directly or indirectly used in the operation of the CAFO for any or all of the following: spillage or overflow from animal or poultry watering systems; washing, cleaning, or flushing pens, barns, manure pits, or other CAFO facilities; direct contact swimming, washing, or spray cooling of animals; or dust control. Process wastewater also includes any water which comes into contact with any raw materials, products, or byproducts including manure, litter, feed, milk, eggs, or bedding (40 CFR 412.2(d)) [**Added July 2005**].
- *Product Stewardship* - a manufacturer's treatment or recovery of its own unused products, shipping and storage containers with product residues, off-specification products, and does not include spent or used materials from use of its products (40 CFR 437.2) [**Added April 2001**].
- *Production Area* - that part of an AFO that includes the animal confinement area, the manure storage area, the raw materials storage area, and the waste containment areas. The animal confinement area includes but is not limited to open lots, housed lots, feedlots, confinement houses, stall barns, free stall barns, milkrooms, milking centers, cowyards, barnyards, medication pens, walkers, animal walkways, and stables. The manure storage area includes but is not limited to lagoons, runoff ponds, storage sheds, stockpiles, under house or pit storages, liquid impoundments, static piles, and composting piles. The raw materials storage area includes but is not limited to feed silos, silage bunkers, and bedding materials. The waste containment area includes but is not limited to settling basins, and areas within berms and diversions which separate uncontaminated storm water. Also included in the

definition of production area is any egg washing or egg processing facility, and any area used in the storage, handling, treatment, or disposal of mortalities (40 CFR 412.2(h)) **[Added July 2005]**.

- *Public Contact Site* - land with a high potential for contact by the public. This includes, but is not limited to, public parks, ball fields, cemeteries, plant nurseries, turf farms, and golf courses (40 CFR 503.11(l)) **[Reviewed October 2001]**.
- *Public Service* - the provision of landfill waste disposal services to individual members of the general public, publicly owned organizations (schools, universities, government agencies, municipalities) and not-for-profit organizations for which the landfill does not receive a fee or other remuneration (40 CFR 445.2(j)) **[Added April 2000]**:
  1. A landfill located on the same site as industrial or commercial operations; and
  2. A landfill not located on the same site as the industrial or commercial operations (offsite), but “wholly-owned” by the industrial or commercial facility and primarily dedicated to receiving waste from the related industrial or commercial facility.
- *Publicly Owned Treatment Works (POTW)* - a treatment works which is owned by the state or a municipality. This includes any devices and systems used in the storage, treatment, recycling, and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes, and other conveyances only if they convey waste to a POTW (40 CFR 403.3(q)) **[Reviewed October 2001; Citation Revised January 2006]**.
- *Qualified Groundwater Scientist* - an individual with a baccalaureate or postgraduate degree in the natural sciences or engineering who has sufficient training and experience in groundwater hydrology and related fields, as may be demonstrated by state registration, professional certification, or completion of accredited university programs, to make sound professional judgments regarding groundwater monitoring, pollutant fate and transport, and corrective action (40 CFR 503.21(l)) **[Reviewed October 2001]**.
- *Rail Tank Car* - a completely enclosed storage vessel pulled by a locomotive that is used to transport liquid, solid, or gaseous commodities or cargos over railway access lines. A rail tank car storage vessel may have one or more storage compartments and the stored commodities or cargos come in direct contact with the tank interior. There are no maximum or minimum vessel or tank volumes (40 CFR 442.2) **[Added October 2000]**.
- *Railroad Line Maintenance Facilities* - facilities specified at 40 CFR 438.1 that only perform routine cleaning and light maintenance on railroad engines, cars, car-wheel trucks, or similar parts or machines, and discharge wastewater exclusively from oily operations. These facilities only perform one or more of the following operations: assembly/disassembly, floor cleaning, maintenance machining (wheel truing), touch-up painting, and washing (40 CFR 438.2(h)) **[Added July 2003]**.
- *Railroad Overhaul or Heavy Maintenance Facilities* - facilities engaged in the manufacture, overhaul, or heavy maintenance of railroad engines, cars, car-wheel trucks, or similar parts or machines. These facilities typically perform one or more of the operations at railroad line maintenance facilities and one or more of the following operations: abrasive blasting, alkaline cleaning, aqueous degreasing, corrosion preventive coating, electrical discharge machining, grinding, heat treating, impact deformation, painting, plasma arc machining, polishing, pressure deformation, soldering/brazing, stripping (paint), testing, thermal cutting, and welding (40 CFR 438.2(i)) **[Added July 2003]**.
- *Range Land* - open land with indigenous vegetation (40 CFR 503.11(m)) **[Reviewed October 2001]**.
- *Real-time Feed Monitoring* - a system designed to track the rate of feed consumption and to detect uneaten feed passing through the nets at a net pen facility. These systems may rely on a combination of visual observation and hardware, including, but not limited to, devices such as video cameras, digital scanning sonar, or upweller systems that allow facilities to determine when to cease feeding the aquatic animals. Visual observation alone from above the pens does not constitute real-time monitoring (40 CFR 451.2) **[Added October 2004]**.

- *Recirculated Cooling Water* - water which is passed through the main condensers for the purpose of removing waste heat, passed through a cooling device for the purpose of removing such heat from the water and then passed again, except for blowdown, through the main condenser (40 CFR 423.11(h)) **[Added October 2003]**.
- *Recirculating System* - a system that filters and reuses water in which the aquatic animals are produced prior to discharge. Recirculating systems typically use tanks, biological or mechanical filtration, and mechanical support equipment to maintain high quality water to produce aquatic animals (40 CFR 451.2) **[Added October 2004]**.
- *Reclamation Site* - drastically disturbed land that is reclaimed using sewage sludge. This includes, but is not limited to, strip mines and construction sites (40 CFR 503.11(n)) **[Reviewed October 2001]**.
- *Recovery* - the recycling or processing of a waste, wastewater or used material such that the material, or a portion thereof, may be reused or converted to a raw material, intermediate, or product. Recovery does not include the re-use of treated or untreated wastewater in place of potable or pure water in industrial processes such as the use of secondary POTW effluents as non-contact cooling water, storm water in place of process water, or the re-use of spent chemicals in place of virgin treatment chemicals (40 CFR 437.2) **[Added April 2001]**.
- *Regulated Parameters* - for 40 CFR 445, numbered (P) and listed with approved methods of analysis in Table 1B at 40 CFR 136.3, these are defined as follows (40 CFR 445.2(k)) **[Added April 2000]**:
  1. Ammonia (as N) means ammonia reported as nitrogen. P4
  2. BOD<sub>5</sub> means 5-day biochemical oxygen demand. P9
  3. Arsenic means total arsenic. P6
  4. Chromium means total chromium. P19
  5. Zinc means total zinc. P75.
- *Regulated Parameters* - for 40 CFR 445, numbered (P) and listed with approved methods of analysis in Table 1C at 40 CFR 136.3, are as follows (40 CFR 445.2(l)) **[Added April 2000]**:
  1. Naphthalene. P68
  2. Phenol. P85.
- *Regulated Parameters* - for 40 CFR 445 listed with approved methods of analysis in the attachments to Methods 625 and 1625B in Appendix A at 40 CFR 136 are as follows (40 CFR 445.2(m)) **[Added April 2000]**:
  1. Aniline.
  2. Benzoic acid.
  3. p-Cresol.
  4. Pyridine.
  5. a-Terpineol.
- *Re-refining* - the processing of used oil using distillation, hydrotreating, and/or other treatment employing acid, caustic, solvent, clay and/or chemicals in order to produce high quality base stock for lubricants or other petroleum products (40 CFR 437.2) **[Added April 2001]**.
- *Risk Specific Concentration* - the allowable increase in the average daily ground level ambient air concentration for a pollutant from the incineration of sewage sludge at or beyond the property line of the site where the sewage sludge incinerator is located (40 CFR 503.41) **[Added October 2001]**.
- *Runoff* - rainwater, leachate, or other liquid that drains overland on any part of a land surface and runs off of the land surface (40 CFR 503.9(v)) **[Reviewed October 2001]**.
- *Runoff Coefficient* - the fraction of total rainfall that will appear at a conveyance as runoff (40 CFR 122.26(b)(11)) **[Added January 2000]**.

- *Schedule of Compliance* - a schedule of remedial measures included in a “permit,” including an enforceable sequence of interim requirements (for example, actions, operations, or milestone events) leading to compliance with the CWA and regulations (40 CFR 122.2) **[Added October 2001]**.
- *Secondary Industry Category* - any industry category which is not a “primary industry category” (40 CFR 122.2) **[Added October 2001]**.
- *Secretary* - the Secretary of the DoD or that person's authorized representative (40 CFR 1700.3) **[Added July 1999]**.
- *Seismic Impact Zone* - an area that has a 10 percent or greater probability that the horizontal ground level acceleration of the rock in the area exceeds 0.10 gravity once in 250 yr (40 CFR 503.21(m)) **[Reviewed October 2001]**.
- *Septage* - the liquid and solid material pumped from a septic tank, cesspool, or similar domestic sewage treatment system, or a holding tank when the system is cleaned or maintained (40 CFR 122.2) **[Added October 2001]**.
- *Setback* - a specified distance from surface waters or potential conduits to surface waters where manure, litter, and process wastewater may not be land applied. Examples of conduits to surface waters include but are not limited to: open tile line intake structures, sinkholes, and agricultural well heads (40 CFR 412.4(b)(1)) **[Added July 2005]**.
- *Severe Property Damage* - substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production (40 CFR 122.41(m)(1)(ii) and 403.17(a)(2)) **[Added October 2001]**.
- *Sewage* - human body wastes and the wastes from toilets and other receptacles intended to receive or retain body waste (33 CFR 159.3) **[Added January 2012]**.
- *Sewage From Vessels* - human body wastes and the wastes from toilets and other receptacles intended to receive or retain body wastes that are discharged from vessels and regulated under section 312 of CWA, except that with respect to commercial vessels on the Great Lakes this term includes graywater. For the purposes of this definition, “graywater” means galley, bath, and shower water (40 CFR 122.2) **[Added October 2001]**.
- *Sewage Sludge* - any solid, semi-solid, or liquid residue removed during the treatment of municipal wastewater or domestic sewage. Sewage sludge includes, but is not limited to, solids removed during primary, secondary, or advanced wastewater treatment, scum, septage, portable toilet pumpings, type III marine sanitation device pumpings (33 CFR 159), and sewage sludge products. Sewage sludge does not include grit or screenings, or ash generated during the incineration of sewage sludge (40 CFR 122.2) **[Added October 2001]**.
- *Sewage Sludge* - solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works. Sewage sludge includes, but is not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment processes; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screenings generated during preliminary treatment of domestic sewage in a treatment works (40 CFR 503.9(w)) **[Added October 2001]**.
- *Sewage Sludge* - solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works. Sewage sludge includes, but is not limited to, domestic septage, scum or solids removed in primary, secondary, or advanced wastewater treatment processes; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludges in a sewage sludge incinerator or grit and screenings generated during preliminary treatment of domestic sewerage in a treatment works (40 CFR 257.2).

- *Sewage Sludge Feed Rate* - either the average daily amount of sewage sludge fired in all sewage sludge incinerators within the property line of the site where the sewage sludge incinerators are located for the number of days in a 365 day period that each sewage sludge incinerator operates, or the average daily design capacity for all sewage sludge incinerators within the property line of the site where the sewage sludge incinerators are located (40 CFR 503.41) [**Added October 2001**].
- *Sewage Sludge Incinerator* - an enclosed device in which only sewage sludge and auxiliary fuel are fired (40 CFR 503.41) [**Added October 2001**].
- *Sewage Sludge Unit* - land on which only sewage sludge is placed for final disposal. This does not include land on which sewage sludge is either stored or treated. Land does not include waters of the United States, as defined in 40 CFR 122.2 (40 CFR 503.21(n)) [**Reviewed October 2001**].
- *Sewage Sludge Unit Boundary* - the outermost perimeter of an active sewage sludge unit (40 CFR 503.21(o)) [**Reviewed October 2001**].
- *Sewage Sludge Use or Disposal Practice* - the collection, storage, treatment, transportation, processing, monitoring, use, or disposal of sewage sludge (40 CFR 122.2) [**Added October 2001**].
- *Significant Industrial User* - except as provided in paragraphs (3) and (4), the term Significant Industrial User means (40 CFR 403.3(v)) [**Added October 2001; Revised January 2006**]:
  1. All Industrial Users subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR chapter I, subchapter N; and
  2. Any other Industrial User that: discharges an average of 25,000 gal/day or more of process wastewater to the POTW (excluding sanitary, noncontact cooling and boiler blowdown wastewater); contributes a process waste stream which makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the POTW Treatment plant; or is designated as such by the Control Authority on the basis that the Industrial User has a reasonable potential for adversely affecting the POTW's operation or for violating any Pretreatment Standard or requirement (in accordance with 40 CFR 403.8(f)(6)).
  3. The Control Authority may determine that an Industrial User subject to categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR chapter I, subchapter N is a Non-Significant Categorical Industrial User rather than a Significant Industrial User on a finding that the Industrial User never discharges more than 100 gallons per day (gpd) of total categorical wastewater (excluding sanitary, non-contact cooling and boiler blowdown wastewater, unless specifically included in the Pretreatment Standard) and the following conditions are met:
    - a. The Industrial User, prior to the Control Authority's finding, has consistently complied with all applicable categorical Pretreatment Standards and Requirements;
    - b. The Industrial User annually submits the certification statement required in 40 CFR 403.12(q) together with any additional information necessary to support the certification statement; and
    - c. The Industrial User never discharges any untreated concentrated wastewater.
  4. Upon a finding that an Industrial User meeting the criteria in paragraph 2 has no reasonable potential for adversely affecting the POTW's operation or for violating any Pretreatment Standards or requirement, the Control Authority may at any time, on its own initiative or in response to a petition received from an Industrial User or POTW, and in accordance with 40 CFR 403.8(f)(6), determine that such Industrial User is not a Significant Industrial User.
- *Significant Materials* - this includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under section 101(14) of CERCLA; any chemical the facility is required to report pursuant to section 313 of title III of SARA; fertilizers; pesticides; and waste products such as ashes, slag, and sludge that have the potential to be released with storm water discharges(40 CFR 122.26(b)(12)) [**Added January 2000; Reviewed October 2001**].

- *Significant Nexus* - this definition is effective 6 February 2020. That a water, including wetlands, either alone or in combination with other similarly situated waters in the region, significantly affects the chemical, physical, or biological integrity of a water identified in paragraphs (1) through (3) of the definition for “Waters of the United States.” The term “in the region” means the watershed that drains to the nearest water identified in paragraphs (1) through (3) of the definition for “Waters of the United States.” For an effect to be significant, it must be more than speculative or insubstantial. Waters are similarly situated when they function alike and are sufficiently close to function together in affecting downstream waters. For purposes of determining whether or not a water has a significant nexus, the water’s effect on downstream (1) through (3) waters shall be assessed by evaluating the aquatic functions identified in paragraphs (1) through (9) of this definition below. A water has a significant nexus when any single function or combination of functions performed by the water, alone or together with similarly situated waters in the region, contributes significantly to the chemical, physical, or biological integrity of the nearest water identified in paragraphs (1) through (3) of the definition for “Waters of the United States.” Functions relevant to the significant nexus evaluation are the following (40 CFR 122.2 and 401.11(l)(3)(v)) **[Added July 2015]**:
  1. Sediment trapping,
  2. Nutrient recycling,
  3. Pollutant trapping, transformation, filtering, and transport,
  4. Retention and attenuation of flood waters,
  5. Runoff storage,
  6. Contribution of flow,
  7. Export of organic matter,
  8. Export of food resources, and
  9. Provision of life cycle dependent aquatic habitat (such as foraging, feeding, nesting, breeding, spawning, or use as a nursery area) for species located in a water identified in paragraphs (1) through (3) of the definition for “Waters of the United States.”
- *Silvicultural Point Source* - any discernible, confined and discrete conveyance related to rock crushing, gravel washing, log sorting, or log storage facilities which are operated in connection with silvicultural activities and from which pollutants are discharged into waters of the United States. The term does not include nonpoint source silvicultural activities such as nursery operations, site preparation, reforestation and subsequent cultural treatment, thinning, prescribed burning, pest and fire control, harvesting operations, surface drainage, or road construction and maintenance from which there is natural runoff. However, some of these activities (such as stream crossing for roads) may involve point source discharges of dredged or fill material which may require a CWA section 404 permit (See 33 CFR 209.120 and 33 CFR 233) (40 CFR 122.27(b)(1)) **[Added October 2001]**.
- *Site* - the land or water area where any “facility or activity” is physically located or conducted, including adjacent land used in connection with the facility or activity (40 CFR 122.2) **[Added October 2001]**.
- *Sludge-Only Facility* - any “treatment works treating domestic sewage” whose methods of sewage sludge use or disposal are subject to regulations promulgated pursuant to section 405(d) of the CWA and is required to obtain a permit under Sec. 122.1(b)(2) (40 CFR 122.2) **[Added July 2000]**.
- *Small Municipal Separate Storm Sewer System (MS4)* - all separate storm sewers that are (40 CFR 122.26(b)(16) and 122.26(b)(17)) **[Added January 2000; Citation Revised April 2012]**:
  1. owned or operated by the United States, a state, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to state law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States
  2. not defined as “large” or “medium” municipal separate storm sewer systems

3. this term includes systems similar to separate storm sewer systems in municipalities, such as systems at military bases, large hospital or prison complexes, and highways and other thoroughfares. The term does not include separate storm sewers in very discrete areas, such as individual buildings.

A small MS4 is regulated under the NPDES storm water program when it is (40 CFR 122.32(a)):

1. operated by Federal, state, tribal, and local governments, including state departments of transportation; and;
2. located in an urbanized area as determined by the latest Decennial Census by the Bureau of the Census. (If the small MS4 is not located entirely within an urbanized area, only the portion that is within the urbanized area is regulated); or
3. designated by the NPDES permitting authority or is based upon a petition.

A small MS4 may receive a waiver of permit coverage if it serves a population of less than 1,000 within the urbanized area and the following criteria are met (40 CFR 122.32(d)):

1. the system is not contributing substantially to the pollutant loadings of a physically interconnected MS4 that is regulated by the NPDES stormwater program; and
2. for discharges of any pollutants that have been identified as a cause of impairment of any water body to which the system discharges, storm water controls are not needed based on wasteload allocations that are part of a USEPA-approved or established TMDL that addresses the pollutants of concern.

A small MS4 may receive a waiver of permit coverage if it serves a population of less than 10,000 and the following criteria are met (40 CFR 122.32(e)):

1. the permitting authority has evaluated all waters of the United States, including small streams, tributaries, lakes, and ponds, that receive a discharge from the MS4;
  2. for all such waters, the permitting authority has determined that stormwater controls are not needed based on wasteload allocations that are part of a USEPA approved or established TMDL that addresses the pollutants of concern or, if a TMDL has not been developed or approved, an equivalent analysis that determines sources and allocations for the pollutants of concern (NOTE: The pollutants of concern include BOD, sediment or a parameter that addresses sediment (such as total suspended solids, turbidity or siltation), pathogens, oil and grease, and any pollutant that has been identified as a cause of impairment of any water body that will receive a discharge from the MS4.); and
  3. the permitting authority has determined that future discharges from the MS4 do not have the potential to result in exceedances of water quality standards, including impairment of designated uses, or other significant water quality impacts, including habitat and biological impacts.
- *Solidification* - the addition of sorbents to convert liquid or semi-liquid waste to a solid by means of adsorption, absorption or both. The process is usually accompanied by stabilization (40 CFR 437.2) **[Added April 2001]**.
  - *Solvent Recovery* - includes fuel blending operations and the recycling of spent solvents through separation of solvent mixtures in distillation columns. Solvent recovery may require an additional, pretreatment step prior to distillation (40 CFR 437.2) **[Added April 2001]**.
  - *Source* - any building, structure, facility, or installation from which there is or may be a discharge of pollutants (40 CFR 122.29(a)(2)) **[Added October 2001]**.
  - *Specific Oxygen Uptake Rate (SOUR)* - the mass of oxygen consumed per unit time per unit mass of total solids (dry weight basis) in the sewage sludge (40 CFR 503.31(h)) **[Reviewed October 2001]**.
  - *Stabilization* - a waste process that decreases the mobility of waste constituents by means of a chemical reaction. For the purpose of this rule, chemical precipitation is not a technique for stabilization (40 CFR 437.2) **[Added April 2001]**.

- *Stack Height* - the difference between the elevation of the top of a sewage sludge incinerator stack and the elevation of the ground at the base of the stack when the difference is equal to or less than 65 m. When the difference is greater than 65 m, stack height is the creditable stack height determined in accordance with 40 CFR 51.100 (ii) (40 CFR 503.41) **[Added October 2001]**.
- *Standard of Performance* - any restriction established by the Administrator pursuant to section 306 of the Act on quantities, rates, and concentrations of chemical, physical, biological, and other constituents which are or may be discharged from new sources into navigable waters, the waters of the contiguous zone or the ocean (40 CFR 401.11) **[Added October 2001]**.
- *Standards for Sewage Sludge Use or Disposal* - the regulations promulgated pursuant to section 405(d) of the CWA which govern minimum requirements for sludge quality, management practices, and monitoring and reporting applicable to sewage sludge or the use or disposal of sewage sludge by any person (40 CFR 122.2) **[Added October 2001]**.
- *Store or Storage of Sewage Sludge* - the placement of sewage sludge on land on which the sewage sludge remains for 2 yr or less. This does not include the placement of sewage sludge on land for treatment (40 CFR 503.9(y)) **[Reviewed October 2001]**.
- *Stormwater* - stormwater runoff, snow melt runoff, and surface runoff and drainage (40 CFR 122.26(b)(13)) **[Added January 2000; Citation Revised April 2012]**.
- *Stormwater Discharge Associated With an Industrial Activity* -the discharge from any conveyance that is used for collecting and conveying stormwater and that is directly related to manufacturing, processing or raw materials storage areas at an industrial plant. The term does not include discharges from facilities or activities excluded from the NPDES program under this 40 CFR 122. For the categories of industries identified in 40 CFR 122.26, the term includes, but is not limited to, stormwater discharges from industrial plant yards; immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility; material handling sites; refuse sites; sites used for the application or disposal of process wastewaters (as defined at 40 CFR 40); sites used for the storage and maintenance of material handling equipment; sites used for residual treatment, storage, or disposal; shipping and receiving areas; manufacturing buildings; storage areas (including tank farms) for raw materials, and intermediate and final products; and areas where industrial activity has taken place in the past and significant materials remain and are exposed to stormwater. For the purposes of this definition, material handling activities include storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, final product, by-product or waste product. The term excludes areas located on plant lands separate from the plant's industrial activities, such as office buildings and accompanying parking lots as long as the drainage from the excluded areas is not mixed with stormwater drained from the above described areas. Industrial facilities (including industrial facilities that are federally, state, or municipally owned or operated that meet the description of the facilities listed in the definition of *Industrial Activities*) include those facilities designated under the provisions of 40 CFR 122.26(a)(1)(v) (40 CFR 122.26(b)(14)) **[Revised January 2000]**.
- *Stormwater Discharge Associated With Small Construction Activity* - the discharge of stormwater from (40 CFR 122.26(b)(15)) **[Added January 2000]**:
  1. construction activities including clearing, grading, and excavating that result in land disturbance of equal to or greater than 1 acre and less than 5 acres. Small construction activity also includes the disturbance of less than 1 acre of total land area that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb equal to or greater than 1 and less than 5 acres. Small construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the facility. The Director may waive the otherwise applicable requirements in a general permit for a stormwater discharge from construction activities that disturb less than 5 acres where:
    - a. the value of the rainfall erosivity factor ("R" in the Revised Universal Soil Loss Equation) is less than five during the period of construction activity. The rainfall erosivity factor is determined in accordance with Chapter 2 of Agriculture Handbook Number 703, Predicting Soil Erosion by

Water: A Guide to Conservation Planning With the Revised Universal Soil Loss Equation (RUSLE), pages 21-64, dated January 1997. The Director of the Federal Register approves this incorporation by reference in accordance with 5 U.S.C 552(a) and 1 CFR part 51. Copies may be obtained from USEPA's Water Resource Center, Mail Code RC4100, 401 M St. S.W., Washington, DC 20460. A copy is also available for inspection at the USEPA Water Docket, 401 M Street S.W., Washington, DC 20460, or the Office of the Federal Register, 800 N. Capitol Street N.W. Suite 700, Washington, DC. An operator must certify to the Director that the construction activity will take place during a period when the value of the rainfall erosivity factor is less than five; or

- b. stormwater controls are not needed based on a total maximum daily load (TMDL) approved or established by USEPA that addresses the pollutants of concern or, for non-impaired waters that do not require TMDLs, an equivalent analysis that determines allocations for small construction sites for the pollutants of concern or that determines that such allocations are not needed to protect water quality based on consideration of existing in-stream concentrations, expected growth in pollutant contributions from all sources, and a margin of safety. The pollutants of concern include sediment or a parameter that addresses sediment (such as total suspended solids, turbidity or siltation) and any other pollutant that has been identified as a cause of impairment of any water body that will receive a discharge from the construction activity. The operator must certify to the Director that the construction activity will take place, and storm water discharges will occur, within the drainage area addressed by the TMDL or equivalent analysis.
2. any other construction activity designated by the Director or, in states with approved NPDES programs, either the Director or the USEPA Regional Administrator, based on the potential for contribution to a violation of a water quality standard or for significant contribution of pollutants to waters of the United States.
- *Strong Chelating Agents* - all compounds which, by virtue of their chemical structure and amount present, form soluble metal complexes which are not removed by subsequent metals control techniques such as pH adjustment followed by clarification or filtration (40 CFR 413.02).
  - *Surface Disposal Site* - an area of land that contains one or more active sewage sludge units (40 CFR 503.21(p)) **[Reviewed October 2001]**.
  - *Tank Barge* - a non-self-propelled vessel constructed or adapted primarily to carry liquid, solid or gaseous commodities or cargos in bulk in cargo spaces (or tanks) through rivers and inland waterways, and may occasionally carry commodities or cargos through oceans and seas when in transit from one inland waterway to another. The commodities or cargos transported are in direct contact with the tank interior. There are no maximum or minimum vessel or tank volumes (40 CFR 442.2) **[Added October 2000]**.
  - *Tank Truck* - a motor-driven vehicle with a completely enclosed storage vessel used to transport liquid, solid or gaseous materials over roads and highways. The storage vessel or tank may be detachable, as with tank trailers, or permanently attached. The commodities or cargos transported come in direct contact with the tank interior. A tank truck may have one or more storage compartments. There are no maximum or minimum vessel or tank volumes. Tank trucks are also commonly referred to as cargo tanks or tankers (40 CFR 442.2) **[Added October 2000]**.
  - *10 Year, 24/hour Rainfall Event* - a rainfall event with a probable recurrence interval of once in ten years as defined by the National Weather Service in Technical Paper No. 40. Rainfall Frequency Atlas of the United States, May 1961 or equivalent regional rainfall probability information developed therefrom (40 CFR 423.11(i)) **[Added October 2003]**.
  - *Ten (10)-Year, 24-Hour Rainfall Event, 25-Year, 24-Hour Rainfall Event, and 100-Year, 24-hour Rainfall Event* - precipitation events with a probable recurrence interval of once in ten years, or twenty five years, or one hundred years, respectively, as defined by the National Weather Service in Technical Paper No. 40, "Rainfall Frequency Atlas of the United States" May, 1961, or equivalent regional or State rainfall probability information developed from this source (40 CFR 412.2(i)) **[Added July 2005]**.

- *TTO* - total toxic organics (40 CFR 413.02).
- *Total Dissolved Solids* – the total dissolved (filterable) solids as determined by use of the method specified in 40 CFR 136 (40 CFR 122.2) [**Added April 2012**].
- *Total Hydrocarbons* - the organic compounds in the exit gas from a sewage sludge incinerator stack measured using a flame ionization detection instrument referenced to propane (40 CFR 503.41(m)) [**Reviewed October 2001**].
- *Total Metal* - the sum of the concentrations of mass of copper, nickel, chromium, and zinc (40 CFR 413.02).
- *Total Residual Chlorine* (or total residual oxidants for intake water with bromides) - the value obtained using any of the “chlorine—total residual” methods in Table IB in 40 CFR 136.3(a), or other methods approved by the permitting authority (40 CFR 423.11(a)) [**Added October 2003; Revised October 2017**].
- *Total Solids* - the materials in sewage sludge that remain as residue when the sewage sludge is dried at 103 to 105 degrees C [217.4 to 221 degrees F] (40 CFR 503.31(i)).
- *Toxic Materials* - any toxic pollutant identified in 40 CFR 401.15 (40 CFR 1700.3) [**Added April 2017**].
- *Toxic Pollutant* – any pollutant listed as toxic under section 307(a)(1) or, in the case of “sludge use or disposal practices,” any pollutant identified in regulations implementing section 405(d) of the CWA (40 CFR 122.2) [**Added April 2012**].
- *Transportation Equipment Cleaning (TEC) Process Wastewater* - all wastewaters associated with cleaning the interiors of tanks including: tank trucks; rail tank cars; intermodal tank containers; tank barges; and ocean/sea tankers used to transport commodities or cargos that come into direct contact with the interior of the tank or container. At those facilities that clean tank interiors, TEC process wastewater also includes wastewater generated from washing vehicle exteriors, equipment and floor washings, TEC-contaminated stormwater, wastewater pre-rinse cleaning solutions, chemical cleaning solutions, and final rinse solutions. TEC process wastewater is defined to include only wastewater generated from a regulated TEC subcategory. Therefore, TEC process wastewater does not include wastewater generated from cleaning hopper cars, or from food grade facilities discharging to a POTW. Wastewater generated from cleaning tank interiors for purposes of shipping products (i.e., cleaned for purposes other than maintenance and repair) is considered TEC process wastewater. Wastewater generated from cleaning tank interiors for the purposes of maintenance and repair on the tank is not considered TEC process wastewater. Facilities that clean tank interiors solely for the purposes of repair and maintenance are not regulated under 40 CFR 442 (40 CFR 442.2) [**Added October 2000**].
- *Treat or Treatment of Sewage Sludge* - the preparation of sewage sludge for final use or disposal. This includes, but is not limited to, thickening, stabilization, and dewatering of sewage sludge. This does not include storage of sewage sludge (40 CFR 503.9(z)) [**Reviewed October 2001**].
- *Treatment* - any method, technique, or process designed to change the physical, chemical or biological character or composition of any metal-bearing, oily, or organic wastes to neutralize such wastes; to render such wastes amenable to discharge; or to recover energy or recover metal, oil, or organic content from the wastes. Treatment does not include (a) the re-use of treated or untreated wastewater in place of potable or pure water in industrial processes such as the use of secondary POTW effluents as non-contact cooling water or storm water in place of process water or (b) the re-use of treated or untreated spent chemicals (such as pickle liquor) as treatment chemicals (40 CFR 437.2) [**Added April 2001**].
- *Treatment Works* - either a Federally owned, publicly owned, or privately owned device or system used to treat (including recycle and reclaim) either domestic sewage or a combination of domestic sewage and industrial waste of a liquid nature (40 CFR 503.9(aa)) [**Reviewed October 2001**].

- *Treatment Works Treating Domestic Sewage (TWTDS)* - a POTW or any other sewage sludge or wastewater treatment devices or systems, regardless of ownership (including federal facilities), used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated for the disposal of sewage sludge. This definition does not include septic tanks or similar devices. For purposes of this definition, “domestic sewage” includes waste and wastewater from humans or household operations that are discharged to or otherwise enter a treatment works. In states where there is no approved state sludge management program under section 405(f) of the CWA, the USEPA or authorized regulatory agency may designate any person subject to the standards for sewage sludge use and disposal in 40 CFR 503 as a “treatment works treating domestic sewage,” where he or she finds that there is a potential for adverse effects on public health and the environment from poor sludge quality or poor sludge handling, use or disposal practices, or where he or she finds that such designation is necessary to ensure that such person is in compliance with 40 CFR 503 (40 CFR 122.2) **[Added October 2001]**.
- *Tributary and Tributaries* - a water that contributes flow, either directly or through another water (including an impoundment identified in paragraph (4) of the definition for “Waters of the United States”), to a water identified in paragraphs ((1) through (3) of the definition for “Waters of the United States” that is characterized by the presence of the physical indicators of a bed and banks and an ordinary high water mark. These physical indicators demonstrate there is volume, frequency, and duration of flow sufficient to create a bed and banks and an ordinary high water mark, and thus to qualify as a tributary. A tributary can be a natural, man-altered, or man-made water and includes waters such as rivers, streams, canals, and ditches not excluded in the definition of “Waters of the United States.” A water that otherwise qualifies as a tributary under this definition does not lose its status as a tributary if, for any length, there are one or more constructed breaks (such as bridges, culverts, pipes, or dams), or one or more natural breaks (such as wetlands along the run of a stream, debris piles, boulder fields, or a stream that flows underground) so long as a bed and banks and an ordinary high water mark can be identified upstream of the break. A water that otherwise qualifies as a tributary under this definition does not lose its status as a tributary if it contributes flow through a water of the United States that does not meet the definition of tributary or through a non-jurisdictional water to a water identified in paragraphs (1) through (3) of the definition for “Waters of the United States.” This definition is effective 6 February 2020 (40 CFR 122.2 and 401.11(l)(3)(iii)) **[Added July 2015; Revised April 2018]**.
- *Type I Marine Sanitation Device* - a device that, under the test conditions described in 33 CFR 159.123 and 159.125, produces an effluent having a fecal coliform bacteria count not greater than 1,000 per 100 milliliters and no visible floating solids (33 CFR 159.3) **[Added January 2012]**.
- *Type II Marine Sanitation Device* - a device that, under the test conditions described in 33 CFR 159.126 and 159.126a, produces an effluent having a fecal coliform bacteria count not greater than 200 per 100 milliliters and suspended solids not greater than 150 milligrams per liter (33 CFR 159.3) **[Added January 2012]**.
- *Type III Marine Sanitation Device* - a device that is designed to prevent the overboard discharge of treated or untreated sewage or any waste derived from sewage (33 CFR 159.3) **[Added January 2012]**.
- *Uncontrolled Sanitary Landfill* - a landfill or open dump, whether in operation or closed, that does not meet the requirements for runoff or runoff controls established pursuant to subtitle D of the Solid Waste Disposal Act (40 CFR 122.26(b)(20)) **[Added January 2000]**.
- *United States* - includes the States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Canal Zone, and the Trust Territory of the Pacific Islands (40 CFR 1700.3) **[Added July 1999]**.
- *Unstabilized Solids* - organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process (40 CFR 503.31(j)) **[Reviewed October 2001]**.
- *Unstable Area* - land subject to natural or human-induced forces that may damage the structural components of an active sewage sludge unit. This includes, but is not limited to, land on which the soils are subject to mass movement (40 CFR 503.21(q)) **[Reviewed October 2001]**.

- *Upset* - an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation (40 CFR 122.41(n)(1)) **[Added October 2001]**.
- *Upset* - an exceptional incident in which there is unintentional and temporary noncompliance with categorical Pretreatment Standards because of factors beyond the reasonable control of the Industrial User. An Upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation (40 CFR 403.16(a)) **[Added October 2001]**.
- *Used Oil Filter Recycling* - crushing and draining of used oil filters of entrained oil and/or shredding and separation of used oil filters (40 CFR 437.2) **[Added April 2001]**.
- *Variance* - any mechanism or provision under section 301 or 316 of CWA or under 40 CFR 125, or in the applicable “effluent limitations guidelines” which allows modification to or waiver of the generally applicable effluent limitation requirements or time deadlines of CWA. This includes provisions which allow the establishment of alternative limitations based on fundamentally different factors or on sections 301(c), 301(g), 301(h), 301(i), or 316(a) of CWA (40 CFR 122.2) **[Added October 2001]**.
- *Vector Attraction* - the characteristic of sewage sludge that attracts rodents, flies, mosquitoes, or other organisms capable of transporting infectious agents (40 CFR 503.31(k)) **[Reviewed October 2001]**.
- *Vector Attraction Reduction Options* - the following are vector attraction reduction options (40 CFR 503.33(b)) **[Revised October 1999; Reviewed October 2001]**:
  1. The mass of volatile solids in the sewage sludge shall be reduced by a minimum of 38 percent (see calculation procedures in “Environmental Regulations and Technology--Control of Pathogens and Vector Attraction in Sewage Sludge”, USEPA-625/R-92/013, 1992, U.S. Environmental Protection Agency, Cincinnati, Ohio 45268)
  2. When the 38 percent volatile solids reduction requirement in paragraph 1 cannot be met for an anaerobically digested sewage sludge, vector attraction reduction can be demonstrated by digesting a portion of the previously digested sewage sludge anaerobically in the laboratory in a bench-scale unit for 40 additional days at a temperature between 30 and 37 degrees C. When at the end of the 40 days, the volatile solids in the sewage sludge at the beginning of that period is reduced by less than 17 percent, vector attraction reduction is achieved
  3. When the 38 percent volatile solids reduction requirement in paragraph 1 cannot be met for an aerobically digested sewage sludge, vector attraction reduction can be demonstrated by digesting a portion of the previously digested sewage sludge that has a percent solids of two percent or less aerobically in the laboratory in a bench-scale unit for 30 additional days at 20 degrees C. When at the end of the 30 days, the volatile solids in the sewage sludge at the beginning of that period is reduced by less than 15 percent, vector attraction reduction is achieved
  4. The specific oxygen uptake rate (SOUR) for sewage sludge treated in an aerobic process shall be equal to or less than 1.5 mg of oxygen per hour per gram of total solids (dry weight basis) at a temperature of 20 degrees C
  5. Sewage sludge shall be treated in an aerobic process for 14 days or longer. During that time, the temperature of the sewage sludge shall be higher than 40 degrees C and the average temperature of the sewage sludge shall be higher than 45 degrees C
  6. The pH of sewage sludge shall be raised to 12 or higher by alkali addition and, without the addition of more alkali, shall remain at 12 or higher for 2 h and then at 11.5 or higher for an additional 22 h
  7. The percent solids of sewage sludge that does not contain unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 75 percent based on the moisture content and total solids prior to mixing with other materials

8. The percent solids of sewage sludge that contains unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 90 percent based on the moisture content and total solids prior to mixing with other materials
  9. Sewage sludge shall be injected below the surface of the land. No significant amount of the sewage sludge shall be present on the land surface within 1 h after the sewage sludge is injected. When the sewage sludge that is injected below the surface of the land is Class A with respect to pathogens, the sewage sludge shall be injected below the land surface within 8 h after being discharged from the pathogen treatment process
  10. Sewage sludge applied to the land surface or placed on an active sewage sludge unit shall be incorporated into the soil within 6 h after application to or placement on the land, unless otherwise specified by the permitting authority
  11. When sewage sludge that is incorporated into the soil is Class A with respect to pathogens, the sewage sludge shall be applied to or placed on the land within 8 h after being discharged from the pathogen treatment process
  12. Sewage sludge placed on an active sewage sludge unit shall be covered with soil or other material at the end of each operating day
  13. The pH of domestic septage shall be raised to 12 or higher by alkali addition and, without the addition of more alkali, shall remain at 12 or higher for 30 min.
- *Vegetated Buffer* - a narrow, permanent strip of dense perennial vegetation established parallel to the contours of and perpendicular to the dominant slope of the field for the purposes of slowing water runoff, enhancing water infiltration, and minimizing the risk of any potential nutrients or pollutants from leaving the field and reaching surface waters (40 CFR 412.4(b)(2)) [**Added July 2005**].
  - *Vessel* - includes every description of watercraft or other artificial contrivance used, or capable of being used, as a means of transportation on the waters of the United States (33 CFR 159.3) [**Added January 2012**].
  - *Volatile Solids* - the amount of the total solids in sewage sludge lost when the sewage sludge is combusted at 550 °C [1022 °F] in the presence of excess air (40 CFR 503.31(l)) [**Reviewed October 2001**].
  - *Waste* - includes aqueous, non-aqueous, and solid waste, wastewater, and/or used material (40 CFR 437.2) [**Added April 2001**].
  - *Waters of the United States* – this definition is effective 6 February 2020. This phrase includes the following (40 CFR 122.2 and 401.11(l)(1), and 401.1(l)(2) [**Added October 2001; Revised April 2012; Revised July 2015; Revised April 2018**])
    1. All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
    2. All interstate waters, including interstate wetlands [see definition of *Wetlands*];
    3. The territorial seas;
    4. All impoundments of waters otherwise identified as waters of the United States under 40 CFR 110.1;
    5. All tributaries, [see definition of *Tributary*], of waters identified in paragraphs (1) through (3);
    6. All waters adjacent [see definition of *Adjacent*] to a water identified in paragraphs (1) through (5) of this definition, including wetlands, ponds, lakes, oxbows, impoundments, and similar waters;
    7. All waters in paragraphs (a) through (e) of this paragraph (7) where they are determined, on a case-specific basis, to have a significant nexus to a water identified in paragraphs (1) through (3) of this definition. The waters identified in each of paragraphs (a) through (e) of this paragraph (7) are similarly situated and shall be combined, for purposes of a significant nexus analysis, in the watershed that drains to the nearest water identified in paragraphs (1) through (3) of this definition. Waters identified in this paragraph (7) shall not be combined with waters identified in paragraph (6) when performing a significant nexus analysis. If waters identified in this paragraph are also an adjacent water under paragraph (6), they are an adjacent water and no case-specific significant nexus analysis is required.
      - a. *Prairie potholes*. Prairie potholes are a complex of glacially formed wetlands, usually occurring in depressions that lack permanent natural outlets, located in the upper Midwest.
      - b. *Carolina bays and Delmarva bays*. Carolina bays and Delmarva bays are ponded, depressional wetlands that occur along the Atlantic coastal plain.

- c. *Pocosins*. Pocosins are evergreen shrub and tree dominated wetlands found predominantly along the Central Atlantic coastal plain.
  - d. *Western vernal pools*. Western vernal pools are seasonal wetlands located in parts of California and associated with topographic depression, soils with poor drainage, mild, wet winters and hot, dry summers.
  - e. *Texas coastal prairie wetlands*. Texas coastal prairie wetlands are freshwater wetlands that occur as a mosaic of depressions, ridges, intermound flats, and mima mound wetlands located along the Texas Gulf Coast.
8. All waters located within the 100-year floodplain of a water identified in paragraphs (1) through (3) of this definition and all waters located within 4,000 feet of the high tide line or ordinary high water mark [see definition of *High Tide Line* and *Ordinary High Water Mark*] of a water identified in paragraphs ((1) through (5) of this definition where they are determined on a case-specific basis to have a significant nexus to a water identified in paragraphs ((1) through (3) of this definition. For waters determined to have a significant nexus, the entire water is a water of the United States if a portion is located within the 100-year floodplain of a water identified in paragraphs (1) through (3) of this definition or within 4,000 feet of the high tide line or ordinary high water mark. Waters identified in this paragraph (8) shall not be combined with waters identified in paragraph (6) of this definition when performing a significant nexus analysis. If waters identified in this paragraph (8) are also an adjacent water under paragraph (6), they are an adjacent water and no case-specific significant nexus analysis is required.

The following are not “waters of the United States” even where they otherwise meet the terms of paragraphs (4) through (8) above in this definition.

1. Waste treatment systems (other than cooling ponds meeting the criteria of this paragraph)
  2. Prior converted cropland. Notwithstanding the determination of an area’s status as prior converted cropland by any other Federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.
  3. The following ditches:
    - a. Ditches with ephemeral flow that are not a relocated tributary or excavated in a tributary.
    - b. Ditches with intermittent flow that are not a relocated tributary, excavated in a tributary, or drain wetlands
    - c. Ditches that do not flow, either directly or through another water, into a water identified in paragraphs (1) through (3) of the above definition of waters which are “waters of the United States”.
  4. The following features:
    - a. Artificially irrigated areas that would revert to dry land should application of water to that area cease;
    - b. Artificial, constructed lakes and ponds created in dry land such as farm and stock watering ponds, irrigation ponds, settling basins, fields flooded for rice growing, log cleaning ponds, or cooling ponds;
    - c. Artificial reflecting pools or swimming pools created in dry land;
    - d. Small ornamental waters created in dry land;
    - e. Water-filled depressions created in dry land incidental to mining or construction activity, including pits excavated for obtaining fill, sand, or gravel that fill with water;
    - f. Erosional features, including gullies, rills, and other ephemeral features that do not meet the definition of tributary, non-wetland swales, and lawfully constructed grassed waterways; and
    - g. Puddles.
  5. Groundwater, including groundwater drained through subsurface drainage systems.
  6. Stormwater control features constructed to convey, treat, or store stormwater that are created in dry land.
  7. Wastewater recycling structures constructed in dry land; detention and retention basins built for wastewater recycling; groundwater recharge basins; percolation ponds built for wastewater recycling; and water distributary structures built for wastewater recycling.
- *Waters Subject to UNDS* - the navigable waters of the United States, including the territorial seas and the waters of the contiguous zone, as these terms are defined in the Clean Water Act (33 U.S.C. 1362) (40 CFR 1700.3) [Added April 2017].
  - *Wet Electrostatic Precipitator* - an air pollution control device that uses both electrical forces and water to remove pollutants in the exit gas from a sewage sludge incinerator stack (40 CFR 503.41) [Added October 2001].

- *Wet Lot* - a confinement facility for raising ducks which is open to the environment, has a small number of sheltered areas, and with open water runs and swimming areas to which ducks have free access (40 CFR 412.21(b)) [**Added July 2005**].
- *Wet Scrubber* - an air pollution control device that uses water to remove pollutants in the exit gas from a sewage sludge incinerator stack (40 CFR 503.41) [**Added October 2001**].
- *Wetlands* - those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas (40 CFR 122.2 and 401.11(l)(3)(iv)) [**Revised July 2015**].
- *Whole Effluent Toxicity* - the aggregate toxic effect of an effluent measured directly by a toxicity test (40 CFR 122.2) [**Added April 2009**].

#### **F. Records To Review**

- NPDES Permits
- NPDES Permit applications (new or RENEWAL)
- Discharge monitoring reports for the past year
- Laboratory records and procedures and USEPA QA results
- Monthly operating reports for wastewater treatment facilities
- Flow monitoring calibration certification and supporting records
- Ash pond volume certification and supporting records
- Special reports, certifications, etc., required by NPDES permit
- Spill Prevention Control and Countermeasure (SPCC) Plan
- All records required by SPCC Plan
- All enforcement actions
- NPDES state or Federal inspection reports
- Sewage treatment plant operator certification
- Administrative orders
- Sewer and storm drain layout
- Local sewer use ordinance
- Local service use permit
- Sewer system bypass records
- Sanitary sewer overflow records.
- Notification to local POTW
- Septage haul records
- Old spill reports
- Repair/Maintenance records for the wastewater treatment system
- As built drawings
- Federal facility compliance agreements
- Contracts/other instruments that describe the relationship between a POTW and a Federal facility
- Stormwater pollution prevention plan
- Pretreatment permits
- Design plans for wastewater and industrial waste treatment plants, including treatment basins
- Utility and general site maps, diagrams - plumbing (maintenance shops)
- Pollution Prevention Plan

#### **G. Physical Features To Inspect**

- Discharge outfall pipes (maintenance shops, hardstands, and parking lots)

- Wastewater treatment facilities
- Industrial treatment facilities
- Floor and sink drains (especially in industrial areas)
- Oil storage tanks
- Oil/water separators and other pretreatment devices such as sand and grit traps, grease traps, and sand interceptors
- Wastewater generation points
- Discharge to POTW/FOTW
- Stormwater ditches around motor pools
- Streams, rivers, open waterways
- Stormwater collection points (especially in industrial and maintenance areas)
- Fire training pit
- Nonpoint source discharge areas
- Motor pools and vehicle maintenance stands, plumbing, drains, and discharges (end of pipe)
- Wash racks (centralized facilities, individual and areas in vicinity of maintenance shop)
- Catch basins, drop inlets, holding/retention ponds
- Electrical grease racks and inspection racks
- Waste and sump collection points
- Detention ponds from vehicle washing operations (especially I.D. POL products)
- Vehicle maintenance inspection pits and ramps
- Sludge disposal areas (especially from vehicle wash racks and central facilities)
- Battery and radiator repair operations
- Ash disposal areas from incinerators (i.e., pathological)
- Sewage sludge land application sites
- Construction sites
- Landfills



## H. Guidance for Wastewater Management Checklist Users

	REFER TO CHECKLIST ITEMS:
All Facilities	WA.1.1.US.
Missing, Risk Management, and Positive Checklist Items	WA.2.1.US. through WA.2.3.US
NPDES Permits	WA.10.1.US. through WA.10.16.US.
Treatment Works	WA.20.1.US through WA.20.10.US
Centralized Waste Treatment Facilities	WA.23.1.US through WA.23.6.US
Discharges to POTWs/FOTWs	WA.25.1.US. through WA.25.10.US.
Miscellaneous Effluent Limitations	WA.41.1.US
Construction and Development Point Sources	WA.43.1.US through WA.43.3.US
Effluent Limitations for Steam Electric Power Generating Sources General New Sources Existing Sources	WA.45.1.US. through WA.45.7.US. WA.50.1.US. through WA.50.5.US. WA.55.1.US.
Effluent Limitations for Electroplating Point Sources	WA.60.1.US. through WA.60.7.US.
Effluent Limitations for Metal Finishing Point Sources General Existing Sources New Sources	WA.65.1.US. through WA.65.3.US. WA.70.1.US. WA.75.1.US. and WA.75.2.US.
Effluent Limitations for Hospitals	WA.80.1.US.
Effluent Limitations for Dental Clinics	WA.81.1.US through WA.81.4.US
Discharges from Landfills	WA.83.1.US. through WA.83.3.US.
Effluent Limitations for Photo Labs	WA.85.1.US.
Effluent Limitations for Transportation Cleaning Equipment	WA.86.1.US through WA.86.4.US
Other Discharges and Dischargers: Armed Forces Vessels Aquatic Animal Production Concentrated Animal Feeding Operations	WA.95.1.US. WA.95.2.US through WA.95.4.US WA.95.5.US through WA.95.11.US

Individual Sewage Systems	WA.100.1.US
Land Application of Sludge	
General	WA.105.1.US. through WA.105.8.US.
Vectors and Pathogens	WA.110.1.US. through WA.110.5.US.
Notifications	WA.115.1.US. through WA.115.5.US.
Monitoring	WA.120.1.US. and WA.120.2.US.
Recordkeeping and Reporting	WA.125.1.US. through WA.125.8.US.
Surface Disposal of Sludge	
General	WA.135.1.US. through WA.135.8.US.
Monitoring and Documentation	WA.140.1.US. through WA.140.6.US.

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Appendix 12-0, Population Parameters

Appendix 12-0a, Areas Covered by EPA's Pesticide General Permit

Appendix 12-0b, CWT Discharges: Metal Treatment and Recovery

Appendix 12-0c, CWT Wastewater Discharges: Oils Treatment and Recovery

Appendix 12-0d, CWT Wastewater Discharges: Organics Treatment and Recovery

Appendix 12-0e, CWT Discharges: Multiple Waste Streams

Appendix 12-0f, Oily Operations Definitions

Appendix 12-0g, Metal-Bearing Operations Definitions

Appendix 12-0h, Areas Covered by EPA's Construction General Permit

Appendix 12-1, Steam Electric Power Generating Point Sources

Appendix 12-2, Operations Excepted from Electroplating Point Source Effluent Limitations

Appendix 12-3, Metal Finishing Point Sources

Appendix 12-4, Effluent Standards for Hospitals and Photographic Point Sources

Appendix 12-4aa, Discharge Limitations for the Cleaning of Tank Trucks and Intermodal Tank Containers Used to Transport Chemical or Petroleum Cargos

Appendix 12-4bb, Pollutant Management Plan

Appendix 12-4cc, Discharge Limitations for the Cleaning of Rail Tank Cars Used to Transport Chemical or Petroleum Cargos

Appendix 12-4dd, Discharge Limitations for the Cleaning of Tank Barges and Ocean/Sea Tankers Transporting Chemical or Petroleum Cargos

Appendix 12-4ee, Discharge Limitations for the Cleaning of Tanks Transporting Food Grade Cargos

Appendix 12-4a, Application of BPT, BCT, BAT, and NSPS at Landfills Regulated Under 40 CFR 264 and 40 CFR 265.

Appendix 12-4b, Application of BPT, BCT, BAT, and NSPS at Landfills Regulated Under 40 CFR 257 and 40 CFR 258.

Appendix 12-5, Relevant Dates for Sewage Sludge Program

Appendix 12-6, Cumulative Pollutant Loading Rates for Sludge

Appendix 12-7, Ceiling Concentrations for Sludge

Appendix 12-8, Pollutant Concentrations for Sludge

Appendix 12-9, Annual Pollutant Loading Rates

Appendix 12-10, Frequency of Monitoring - Land Application and Surface Disposal

Appendix 12-11, Pollutant Concentrations for an Active Sewage Sludge Unit



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<b>WA.1</b>  <b>ALL FACILITIES</b>  <b>WA.1.1.US.</b> The current status of any ongoing or unresolved consent orders, compliance agreements, notice of violations (NOVs), interagency agreements, or equivalent state enforcement actions is required to be examined (a finding under this checklist item will have the enforcement action/identifying information as the citation).	Determine if noncompliance issues have been resolved by reviewing a copy of the current or previous report, consent orders, compliance agreements, NOVs, inter agency agreements, or equivalent state enforcement actions.



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<p><b>WA.2</b></p> <p><b>MISSING, RISK MANAGEMENT, AND POSITIVE CHECKLIST ITEMS</b></p> <p><b>WA.2.1.US.</b> Facilities are required to comply with all applicable Federal regulations not contained in this checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of finding).</p> <p><b>WA.2.2.US.</b> Risk management techniques should be promoted in environmental efforts (MP) [Added April 2002].</p> <p><b>WA.2.3.US.</b> Facilities should go above and beyond statutory and regulatory compliance (MP) [Added April 2002].</p>	<p>Determine if any new regulations have been issued since the finalization of TEAM.</p> <p>Determine if the facility has activities or facilities that are regulated, but not addressed in this checklist.</p> <p>Verify that the facility is in compliance with all applicable and newly issued regulations.</p> <p>Determine if risk management techniques are promoted in environmental efforts.</p> <p>Determine if the facility has gone above and beyond simply complying with environmental requirements.</p>



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<p><b>WA.10</b></p> <p><b>NPDES PERMITS</b></p> <p><b>WA.10.1.US.</b> Point source discharges are required to have either a state NPDES or a Federal NPDES permit if located in states without an USEPA-approved NPDES permit program (40 CFR 122.1(b), 122.3, 122.21(c)(1), 122.21(d), 122.22(a)(3), 122.41(a), and 122.50) [Revised October 1999; Revised July 2000; Revised October 2001; Revised January 2005; Revised April 2005; Revised January 2006; Revised January 2012; Revised April 2012].</p>	<p>Verify that discharges of pollutants from any point source into waters of the United States have an NPDES permit.</p> <p>(NOTE: The term “pollutant” includes dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under the Atomic Energy Act of 1954), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. For exemptions, see the definition of the term “Pollutant,” as well as the definitions for <i>Point Source</i>, and <i>Waters of the United States</i>.)</p> <p>(NOTE: Look for pollutants being discharged to a water of the United States from point sources such as:</p> <ul style="list-style-type: none"> <li>– oil/water separators</li> <li>– washracks</li> <li>– wastewater treatment activities</li> <li>– cooling tower</li> <li>– hospitals</li> <li>– manufacturing activities.)</li> </ul> <p>Verify that any person proposing a new discharge submits an application at least 180 days before the date on which the discharge is to commence, unless permission for a later date has been granted by the Director.</p> <p>Verify that the following additional point sources have NPDES permits for discharges:</p> <ul style="list-style-type: none"> <li>– concentrated animal feeding operations (see text of 40 CFR 122.23)</li> <li>– concentrated aquatic animal production facilities (see text of 40 CFR 122.24)</li> <li>– discharges into aquaculture projects (see text of 40 CFR 122.25)</li> <li>– discharges of stormwater as required in 40 CFR 122.26 (see checklist item WA.10.2.US and WA.10.3.US)</li> <li>– silvicultural point sources (see text of 40 CFR 122.27).</li> </ul> <p>(NOTE: This NPDES permit program also applies to owners or operators of any treatment works treating domestic sewage, whether or not the treatment works is otherwise required to obtain an NPDES permit. Exemptions from the NPDES permit requirements include facilities holding permits issued under the <i>Solid Waste Disposal Act</i>; <i>Safe Drinking Water Act</i>; <i>Marine Protection, Research, and Sanctuaries Act</i>; the <i>Clean Air Act</i>; or an USEPA-approved state program adequate to assure compliance with Section 405 of the CWA (i.e., sludge disposal requirements, implemented via 40 CFR 503).)</p>

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	<p>(NOTE: The Regional Administrator may designate any facility subject to the standards for sewage sludge and disposal use as “treatment works treating domestic sewage [TWTDS]” [see Definitions]. After being designated as a TWTDS, a facility has 180 days to submit a NPDES permit application.)</p> <p>Verify that permit requirements are being met such as:</p> <ul style="list-style-type: none"> <li>– monitoring/sampling</li> <li>– concentrations of discharge constituents</li> <li>– recordkeeping</li> <li>– reports.</li> </ul> <p>(NOTE: See checklist item WA.10.7.US for further details on compliance with the management, recordkeeping, and reporting requirements of the NPDES permit.)</p> <p>Verify that NPDES permittees with currently effective permits submit a new application 180 days before the existing permit expires unless permission has been granted for a later date by the regulator.</p> <p>Verify that, for a Federal agency, the NPDES permit application has been signed by the principal executive officer.</p> <p>(NOTE: For the purposes of NPDES permit applications, a “principal executive officer” is one of the following:</p> <ul style="list-style-type: none"> <li>– the chief executive officer of the Agency</li> <li>– a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency [e.g., Regional Administrators of EPA].)</li> </ul> <p>(NOTE: The following discharges do not require NPDES permits:</p> <ul style="list-style-type: none"> <li>– any discharge of sewage from vessels, effluent from properly functioning marine engines, laundry, shower, and galley sink wastes, or any other discharge incidental to the normal operation of a vessel [NOTE: This exclusion does not apply to rubbish, trash, garbage, or other such materials discharged overboard; nor to other discharges when the vessel is operating in a capacity other than as a means of transportation such as when used as an energy or mining facility, a storage facility or a seafood processing facility, or when secured to a storage facility or a seafood processing facility, or when secured to the bed of the ocean, contiguous zone or waters of the United States for the purpose of mineral or oil exploration or development. See also WA.10.12.US concerning the NPDES Vessel General Permit]</li> <li>– discharges of dredged or fill material into waters of the United States which are regulated under section 404 of CWA.</li> <li>– the introduction of sewage, industrial wastes or other pollutants into publicly owned treatment works by indirect dischargers [NOTE: This exclusion does not apply to the introduction of pollutants to privately owned treatment works</li> </ul>

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<p><b>WA.10.2.US.</b> Facilities with stormwater discharges associated with industrial activities (see <i>Definitions</i>) are required to have, and comply with, NPDES industrial stormwater discharge permits unless they have a valid certification of no exposure or</p>	<p>or to other discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other party not leading to treatment works]</p> <ul style="list-style-type: none"> <li>– any discharge in compliance with the instructions of an On-Scene Coordinator pursuant to 40 CFR 300 [The National Oil and Hazardous Substances Pollution Contingency Plan] or 33 CFR 153.10(e) [Pollution by Oil and Hazardous Substances]</li> <li>– any introduction of pollutants from non point-source agricultural and silvicultural activities, including stormwater runoff from orchards, cultivated crops, pastures, range lands, and forest lands, but not discharges from CAFOs as defined in 40 CFR 122.23, discharges from concentrated aquatic animal production facilities as defined in 40 CFR 122.24, discharges to aquaculture projects as defined in 40 CFR 122.25, and discharges from silvicultural point sources as defined in 40 CFR 122.27</li> <li>– return flows from irrigated agriculture</li> <li>– discharges into a privately owned treatment works, except as the Director of the EPA may otherwise require</li> <li>– the application of pesticides consistent with all relevant requirements under FIFRA (i.e., those relevant to protecting water quality), in the following two circumstances: <ul style="list-style-type: none"> <li>– the application of pesticides directly to waters of the United States in order to control pests [NOTE: Examples of such applications include applications to control mosquito larvae, aquatic weeds, or other pests that are present in waters of the United States. See WA.10.13.US concerning Pesticide General Permit requirements]</li> <li>– the application of pesticides to control pests that are present over waters of the United States, including near such waters, where a portion of the pesticides will unavoidably be deposited to waters of the United States in order to target the pests effectively; for example, when insecticides are aerially applied to a forest canopy where waters of the United States may be present below the canopy or when pesticides are applied over or near water for control of adult mosquitoes or other pests [NOTE: See WA.10.13.US concerning the Pesticide General Permit]</li> </ul> </li> <li>– discharges from a water transfer which is an activity that conveys or connects waters of the United States without subjecting the transferred water to intervening industrial, municipal, or commercial use [NOTE: This exclusion does not apply to pollutants introduced by the water transfer activity itself to the water being transferred].)</li> </ul> <p>Verify that, as applicable, facilities with stormwater discharge associated with industrial activities have, and are in compliance with, an individual stormwater discharge permit or have sought coverage under a promulgated stormwater general permit.</p> <p>(NOTE: See checklist item WA.10.15.US for requirements applicable to industrial activities seeking coverage under the <i>Multi-Sector General Permit</i>.)</p>

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are otherwise exempted (40 CFR 122.21(c)(1), 122.21(d)(2), 122.22(a)(3), 122.26(a)(4), 122.26(a)(6), 122.26(c)(1), 122.26(g), and 122.41(a)) <b>[Revised April 2012]</b> .	<p>(NOTE: The definition of “Industrial Activities” includes “construction activity including clearing, grading and excavation, except operations that result in the disturbance of less than 5 acres of total land area. Construction activity also includes the disturbance of less than 5 acres of total land area that is a part of a larger common plan of development or sale if the larger common plan will ultimately disturb 5 acres or more.” See checklist item WA.10.3.US for NPDES permit requirements related to small construction activities.)</p> <p>Verify that facilities proposing a new discharge of stormwater associated with industrial activity submit an application 180 days before that facility starts industrial activity which may result in a discharge of stormwater associated with that industrial activity.</p> <p>Verify that, for a Federal agency, the NPDES stormwater permit application has been signed by the principal executive officer.</p> <p>(NOTE: For the purposes of NPDES permit applications, a “principal executive officer” is one of the following:</p> <ul style="list-style-type: none"> <li>– the chief executive officer of the Agency</li> <li>– a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency [e.g., Regional Administrators of EPA].)</li> </ul> <p>Verify that a permittee with a currently effective permit submits a new application 180 days before the existing permit expires unless permission is received to wait until a later date.</p> <p>(NOTE: The operator of an existing or new discharge composed entirely of stormwater from an oil or gas exploration, production, processing, or treatment operation, or transmission facility is not required to submit a permit application unless the facility meets one of the following:</p> <ul style="list-style-type: none"> <li>– has had a discharge of stormwater resulting in the discharge of a reportable quantity for which notification is or was required pursuant to 40 CFR 117.21 or 302.6 at any time since 16 November 1987</li> <li>– has had a discharge of stormwater resulting in the discharge of a reportable quantity for which notification is or was required pursuant to 40 CFR 110.6 at any time since 16 November 1987</li> <li>– contributes to a violation of a water quality standard.)</li> </ul> <p>(NOTE: The operator of an existing or new discharge composed entirely of stormwater from a mining operation is not required to submit a permit application unless the discharge has come into contact with, any overburden, raw material, intermediate products, finished product, byproduct or waste products located on the site of such operations.)</p> <p>Verify that an operator of a stormwater discharge associated with industrial activity which discharges through a large or medium municipal separate storm sewer system</p>

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	<p>(MS4) submits the following to the operator of the MS4 receiving the discharge 180 days prior to starting the discharge:</p> <ul style="list-style-type: none"> <li>– the name of the facility</li> <li>– a contact person</li> <li>– and phone number</li> <li>– the location of the discharge</li> <li>– a description, including Standard Industrial Classification, which best reflects the principal products or services provided by each facility</li> <li>– any existing NPDES permit number.</li> </ul> <p>(NOTE: For stormwater discharges associated with industrial activity from point sources which discharge through a non-municipal or non-publicly owned separate storm sewer system, the Director, in his discretion, may issue one of the following:</p> <ul style="list-style-type: none"> <li>– a single NPDES permit, with each discharger a co-permittee to a permit issued to the operator of the portion of the system that discharges into waters of the United States</li> <li>– individual permits to each discharger of stormwater associated with industrial activity through the non-municipal conveyance system.)</li> </ul> <p>(NOTE: See checklist item WA.10.7.US for further details on compliance with the management, recordkeeping, and reporting requirements of the NPDES permit.)</p> <p>Verify that, if a facility meets the definition of an “industrial facility” in this requirement and they do not have a NPDES industrial stormwater discharge permit, they have submitted a signed certification to the NPDES permitting authority that there are no discharges of stormwater contaminated by exposure to industrial materials and activities from the entire facility.</p> <p>(NOTE: This is commonly referred to as a certification of no exposure.)</p> <p>Verify that, for a Federal agency, the certification of no exposure has been signed by the principal executive officer.</p> <p>(NOTE: For the purposes of NPDES permit applications, a “principal executive officer” is one of the following:</p> <ul style="list-style-type: none"> <li>– the chief executive officer of the Agency</li> <li>– a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency [e.g., Regional Administrators of EPA].)</li> </ul> <p>(NOTE: Stormwater discharges from construction activities are not eligible for the “no exposure” exclusion.)</p> <p>Verify that, the certification of no exposure is submitted every 5 yr.</p>

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	<p>(NOTE: Discharges composed entirely of stormwater are not “stormwater discharges associated with industrial activity” if there is “no exposure” of industrial materials and activities to rain, snow, snowmelt and/or runoff. “No exposure” means that all industrial materials and activities are protected by a storm resistant shelter to prevent exposure to rain, snow, snowmelt, and/or runoff. Industrial materials or activities include, but are not limited to, material handling equipment or activities, industrial machinery, raw materials, intermediate products, by-products, final products, or waste products. Material handling activities include the storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, final product or waste product.)</p> <p>Verify that, if a facility has certified “no exposure,” the facility:</p> <ul style="list-style-type: none"> <li>– provides a storm resistant shelter to protect industrial materials and activities from exposure to rain, snow, snow melt, and runoff</li> <li>– allows the regulatory authority to inspect the facility to determine compliance with the “no exposure” conditions</li> <li>– allows the Director to make any “no exposure” inspection reports available to the public upon request</li> <li>– submits a copy of the certification of “no exposure” upon request to the MS4 operator, as well as allow inspection and public reporting by the MS4 operator for facilities that discharge through an MS4.</li> </ul> <p>(NOTE: Storm-resistant shelters include completely roofed and walled buildings or structures, as well as structures with only a top cover but no side coverings, provided material under the structure is not otherwise subject to any run-on and subsequent runoff of stormwater.)</p> <p>(NOTE: To qualify for the “no exposure” exclusion, storm resistant shelter is not required for:</p> <ul style="list-style-type: none"> <li>– drums, barrels, tanks, and similar containers that are tightly sealed, provided those containers are not deteriorated and do not leak (“sealed” means banded or otherwise secured and without operational taps or valves)</li> <li>– lidded dumpsters containing waste materials provided the container is completely covered and nothing can drain out holes in the bottom or is lost in loading onto a garbage truck</li> <li>– adequately maintained vehicles used in material handling which are not leaking or are otherwise a potential sources of contaminants</li> <li>– adequately maintained final products meant to be used outdoors (e.g., new cars) as long as the final products have not deteriorated or are otherwise a potential source of contaminants, except for the following for which shelter is required to qualify for “no exposure” certification: <ul style="list-style-type: none"> <li>– products that would be mobilized in stormwater discharge such as rock salt</li> <li>– products which may, when exposed, oxidize, deteriorate, leak or otherwise be a potential source of contaminants (e.g., junk cars; stockpiled train rails)</li> </ul> </li> </ul>

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<p><b>WA.10.3.US.</b> Certain discharges of stormwater, other than those associated with industrial activities, are required to be permitted (40 CFR 122.21(c)(1), 122.22(a)(3), 122.26(a)(1), 122.26(a)(2), 122.26(a)(3), 122.26(a)(5), 122.26(a)(7), 122.26(a)(9), 122.26(c)(1), 122.32(a), 122.41(a), and 122.50) [Revised January 2000; Revised July 2000; Revised July 2002; Revised</p>	<ul style="list-style-type: none"> <li>– “final” products which are, in actuality, “intermediate” products including those products used in the composition of yet another product (e.g., sheet metal, tubing and paint used in making fences, machinery, or other products)</li> <li>– “final” products destined for incorporation in a “final product intended for use outdoors” when the product may be chemically treated or are insufficiently impervious to weathering</li> <li>– the containers, racks and other transport platforms (e.g., wooden pallets) used for the storage or conveyance of final products, providing the containers, racks and platforms are pollutant-free</li> <li>– ASTs which meet the following: <ul style="list-style-type: none"> <li>– they are physically separated from and not associated with vehicle maintenance operations</li> <li>– there are no piping, pumps, or other equipment leaking contaminants that could contact stormwater.)</li> </ul> </li> </ul> <p>(NOTE: Industrial refuse and trash that is stored uncovered is considered exposed.)</p> <p>(NOTE: The “no exposure” exclusion is available on a facility-wide basis only, not for individual outfalls.)</p> <p>(NOTE: If circumstances change and industrial materials or activities become exposed to rain, snow, snow melt, and/or runoff, the conditions for “no exposure” no longer apply. In such cases, the discharge becomes subject to enforcement for un-permitted discharge. Any discharger who anticipates changes in circumstances should apply for and obtain permit authorization prior to the change of circumstances.)</p> <p>(NOTE: For more information on the application of the “no exposure” exclusion, see EPA Document 833-B-00-0001, <i>Guidance Manual for Conditional Exclusion From Storm Water Permitting Based On “No Exposure” Of Industrial Activities To Storm Water</i> <a href="http://www.epa.gov/npdes/pubs/noxguide.pdf">www.epa.gov/npdes/pubs/noxguide.pdf</a>.)</p> <p>(NOTE: This checklist item details examples of the types of discharges requiring stormwater permits [other than those required for discharges of stormwater associated with industrial activities; see checklist item WA.10.2.US] as well as the exemptions and situation when a permit is not needed.)</p> <p>Verify that the following discharges obtain stormwater discharge permits:</p> <ul style="list-style-type: none"> <li>– discharges from small MS4s if: <ul style="list-style-type: none"> <li>– the small MS4 is located in an urbanized area as determined by the latest census (NOTE: If not located entirely within an urbanized area, only the portion in the urbanized area is regulated)</li> <li>– the small MS4 is designated by the NPDES permitting authority</li> </ul> </li> <li>– discharges associated with stormwater discharge associated with small construction activity (between 1 and 5 acres, see <i>Definitions</i>)</li> </ul>

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<b>April 2003; Revised January 2005; Revised April 2005; Revised October 2008; Revised April 2012].</b>	<ul style="list-style-type: none"> <li>– discharges determined by the regulator to need stormwater controls are needed for the discharge based on wasteload allocations that are part of “total maximum daily loads” (TMDL) that address the pollutants of concern</li> <li>– discharges, or category of discharges within a geographic area, determined by the regulator to contribute to a violation of a water quality standard or is a significant contributor of pollutants to the waters of the United States</li> <li>– all discharges from large and medium municipal separate storm sewer systems.</li> </ul> <p>(NOTE: For discharges from large and medium MS4s, there may be either one system-wide permit covering all discharges from municipal separate storm sewers within a large or medium MS4 or distinct permits for appropriate categories of discharges within a large or medium MS4 including, but not limited to:</p> <ul style="list-style-type: none"> <li>– all discharges owned or operated by the same municipality</li> <li>– all discharges located within the same jurisdiction</li> <li>– all discharges within a system that discharge to the same watershed</li> <li>– discharges within a system that are similar in nature</li> <li>– for individual discharges from municipal separate storm sewers within the system.)</li> </ul> <p>(NOTE: Conveyances that discharge stormwater combined with municipal sewage are point sources, see checklist item WA.10.1.US.)</p> <p>Verify that any person proposing a new stormwater discharge submits an application at least 180 days before the date on which the stormwater discharge is to commence, unless permission for a later date has been granted by the regulator.</p> <p>Verify that small construction activities submit applications at least 90 days before the date on which construction is to start (see checklist item WA.10.2.US for stormwater permits for large construction activities.)</p> <p>(NOTE: Different submittal dates may be required under the terms of applicable general permits.)</p> <p>Verify that, for discharges composed entirely of stormwater, a discharger that the Director determines to contribute to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States applies for a permit within 180 days of receipt of notice, unless permission for a later date is granted by the Director.</p> <p>Verify that the operator of a discharge from a MS4 that is part of a large or medium MS4 does one of the following:</p> <ul style="list-style-type: none"> <li>– participates in a permit application (to be a permittee or a co-permittee) with one or more other operators of discharges from the large or medium MS4 that covers all, or a portion of all, discharges from the municipal separate storm sewer system</li> </ul>

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<p><b>WA.10.4.US.</b> Even where not covered by NPDES permits, stormwater discharges should be uncontaminated and periodic surveillance of these discharges should be completed (MP) <b>[Revised May 1997]</b>.</p>	<ul style="list-style-type: none"> <li>– submits a distinct permit application that only covers discharges from the MS4s for which the operator is responsible.</li> </ul> <p>(NOTE: One permit application may be submitted for all or a portion of all MS4s within adjacent or interconnected large or medium municipal separate storm sewer systems. Permits for all or a portion of all discharges from large or medium MS4s that are issued on a system-wide, jurisdiction-wide, watershed, or other basis may specify different conditions relating to different discharges covered by the permit, including different management programs for different drainage areas that contribute stormwater to the system. Co-permittees need only comply with permit conditions relating to discharges from the municipal separate storm sewers for which they are operators.)</p> <p>Verify that, for a Federal agency, the NPDES stormwater permit application has been signed by the principal executive officer.</p> <p>(NOTE: For the purposes of NPDES permit applications, a “principal executive officer” is one of the following:</p> <ul style="list-style-type: none"> <li>– the chief executive officer of the Agency</li> <li>– a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency [e.g., Regional Administrators of EPA].)</li> </ul> <p>Verify that permit requirements are being met such as:</p> <ul style="list-style-type: none"> <li>– monitoring/sampling</li> <li>– concentrations of discharge constituents</li> <li>– recordkeeping</li> <li>– reports.</li> </ul> <p>(NOTE: See checklist item WA.10.7.US for further details on compliance with the management, recordkeeping, and reporting requirements of the NPDES permit.)</p> <p>Determine which drains are connected to the storm sewer and the location of all outfalls and discharge points.</p> <p>Determine if there is evidence of contamination (oil sheen, discoloration, etc.) by physical review of stormwater discharge sites.</p> <p>Verify that following oil/water separators are operating properly and correctly maintained:</p> <ul style="list-style-type: none"> <li>– oil/water separators connected to the permitted storm sewer outfall</li> <li>– oil/water separators discharging non-stormwater</li> <li>– oil/water separators discharging stormwater from nonindustrial activities.</li> </ul>

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<p><b>WA.10.5.US.</b> Samples must be collected in accordance with proper collection, testing, preservation, and shipping procedures in Standard Methods for the examination of Water and Wastewater (40 CFR 136.1 through 136.4) [Revised March 1995].</p> <p><b>WA.10.6.US.</b> Analytical testing must be done in accordance with USEPA approved analytical procedures (40 CFR 136.3).</p>	<p>Determine if there are any action plans to eliminate the discharges.</p> <p>Determine if there is evidence of contaminated waste streams discharging to floor drains connected to the stormwater discharge system by checking major industrial shops or industrial areas physically, such as:</p> <ul style="list-style-type: none"> <li>– battery shop</li> <li>– corrosion control</li> <li>– engine shop</li> <li>– motor pool</li> <li>– paint shop</li> <li>– plating shop</li> <li>– pesticide shop</li> <li>– petroleum, oil, and lubricant (POL) area</li> <li>– golf courses</li> <li>– washracks</li> <li>– DRMO</li> <li>– contractor storage areas.</li> </ul> <p>Verify that:</p> <ul style="list-style-type: none"> <li>– proper sample containers are used</li> <li>– samples are refrigerated to 4 oC during compositing</li> <li>– proper preservation techniques are used</li> <li>– flow-proportioned samples are obtained where required by permit</li> <li>– sample holding times prior to analyses conform with requirements.</li> <li>– the chain of custody is maintained from sampling point through analytic testing to results (essential if litigation occurs).</li> </ul> <p>Verify that results are reported in the self-monitoring report.</p> <p>Determine if:</p> <ul style="list-style-type: none"> <li>– a USEPA approved analytical testing lab was used</li> <li>– proper approval was obtained from state/USEPA if alternate analytical procedures are used</li> <li>– parameters other than those required by the permit are analyzed</li> <li>– satisfactory calibration and maintenance of instruments and equipment is done</li> <li>– quality control procedures are used</li> <li>– duplicate samples are analyzed</li> <li>– spiked samples are used</li> <li>– a commercial laboratory is used</li> <li>– the commercial laboratory is state certified (states with formal certification program).</li> </ul>

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<p><b>WA.10.7.US.</b> All holders of NPDES permits, whether point source or stormwater, are required to meet certain management and operational requirements (40 CFR 122.22(a), 122.22(b) and 122.41(b) through 122.41(n)) [Added October 1999; Reviewed October 2001; Revised April 2012].</p>	<p>Verify that, if the permittee wished to continue an activity regulated by a permit after the expiration date of the permit, the permittee applied for and obtained a new permit.</p> <p>(NOTE: A permittee in an enforcement action cannot use a defense that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.)</p> <p>Verify that the permittee takes all reasonable steps to minimize or prevent any discharges, sludge use, or disposal in violation of the permit if it has a reasonable likelihood of adversely affecting human health or the environment.</p> <p>Verify that the permittee at all times properly operates and maintains all facilities and systems of treatment and control (and related appurtenances), which are installed or used by the permittee to achieve compliance with the conditions of the permit.</p> <p>(NOTE: Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This requires the operation of back-up or auxiliary facilities or similar systems, which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.)</p> <p>(NOTE: A permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition. A permit does not convey any property rights of any sort, or any exclusive privilege.)</p> <p>Verify that the permittee provides to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit.</p> <p>Verify that the permittee also provides to the Director, upon request, copies of records required to be kept by this permit.</p> <p>(NOTE: The permittee is required to allow the Director, or an authorized representative (including an authorized contractor acting as a representative of the Administrator), upon presentation of credentials and other documents as may be required by law, to:</p> <ul style="list-style-type: none"> <li>– enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the permit</li> <li>– have access to and copy, at reasonable times, any records that are kept under the conditions of the permit</li> </ul>

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	<ul style="list-style-type: none"> <li>– inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit</li> <li>– sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.)</li> </ul> <p>Verify that samples and measurements taken for the purpose of monitoring are representative of the monitored activity.</p> <p>Verify that the permittee retains records of all monitoring information, including the following for a period of at least 3 yr from the date of the sample, measurement, report, or application:</p> <ul style="list-style-type: none"> <li>– all calibration and maintenance records</li> <li>– all original strip chart recordings for continuous monitoring instrumentation</li> <li>– copies of all reports required by the permit</li> <li>– records of all data used to complete the application for the permit.</li> </ul> <p>Verify that records of monitoring information required by the permit related to the permittee's sewage sludge use and disposal activities, are retained for a period of at least 5 yr (or longer as required by 40 CFR 503).</p> <p>(NOTE: The retention period may be extended by request of the Director at any time.)</p> <p>Verify that records of monitoring information include:</p> <ul style="list-style-type: none"> <li>– the date, exact place, and time of sampling or measurements</li> <li>– the individual(s) who performed the sampling or measurements</li> <li>– the date(s) analyses were performed</li> <li>– the individual(s) who performed the analyses</li> <li>– the analytical techniques or methods used</li> <li>– the results of such analyses.</li> </ul> <p>Verify that monitoring results are conducted according to test procedures approved under 40 CFR 136 or, in the case of sludge use or disposal, approved under 40 CFR 136 unless otherwise specified in 40 CFR 03, unless other test procedures have been specified in the permit.</p> <p>Verify that all applications, reports, or information submitted to the Director are signed and certified.</p> <p>Verify that, for a Federal agency, the NPDES stormwater permit application has been signed by the principal executive officer.</p>

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	<p>(NOTE: For the purposes of NPDES permit applications, a “principal executive officer” is one of the following:</p> <ul style="list-style-type: none"> <li>– the chief executive officer of the Agency</li> <li>– a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency [e.g., Regional Administrators of EPA].)</li> </ul> <p>Verify that all reports required by permits, and other requested information, are signed by the principal chief executive officer or by a duly authorized representative of that person.</p> <p>(NOTE: A person is a duly authorized representative only if:</p> <ul style="list-style-type: none"> <li>– the authorization is made in writing by the principal chief executive officer</li> <li>– the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position have overall responsibility for environmental matters for the company</li> <li>– the written authorization is submitted to the Director.)</li> </ul> <p>Verify that the permittee gives notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility.</p> <p>(NOTE: Notice is required only when:</p> <ul style="list-style-type: none"> <li>– the alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source</li> <li>– the alteration or addition could significantly change the nature or increase the quantity of pollutants discharged (This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR 122.42(a)(1) [see checklist item WA.10.8.US])</li> <li>– the alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.)</li> </ul> <p>Verify that the permittee gives notice to the Director of any planned changes in the permitted facility or activity that may result in noncompliance with permit requirements.</p> <p>(NOTE: The permit is not transferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Clean Water Act. (see 40 CFR 122.61; in some cases, modification or revocation and reissuance are mandatory.)</p>

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	<p>Verify that monitoring results are reported at the intervals specified in the permit and are reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Director for reporting results of monitoring of sludge use or disposal practices.</p> <p>Verify that, if the permittee monitors any pollutant more frequently than required by the permit using approved test procedures, or as specified in the permit, the results of this monitoring are included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Director.</p> <p>(NOTE: Calculations for all limitations that require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.)</p> <p>Verify that reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit are submitted no later than 14 days following each schedule date.</p> <p>Verify that the permittee reports any noncompliance which may endanger health or the environment such that:</p> <ul style="list-style-type: none"> <li>– information is provided orally within 24 h from the time the permittee became aware of the circumstances</li> <li>– a written submission is provided within 5 days of the time the permittee becomes aware of the circumstances and contains a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.</li> </ul> <p>Verify that the following is included in information which must be reported within 24 h:</p> <ul style="list-style-type: none"> <li>– any unanticipated bypass which exceeds any effluent limitation in the permit</li> <li>– any upset which exceeds any effluent limitation in the permit</li> <li>– violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in the permit to be reported within 24 h.</li> </ul> <p>(NOTE: The Director may waive the written report on a case-by-case basis if the oral report has been received within 24 h.)</p> <p>Verify that the permittee reports all instances of noncompliance that are not otherwise reported, at the time monitoring reports are submitted.</p> <p>Verify that where the permittee has become aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit</p>

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<p><b>WA.10.8.US.</b> Existing manufacturing, commercial, mining, and silvicultural dischargers are required to meet additional conditions (40 CFR 122.42(a)) <b>[Added October 1999]</b>.</p>	<p>application or in any report to the Director, it promptly submits such facts or information.</p> <p>Verify that the permittee only allows a bypass to occur which does not cause effluent limitations to be exceeded if it is for essential maintenance to assure efficient operation.</p> <p>Verify that, if the permittee knows in advance of the need for a bypass, it submits prior notice, if possible, at least 10 days before the date of the bypass.</p> <p>Verify that the permittee submits notice of an unanticipated bypass within 24 h.</p> <p>(NOTE: Bypass is prohibited and the Director may take enforcement action against a permittee for bypass unless:</p> <ul style="list-style-type: none"> <li>– bypass was unavoidable to prevent loss of life, personal injury, or severe property damage</li> <li>– there were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime</li> <li>– the permittee submitted notices as required.)</li> </ul> <p>Verify that, if a permittee wishes to establish an affirmative defense of upset, they demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:</p> <ul style="list-style-type: none"> <li>– an upset occurred and that the permittee can identify the cause(s) of the upset</li> <li>– the permitted facility was at the time being properly operated</li> <li>– the permittee submitted required 24 h notice of the upset</li> <li>– the permittee complied with any remedial measures required.</li> </ul> <p>Verify that all existing manufacturing, commercial, mining, and silvicultural dischargers notify the Director as soon as they know, or have reason to believe:</p> <ul style="list-style-type: none"> <li>– that any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in the permit, if that discharge will exceed the highest of the following notification levels: <ul style="list-style-type: none"> <li>– 100 micrograms/L</li> <li>– 200 micrograms/L for acrolein and acrylonitrile; 500 micrograms/L for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and 1 mg/L for antimony</li> <li>– 5 times the maximum concentration value reported for that pollutant in the permit application</li> <li>– the level established by the Director.</li> </ul> </li> <li>– that any activity has occurred or will occur that would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant that is not limited in</li> </ul>

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<p><b>WA.10.9.US.</b> All POTWs are required to notify the Director of changes (40 CFR 122.42(b)) [Added October 1999; Reviewed October 2001].</p> <p><b>WA.10.10.US.</b> Municipal separate storm sewer systems (MS4) are required to meet additional conditions (40 CFR 122.42(c)) [Added October 1999; Reviewed October 2001].</p> <p><b>WA.10.11.US.</b> Transfer of NPDES permits may only occur under certain conditions (40 CFR 122.61 and 122.63)</p>	<p>the permit, if that discharge will exceed the highest of the following notification levels:</p> <ul style="list-style-type: none"> <li>– 500 micrograms/L</li> <li>– 1 mg/L for antimony</li> <li>– 10 times the maximum concentration value reported for that pollutant in the permit application</li> <li>– the level established by the Director.</li> </ul> <p>Verify that all POTWs provide adequate notice to the Director of the following:</p> <ul style="list-style-type: none"> <li>– any new introduction of pollutants into the POTW from an indirect discharge that would be subject to section 301 or 306 of the CWA if the discharger were directly discharging those pollutants</li> <li>– any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.</li> </ul> <p>(NOTE: Adequate notice shall include information on:</p> <ul style="list-style-type: none"> <li>– the quality and quantity of effluent introduced into the POTW</li> <li>– any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.)</li> </ul> <p>Verify that the operator of a large or medium municipal separate storm sewer system (MS4) or a municipal separate storm sewer that has been designated by the Director submits an annual report by the anniversary of the date of the issuance of the permit for the system.</p> <p>Verify that the report includes:</p> <ul style="list-style-type: none"> <li>– the status of implementing the components of the stormwater management program that are established as permit conditions</li> <li>– proposed changes to the stormwater management programs that are established as permit conditions</li> <li>– revisions, if necessary, to the assessment of controls and the fiscal analysis reported in the permit</li> <li>– a summary of data, including monitoring data, that is accumulated throughout the reporting year</li> <li>– annual expenditures and budget for the year following each annual report</li> <li>– a summary describing the number and nature of enforcement actions, inspections, and public education programs</li> <li>– identification of water quality improvements or degradation.</li> </ul> <p>Verify that a permit is transferred by the permittee to a new owner or operator only if the permit has been modified or revoked and reissued, or a minor modification made, to identify the new permittee and incorporate such other requirements as may be necessary under CWA.</p>



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<b>April 2012; Revised April 2013].</b>	<p>(NOTE: A “recreational vessel” means a vessel being manufactured or operated primarily for pleasure or leased, rented, or chartered to another for the latter's pleasure [46 USC 2101(25)].)</p> <p>(NOTE: A “vessel of the Armed Forces” means:</p> <ul style="list-style-type: none"> <li>– any vessel owned or operated by the DoD, other than a time or voyage chartered vessel</li> <li>– any vessel owned or operated by the DOT that is designated by the Secretary of the department in which the Coast Guard is operating as a vessel equivalent to a vessel described in the above list.)</li> </ul> <p>Verify that, prior to discharging wastewater, the following watercraft have submitted a Notice of Intent (NOI) to become authorized to discharge wastewater under the VGP:</p> <ul style="list-style-type: none"> <li>– vessels (commercial fishing vessels of any size and non-recreational vessels less than 79 ft) with ballast water discharges are required to submit an NOI for the ballast water discharge only</li> <li>– vessels greater than or equal to 300 gross tons</li> <li>– vessels having the capacity to hold or discharge more than 8 m<sup>3</sup> (2113 gal) of ballast water.</li> </ul> <p>Verify that all components of the VGP are being met, including the following:</p> <ul style="list-style-type: none"> <li>– general effluent limits applicable to 26 specific discharge streams</li> <li>– narrative water-quality based effluent limits</li> <li>– inspection</li> <li>– monitoring</li> <li>– recordkeeping</li> <li>– reporting requirements</li> <li>– any additional requirements applicable to certain vessel types.</li> </ul> <p>Verify that, for a Federal agency, reports required by a permit and other information requested by the regulator is signed by one of the following:</p> <ul style="list-style-type: none"> <li>– the chief executive officer of the agency</li> <li>– a senior executive officer having responsibility over the overall operations of a principal geographic unit of the agency (i.e., Regional Administrators of EPA)</li> <li>– a duly authorized representative.</li> </ul> <p>(NOTE: A person is a duly authorized representative only if:</p> <ul style="list-style-type: none"> <li>– the authorization is made in writing by the chief executive officer of the agency or a senior executive officer having responsibility over the overall operations of a principal geographic unit of the agency</li> </ul>

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<p><b>WA.10.13.US.</b> Certain pesticide applications to the waters of the U.S. must follow the requirements of the <i>NPDES Pesticide General Permit (PGP)</i> (40 CFR 122.22(b), 122.28 and the <i>NPDES Pesticide General Permit</i>) [Added April 2012; Revised October 2016].</p>	<ul style="list-style-type: none"> <li>– the authorization specifies either an individual or a position having responsibilities for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters</li> <li>– the written authorization is submitted to the Director.)</li> </ul> <p>(NOTE: The current VGP expires on 19 December 2013 and is available at <a href="http://www.epa.gov/npdes/pubs/vessel_vgp_permit.pdf">http://www.epa.gov/npdes/pubs/vessel_vgp_permit.pdf</a>.)</p> <p>(NOTE: On 28 March 2013, EPA issued the 2013 Vessel General Permit (VGP) to authorize discharges incidental to the normal discharge of operations of commercial vessels. The 2013 VGP has an effective date of 19 December 2013 and expires 19 December 2018. See <a href="http://cfpub.epa.gov/npdes/vessels/vgpermit.cfm">http://cfpub.epa.gov/npdes/vessels/vgpermit.cfm</a>.)</p> <p>(NOTE: As of 10 October 2016 all ten EPA Regions issued the NPDES Pesticide General Permit (PGP) for Point Source Discharges From the Application of Pesticides to the waters of the United States. The 2016 PGP, which has an effective date of 31 October 2016, replaces the existing permit (2011 PGP) that expired at midnight on 31 October 2016, and authorizes certain point source discharges from the application of pesticides to waters of the United States in accordance with the terms and conditions described in the permit. EPA is issuing this permit for five (5) yr in all areas of the country where EPA is the NPDES permitting authority. See <a href="https://www.epa.gov/npdes/pesticide-permitting">https://www.epa.gov/npdes/pesticide-permitting</a> for details.)</p> <p>(NOTE: The PGP applies to operators who discharge to waters of the United States (see Definitions) from the application of biological pesticides or chemical pesticides that leave a residue (collectively called pesticides), when the pesticide application is for one of the following pesticide use patterns:</p> <ul style="list-style-type: none"> <li>– mosquito and other flying insect pest control (i.e., to control public health/nuisance and other flying insect pests that develop or are present during a portion of their life cycle in or above standing or flowing water. Public health/nuisance and other flying insect pests in this use category include mosquitoes and black flies)</li> <li>– weed and algae pest control (i.e., to control weeds, algae, and pathogens that are pests in water and at water’s edge, including ditches and/or canals)</li> <li>– animal pest control (i.e., to control animal pests in water and at water’s edge. Animal pests in this use category include fish, lampreys, insects, mollusks, and pathogens)</li> <li>– forest canopy pest control (i.e., application of a pesticide to a forest canopy to control the population of a pest species [e.g., insect or pathogen] where, to target the pests effectively, a portion of the pesticide unavoidably will be applied over and deposited to water.))</li> </ul> <p>Verify that decision-makers submit a Notice of Intent for discharge to waters of the United States from the application of biological pesticides or chemical pesticides</p>

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	<p>that leave a residue when the pesticide application is for a permit-applicable pesticide use pattern.</p> <p>(NOTE: Under the PGP, a “Decision-maker” is any entity with control over the decision to perform pesticide applications including the ability to modify those decisions that result in a discharge to Waters of the United States. A “Decision-maker Who is or Will be Required to Submit an NOI” is any Decision-maker covered under the PGP who knows or should have known that an NOI will be required for those discharges beginning 12 January 2012. Excluded from this definition are those activities for which an NOI is required based solely on that Decision-Maker exceeding an annual treatment area threshold.)</p> <p>Verify that operators applying pesticides under the PGP meet the permit requirements for:</p> <ul style="list-style-type: none"> <li>– a Pesticide Discharge Management Plan</li> <li>– technology-based effluent limitations</li> <li>– water quality-based effluent limitations</li> <li>– monitoring</li> <li>– corrective actions</li> <li>– reporting</li> <li>– recordkeeping.</li> </ul> <p>Verify that, for a Federal agency, reports required by a permit and other information requested by the regulator is signed by one of the following:</p> <ul style="list-style-type: none"> <li>– the chief executive officer of the agency</li> <li>– a senior executive officer having responsibility over the overall operations of a principal geographic unit of the agency (i.e., Regional Administrators of EPA)</li> <li>– a duly authorized representative.</li> </ul> <p>(NOTE: A person is a duly authorized representative only if:</p> <ul style="list-style-type: none"> <li>– the authorization is made in writing by the chief executive officer of the agency or a senior executive officer having responsibility over the overall operations of a principal geographic unit of the agency</li> <li>– the authorization specifies either an individual or a position having responsibilities for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters</li> <li>– the written authorization is submitted to the Director.)</li> </ul> <p>(NOTE: This general permit provides coverage for discharges in the areas where EPA is the NPDES permitting authority, which include six states [Alaska, Idaho, Massachusetts, New Hampshire, New Mexico, and Oklahoma], Washington, D.C., most U.S. territories and Indian country lands, and many federal facilities [for</p>

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<p><b>WA.10.14.US.</b> Where applicable, construction sites over 1 acre must comply with the <i>NPDES Construction General Permit</i> for stormwater discharges (40 CFR 122.22(b), 122.28 and the <i>NPDES Construction General Permit</i>) [Added April 2012; Revised July 2017].</p>	<p>details, see Appendix 12-0a]. In the remaining 44 states [and the Virgin Islands], the states are authorized to develop and issue the NPDES pesticide permits. Dischargers in areas not covered under EPA should contact their state environmental regulatory agency for more information on applicable permit requirements.)</p> <p>(NOTE: The PGP does not apply to:</p> <ul style="list-style-type: none"> <li>– any discharges from a pesticide application to Waters of the United States if the water is identified as impaired by a substance which either is an active ingredient in that pesticide or is a degradate of such an active ingredient, for example: <ul style="list-style-type: none"> <li>– for the purposes of this permit, impaired waters are those that have been identified by a state, tribe, or EPA pursuant to section 303(d) of the CWA as not meeting applicable state or tribal water quality standards</li> <li>– for the purposes of this permit, impaired waters consist of both waters with EPA-approved or EPA-established total maximum daily loads (TMDLs) and waters for which EPA has not yet approved or established a TMDL; a list of those waters is available at <a href="http://www.epa.gov/OWOW/tmdl/">www.epa.gov/OWOW/tmdl/</a></li> </ul> </li> <li>– discharges to waters of the United States if the water is designated by a state or tribe as Tier 3 (Outstanding National Resource Waters) for antidegradation purposes; a list of Tier 3 waters in geographic areas covered under this permit is available at <a href="http://www.epa.gov/npdes/pesticides">www.epa.gov/npdes/pesticides</a></li> <li>– discharges covered by another NPDES permit</li> <li>– discharges included in a permit that in the past 5 yr has been or is in the process of being denied, terminated, or revoked by EPA (this does not apply to the routine reissuance of permits every 5 yr).)</li> </ul> <p>(NOTE: This permit became effective on 16 February 2017. This permit and the authorization to discharge expire at midnight, 16 February 2022. See <a href="https://www.epa.gov/npdes/epas-2017-construction-general-permit-cgp-and-related-documents">https://www.epa.gov/npdes/epas-2017-construction-general-permit-cgp-and-related-documents</a> for a copy of the permit.)</p> <p>(NOTE: This checklist item applies to projects that meet one of the following criteria and is located in an area where EPA is the permitting authority (see Appendix 12-0b):</p> <ul style="list-style-type: none"> <li>– the project will disturb 1 or more acres of land, or will disturb less than 1 acre of land but is part of a common plan of development or sale that will ultimately disturb 1 or more acres of land</li> <li>– the discharge is determined to contribute to a water quality standard or is a significant contributor of pollutants to the waters of the United States (see 40 CFR 122.26(a)(1)(v).)</li> </ul> <p>(NOTE: See checklist item WA.10.2.US and WA.10.3.US for requirements applicable to construction activities seeking stormwater discharge coverage under an individual permit.)</p>

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	<p>Verify that all operators of construction projects for which stormwater discharges are covered under the CGP submit a Notice of Intent (NOI) prior to starting construction activities.</p> <p>Verify that a NOI is submitted for a construction project that starts construction activities on or after 16 February 2012 no later than 14 calendar days prior to starting earth-disturbing activities.</p> <p>(NOTE: A project is considered covered under this permit 14 calendar days after EPA has acknowledged receipt of your the on the Agency’s website unless the project receives EPA notification that authorization has been delayed or denied.)</p> <p>(NOTE: For the purposes of this permit, an “operator” is any party associated with a construction project that meets either of the following two criteria:</p> <ul style="list-style-type: none"> <li>– the party has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications</li> <li>– the party has day-to-day operational control of those activities at a project that are necessary to ensure compliance with the permit conditions (e.g., they are authorized to direct workers at a site to carry out activities required by the permit).</li> </ul> <p>Subcontractors generally are not considered operators for the purposes of this permit. Where there are multiple operators associated with the same project, all operators are required to obtain permit coverage.)</p> <p>(NOTE: If an entity is conducting earth-disturbing activities in response to a public emergency (e.g., natural disaster, widespread disruption in essential public services), and the related work requires immediate authorization to avoid imminent endangerment to human health, public safety, or the environment, or to reestablish essential public services, the entity is authorized to discharge on the condition that a complete and accurate NOI is submitted within 30 calendar days after commencing earth-disturbing activities (see establishing that the activity is eligible under this permit. Documentation must be provided in the SWPPP to substantiate the occurrence of the public emergency.)</p> <p>Verify that a sign or other notice is posted conspicuously at a safe, publicly accessible location in close proximity to the project site including, minimum, the NPDES Permit tracking number and a contact name and phone number for obtaining additional project information.</p> <p>Verify that the notice is located so that it is visible from the public road that is nearest to the active part of the construction site, and uses a font large enough to be readily viewed from a public right-of-way.</p> <p>Verify that permit requirements for the following are met:</p> <ul style="list-style-type: none"> <li>– a Stormwater Pollution Prevention Plan</li> <li>– effluent limitations</li> </ul>

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	<ul style="list-style-type: none"> <li>– erosion and sediment control requirements</li> <li>– stabilization requirements</li> <li>– pollution prevention requirements</li> <li>– inspections</li> <li>– corrective actions</li> <li>– training</li> <li>– reporting</li> <li>– recordkeeping.</li> </ul> <p>Verify that, for a Federal agency, reports required by a permit and other information requested by the regulator is signed by one of the following:</p> <ul style="list-style-type: none"> <li>– the chief executive officer of the agency</li> <li>– a senior executive officer having responsibility over the overall operations of a principal geographic unit of the agency (i.e., Regional Administrators of EPA)</li> <li>– a duly authorized representative.</li> </ul> <p>(NOTE: A person is a duly authorized representative only if:</p> <ul style="list-style-type: none"> <li>– the authorization is made in writing by the chief executive officer of the agency or a senior executive officer having responsibility over the overall operations of a principal geographic unit of the agency</li> <li>– the authorization specifies either an individual or a position having responsibilities for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters</li> <li>– the written authorization is submitted to the Director.)</li> </ul> <p>(NOTE: The following is a list of discharges that are allowed under the permit provided that appropriate stormwater controls are designed, installed, and maintained:</p> <ul style="list-style-type: none"> <li>– stormwater discharges, including stormwater runoff, snowmelt runoff, and surface runoff and drainage, associated with construction activity under: <ul style="list-style-type: none"> <li>– 40 CFR 122.26(b)(14) [definition of “industrial activity”]</li> <li>– 40 CFR 122.26(b)(15)(i) [construction activities between 1 and 5 acres]</li> </ul> </li> <li>– stormwater discharges designated by EPA as needing a permit based on the potential for contribution to a violation to a water quality standard or for significant contribution of pollutants to the water of the U.S.</li> <li>– stormwater discharges from construction support activities (e.g., concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, borrow areas) provided: <ul style="list-style-type: none"> <li>– the support activity is directly related to the construction site required to have permit coverage for stormwater discharges</li> <li>– the support activity is not a commercial operation, nor does it serve multiple unrelated construction projects</li> </ul> </li> </ul>

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<p><b>WA.10.15.US.</b> Facilities with stormwater discharges associated with industrial activities (see <i>Definitions</i>) are required to comply with the NPDES Multi-Sector General Permit (MSGP) unless individually permitted or subject to State General Permit requirements (40 CFR 122.22(b), 122.28, and the <i>Multi-Sector General Permit</i>) [Added April 2012].</p>	<ul style="list-style-type: none"> <li>– the support activity does not continue to operate beyond the completion of the construction activity at the project it supports</li> <li>– stormwater controls are implemented in accordance with Part 2 and, if applicable, Part 3, for discharges from the support activity areas</li> <li>– the following non-stormwater discharges from the construction activity, provided that, with the exception of water used to control dust and to irrigate areas to be vegetatively stabilized, these discharges are not routed to areas of exposed soil on the site and the site is in compliance with any applicable requirements for these discharges in Part 2 of the permit: <ul style="list-style-type: none"> <li>– discharges from emergency fire-fighting activities</li> <li>– fire hydrant flushings</li> <li>– landscape irrigation</li> <li>– water used to wash vehicles and equipment, provided that there is no discharge of soaps, solvents, or detergents used for such purposes</li> <li>– water used to control dust</li> <li>– potable water including uncontaminated water line flushings</li> <li>– routine external building washdown that does not use detergents</li> <li>– pavement wash waters provided spills or leaks of toxic or hazardous materials have not occurred (unless all spill material has been removed) and where detergents are not used. You are prohibited from directing pavement wash waters directly into any surface water, storm drain inlet, or stormwater conveyance, unless the conveyance is connected to a sediment basin, sediment trap, or similarly effective control</li> <li>– uncontaminated air conditioning or compressor condensate</li> <li>– uncontaminated, non-turbid discharges of ground water or spring water</li> <li>– foundation or footing drains where flows are not contaminated with process materials such as solvents or contaminated ground water</li> <li>– construction dewatering water that has been treated by an appropriate control under Part 2.1.3.4 of the permit</li> </ul> </li> <li>– approved discharges of stormwater or authorized non-stormwater discharges commingled with a discharge authorized by a different NPDES permit and/or a discharge that does not require NPDES permit authorization.)</li> </ul> <p>(NOTE: On 29 September 2008 EPA Regions 1, 2, 3, 5, 6, 9, and 10 finalized EPA's NPDES general permit for stormwater discharges from industrial activity, also referred to as the Multi-Sector General Permit (MSGP). This permit replaces the existing permits that expired on 30 October 2005. This permit authorizes the discharge of stormwater associated with industrial activities in accordance with the terms and conditions described in the MSGP. An individual permit may be necessary if the discharger cannot meet the terms and conditions or eligibility requirements in the MSGP.)</p> <p>(NOTE: EPA's MSGP is only applicable in locations where EPA is the permitting authority; otherwise the State MSGP will apply. See the following website <a href="http://cfpub.epa.gov/npdes/stormwater/authorizationstatus.cfm">http://cfpub.epa.gov/npdes/stormwater/authorizationstatus.cfm</a> for information on who has what permitting authority.)</p>

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	<p>(NOTE: See checklist item WA.10.2.US for requirements applicable to industrial activities seeking stormwater discharge coverage under an individual permit.)</p> <p>Verify that facilities with stormwater discharges associated with industrial activity covered by the MSGP have submitted a Notice of Intent a minimum of 60 days prior to commencing discharge, or a minimum of 30 days if the SWPPP is posted on the Internet during this period.</p> <p>(NOTE: The phrase “Stormwater associated with an industrial activity” is defined in 40 CFR 122.26(b)(14). See the <i>Definitions</i> section of this manual and/or the following associated EPA website on stormwater associated with industrial activity for further information on which industrial activities are addressed <a href="http://cfpub.epa.gov/npdes/stormwater/indust.cfm?program_id=6">http://cfpub.epa.gov/npdes/stormwater/indust.cfm?program_id=6</a>. For example, “industrial activities” include the following:</p> <ul style="list-style-type: none"> <li>– steam electric power generating facilities, including coal handling sites</li> <li>– transportation facilities classified as Standard Industrial Classifications 40, 41, 42 (except 4221–25), 43, 44, 45, and 5171 which have vehicle maintenance shops, equipment cleaning operations, or airport deicing operations</li> <li>– treatment works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge that are located within the confines of the facility, with a design flow of 1.0 mgd or more, or required to have an approved pretreatment program under 40 CFR 403</li> <li>– construction activity including clearing, grading and excavation if the disturbance of land is 5 acres or greater (see also checklist item WA.10.14.US)</li> <li>– construction activity including the disturbance of less than 5 acres of total land area that is a part of a larger common plan of development or sale if the larger common plan will ultimately disturb 5 acres or more (see also checklist item WA.10.14.US).)</li> </ul> <p>Verify that the facility complies with all conditions of the MSGP, including:</p> <ul style="list-style-type: none"> <li>– development and implementation of a Stormwater Pollution Prevention Plan</li> <li>– effluent limitations</li> <li>– inspections</li> <li>– visual assessments</li> <li>– comprehensive site assessments</li> <li>– monitoring</li> <li>– corrective actions</li> <li>– reporting</li> <li>– recordkeeping.</li> </ul> <p>Verify that, for a Federal agency, reports required by a permit and other information requested by the regulator is signed by one of the following:</p> <ul style="list-style-type: none"> <li>– the chief executive officer of the agency</li> </ul>

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<p><b>WA.10.16.US.</b> Certain small vessels (less than 79 ft) subject to the EPA’s NPDES Small Vessel General Permit (sVGP) are required to follow specific standards as of 19 December 2014 (40 CFR 122.22(b), 122.28 and the <i>NPDES Small Vessel General Permit for Discharges Incidental to the Operation of Vessels</i>) [Added October 2014].</p>	<ul style="list-style-type: none"> <li>– a senior executive officer having responsibility over the overall operations of a principal geographic unit of the agency (i.e., Regional Administrators of EPA)</li> <li>– a duly authorized representative.</li> </ul> <p>(NOTE: A person is a duly authorized representative only if:</p> <ul style="list-style-type: none"> <li>– the authorization is made in writing by the chief executive officer of the agency or a senior executive officer having responsibility over the overall operations of a principal geographic unit of the agency</li> <li>– the authorization specifies either an individual or a position having responsibilities for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters</li> <li>– the written authorization is submitted to the Director.)</li> </ul> <p>(NOTE: EPA may require a facility to apply for and/or obtain authorization to discharge under either an individual NPDES permit or an alternative NPDES general permit. If EPA requires a facility to apply for an individual NPDES permit, EPA will notify the facility in writing that a permit application is required.)</p> <p>(NOTE: Recreational vessels or vessels of the U.S. Armed Forces are not eligible for coverage under the sVGP. The sVGP applies to discharges incidental to the normal operation of all other vessels of less than 79 ft which discharge in waters of the United States.)</p> <p>(NOTE: A “recreational vessel” means any “vessel” that is either (1) manufactured or used primarily for pleasure or (2) leased, rented, or chartered to a person for the pleasure of that person. The term does not include a vessel that is both subject to Coast Guard inspection and either (1) engaged in commercial use or (2) carries paying passengers [33 U.S.C. 1362(25)]. According to the <i>Final 2014 sVGP Fact Sheet</i>, utility vessels used by the Army Corps of Engineers or a state or federal wildlife agency for public resource management purpose such as hydrographic surveys, wildlife management, buoy marker setting, water patrol, inspections, etc., for which the same model is manufactured and utilized for recreational purposes are considered recreational vessels within the meaning of the Clean Water Act. )</p> <p>(NOTE: A “vessel of the Armed Forces” means:</p> <ul style="list-style-type: none"> <li>– any vessel owned or operated by the DoD, other than a time or voyage chartered vessel</li> <li>– any vessel owned or operated by the DOT that is designated by the Secretary of the department in which the Coast Guard is operating as a vessel equivalent to a vessel described in the above list.)</li> </ul> <p>Verify that the vessel minimizes the potential for pollutants to accidentally enter the effluent, including spills.</p>

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	<p>Verify that the vessel minimizes the discharge of constituents of concern or pollutants, such as foam or floating solids.</p> <p>(NOTE: As used in the sVGP, the term “minimize” means reduce and/or eliminate to the extent achievable using control measures (including BMPs) that are technologically available and economically practicable and achievable in light of best marine practice.)</p> <p>Verify that the vessel does not use any dispersants, cleaners, chemicals, or other materials or emulsifiers that would remove the appearance of a visible sheen in the discharge.</p> <p>Verify that the vessel does not discharge:</p> <ul style="list-style-type: none"> <li>– garbage in the effluent</li> <li>– oil, including any oily mixture, in quantities that may be harmful or cause a visible sheen</li> <li>– antifreeze with toxic or known carcinogenic additives, such as ethylene glycol and methanol and minimizes the discharge of all other antifreeze, such as antifreeze containing propylene glycol.</li> </ul> <p>(NOTE: For vessel engines that have been winterized, minimizing the discharge includes capturing antifreeze drained from the engine.)</p> <p>Verify that, when feasible, major cleaning, maintenance, and repair jobs are performed while the vessel is out of the water or in drydock.</p> <p>Verify that the vessel uses only minimally-toxic, phosphate-free, and biodegradable soaps, detergents, or cleaners.</p> <p>(NOTE: Phosphate-free soap contains by weight 0.5 percent or less of phosphates or derivatives of phosphates.)</p> <p>Verify that the vessel does not add any pollutant that is not incidental to the normal operation of a vessel to any discharge.</p> <p>Verify that, while the vessel engine is operating, personnel frequently check the area around and behind the vessel to ensure that no visible sheen, dust, chemicals, or discoloration are originating from the vessel.</p> <p>Verify that all components of the sVGP are being met, including the following:</p> <ul style="list-style-type: none"> <li>– fuel management</li> <li>– engine and oil control</li> <li>– solid and liquid waste management</li> <li>– deck washdown and runoff and above water line hull cleaning</li> <li>– vessel hull maintenance</li> </ul>

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	<ul style="list-style-type: none"> <li>– graywater</li> <li>– fish hold effluent</li> <li>– ballast water</li> <li>– overboard cooling water discharge</li> <li>– quarterly visual inspections.</li> </ul> <p>Verify that the PARI Form found in Appendix A of the sVGP permit is signed and kept on board the vessel at all times to maintain valid sVGP coverage.</p> <p>(NOTE: The person signing the PARI Form must be a signatory under 40 CFR 122.22. A signatory includes the person in charge (e.g., the Master), or that person's duly authorized representative. )</p> <p>Verify that all records required under the sVGP (e.g., PARI Form and inspection records as applicable) are kept for a period of at least 3 yr from the date the permit expires or the date the owner's or operator's authorization to discharge under this permit is terminated.</p> <p>(NOTE: For the sVGP, records may be kept electronically if the records are:</p> <ul style="list-style-type: none"> <li>– in a format that can be read in a similar manner as a paper record</li> <li>– legally dependable with no less evidentiary value than their paper equivalent</li> <li>– accessible to the inspector during an inspection to the same extent as a paper copy stored on the vessel would be, if the records were stored in paper form.)</li> </ul> <p>(NOTE: The following discharges are not covered by this permit:</p> <ul style="list-style-type: none"> <li>– discharges that are not incidental to the normal operation of a vessel operating in a capacity as a means of transportation, including, but not limited to: <ul style="list-style-type: none"> <li>– discharges when the vessel is operating in a capacity other than as a means of transportation such as when used as an energy or mining facility; a storage facility or seafood processing facility; or when secured to the bed of the ocean, contiguous zone or waters of the United States for purpose of mineral or oil exploration or development</li> </ul> </li> <li>– medical waste as defined in 33 U.S.C. 1362(20)</li> <li>– noxious liquid substance residues subject to 33 CFR 151, Subpart A</li> <li>– sewage from vessels which is regulated under 40 CFR 140 and 33 CFR 159</li> <li>– discharges of used or spent oil no longer being used for their intended purposes</li> <li>– discharges of rubbish, trash, garbage, or other such materials overboard</li> <li>– discharges of tetrachloroethylene and trichlorethylene (TCE) degreasers or other products containing tetrachloroethylene or TCE</li> <li>– vessel discharges covered, as of the effective date of this permit, under an individual NPDES permit or another NPDES general permit, unless those discharges were covered by EPA's December 2008 Vessel General Permit, or unless EPA provides written authorization for coverage to be obtained for such discharges under this permit</li> <li>– discharges from vessels covered by any NPDES permit that has been or is in the process of being denied, terminated, or revoked by EPA or state permitting authorities (this does not apply to the routine reissuance of permits every 5</li> </ul>

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	<p>yr), unless EPA provides written authorization for coverage to be obtained for such discharges under this permit.)</p> <p>(NOTE: The current sVGP expires on 18 December 2019 and is available at <a href="http://water.epa.gov/polwaste/npdes/vessels/upload/sVGP_2014.pdf">http://water.epa.gov/polwaste/npdes/vessels/upload/sVGP_2014.pdf</a>)</p>



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<p><b>WA.20</b></p> <p><b>TREATMENT WORKS</b></p> <p><b>WA.20.1.US.</b> POTWs are required to develop specific limits to ensure compliance with 40 CFR 403.5(a) and 403.5(b) (40 CFR 403.5(c) and 403.8(f)(4)) [Added October 2001; Revised January 2006].</p> <p><b>WA.20.2.US.</b> In certain circumstances, POTWs are required to develop a POTW</p>	<p>(NOTE: General Pretreatment regulations (40 CFR 403) apply to the following (40 CFR 403.1(b)):</p> <ul style="list-style-type: none"> <li>– pollutants from non-domestic sources covered by pretreatment standards which are indirectly discharged into or transported by truck or rail or otherwise introduced into POTWs</li> <li>– POTWs which receive wastewater from sources subject to National pretreatment standards</li> <li>– states which have or are applying for NPDES) programs approved in accordance with section 402 of the CWA</li> <li>– any new or existing source subject to pretreatment standards.)</li> </ul> <p>(NOTE: National pretreatment standards do not apply to sources which discharge to a sewer that is not connected to a POTW Treatment Plant.)</p> <p>Verify that when the POTW has an approved Pretreatment Program, it develops and enforces specific limits to implement and enforce the prohibitions listed in 40 CFR 403.5(a)(1) and 403.5(b) (see checklist item WA.25.1.US and WA.25.2.US).</p> <p>(NOTE: Each POTW with an approved pretreatment program shall continue to develop these limits as necessary and effectively enforce such limits.)</p> <p>Verify that all other POTW's, in cases where pollutants contributed by industrial user(s) result in interference or pass-through, and the violation is likely to recur, develop and enforce specific effluent limits for industrial user(s), and all other users, as appropriate, which, together with appropriate changes in the POTW's facilities or operation, ensure renewed and continued compliance with the POTW's NPDES permit or sludge use or disposal practices.</p> <p>(NOTE: Specific effluent limits shall not be developed and enforced without individual notice to persons or groups who have requested such notice and an opportunity to respond.)</p> <p>(NOTE: POTWs may develop Best Management Practices (BMPs) to implement specific limits. Such BMPs shall be considered local limits and Pretreatment Standards.)</p> <p>Verify that, if the POTW has not developed local limits as required, the POTW has demonstrated the limits are not necessary.</p> <p>(NOTE: General Pretreatment regulations (40 CFR 403) apply to the following (40 CFR 403.1(b)):</p>

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<p>pretreatment program which meets specific criteria (40 CFR 403.8(a) and 403.8(f)(2))  <b>[Added October 2001; Revised January 2006].</b></p>	<ul style="list-style-type: none"> <li>– pollutants from non-domestic sources covered by pretreatment standards which are indirectly discharged into or transported by truck or rail or otherwise introduced into POTWs</li> <li>– POTWs which receive wastewater from sources subject to National pretreatment standards</li> <li>– states which have or are applying for NPDES) programs approved in accordance with section 402 of the CWA</li> <li>– any new or existing source subject to pretreatment standards.)</li> </ul> <p>(NOTE: National pretreatment standards do not apply to sources which discharge to a sewer that is not connected to a POTW Treatment Plant.)</p> <p>Verify that any POTW (or combination of POTWs operated by the same authority) with a total design flow greater than 5 million gal per day (mgd) and receiving from industrial users pollutants which pass through or interfere with the operation of the POTW, or are otherwise subject to pretreatment standards has a POTW pretreatment program.</p> <p>(NOTE: The pretreatment program is not required if the NPDES state exercises its option to assume local responsibilities.)</p> <p>(NOTE: The USEPA or authorized regulatory agency may require that a POTW with a design flow of 5 mgd or less develop a POTW pretreatment program if the nature or volume of the industrial influent, treatment process upsets, violations of POTW effluent limitations, contamination of municipal sludge, or other circumstances warrant, in order to prevent interference with the POTW or pass through.)</p> <p>Verify that the POTW pretreatment program includes procedure which enables the POTW to:</p> <ul style="list-style-type: none"> <li>– identify and locate all possible industrial users which might be subject to the POTW pretreatment program</li> <li>– identify the character and volume of pollutants contributed to the POTW by the identified industrial users</li> <li>– notify identified industrial users of applicable pretreatment standards and any applicable requirements under sections 204(b) and 405 of the CWA and subtitles C and D of RCRA</li> <li>– receive and analyze self-monitoring reports and other notices submitted by industrial users in accordance with the self-monitoring requirements</li> <li>– randomly sample and analyze the effluent from Industrial Users and conduct surveillance activities in order to identify, independent of information supplied by Industrial Users, occasional and continuing noncompliance with Pretreatment Standards. Inspect and sample the effluent from each Significant Industrial User at least once a year, except as otherwise specified below: <ul style="list-style-type: none"> <li>– where the POTW has authorized the Industrial User subject to a categorical Pretreatment Standard to forego sampling of a pollutant</li> </ul> </li> </ul>

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	<p>regulated by a categorical Pretreatment Standard, the POTW samples for the waived pollutant(s) at least once during the term of the Categorical Industrial User's control mechanism (NOTE: In the event that the POTW subsequently determines that a waived pollutant is present or is expected to be present in the Industrial User's wastewater based on changes that occur in the User's operations, the POTW must immediately begin at least annual effluent monitoring of the User's Discharge and inspection)</p> <ul style="list-style-type: none"> <li>– where the POTW has determined that an Industrial User meets the criteria for classification as a Non-Significant Categorical Industrial User, the POTW evaluates, at least once per year, whether an Industrial User continues to meet the criteria in 40 CFR 403.3(v)(2)</li> <li>– in the case of Industrial Users subject to reduced reporting requirements under 40 CFR 403.12(e)(3), the POTW randomly samples and analyzes the effluent from Industrial Users and conducts inspections at least once every 2 yr (NOTE: If the Industrial User no longer meets the conditions for reduced reporting in 40 CFR 403.12(e)(3), the POTW must immediately begin sampling and inspecting the Industrial User at least once a year.)</li> <li>– evaluate whether each such Significant Industrial User needs a plan or other action to control Slug Discharges (NOTE: For Industrial Users identified as significant prior to November 14, 2005, this evaluation must have been conducted at least once by October 14, 2006; additional Significant Industrial Users must be evaluated within 1 year of being designated a Significant Industrial User)</li> <li>– investigate instances of noncompliance with pretreatment standards and Requirements, as indicated in the required reports and notices, or indicated by analysis, inspection, and surveillance activities</li> <li>– perform sample taking and analysis and the collection of other information with sufficient care to produce evidence admissible in enforcement proceedings or in judicial actions</li> <li>– comply with the public participation requirements of 40 CFR 25 in the enforcement of national pretreatment standards.</li> </ul> <p>(NOTE: A Slug Discharge is any Discharge of a non-routine, episodic nature, including but not limited to an accidental spill or a non-customary batch Discharge, which has a reasonable potential to cause Interference or Pass Through, or in any other way violate the POTW's regulations, local limits or Permit conditions.)</p> <p>(NOTE: A slug control plan shall contain, at a minimum, the following elements:</p> <ul style="list-style-type: none"> <li>– description of discharge practices, including non-routine batch discharges</li> <li>– description of stored chemicals</li> <li>– procedures for immediately notifying the POTW of Slug Discharges, including any discharge that would violate a prohibition under 40 CFR 403.5(b) with procedures for follow-up written notification within five days</li> <li>– if necessary, procedures to prevent adverse impact from accidental spills, including inspection and maintenance of storage areas, handling and transfer</li> </ul>

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<p><b>WA.20.3.US.</b> A POTW requesting approval of a POTW pretreatment program</p>	<p>of materials, loading and unloading operations, control of plant site run-off, worker training, building of containment structures or equipment, measures for containing toxic organic pollutants (including solvents), and/or measures and equipment for emergency response.)</p> <p>Verify that the procedures include provisions for at least annual public notification in a newspaper(s) of general circulation that provides meaningful public notice within the jurisdiction(s) served by the POTW of Industrial Users which, at any time during the previous 12 mo, were in significant noncompliance with applicable Pretreatment requirements.</p> <p>(NOTE: A Significant Industrial User (or any Industrial User which violates paragraphs (f)(2)(viii)(C), (D), or (H)) is in significant noncompliance if its violation meets one or more of the following criteria:</p> <ul style="list-style-type: none"> <li>– chronic violations of wastewater Discharge limits, defined here as those in which 66 percent or more of all of the measurements taken for the same pollutant parameter during a 6-month period exceed (by any magnitude) a numeric Pretreatment Standard or Requirement, including instantaneous limits, as defined by 40 CFR 403.3(l)</li> <li>– Technical Review Criteria (TRC) violations, defined here as those in which 33 percent or more of all of the measurements taken for the same pollutant parameter during a 6-month period equal or exceed the product of the numeric Pretreatment Standard or Requirement including instantaneous limits, as defined by 40 CFR 403.3(l) multiplied by the applicable TRC (TRC=1.4 for BOD, TSS, fats, oil, and grease, and 1.2 for all other pollutants except pH)</li> <li>– any other violation of a Pretreatment Standard or Requirement as defined by 40 CFR 403.3(l) (daily maximum, long-term average, instantaneous limit, or narrative Standard) that the POTW determines has caused, alone or in combination with other Discharges, Interference or Pass Through (including endangering the health of POTW personnel or the general public)</li> <li>– any discharge of a pollutant that has caused imminent endangerment to human health, welfare or to the environment or has resulted in the POTW's exercise of its emergency authority to halt or prevent such a discharge</li> <li>– failure to meet, within 90 days after the schedule date, a compliance schedule milestone contained in a local control mechanism or enforcement order for starting construction, completing construction, or attaining final compliance</li> <li>– failure to provide, within 45 days after the due date, required reports such as baseline monitoring reports, 90-day compliance reports, periodic self-monitoring reports, and reports on compliance with compliance schedules</li> <li>– failure to accurately report noncompliance</li> <li>– any other violation or group of violations, which may include a violation of Best Management Practices, which the POTW determines will adversely affect the operation or implementation of the local Pretreatment program.)</li> </ul> <p>(NOTE: General Pretreatment regulations (40 CFR 403) apply to the following (40 CFR 403.1(b)):</p>

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<p>is required to develop a program description and follow certain procedures (40 CFR 403.9(a) through 403.9(c), 403.9(e), and 403.9(g)) [Added October 2001].</p>	<ul style="list-style-type: none"> <li>– pollutants from non-domestic sources covered by pretreatment standards which are indirectly discharged into or transported by truck or rail or otherwise introduced into POTWs</li> <li>– POTWs which receive wastewater from sources subject to National pretreatment standards</li> <li>– states which have or are applying for NPDES) programs approved in accordance with section 402 of the CWA</li> <li>– any new or existing source subject to pretreatment standards.)</li> </ul> <p>(NOTE: National pretreatment standards do not apply to sources which discharge to a sewer that is not connected to a POTW Treatment Plant.)</p> <p>Verify that the program description is submitted to the Approval Authority that will make a determination on the request for program approval.</p> <p>Verify that a POTW requesting approval of a POTW pretreatment program develops a program description which contains the following information:</p> <ul style="list-style-type: none"> <li>– a statement from the City Solicitor or a city official acting in a comparable capacity (or the attorney for those POTWs which have independent legal counsel) that the POTW has authority adequate to carry out the programs described in 40 CFR 403.8. This statement shall: <ul style="list-style-type: none"> <li>– identify the provision of the legal authority under 40 CFR 403.8(f)(1) which provides the basis for each procedure under 40 CFR 403.8(f)(2)</li> <li>– identify the manner in which the POTW will implement the program requirements set forth in 40 CFR 403.8, including the means by which pretreatment standards will be applied to individual industrial users (e.g., by order, permit, ordinance, etc.)</li> <li>– identify how the POTW intends to ensure compliance with pretreatment standards and requirements, and to enforce them in the event of noncompliance by industrial users</li> </ul> </li> <li>– a copy of any statutes, ordinances, regulations, agreements, or other authorities relied upon by the POTW for its administration of the Program, including a statement reflecting the endorsement or approval of the local boards or bodies responsible for supervising and/or funding the POTW Pretreatment Program if approved</li> <li>– a brief description (including organization charts) of the POTW organization which will administer the Pretreatment Program. If more than one agency is responsible for administration of the Program the responsible agencies should be identified, their respective responsibilities delineated, and their procedures for coordination set forth</li> <li>– a description of the funding levels and full- and part-time manpower available to implement the Program.</li> </ul> <p>(NOTE: The POTW may request conditional approval of the pretreatment program pending the acquisition of funding and personnel for certain elements of the program. The request for conditional approval must meet the requirements set forth</p>

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<p><b>WA.20.4.US.</b> POTWs are required to have sufficient resources and qualified personnel to carry out the POTW pretreatment program (40 CFR 403.8(f)(3)) [Added October 2001; Revised January 2006].</p>	<p>for the program description except that the requirements may be relaxed if the submission demonstrates that:</p> <ul style="list-style-type: none"> <li>– a limited aspect of the Program does not need to be implemented immediately</li> <li>– the POTW had adequate legal authority and procedures to carry out those aspects of the program which will not be implemented immediately</li> <li>– funding and personnel for the program aspects to be implemented at a later date will be available when needed.</li> </ul> <p>The POTW will describe in the submission the mechanism by which this funding will be acquired. Upon receipt of a request for conditional approval, the Approval Authority will establish a fixed date for the acquisition of the needed funding and personnel. If funding is not acquired by this date, the conditional approval of the POTW Pretreatment Program and any removal allowances granted to the POTW, may be modified or withdrawn.)</p> <p>Verify that any POTW requesting POTW pretreatment program approval submits to the Approval Authority three copies of the submission.</p> <p>Verify that the POTW pretreatment program is consistent with any approved water quality management plan developed in accordance with 40 CFR 130, 131, as revised, where such 208 plan includes Management Agency designations and addresses pretreatment in a manner consistent with 40 CFR 403.</p> <p>Verify that the POTW has sufficient resources and qualified personnel to carry out the Pretreatment Program authorities and procedures.</p> <p>(NOTE: In some limited circumstances, funding and personnel may be delayed where:</p> <ul style="list-style-type: none"> <li>– the POTW has adequate legal authority and procedures to carry out the pretreatment program requirements</li> <li>– a limited aspect of the Program does not need to be implemented immediately.)</li> </ul> <p>(NOTE: General Pretreatment regulations (40 CFR 403) apply to the following (40 CFR 403.1(b)):</p> <ul style="list-style-type: none"> <li>– pollutants from non-domestic sources covered by pretreatment standards which are indirectly discharged into or transported by truck or rail or otherwise introduced into POTWs</li> <li>– POTWs which receive wastewater from sources subject to National pretreatment standards</li> <li>– states which have or are applying for NPDES) programs approved in accordance with section 402 of the CWA</li> <li>– any new or existing source subject to pretreatment standards.)</li> </ul> <p>(NOTE: National pretreatment standards do not apply to sources which discharge to a sewer that is not connected to a POTW Treatment Plant.)</p>

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<p><b>WA.20.5.US.</b> POTWs are required to develop and implement an enforcement response plan (40 CFR 403.8(f)(5)) [Added October 2001; Revised January 2006].</p>	<p>Verify that the POTW develops and implements an enforcement response plan that contains detailed procedures indicating how a POTW will investigate and respond to instances of industrial user noncompliance.</p> <p>Verify that the plan, at a minimum:</p> <ul style="list-style-type: none"> <li>– describes how the POTW will investigate instances of noncompliance</li> <li>– describes the types of escalating enforcement responses the POTW will take in response to all anticipated types of industrial user violations and the time periods within which responses will take place</li> <li>– identifies (by title) the official(s) responsible for each type of response</li> <li>– adequately reflects the POTW's primary responsibility to enforce all applicable pretreatment requirements and standards.</li> </ul> <p>(NOTE: General Pretreatment regulations (40 CFR 403) apply to the following (40 CFR 403.1(b)):</p> <ul style="list-style-type: none"> <li>– pollutants from non-domestic sources covered by pretreatment standards which are indirectly discharged into or transported by truck or rail or otherwise introduced into POTWs</li> <li>– POTWs which receive wastewater from sources subject to National pretreatment standards</li> <li>– states which have or are applying for NPDES) programs approved in accordance with section 402 of the CWA</li> <li>– any new or existing source subject to pretreatment standards.)</li> </ul> <p>(NOTE: National pretreatment standards do not apply to sources which discharge to a sewer that is not connected to a POTW Treatment Plant.)</p>
<p><b>WA.20.6.US.</b> POTWs are required to prepare and maintain a list of significant industrial users (40 CFR 403.8(f)(6)) [Added October 2001; Revised January 2006].</p>	<p>Verify that the POTW prepares and maintains a list of its Industrial Users meeting the criteria in 40 CFR 403.3(v)(1).</p> <p>Verify that the list identifies the criteria in 40 CFR 403.3(v)(1) applicable to each Industrial User and, where applicable, also indicates whether the POTW has made a determination that such Industrial User should not be considered a Significant Industrial User.</p> <p>Verify that the initial list is submitted to the Approval Authority or as a non-substantial modification.</p> <p>Verify that modifications to the list are submitted to the Approval Authority.</p>
<p><b>WA.20.7.US.</b> POTWs with approved Pretreatment Programs are required to provide the Approval Authority with a report containing certain information</p>	<p>Verify that POTWs with approved Pretreatment Programs provide the Approval Authority with a report that briefly describes the POTW's program activities, including activities of all participating agencies, if more than one jurisdiction is involved in the local program.</p>



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<p><b>WA.20.9.US.</b> Certain POTWs applying for NPDES permits are required to collect whole effluent toxicity (WET) data and report such data (40 CFR 122.21(j)(5)) [Added October 2001, Revised January 2006].</p>	<ul style="list-style-type: none"> <li>– the date, exact place, methods, and time of sampling and the names of the person or persons taking the samples</li> <li>– the dates analyses were performed</li> <li>– who performed analyses</li> <li>– the analytical techniques, methods used</li> <li>– the results of the analyses.</li> </ul> <p>Verify that the POTW retains for a minimum of 3 yr any records of monitoring activities and results (whether or not such monitoring activities are required) and makes those records available for inspection and copying by the Director and the Regional Administrator.</p> <p>(NOTE: General Pretreatment regulations (40 CFR 403) apply to the following (40 CFR 403.1(b)):</p> <ul style="list-style-type: none"> <li>– pollutants from non-domestic sources covered by pretreatment standards which are indirectly discharged into or transported by truck or rail or otherwise introduced into POTWs</li> <li>– POTWs which receive wastewater from sources subject to National pretreatment standards</li> <li>– states which have or are applying for NPDES) programs approved in accordance with section 402 of the CWA</li> <li>– any new or existing source subject to pretreatment standards.)</li> </ul> <p>(NOTE: National pretreatment standards do not apply to sources which discharge to a sewer that is not connected to a POTW Treatment Plant.)</p> <p>Verify that all applicants provide an identification of any whole effluent toxicity (WET) tests conducted during the 4.5 yr prior to the date of the application on any of the applicant's discharges or on any receiving water near the discharge.</p> <p>Verify that the following applicants submit to the Director the results of valid WET tests for acute or chronic toxicity for samples taken from each outfall through which effluent is discharged to surface waters, except for combined sewer overflows (CSO):</p> <ul style="list-style-type: none"> <li>– all POTWs with design flow rates greater than or equal to one million gallons per day</li> <li>– all POTWs with approved pretreatment programs or POTWs required to develop a pretreatment program</li> <li>– other POTWs, as required by the Director, based on consideration of the following factors: <ul style="list-style-type: none"> <li>– the variability of the pollutants or pollutant parameters in the POTW effluent (based on chemical-specific information, the type of treatment plant, and types of industrial contributors);</li> <li>– the ratio of effluent flow to receiving stream flow</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– existing controls on point or non-point sources, including total maximum daily load calculations for the receiving stream segment and the relative contribution of the POTW</li> <li>– receiving stream characteristics, including possible or known water quality impairment, and whether the POTW discharges to a coastal water, one of the Great Lakes, or a water designated as an outstanding natural resource water</li> <li>– other considerations (including, but not limited to, the history of toxic impacts and compliance problems at the POTW) that the Director determines could cause or contribute to adverse water quality impacts.</li> </ul> <p>(NOTE: Where the POTW has two or more outfalls with substantially identical effluent discharging to the same receiving stream segment, the Director may allow applicants to submit whole effluent toxicity data for only one outfall on a case-by case basis. The Director may also allow applicants to composite samples from one or more outfalls that discharge into the same mixing zone.)</p> <p>Verify that each applicant required to perform WET testing provides one of the following:</p> <ul style="list-style-type: none"> <li>– results of a minimum of four quarterly tests for a year, from the year preceding the permit application</li> <li>– results from four tests performed at least annually in the 4.5 yr period prior to the application, provided the results show no appreciable toxicity using a safety factor determined by the permitting authority.</li> </ul> <p>Verify that applicants conduct tests with multiple species (no less than two species; e.g., fish, invertebrate, plant), and test for acute or chronic toxicity, depending on the range of receiving water dilution.</p> <p>(NOTE: EPA recommends that applicants conduct acute or chronic testing based on the following dilutions:</p> <ul style="list-style-type: none"> <li>– acute toxicity testing if the dilution of the effluent is greater than 1000:1 at the edge of the mixing zone</li> <li>– acute or chronic toxicity testing if the dilution of the effluent is between 100:1 and 1000:1 at the edge of the mixing zone</li> <li>– chronic testing if the dilution of the effluent is less than 100:1 at the edge of the mixing zone.</li> </ul> <p>Acute testing may be more appropriate at the higher end of this range (1000:1), and chronic testing may be more appropriate at the lower end of this range (100:1).)</p> <p>Verify that applicants required to perform WET testing provide the number of chronic or acute WET tests that have been conducted since the last permit reissuance.</p>

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<p><b>WA.20.10.US.</b> POTWs with a currently effective permit must submit a new application at least 180 days before the expiration date of the existing permit (40 CFR 122.21(d)) <b>[Added January 2006].</b></p>	<p>(NOTE: Applicants must provide the results using the form provided by the Director, or test summaries if available and comprehensive, for each WET test for which such information has not been reported previously to the Director.)</p> <p>Verify that WET testing is conducted using methods approved under 40 CFR 136.</p> <p>(NOTE: West coast facilities in Washington, Oregon, California, Alaska, Hawaii, and the Pacific Territories are exempted from 40 CFR part 136 chronic methods and must use alternative guidance as directed by the permitting authority.)</p> <p>Verify that, when submitting WET data to the Director within 4.5 yr prior to the date of the application, applicants provide the dates on which the data were submitted and a summary of the results.</p> <p>Verify that each POTW required to perform whole effluent toxicity testing (WET) provides any information on the cause of toxicity and written details of any toxicity reduction evaluation conducted, if any whole effluent toxicity test conducted within the past 4.5 yr revealed toxicity.</p> <p>Verify that any POTW with a currently effective permit submits a new application at least 180 days before the expiration date of the existing permit</p> <p>(NOTE: This does not apply if permission for a later date has been granted by the Director. The Director shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)</p>



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<p><b>WA.23</b></p> <p><b>CENTRALIZED WASTE TREATMENT FACILITIES</b></p> <p><b>WA.23.1.US.</b> CWTs that introduce process wastewater into a POTW are required to comply with 40 CFR Part 403 (40 CFR 437.1(a) and 437.3) [Added April 2001].</p> <p><b>WA.23.2.US.</b> CWTs are required to meet monitoring requirements (40 CFR 437.1(a) and 437.4) [Added April 2001].</p>	<p>(NOTE: The requirements for Centralized Waste Treatment (CWT) point sources apply to that portion of wastewater discharges from a CWT facility that results from any of the following activities:</p> <ul style="list-style-type: none"> <li>– treatment and recovery of hazardous or non-hazardous industrial metal-bearing wastes, oily wastes and organic-bearing wastes received from off-site</li> <li>– the treatment of CWT wastewater.</li> </ul> <p>See the definition for <i>Excluded CWTs</i>.)</p> <p>Verify that CWTs that introduce process wastewater into a POTW comply with 40 CFR Part 403,</p> <p>(NOTE: The requirements for Centralized Waste Treatment (CWT) point sources apply to that portion of wastewater discharges from a CWT facility that results from any of the following activities:</p> <ul style="list-style-type: none"> <li>– treatment and recovery of hazardous or non-hazardous industrial metal-bearing wastes, oily wastes and organic-bearing wastes received from off-site</li> <li>– the treatment of CWT wastewater.</li> </ul> <p>See the definition for <i>Excluded CWTs</i>.)</p> <p>Verify that any CWT facility that discharges wastewater resulting from the treatment of metal-bearing waste, oily waste, or organic-bearing waste monitors as follows:</p> <ul style="list-style-type: none"> <li>– facilities subject to more than one subpart (i.e., metals treatment, oils treatment and recovery, organics treatment and recovery) monitor for compliance for each subpart after treatment and before mixing of the waste with wastes of any other subpart (NOTE: Alternatively, a multiple waste stream subcategory facility may certify that it provides equivalent treatment for the applicable waste and monitor for compliance with the applicable set of multiple waste stream subcategory limitations after mixing</li> <li>– facilities subject to one or more subpart (i.e., metals treatment, oils treatment and recovery, organics treatment and recovery) monitor for compliance with the applicable subpart after treatment and before mixing of the waste with wastes of any other subpart, uncontaminated storm water, or wastewater subject to another effluent limitation or standard in Subchapter N (NOTE: If, however, the facility can demonstrate to the receiving POTW or permitting authority the capability of achieving the effluent limitation or standard for each subpart after treatment and before mixing with other waste streams, the facility may monitor for compliance after mixing. In the case of a facility that elects to comply with the applicable set of multiple waste stream subcategory limitations or standards, it is only subject to one subpart.)</li> </ul>

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<p><b>WA.23.3.US.</b> The portion of the discharge of wastewater from a CWT facility that results from the treatment of, or recovery of metals from, both metal-bearing wastes received from off-site and other CWT wastewater associated with the treatment of, or recovery of metal-bearing wastes must meet certain parameters (40 CFR 437.1(a) and 437.10 through 437.16) [Added April 2001].</p>	<p>– when a CWT facility treats any waste receipt that contains cyanide at a concentration higher than 136 mg/L, the CWT facility monitors for cyanide after cyanide treatment and before dilution with other waste streams (NOTE: If, however, the facility can demonstrate to the receiving POTW or permitting authority the capability of achieving the cyanide limitation or standard after cyanide treatment and before mixing with other waste streams, the facility may monitor for compliance after mixing.)</p> <p>(NOTE: The requirements for Centralized Waste Treatment (CWT) point sources apply to that portion of wastewater discharges from a CWT facility that results from any of the following activities:</p> <ul style="list-style-type: none"> <li>– treatment and recovery of hazardous or non-hazardous industrial metal-bearing wastes, oily wastes and organic-bearing wastes received from off-site</li> <li>– the treatment of CWT wastewater.</li> </ul> <p>See the definition for <i>Excluded CWTs</i>.)</p> <p>Verify that the portion of the discharge of wastewater from a CWT facility that results from the treatment of, or recovery of metals from, both metal-bearing wastes received from off-site and other CWT wastewater associated with the treatment of, or recovery of metal-bearing wastes meet the following parameters unless an alternative standard has been applied (See Appendix 12-0b):</p> <ul style="list-style-type: none"> <li>– effluent limitations attainable by the application of the best practicable control technology currently available (BPT)</li> <li>– effluent limitations attainable by the application of best conventional pollutant control technology (BCT)</li> <li>– effluent limitations attainable by the application of the best available technology economically achievable (BAT)</li> <li>– new source performance standards (NSPS)</li> <li>– pretreatment standards for existing sources (PSES)</li> <li>– pretreatment standards for new sources (PSNS).</li> </ul> <p>Verify that, in addition to the BPT, BAT, NSPS, PSES, PSNS limitations/standards in Appendix 12-0b, the in-plant BPT, BAT, NSPS, PSES, PSNS limitations/standards limitation for metal-bearing wastewater containing cyanide is a maximum daily discharge of 500 mg/L and a maximum monthly average of 178 mg/L.</p> <p>Verify that the pretreatment standards for existing sources are met no later than 22 December 2003.</p> <p>(NOTE: In order to ensure appropriate treatment rather than dilution of dissimilar wastes, an NPDES permit writer or control authority may require a new source or an existing facility to achieve alternative effluent limitations and standards in the following circumstances:</p>

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<p><b>WA.23.4.US.</b> The portion of the discharge of wastewater from a CWT facility that results from the treatment of, or recovery of, oil from both oily wastes received off-site and other CWT wastewater associated with the treatment or, or recovery of oily wastes must meet certain parameters (40 CFR 437.1(a) and 437.20 through 437.26) [Added April 2001].</p>	<ul style="list-style-type: none"> <li>– the facility receives, on a continuing basis, flows of process wastewater from five or fewer facilities subject to 40 CFR Subchapter N limitations and standards; and</li> <li>– the process wastewater flows received for treatment at the facility have relatively consistent pollutant profiles.)</li> </ul> <p>(NOTE: The requirements for Centralized Waste Treatment (CWT) point sources apply to that portion of wastewater discharges from a CWT facility that results from any of the following activities:</p> <ul style="list-style-type: none"> <li>– treatment and recovery of hazardous or non-hazardous industrial metal-bearing wastes, oily wastes and organic-bearing wastes received from off-site</li> <li>– the treatment of CWT wastewater.</li> </ul> <p>See the definition for <i>Excluded CWTs</i>.)</p> <p>Verify that the portion of the discharge of wastewater from a CWT facility that results from the treatment of, or recovery of, oil from both oily wastes received off-site and other CWT wastewater associated with the treatment or, or recovery of oily wastes meet the following parameters unless an alternative standard has been applied (See Appendix 12-0c):</p> <ul style="list-style-type: none"> <li>– effluent limitations attainable by the application of the best practicable control technology currently available (BPT)</li> <li>– effluent limitations attainable by the application of best conventional pollutant control technology (BCT)</li> <li>– effluent limitations attainable by the application of the best available technology economically achievable (BAT)</li> <li>– new source performance standards (NSPS)</li> <li>– pretreatment standards for existing sources (PSES)</li> <li>– pretreatment standards for new sources (PSNS).</li> </ul> <p>Verify that the pretreatment standards for existing sources are met no later than 22 December 2003.</p> <p>(NOTE: In order to ensure appropriate treatment rather than dilution of dissimilar wastes, an NPDES permit writer or control authority may require a new source or an existing facility to achieve alternative effluent limitations and standards in the following circumstances:</p> <ul style="list-style-type: none"> <li>– the facility receives, on a continuing basis, flows of process wastewater from five or fewer facilities subject to 40 CFR Subchapter N limitations and standards; and</li> <li>– the process wastewater flows received for treatment at the facility have relatively consistent pollutant profiles.)</li> </ul>
<p><b>WA.23.5.US.</b> The portion of the discharge of wastewater from a CWT facility that results from the treatment of,</p>	<p>(NOTE: The requirements for Centralized Waste Treatment (CWT) point sources apply to that portion of wastewater discharges from a CWT facility that results from any of the following activities:</p>

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<p>or recovery of organic material from, both organic wastes received from offsite and other CWT wastewater associated with the treatment of, or recovery of organic wastes must meet certain parameters (40 CFR 437.1(a) and 437.30 through 437.36) [<b>Added April 2001</b>].</p> <p><b>WA.23.6.US.</b> CWTs that treat wastes subject to one or more of the previous Subparts (i.e., metals treatment, oils treatment and recovery, organics treatment and recovery) must meet certain parameters (40 CFR 437.1(a) and 437.40 through 437.47) [<b>Added April 2001</b>].</p>	<ul style="list-style-type: none"> <li>– treatment and recovery of hazardous or non-hazardous industrial metal-bearing wastes, oily wastes and organic-bearing wastes received from off-site</li> <li>– the treatment of CWT wastewater.</li> </ul> <p>See the definition for <i>Excluded CWTs</i>.)</p> <p>Verify that the portion of the discharge of wastewater from a CWT facility that results from the treatment of, or recovery of organic material from, both organic wastes received from offsite and other CWT wastewater associated with the treatment of, or recovery of organic wastes meet the following parameters unless an alternative standard has been applied (See Appendix 12-0d):</p> <ul style="list-style-type: none"> <li>– effluent limitations attainable by the application of the best practicable control technology currently available (BPT)</li> <li>– effluent limitations attainable by the application of best conventional pollutant control technology (BCT)</li> <li>– effluent limitations attainable by the application of the best available technology economically achievable (BAT)</li> <li>– new source performance standards (NSPS)</li> <li>– pretreatment standards for existing sources (PSES)</li> <li>– pretreatment standards for new sources (PSNS).</li> </ul> <p>Verify that the pretreatment standards for existing sources are met no later than 22 December 2003.</p> <p>(NOTE: In order to ensure appropriate treatment rather than dilution of dissimilar wastes, an NPDES permit writer or control authority may require a new source or an existing facility to achieve alternative effluent limitations and standards in the following circumstances:</p> <ul style="list-style-type: none"> <li>– the facility receives, on a continuing basis, flows of process wastewater from five or fewer facilities subject to 40 CFR Subchapter N limitations and standards; and</li> <li>– the process wastewater flows received for treatment at the facility have relatively consistent pollutant profiles.)</li> </ul> <p>(NOTE: The requirements for Centralized Waste Treatment (CWT) point sources apply to that portion of wastewater discharges from a CWT facility that results from any of the following activities:</p> <ul style="list-style-type: none"> <li>– treatment and recovery of hazardous or non-hazardous industrial metal-bearing wastes, oily wastes and organic-bearing wastes received from off-site</li> <li>– the treatment of CWT wastewater.</li> </ul> <p>See the definition for <i>Excluded CWTs</i>.)</p> <p>Verify that CWTs that treat wastes subject to one or more of the previous Subparts (i.e., metals treatment, oils treatment and recovery, organics treatment and recovery) meet the parameters outlined in this checklist item or the provisions in checklist items WA.23.3.US through WA.23.5.US.</p>

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	<p>(NOTE: This checklist item is applicable to that portion of wastewater discharges from a CWT facility that results from mixing any combination of treated or untreated waste only if a facility requests the permit writer or control authority to develop Subpart D limitations (or standards) and establishes that it provides equivalent treatment.)</p> <p>Verify that, if the CWT wants to be subject to the effluent limitations in this checklist item, the CWT submits an initial certification statement to the appropriate permitting authority (either the local control authority (the POTW) or NPDES permit writer), that:</p> <ul style="list-style-type: none"> <li>– includes the signature of the responsible corporate officer</li> <li>– lists and describes the subcategories of wastes accepted for treatment at the facility</li> <li>– lists and describes the treatment systems in-place at the facility and conditions under which the treatment systems are operated for the subcategories of wastes accepted for treatment at the facility</li> <li>– includes information and supporting data establishing that these treatment systems will achieve equivalent treatment.</li> </ul> <p>Verify that the CWT submits a written periodic certification statement to the appropriate permitting authority (the local control authority (the POTW) or NPDES permit writer) that certifies that the facility is operating its treatment systems to provide equivalent treatment as set forth in the initial certification.</p> <p>Verify that, if the facility has modified its treatment systems, the facility submits a description of the modified systems and information and supporting data to establish that the modified system will achieve equivalent treatment.</p> <p>Verify that the periodic certification statement is submitted once a year and signed by the responsible corporate officer.</p> <p>Verify that the onsite compliance data or information retained in the offices of the facility that supports the initial and periodic certification statements.</p> <p>Verify that the paperwork:</p> <ul style="list-style-type: none"> <li>– lists and describes the subcategory wastes being accepted for treatment at the facility</li> <li>– lists and describes the treatment systems in-place at the facility, modifications to the treatment systems and the conditions under which the systems are operated for the subcategories of wastes accepted for treatment at the facility</li> <li>– provides information and supporting data establishing that these treatment systems will achieve equivalent treatment</li> <li>– describes the procedures it follows to ensure that its treatment systems are well-operated and maintained</li> </ul>

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	<p>– explain why the procedures it has adopted will ensure its treatment systems are well operated and maintained.</p> <p>Verify that the standards and limitations in Appendix 12-0e are met.</p> <p>(NOTE: In order to ensure appropriate treatment rather than dilution of dissimilar wastes, an NPDES permit writer or control authority may require a new source or an existing facility to achieve alternative effluent limitations and standards in the following circumstances:</p> <ul style="list-style-type: none"> <li>– the facility receives, on a continuing basis, flows of process wastewater from five or fewer facilities subject to 40 CFR Subchapter N limitations and standards; and</li> <li>– the process wastewater flows received for treatment at the facility have relatively consistent pollutant profiles.)</li> </ul>

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<p><b>WA.25</b></p> <p><b>DISCHARGES TO POTWs/FOTWs</b></p> <p><b>WA.25.1.US.</b> Pollutants must not be discharged into a POTW/ FOTW which would cause pass through or interference (40 CFR 403.5(a) and 403.5(c)(2)).</p> <p><b>WA.25.2.US.</b> Specific pollutants shall not be introduced into a POTW/FOTW (40 CFR 403.5(b)) [Revised January 2006].</p>	<p>Determine the following:</p> <ul style="list-style-type: none"> <li>– what point source discharges are onsite</li> <li>– what drains lead to the treatment works</li> <li>– what do personnel pour down the drains leading to the treatment works</li> <li>– what types of materials are located in areas where spills may reach the drains to the treatment works.</li> </ul> <p>Determine which drains are connected to the sanitary sewer draining to a POTW/ FOTW and possible pollutants entering these drains.</p> <p>Verify that pollutants are not being discharged to a POTW/FOTW that would cause a pass through or interference (see definitions).</p> <p>Determine if the POTW/FOTW has imposed any pretreatment standards or reporting requirements and verify that they are being met.</p> <p>Verify that pollutants which create a fire or explosion hazard in the POTW/FOTW, including, but not limited to, wastestreams with a closed cup flashpoint of less than 140 °F or 60 °C using the test methods specified in 40 CFR 261.21 are not being discharged to the POTW/FOTW.</p> <p>Verify that pollutants that will cause corrosive structural damage to the POTW/ FOTW are not being discharged to a POTW/ FOTW.</p> <p>Verify that in no case are discharges with a pH below 5.0 released.</p> <p>Verify that solid or viscous pollutants in amounts that will cause obstruction to the flow are not being discharged to the POTW/FOTW. Examples are:</p> <ul style="list-style-type: none"> <li>– fish cleaning stations</li> <li>– pieces of metals, rubber, and wood from shops</li> <li>– sand and sediment.</li> </ul> <p>Verify that no pollutants, including pollutants with oxygen demand, are released at a flow rate or concentration that will cause interference with the POTW/FOTW.</p> <p>Verify that heat in amounts that would inhibit biological activity at the POTW/ FOTW resulting in interference is not discharged, including:</p> <ul style="list-style-type: none"> <li>– scrubber water</li> </ul>

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<p><b>WA.25.3.US.</b> The POTW/FOTW is required to be notified immediately of any discharge, including slug loading, that could cause problems to the POTW/FOTW (40 CFR 403.8(f)(2)(vi) and 403.12(f)) [Revised January 2006].</p> <p><b>WA.25.4.US.</b> FOTWs may only accept wastewaters that meet one of four conditions (FFCA, PL 102-386, Section 3023(a)).</p> <p><b>WA.25.5.US.</b> Industrial users that are not required to meet a categorical pretreatment standard are required to submit</p>	<p>– boiler blow down.</p> <p>(NOTE: In no case will the temperatures of discharges result in a temperature at the POTW/FOTW of greater than 40 degrees C (104 degrees F).)</p> <p>Verify that petroleum, oil, nonbiodegradable cutting oil, or products of mineral oil origin are not discharged in amounts that would result in a pass through or interference (specifically check maintenance areas and oil/water separators).</p> <p>Verify that pollutants which would result in the presence of toxic gases, vapors, or fumes within the POTW/FOTW in quantities that would cause acute worker health and safety problems are not discharged.</p> <p>Verify that no trucked or hauled pollutants are discharged except at discharge points designated by the POTW/FOTW.</p> <p>Determine if any exemptions or variances have been granted for discharges.</p> <p>Verify that personnel are aware of the need to notify the POTW/FOTW of any discharge that would cause problems.</p> <p>Verify that, specifically, Significant Industrial Users notify the POTW/FOTW immediately of any changes at its facility affecting potential for a Slug Discharge.</p> <p>Verify that all wastewater being discharged to the FOTW meets one of the following conditions:</p> <ul style="list-style-type: none"> <li>– a pretreatment standard is established for the source and the source is in compliance with the standard</li> <li>– a schedule for establishing a pretreatment standard for the source has been set by the USEPA and the schedule dictates that the standard will be in place by October 1999. Additionally, the source is in compliance with the standard after the effective date of the standard</li> <li>– the industrial source meets land disposal restriction standards under 40 CFR 268</li> <li>– the industrial activity generates less than 100 kg [approx. 220 lb] of hazardous waste per month.</li> </ul> <p>(NOTE: Reporting requirements for Industrial Users not subject to categorical Pretreatment Standards. The Control Authority must require appropriate reporting from those Industrial Users with Discharges that are not subject to categorical Pretreatment Standards.)</p>

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<p>specific reports (40 CFR 403.12(h)) <b>[Revised January 2006]</b>.</p> <p><b>WA.25.6.US.</b> Industrial users are required to notify the POTW, the Regional Waste Management Division Director, and state hazardous waste authorities in writing of any discharges into the POTW of a substance that would be a hazardous waste (40 CFR 403.12(p)).</p> <p><b>WA.25.7.US.</b> FOTWs cannot accept the discharge of any acutely hazardous wastes (FFCA, PL 102- 386, Section 3023(b)).</p> <p><b>WA.25.8.US.</b> All industrial users are required to notify the POTW/ FOTW in advance of any substantial change in the volume or character of</p>	<p>Verify that Significant Non-categorical Industrial Users submit to the Control Authority at least once every 6 mo (on dates specified by the Control Authority) a description of the nature, concentration, and flow of the pollutants required to be reported by the Control Authority.</p> <p>Verify that, in cases where a local limit requires compliance with a Best Management Practice or pollution prevention alternative, the User submits documentation required by the Control Authority to determine the compliance status of the User.</p> <p>Verify that these documentation reports are based on sampling and analysis performed in the period covered by the report, and in accordance with the techniques described in 40 CFR 136.</p> <p>(NOTE: This sampling and analysis may be performed by the Control Authority in lieu of the significant non-categorical Industrial User.)</p> <p>Determine if any substance is discharged to a POTW that would be classified as a hazardous waste if disposed of in any other manner.</p> <p>Verify that if they are discharging a hazardous waste to the POTW, the correct people have been notified of the following:</p> <ul style="list-style-type: none"> <li>– the name of the waste</li> <li>– the type of discharge (batch, continuous, or other)</li> <li>– USEPA hazardous waste number.</li> </ul> <p>Verify that if the discharge is more than 100 kg/mo, the following information is also included to the extent that it is known and readily available:</p> <ul style="list-style-type: none"> <li>– identification of the hazardous constituents</li> <li>– an estimate of the mass and concentrations of the constituents in the waste discharges during the calendar month.</li> </ul> <p>Verify that if any hazardous waste is discharged to the FOTW, it is not acutely hazardous waste.</p> <p>Verify that all Industrial Users promptly notify the Control Authority (and the POTW if the POTW is not the Control Authority) in advance of any substantial change in the volume or character of pollutants in their Discharge, including the listed or characteristic hazardous wastes for which the Industrial User has submitted initial notification.</p>

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<p>pollutants in their discharge (40 CFR 403.12(j)) [Revised January 2006].</p> <p><b>WA.25.9.US.</b> Industrial users and POTWs/ FOTWs are required to keep specific reports (40 CFR 403.12(o)) [Revised January 2006].</p> <p><b>WA.25.10.US.</b> Industrial users which are determined to be a Non-Significant Categorical Industrial User must submit a certification (40 CFR 403.12(o)) [Added January 2006].</p>	<p>Verify that records are kept of all information resulting from monitoring activities, including documentation associated with Best Management Practices.</p> <p>Verify that the records include for all samples the following information:</p> <ul style="list-style-type: none"> <li>– the date, exact place, methods, and time of sampling and the names of the person or persons taking the samples</li> <li>– the dates analyses were performed</li> <li>– who performed analyses</li> <li>– the analytical techniques, methods used</li> <li>– the results of the analyses.</li> </ul> <p>Verify that Industrial Users retain for a minimum of 3 yr any records of monitoring activities and results (whether or not such monitoring activities are required) and makes those records available for inspection and copying by the Director and the Regional Administrator (and POTW in the case of an Industrial User).</p> <p>Verify that a facility determined to be a Non-Significant Categorical Industrial User annually submits the following certification statement:</p> <p style="padding-left: 40px;">Based on my inquiry of the person or persons directly responsible for managing compliance with the categorical Pretreatment Standards under 40 CFR -----, I certify that, to the best of my knowledge and belief that during the period from -----, to -----, ----- [month, days, year]:</p> <p style="padding-left: 40px;">The facility described as ----- [facility name] met the definition of a non-significant categorical Industrial User as described in 40 CFR 403.3(v)(2);</p> <p style="padding-left: 40px;">The facility complied with all applicable Pretreatment Standards and requirements during this reporting period; and</p> <p style="padding-left: 40px;">(c) the facility never discharged more than 100 gallons of total categorical wastewater on any given day during this reporting period.</p> <p>Verify that the certification accompanies any alternative report required by the Control Authority.</p>

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<p><b>WA.41</b></p> <p><b>MISCELLANEOUS EFFLUENT LIMITATIONS</b></p> <p><b>WA.41.1.US.</b> Process wastewater discharges from oily operations (see definitions) to surface waters from certain metal product and machinery (MP&amp;M) sectors must meet specific parameters (40 CFR 438.1, 438.12, and 438.13) [Added July 2003; Citation Revised July 2018].</p>	<p>(NOTE: This checklist item applies to:</p> <ul style="list-style-type: none"> <li>– direct discharges resulting from the washing of cars, aircraft or other vehicles, when performed as a preparatory step prior to one or more successive manufacturing, rebuilding, or maintenance operations</li> <li>– process wastewater discharges from oily operations [see the definitions and Appendix 12-Of] to surface waters from existing or new industrial facilities [including facilities owned and operated by Federal, State, or local governments] engaged in manufacturing, rebuilding, or maintenance of metal parts, products, or machines for use in the following MP&amp;M industrial sectors: <ul style="list-style-type: none"> <li>– Aerospace</li> <li>– Aircraft</li> <li>– Bus and Truck</li> <li>– Electronic Equipment</li> <li>– Hardware</li> <li>– Household Equipment</li> <li>– Instruments</li> <li>– Miscellaneous Metal Products</li> <li>– Mobile Industrial Equipment</li> <li>– Motor Vehicle</li> <li>– Office Machine</li> <li>– Ordnance</li> <li>– Precious Metals and Jewelry</li> <li>– Railroad</li> <li>– Ships and Boats</li> <li>– Stationary Industrial Equipment.)</li> </ul> </li> </ul> <p>Verify that, except as provided at 40 CFR 125.30 through 125.32, any existing point source achieves the following effluent limitations representing the application of BPT:</p> <ul style="list-style-type: none"> <li>– TSS is a maximum daily of 62 mg/L (ppm) or less</li> <li>– O&amp;G (as HEM) is a maximum daily of 46 mg/L (ppm) or less.</li> </ul> <p>Verify that, except as provided at 40 CFR 125.30 through 125.32, any existing point source discharges remain within the pH range 6 to 9.</p> <p>Verify that, except as provided at 40 CFR 125.30 through 125.32, any existing point source achieves the following effluent limitations representing the application of BCT:</p>

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	<ul style="list-style-type: none"> <li>– TSS is a maximum daily of 62 mg/L (ppm) or less</li> <li>– O&amp;G (as HEM) is a maximum daily of 46 mg/L (ppm) or less.</li> </ul> <p>Verify that each new point source that commences discharge after 12 June 2003 achieves the following effluent limitations:</p> <ul style="list-style-type: none"> <li>– TSS is a maximum daily of 62 mg/L (ppm) or less</li> <li>– O&amp;G (as HEM) is a maximum daily of 46 mg/L (ppm) or less.</li> </ul> <p>Verify that each new point source that commences discharge after 12 June 2003 remains within the pH range 6 to 9.</p> <p>(NOTE: This checklist item does not apply to:</p> <ul style="list-style-type: none"> <li>– process wastewaters from metal-bearing operations [see definitions and Appendix 12-0g] or process wastewaters which are subject to the limitations and standards of other effluent limitations guidelines [e.g., Metal Finishing (40 CFR 433) or Iron and Steel Manufacturing (40 CFR 420)]</li> <li>– process wastewaters from oily operations commingled with process wastewaters already covered by other effluent limitations guidelines or with process wastewaters from metal-bearing operations</li> <li>– wastewater discharges resulting from the washing of cars, aircraft or other vehicles, when performed only for aesthetic or cosmetic purposes</li> <li>– wastewater discharges from railroad line maintenance facilities [see definitions]</li> <li>– non-process wastewater as defined at 40 CFR 438.2(e) [see definitions]</li> <li>– wastewater discharges introduced into a POTW or a Federally owned and operated Treatment Works Treating Domestic Sewage (TWTDS)</li> <li>– process wastewater generated by maintenance and repair</li> <li>– activities at gasoline service stations, passenger car rental facilities, or utility trailer and recreational vehicle rental facilities</li> <li>– wastewater discharges generated from gravure cylinder preparation or metallic platemaking conducted within or for printing and publishing facilities</li> <li>– wastewater discharges in or on dry docks and similar structures, such as graving docks, building ways, marine railways, lift barges at shipbuilding facilities [or shipyards], and ships that are afloat</li> <li>– wastewater generated by facilities primarily performing drum reconditioning and cleaning to prepare metal drums for resale, reuse, or disposal.)</li> </ul> <p>(NOTE: Wastewater discharges from railroad overhaul or heavy maintenance facilities [see definitions] may be covered by the Metal Finishing Point Source Category [40 CFR 433], or by other effluent limitations guidelines, as applicable.)</p>

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<p><b>WA.43</b></p> <p><b>CONSTRUCTION AND DEVELOPMENT POINT SOURCES</b></p> <p><b>WA.43.1.US.</b> Point sources subject to the Construction and Development Point Source Category are required to achieve effluent limitations representing the degree of effluent reduction attainable by application of the best practicable control technology currently available (BPT), best available technology economically achievable (BAT), and best conventional pollutant control technology (BCT) (40 CFR 450.10(a), 450.10(d), 450.21, 450.22(c) through 450.22(h), and 450.23) [Added January 2010; Revised April 2014].</p>	<p>(NOTE: This checklist item applies to discharges associated with the following construction activity required to obtain NPDES permit coverage:</p> <ul style="list-style-type: none"> <li>– construction activity including clearing, grading and excavation, except operations that result in the disturbance of less than 5 acres of total land area</li> <li>– construction activity including the disturbance of less than 5 acres of total land area that is a part of a larger common plan of development or sale if the larger common plan will ultimately disturb 5 acres or more</li> <li>– stormwater discharge associated with small construction activity (see definition.</li> </ul> <p>It does not apply to new sources which started construction activity after 1 February 2010.)</p> <p>(NOTE: This checklist item does not apply to 40 CFR 125.30 through 125.32 concerning the application of alternative effluent limitations.)</p> <p>Verify that point sources subject to the Construction and Development Point Source Category achieve, at a minimum, effluent limitations representing the degree of effluent reduction attainable by application of the BPT currently available.</p> <p>(NOTE: Currently the BPT, BAT, and BCT requirements are the same.)</p> <p>Verify that, at a minimum, erosion and sedimentation controls are designed, installed and maintained to:</p> <ul style="list-style-type: none"> <li>– control stormwater volume and velocity to minimize soil erosion in order to minimize pollutant discharges</li> <li>– control stormwater discharges including both peak flowrates and total stormwater volume, to minimize channel and streambank erosion and scour in the immediate vicinity of the discharge points</li> <li>– minimize the amount of soil exposed during construction activity</li> <li>– minimize the disturbance of steep slopes</li> <li>– minimize sediment discharges from the site by addressing factors such as the amount, frequency, intensity and duration of precipitation, the nature of resulting stormwater runoff, and soil characteristics, including the range of soil particle sizes expected to be present on the site</li> <li>– provide and maintain natural buffers around waters of the United States, direct stormwater to vegetated areas and maximize stormwater infiltration to reduce pollutant discharges, unless infeasible</li> </ul>

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	<ul style="list-style-type: none"> <li>– minimize soil compaction, although minimizing soil compaction is not required where the intended function of a specific area of the site dictates that it be compacted</li> <li>– unless infeasible, preserve topsoil; preserving topsoil is not required where the intended function of a specific area of the site dictates that the topsoil be disturbed or removed.</li> </ul> <p>Verify that stabilization of disturbed areas is, at a minimum, initiated immediately whenever any clearing, grading, excavating or other earth disturbing activities have permanently ceased on any portion of the site, or temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days.</p> <p>(NOTE: In arid, semiarid, and drought-stricken areas where initiating vegetative stabilization measures immediately is infeasible, alternative stabilization measures must be employed as specified by the permitting authority. Stabilization must be completed within a period of time determined by the permitting authority. In limited circumstances, stabilization may not be required if the intended function of a specific area of the site necessitates that it remain disturbed.)</p> <p>(NOTE: Discharges from dewatering activities, including discharges from dewatering of trenches and excavations, are prohibited unless managed by appropriate controls.)</p> <p>Verify that, at a minimum, pollution prevention measures are designed, installed, implemented and maintained to:</p> <ul style="list-style-type: none"> <li>– minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters while wash waters are treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge</li> <li>– minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste and other materials present on the site to precipitation and to stormwater except that minimization of exposure is not required in cases where the exposure to precipitation and to stormwater will not result in a discharge of pollutants, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use)</li> <li>– minimize the discharge of pollutants from spills and leaks and implement chemical spill and leak prevention and response procedures.</li> </ul> <p>Verify that the following discharges do not happen:</p> <ul style="list-style-type: none"> <li>– wastewater from washout of concrete, unless managed by an appropriate control</li> <li>– wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials</li> </ul>

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<p><b>WA.43.2.US.</b> Checklist item deleted (Deleted April 2014) [Added January 2010; Revised April 2010; Revised January 2011; Deleted April 2014].</p> <p><b>WA.43.3.US.</b> New point sources subject to the Construction and Development Point Source category are required to achieve effluent limitations representing new source performance standards reflecting the best available demonstrated control technology (40 CFR 450.10(a), 450.10(c), 450.24) [Added January 2010].</p>	<ul style="list-style-type: none"> <li>– fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance</li> <li>– soaps or solvents used in vehicle and equipment washing.</li> </ul> <p>Verify that, when discharging from basins and impoundments, outlet structures that withdraw water from the surface are used unless infeasible.</p> <p>(NOTE: This checklist item based on the BAT requirements in 40 CFR 450.22 was deleted when 450.22(a) and 450.22(b) were removed and reserved.)</p> <p>(NOTE: This checklist item applies to discharges associated with the following new construction activity starting after 1 February 2010 which is required to obtain NPDES permit coverage:</p> <ul style="list-style-type: none"> <li>– construction activity including clearing, grading and excavation, except operations that result in the disturbance of less than 5 acres of total land area</li> <li>– construction activity including the disturbance of less than 5 acres of total land area that is a part of a larger common plan of development or sale if the larger common plan will ultimately disturb 5 acres or more</li> <li>– stormwater discharge associated with small construction activity [see definitions].)</li> </ul> <p>Verify that any new source achieves, at a minimum, the new source performance standards representing the degree of effluent reduction attainable by application of the best available demonstrated control technology described in 40 CFR 450.22 (see checklist item WA.43.2.US).</p>



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<b>EFFLUENT LIMITATIONS FOR STEAM ELECTRIC POWER GENERATING SOURCES</b>  <b>WA.45</b> <b>General</b>  <b>WA.45.1.US.</b> Steam electric power generating point sources are subject to certain point source effluent limitations (40 CFR 423.12(b)(1) through 423.12(b)(2) and 423.12(b)(12)).  <b>WA.45.2.US.</b> Steam electric power generating point sources are subject to certain point source effluent limitations (40 CFR 423.12(b)(3) through 423.12(b)(7) and 423.12(b)(12)).	<p>Verify that the following limitations for steam generation point source effluent are met:</p> <ul style="list-style-type: none"> <li>– pH of all discharges, except once through cooling water, is in the range of 6.0 to 9.0</li> <li>– there is no discharge of PCB compounds.</li> </ul> <p>(NOTE: If waste streams from various sources are combined for treatment or discharge, the quantity of each pollutant or pollutant property attributable to each contributing waste source are subject to the limitations listed here.)</p> <p>(NOTE: This applies to electricity power generating facilities utilizing fossil-type fuel or nuclear fuel in conjunction with a thermal cycle employing the steam water system as the thermodynamic medium.)</p> <p>Verify that the quantity of pollutant discharged from low volume waste sources and in fly ash and bottom ash transport water do not exceed the quantity determined by multiplying the flow of either source times the concentration listed in Table 1 of Appendix 12-1.</p> <p>Verify that the quantity of pollutants discharged in metal cleaning wastes do not exceed the quantity determined by multiplying the flow of metal cleaning wastes times the concentration listed in Table 2 of Appendix 12-1.</p> <p>Verify that the quantity of free available chlorine discharged in once through cooling water or in cooling tower blow down does not exceed the quantity determined by multiplying the flow of either source times the concentration listed below:</p> <ul style="list-style-type: none"> <li>– maximum concentration (mg/l) = 0.5</li> <li>– average concentration (mg/l) = 0.2.</li> </ul> <p>(NOTE: If waste streams from various sources are combined for treatment or discharge, the quantity of each pollutant or pollutant property attributable to each contributing waste source are subject to the limitations listed here.)</p>

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<p><b>WA.45.3.US.</b> Discharges of free available chlorine and total residual chlorine are subject to certain point source effluent limitations (40 CFR 423.12(b)(8) and 423.12(b)(12)).</p> <p><b>WA.45.4.US.</b> Discharges of coal pile runoff are subject to certain point source effluent limitations (40 CFR 423.12(b)(9) through 423.12(b)(11) and 423.12(b)(12)).</p> <p><b>WA.45.5.US.</b> Steam electric power generating point sources are subject to certain BAT point source effluent limitations (40 CFR 423.13(a), 423.13(d), 423.13(e), 423.13(g), and 423.13(h)) [Revised October 2017].</p>	<p>(NOTE: This applies to electricity power generating facilities utilizing fossil-type fuel or nuclear fuel in conjunction with a thermal cycle employing the steam water system as the thermodynamic medium.)</p> <p>Verify that neither free available chlorine nor total residual chlorine are discharged from any unit for more than 2 h per day and not more than one unit in any plant discharges at a time unless permission to do so has been granted by the appropriate authority.</p> <p>(NOTE: If waste streams from various sources are combined for treatment or discharge, the quantity of each pollutant or pollutant property attributable to each contributing waste source are subject to the limitations listed here.)</p> <p>Determine if there are discharges of coal pile runoff.</p> <p>Verify that the maximum concentration for any time of TSS does not exceed 50 mg/L.</p> <p>(NOTE: If waste streams from various sources are combined for treatment or discharge, the quantity of each pollutant or pollutant property attributable to each contributing waste source are subject to the limitations listed here.)</p> <p>Determine if there are steam electric power generating point sources.</p> <p>Verify that there is no discharge of PCB compounds.</p> <p>Verify that the quantity of pollutants discharged in cooling tower blow down do not exceed the quantity determined by multiplying the flow of cooling tower blow down times the concentrations listed in Table 3 of Appendix 12-1.</p> <p>Verify that neither free available chlorine nor total residual chlorine is discharged from any unit for more than 2 h in any 1 day and not more than one unit at a time in any plant discharges these compounds, unless the utility has a permit to do so from the appropriate authority.</p> <p>Verify that the quantity of pollutants discharged in chemical metal cleaning wastes does not exceed the quantity determined by multiplying the flow of chemical metal cleaning wastes times the concentration lists in Table 4 of Appendix 12-1.</p> <p>(NOTE: If waste streams from various sources are combined for treatment or discharge, the quantity of each pollutant or pollutant property attributable to each contributing waste source are subject to the effluent limitations listed here.)</p>

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<p><b>WA.45.6.US.</b> Steam electric power generator facilities rated at a capacity of 25 MW or more are subject to certain point source effluent limitations (40 CFR 423.13(b)).</p>	<p>Determine if there are steam electric power generators rated at a capacity of 25 MW or more.</p> <p>Verify that the quantity of total residual chlorine discharged in once through cooling water from each discharge point does not exceed the quantity determined by multiplying the flow of once through cooling water from each discharge point times a maximum concentration (mg/L) of 0.20.</p> <p>Verify that total residual chlorine is not discharged from any single generating unit for more than 2 h per day, unless permits to do so have been obtained from the appropriate authority.</p>
<p><b>WA.45.7.US.</b> Steam electric power generator facilities rated at a capacity of 25 MW or fewer are subject to certain point source effluent limitations (40 CFR 423.13(c)).</p>	<p>Determine if there are steam electric power generators rated at a capacity of 25 MW or fewer.</p> <p>Verify that the quantity of free available chlorine discharged in once through cooling water does not exceed the quantity determined by multiplying the flow of once through cooling water sources times the concentration listed:</p> <ul style="list-style-type: none"> <li>– maximum concentration (mg/L) = 0.5</li> <li>– average concentration (mg/L) = 0.2.</li> </ul> <p>Verify that neither free available chlorine nor total residual chlorine is discharged from any unit for more than 2 h in any one day and not more than one unit at a time in any plant discharges these compounds, unless the utility has a permit to do so from the appropriate authority.</p>





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<p>certain pretreatment standards (40 CFR 423.17).</p> <p><b>WA.50.3.US.</b> New steam electric power generator facilities having a total rated electric generating capacity of 25 or more MW are subject to certain point source effluent limitations (40 CFR 423.15(h)).</p> <p><b>WA.50.4.US.</b> New steam electric power generator facilities having a total rated electric generating capacity of 25 MW or fewer are subject to certain point source effluent limitations (40 CFR 423.15(i)).</p> <p><b>WA.50.5.US.</b> Discharges of coal pile runoff are subject to certain point source effluent limitations (40 CFR 423.15(k) and 423.15(n)).</p>	<p>Verify that discharge of copper (total) in chemical metal cleaning wastes from new sources into POTWs/FOTWs does not exceed the maximum concentration for one day of 1.0 mg/L.</p> <p>Verify that pollutants discharge in cooling tower blow down from new sources does not exceed the concentration listed in Table 7 of Appendix 12-1.</p> <p>Verify that there is no discharge of wastewater pollutants from fly ash transport water from new sources into POTWs/FOTWs.</p> <p>Determine if there is a new steam electric power generator facilities having a total rated electric generating capacity of 25 or more MW.</p> <p>Verify that the quantity of total residual chlorine discharged in once through cooling water from each discharge point does not exceed the quantity determined by multiplying the flow of once through cooling water from each discharge point times 0.20 mg/L.</p> <p>Verify that total residual chlorine is not discharged from any single generating unit for more than 2 h per day, unless permitted to do so by the appropriate authority.</p> <p>(NOTE: Simultaneous multi-unit chlorination is permitted.)</p> <p>Determine if there is a steam electric power generator facility having a total rated electric generating capacity of 25 MW or fewer.</p> <p>Verify that the quantity of free available chlorine discharge in once through cooling water does not exceed the quantity determined by multiplying the flow of once through cooling water sources times the concentration listed:</p> <ul style="list-style-type: none"> <li>– maximum concentration (mg/L) = 0.5</li> <li>– average concentration (mg/L) = 0.2.</li> </ul> <p>Verify that neither free available chlorine nor total residual chlorine is discharged at any one time, unless the utility has been permitted to do so by the appropriate authority.</p> <p>Determine if there is a coal pile storage areas.</p> <p>Verify that the quantity of TSS discharge in coal pile runoff does not exceed 50 mg/L.</p>

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	(NOTE: Any untreated overflow from areas designed, constructed, and operated to treat the coal pile runoff resulting from a 10-yr, 24-h rainfall event is not subject to this limitation.)



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<b>EFFLUENT LIMITATIONS FOR STEAM ELECTRIC POWER GENERATING SOURCES</b>  <b>WA.55</b> <b>Existing Sources</b>  <b>WA.55.1.US.</b> Pollutants from existing steam electric generating sources introduced into a POTW/FOTW are subject to certain pretreatment standards (40 CFR 423.16).	<p>Verify that there is no discharge of PCB compounds from existing sources into a POTW/FOTW.</p> <p>Verify that copper (total) discharged in chemical metal cleaning wastes from existing sources into a POTW/FOTW do not exceed the maximum for any 1 day of 1.0 mg/L.</p> <p>Verify that the pollutants discharged in cooling tower blow down from existing sources into a POTW/FOTW do not exceed the concentration listed in Table 6 of Appendix 12-1.</p>



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<p><b>WA.60</b></p> <p><b>EFFLUENT LIMITATIONS FOR ELECTROPLATING POINT SOURCES</b></p> <p><b>WA.60.1.US.</b> Electroplating operations are subject to certain point source effluent limitations (40 CFR 413.01(a) through 413.01(c) and 413.04).</p> <p><b>WA.60.2.US.</b> Existing electroplating point sources that introduce pollutants into a POTW/FOTW that discharge less than 38,000 L (10,000 gal) per calendar day of electroplating process wastewaters resulting from the electroplating of common metals, are subject to certain pretreatment standards (40 CFR 413.10, 413.14(a), 413.14(b), and 413.14(f)).</p>	<p>(NOTE: These requirements only apply to integrated facilities (i.e. facilities where the electroplating process water is mixed with all the other Federal facilities wastewater).)</p> <p>Determine if there are electroplating operations.</p> <p>(NOTE: See Appendix 12-2 for similar but excepted operations.)</p> <p>Verify that pretreated pollutant standards are measured by determining the relevant subcategory from the corresponding daily and 4-day average values listed in Table 1 in Appendix 12-2.</p> <p>Verify that where electroplating process wastewaters are combined with regulated wastewaters that have 30-day average standards, the corresponding 30-day average standard for electroplating is used.</p> <p>(NOTE: These requirements only apply to integrated facilities (i.e. facilities where the electroplating process water is mixed with all the other Federal facilities wastewater).)</p> <p>(NOTE: Electroplating of common metals refers to electroplating with copper, nickel, chromium, zinc, tin, lead, cadmium, iron, aluminum, or any combination of these.)</p> <p>Determine if there are existing sources that introduce pollutants into a POTW/FOTW that discharges less than 38,000 L (10,000 gal) per calendar day of electroplating process wastewaters resulting from the electroplating of common metals.</p> <p>Verify that the source's wastewater meets the limitations listed in Table 2 of Appendix 12-2.</p> <p>Verify that the use of process wastewater is not augmented or otherwise diluted as a partial or total substitute for adequate treatment to achieve compliance with the limitations.</p> <p>Verify that the source's wastewater TTO is limited to 4.57 mg/L maximum for any 1 day.</p>

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<p><b>WA.60.3.US.</b> Existing sources that introduce pollutants into a POTW/FOTW that discharge 38,000 L (10,000 gal) or more per calendar day of electroplating process wastewaters resulting from the electroplating of common metals, are subject to certain pretreatment standards (40 CFR 413.10, 413.14(a), 413.14(c) through 413.14(e), and 413.14(g)).</p>	<p>(NOTE: These requirements only apply to integrated facilities (i.e. facilities where the electroplating process water is mixed with all the other Federal facilities wastewater).)</p> <p>(NOTE: Electroplating of common metals refers to electroplating with copper, nickel, chromium, zinc, tin, lead, cadmium, iron, aluminum, or any combination of these.)</p> <p>Determine if there are existing sources that introduce pollutants into a POTW/FOTW that discharges 38,000 L (10,000 gal) or more per calendar day of electroplating process wastewaters resulting from the electroplating of common metals.</p> <p>Verify that the source's wastewater meets the limitations listed in Table 3 of Appendix 12-2.</p> <p>(NOTE: Mass-based standards are equivalent to and may be applied in place of those listed in Table 3 upon prior agreement between the discharger and the treatment works receiving the wastes.)</p> <p>Verify that the use of process wastewater is not augmented or otherwise diluted as a partial or total substitute for adequate treatment to achieve compliance with the limitations.</p> <p>Verify that if there is an absence of chelating agents in the pretreatment process, after reduction of hexavalent chromium wastes, and after neutralization using calcium oxide (or hydroxide) the limitations listed in Table 4 of Appendix 12-2 are met.</p> <p>Verify that the source's wastewater TTO is limited to 2.13 mg/L maximum for any 1 day.</p>
<p><b>WA.60.4.US.</b> Existing electroplating point sources that introduce pollutants into a POTW/FOTW that discharge less than 38,000 L (10,000 gal) per calendar day of electroplating process wastewaters resulting from chromating, phosphating or immersion plating on ferrous or non ferrous materials, are subject to certain pre-treatment standards (40 CFR</p>	<p>(NOTE: These requirements only apply to integrated facilities [i.e. facilities where the electroplating process water is mixed with all the other Federal facilities wastewater].)</p> <p>Determine if there are existing electroplating point sources that introduce pollutants into a POTW/FOTW that discharges less than 38,000 L (10,000 gal) per calendar day of electroplating process wastewaters resulting from chromating, phosphating, or immersion plating on ferrous or nonferrous materials.</p> <p>Verify that the source's wastewater meets the limitations listed in Table 2 of Appendix 12-2.</p> <p>Verify that the use of process wastewater is not augmented or otherwise diluted as a partial or total substitute for adequate treatment to achieve compliance with the limitations.</p>

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<p>413.50, 413.54(a), 413.54(b), and 413.54(f)).</p> <p><b>WA.60.5.US.</b> Existing electroplating point sources that introduce pollutants into a POTW/FOTW that discharge 38,000 L (10,000 gal) or more per calendar day of electroplating process wastewaters resulting from chromating, phosphating or immersion plating on ferrous or non ferrous materials, are subject to certain pre-treatment standards (40 CFR 413.50, 413.54(a), 413.54(c) through 413.54(e), and 413.54(g)).</p> <p><b>WA.60.6.US.</b> Existing electroplating point sources that introduce pollutants into a POTW/FOTW that discharge less than 38,000 L (10,000 gal) per calendar day of electroplating process wastewaters resulting from electroless plating, are subject to certain pretreatment standards (40 CFR 413.70, 413.74(a), 413.74(b), and 413.74(f)).</p>	<p>Verify that the source's wastewater TTO is limited to 4.57 mg/L maximum.</p> <p>(NOTE: These requirements only apply to integrated facilities [i.e. facilities where the electroplating process water is mixed with all the other Federal facilities wastewater])</p> <p>Determine if there are existing electroplating point sources that introduce pollutants into a POTW/FOTW that discharges 38,000 L (10,000 gal) or more per calendar day of electroplating process wastewaters resulting from chromating, phosphating, or immersion plating.</p> <p>Verify that the source's wastewater meets the limitations listed in Table 3 of Appendix 12-2.</p> <p>(NOTE: Mass-based standards are equivalent to and may be applied in place of those listed in Table 3 upon prior agreement between the discharger and the treatment works receiving the wastes.)</p> <p>Verify that the use of process wastewater is not augmented or otherwise diluted as a partial or total substitute for adequate treatment to achieve compliance with the limitations.</p> <p>Verify that if there is an absence of chelating agents in the pretreatment process, after reduction of hexavalent chromium wastes, and after neutralization using calcium oxide (or hydroxide), the limitations listed in Table 4 of Appendix 12-2 are met.</p> <p>Verify that the source's wastewater TTO is limited to 2.13 mg/L maximum for any 1 day.</p> <p>(NOTE: These requirements only apply to integrated facilities [i.e. facilities where the electroplating process water is mixed with all the other Federal facilities wastewater].)</p> <p>(NOTE: Electroless plating refers to electroless plating of a metallic layer on a metallic or nonmetallic substrate.)</p> <p>Determine if there are existing electroplating point sources that introduce pollutants into a POTW/FOTW that discharges less than 38,000 L (10,000 gal) per calendar day of electroplating process wastewaters resulting from the electroless plating.</p> <p>Verify that the source's wastewater meets the limitations listed in Table 2 of Appendix 12-2.</p>

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<p><b>WA.60.7.US.</b> Existing electroplating point sources that discharge pollutants into a POTW/FOTW that discharge 38,000 L (10,000 gal) or more per calendar day of electroplating process wastewaters resulting from electroless plating, are subject to certain pretreatment standards (40 CFR 413.70, 413.74(a), 413.74(c) through 413.74(e), and 413.74(g)).</p>	<p>Verify that the use of process wastewater is not augmented or otherwise diluted as a partial or total substitute for adequate treatment to achieve compliance with the limitations.</p> <p>Verify that the source's wastewater TTO is limited to 4.57 mg/L maximum.</p> <p>(NOTE: These requirements only apply to integrated facilities (i.e. facilities where the electroplating process water is mixed with all the other Federal facilities wastewater).)</p> <p>(NOTE: Electroless plating refers to electroless plating of a metallic layer on a metallic or nonmetallic substrate.)</p> <p>Determine if there are existing electroplating point sources that introduce pollutants into a POTW/FOTW that discharges 38,000 L (10,000 gal) or more per calendar day of process wastewaters resulting from electroless plating.</p> <p>Verify that the source's wastewater meets the limitations listed in Table 3 of Appendix 12-2.</p> <p>(NOTE: Mass-based standards are equivalent to and may be applied in place of those listed in Table 3 upon prior agreement between the discharger and the treatment works receiving the wastes.)</p> <p>Verify that the use of process wastewater is not augmented or otherwise diluted as a partial or total substitute for adequate treatment to achieve compliance with the limitations.</p> <p>Verify that if there is an absence of chelating agents in the pretreatment process after reduction of hexavalent chromium wastes, and after neutralization using calcium oxide (or hydroxide), the limitations listed in Table 4 of Appendix 12-2 are met.</p> <p>Verify that the source's wastewater TTO is limited to 2.13 mg/L maximum for any 1 day.</p>

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<b>EFFLUENT LIMITATIONS FOR METAL FINISHING POINT SOURCES</b>  <b>WA.65</b> <b>General</b>  <b>WA.65.1.US.</b> Shops performing electroplating, electroless plating, anodizing, coating (chromating, phosphating, and coloring), chemical etching and milling, and printed circuit board manufacture are subject to certain point source effluent limitation (40 CFR 433.10 through 433.12(c)).  <b>WA.65.2.US.</b> Shops performing electroplating, electroless plating, anodizing, coating (chromating, phosphating, and coloring), chemical etching and milling, and printed circuit board manufacture are subject to certain BPT point source effluent limitation (40 CFR 433.12(b) and 433.13).  <b>WA.65.3.US.</b> Shops performing electroplating, electroless plating, anodizing, coating (chromating,	Determine if there are shops performing electroplating, electroless plating, anodizing, coating (chromating, phosphating, and coloring), chemical etching and milling, and printed circuit board manufacture.  (NOTE: If any of the listed processes are performed, then refer to Appendix 12-3 for an additional listing of process operations subject to limitations under this regulation.)  Verify that self-monitoring of cyanide is conducted after cyanide treatment and before dilution with other streams.  Verify that the pollutants discharged from metal finishing point sources meet the limitations listed in Table 1 of Appendix 12-3).  Verify that oil and grease does not exceed the following:  – maximum for any one day of 52 mg/L – monthly average of 26 mg/L.  Verify that TSS does not exceed the following:  – maximum for any one day of 60 mg/L – monthly average of 31 mg/L.  Verify that the pH is within the 6.0 to 9.0 range.  Verify that the use of process wastewater is not augmented or otherwise diluted as a partial or total substitute for adequate treatment to achieve compliance.  (NOTE: An indirect discharge may make a certification instead of required TTO monitoring if a solvent management plan has been submitted to the permitting or control authority.)  Determine if there are shops performing electroplating, electroless plating, anodizing, coating (chromating, phosphating, and coloring), chemical etching and milling, and printed circuit board manufacture.

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<p>phosphating, and coloring), chemical etching and milling, and printed circuit board manufacture are subject to certain BAT point source effluent limitation (40 CFR 433.14).</p>	<p>Verify that the pollutants in discharge from metal finishing point sources meet the limitations listed in Table 1 of Appendix 12-3.</p> <p>(NOTE: Alternately, if cyanide treatment is done and permitted by the appropriate authority, the following amenable limits may apply for cyanide:</p> <ul style="list-style-type: none"> <li>– maximum for any 1 day = 0.86 mg/L</li> <li>– maximum monthly average = 0.32 mg/L.)</li> </ul> <p>Verify that the use of metal finishing process wastewater is not augmented or otherwise diluted as a partial or total substitute for adequate treatment to achieve compliance with the limitations.</p>

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<b>EFFLUENT LIMITATIONS FOR METAL FINISHING POINT SOURCES</b>  <b>WA.70</b> <b>Existing Sources</b>  WA.70.1.US. Pollutants from existing metal finishing point sources introduced into a POTW/FOTW are subject to certain pretreatment standards (40 CFR 433.15).	<p>Determine if there are existing metal finishing point sources introducing pollutants into a POTW/FOTW.</p> <p>Verify that pollutants introduced from existing metal finishing point sources (except from job shops and independent printed circuit board manufacturers) into a POTW/FOTW meet the standards listed in Table 1 of Appendix 12-3.</p> <p>(NOTE: Alternately, if cyanide treatment is done and permitted by the appropriate authority, the following amenable limits may apply for cyanide:</p> <ul style="list-style-type: none"> <li>– maximum for any 1 day = 0.86 mg/L</li> <li>– maximum monthly average = 0.32 mg/L.)</li> </ul> <p>Verify that the use of metal finishing process wastewater is not augmented or otherwise diluted as a partial or total substitute for adequate treatment to achieve compliance with the limitations.</p> <p>Verify that any existing source subject to the criteria listed here meets the daily maximum pretreatment standard for TTO of 4.57 mg/L.</p>



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<b>EFFLUENT LIMITATIONS FOR METAL FINISHING POINT SOURCES</b>  <b>WA.75</b> <b>New Sources</b>  <b>WA.75.1.US.</b> Pollutants from new metal finishing point sources introduced into a POTW/ FOTW are subject to certain performance standards (40 CFR 433.16).  <b>WA.75.2.US.</b> Pollutants from new metal finishing point sources introduced into a POTW/ FOTW are subject to certain pretreatment standards (40 CFR 433.17).	<p>Determine if pollutants from new metal finishing point sources are introduced into a POTW/FOTW.</p> <p>Verify that pollutants introduced from new metal finishing point sources into a POTW/FOTW meet the standards listed in Table 2 of Appendix 12-3.</p> <p>(NOTE: Alternately, if cyanide treatment is done and permitted by the appropriate authority, the following amenable limits may apply for cyanide:</p> <ul style="list-style-type: none"> <li>– maximum for any 1 day = 0.86 mg/L</li> <li>– maximum monthly average = 0.32 mg/L.)</li> </ul> <p>Verify that the use of metal finishing process wastewater is not augmented or otherwise diluted as a partial or total substitute for adequate treatment to achieve compliance with the limitations.</p> <p>Determine if pretreated pollutants from new metal finishing point sources are introduced into a POTW/FOTW.</p> <p>Verify that the pretreated pollutants introduced from new metal finishing point sources into POTWs meet the standards listed in Table 3 of Appendix 12-3.</p> <p>(NOTE: Alternately, if cyanide treatment is done and permitted by the appropriate authority, the following amenable limits may apply for cyanide:</p> <ul style="list-style-type: none"> <li>– maximum for any 1 day = 0.86 mg/L</li> <li>– maximum monthly average = 0.32 mg/L.)</li> </ul> <p>Verify that the use of metal finishing process wastewater is not augmented or otherwise diluted as a partial or total substitute for adequate treatment to achieve compliance with the limitations.</p>



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<b>WA.80</b>  <b>EFFLUENT LIMITATIONS FOR HOSPITALS</b>  <b>WA.80.1.US.</b> Hospital point source effluents are subject to certain discharge standards (40 CFR 460.10).	<p>Determine if there is a hospital point source.</p> <p>Verify that the hospital point source effluent is limited in the quality or quantity of pollutants discharged as described in Appendix 12-4.</p> <p>(NOTE: The standards apply to discharges after application of BAT.)</p>





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<p><b>WA.81</b></p> <p><b>EFFLUENT LIMITATIONS FOR DENTAL CLINICS</b></p> <p><b>WA.81.1.US.</b> Existing dental dischargers are required to meet certain pretreatment standards no later than 14 July 2020 (40 CFR 441.10 and 441.30) [Added July 2017].</p>	<p>(NOTE: Dental dischargers are defined as a facility where the practice of dentistry is performed, including, but not limited to, institutions, permanent or temporary offices, clinics, home offices, and facilities owned and operated by Federal, state or local governments, that discharges wastewater to a publicly owned treatment works (POTW).)</p> <p>(NOTE: The requirements in this checklist item apply to existing sources as of 14 July 2020. An existing source is one which first discharges to a POTW 14 July 2017 or before.)</p> <p>Verify that dental amalgam solids are removed from all amalgam process wastewater by an amalgam separator or an amalgam removal device other than a separator.</p> <p>Verify that, if an amalgam separator is used, it is installed, operated and maintained as follows:</p> <ul style="list-style-type: none"> <li>– compliant with either the American National Standards Institute (ANSI) American National Standard/American Dental Association (ADA) Specification 108 for Amalgam Separators (2009) with Technical Addendum (2011) or the International Organization for Standardization (ISO) 11143 Standard (2008) or subsequent versions so long as that version requires amalgam separators to achieve at least a 95% removal efficiency as assessed by an accredited testing laboratory under ANSI's accreditation program for product certification or a testing laboratory that is a signatory to the International Laboratory Accreditation Cooperation's Mutual Recognition Arrangement and the testing laboratory's scope of accreditation includes ANSI/ADA 108-2009 or ISO 11143</li> <li>– the amalgam separator(s) are sized to accommodate the maximum discharge rate of amalgam process wastewater</li> <li>– the amalgam separator(s) are inspected in accordance with the manufacturer's operating manual to ensure proper operation and maintenance of the separator(s) and to confirm that all amalgam process wastewater is flowing through the amalgam retaining portion of the amalgam separator(s)</li> <li>– in the event that an amalgam separator is not functioning properly, the amalgam separator is repaired consistent with manufacturer instructions or replaced with a unit that meets the requirements as soon as possible, but no later than 10 business days after the malfunction is discovered by the dental discharger, or an agent or representative of the dental discharger</li> <li>– the amalgam retaining units are replaced in accordance with the manufacturer's schedule as specified in the manufacturer's operating manual</li> </ul>

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	<p>or when the amalgam retaining unit has reached the maximum level, as specified by the manufacturer in the operating manual, at which the amalgam separator can perform to the specified efficiency, whichever comes first.</p> <p>(NOTE: A dental discharger that operates an amalgam separator that was installed at a dental facility prior to 14 June 2017 satisfies the removal and sizing requirements until the existing separator is replaced or until 14 June 2027, whichever is sooner.)</p> <p>Verify that, if an amalgam removal device(s) other than an amalgam separator is used, it is installed, operated and maintained according to the following requirements:</p> <ul style="list-style-type: none"> <li>– it has a removal efficiency of at least 95 percent of the mass of solids from all amalgam process wastewater where the removal efficiency is calculated in grams recorded to three decimal places, on a dry weight basis and is demonstrated at the maximum water flow rate through the device as established by the device manufacturer's instructions for use</li> <li>– the removal efficiency is determined using the average performance of three samples and is demonstrated using a test sample of dental amalgam that meets the following particle size distribution specifications using a representative distributions of particle size: <ul style="list-style-type: none"> <li>– 60 percent by mass of particles that pass through a 3150 [micro]m sieve but which do not pass through a 500 [micro]m sieve</li> <li>– 10 percent by mass of particles that pass through a 500 [micro]m sieve but which do not pass through a 100 [micro]m sieve</li> <li>– 30 percent by mass of particles that pass through a 100 [micro]m sieve</li> </ul> </li> <li>– the device(s) are sized to accommodate the maximum discharge rate of amalgam process wastewater</li> <li>– the device(s) are accompanied by the manufacturer's manual providing instructions for use including the frequency for inspection and collecting container replacement such that the unit is replaced once it has reached the maximum filling level at which the device can perform to the specified efficiency</li> <li>– the device(s) are inspected in accordance with the manufacturer's operation manual to ensure proper operation and maintenance, including confirmation that amalgam process wastewater is flowing through the amalgam separating portion of the device(s)</li> <li>– in the event that a device is not functioning properly, it is repaired consistent with manufacturer instructions or replaced with a unit that meets the requirements as soon as possible, but no later than 10 business days after the malfunction is discovered by the dental discharger, or an agent or representative of the dental discharger</li> <li>– the amalgam retaining unit(s) of the device(s) is replaced as specified in the manufacturer's operating manual, or when the collecting container has reached the maximum filling level, as specified by the manufacturer in the operating</li> </ul>

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<p><b>WA.81.2.US.</b> New dental dischargers are required to meet certain pretreatment standards no later than 14 July 2017 (40 CFR 441.10 and 441.40) [Added July 2017].</p>	<p>manual, at which the amalgam separator can perform to the specified efficiency, whichever comes first</p> <ul style="list-style-type: none"> <li>– the demonstration of the device(s) is documented in the One-Time Compliance Report.</li> </ul> <p>Verify that dental dischargers implement the following best management practices (BMPs):</p> <ul style="list-style-type: none"> <li>– waste amalgam including, but not limited to, dental amalgam from chair-side traps, screens, vacuum pump filters, dental tools, cuspidors, or collection devices, is not be discharged to a POTW</li> <li>– dental unit water lines, chair-side traps, and vacuum lines that discharge amalgam process wastewater to a POTW are not cleaned with oxidizing or acidic cleaners, including but not limited to bleach, chlorine, iodine and peroxide that have a pH lower than 6 or greater than 8.</li> </ul> <p>(NOTE: Unless otherwise designated by the Control Authority, dental dischargers subject to 40 CFR 441 are not Significant Industrial Users as defined in 40 CFR 403, and are not “Categorical Industrial Users” or “industrial users subject to categorical pretreatment standards” as those terms and variations are used in 40 CFR 403.)</p> <p>(NOTE: This checklist item does not apply to:</p> <ul style="list-style-type: none"> <li>– dental dischargers that exclusively practice one or more of the following dental specialties: oral pathology, oral and maxillofacial radiology, oral and maxillofacial surgery, orthodontics, periodontics, or prosthodontics</li> <li>– wastewater discharges from a mobile unit operated by a dental discharger</li> <li>– dental dischargers that do not discharge any amalgam process wastewater to a POTW, such as dental dischargers that collect all dental amalgam process wastewater for transfer to a Centralized Waste Treatment facility as defined in 40 CFR 437.)</li> </ul> <p>(NOTE: Dental dischargers that do not place dental amalgam, and do not remove amalgam except in limited emergency or unplanned, unanticipated circumstances, and that certify such to the Control Authority as required in are exempt from any further requirements of this checklist item.)</p> <p>(NOTE: Dental dischargers are defined as a facility where the practice of dentistry is performed, including, but not limited to, institutions, permanent or temporary offices, clinics, home offices, and facilities owned and operated by Federal, state or local governments, that discharges wastewater to a publicly owned treatment works (POTW).)</p> <p>(NOTE: An new source is one which first discharges to a POTW after 14 July 2017.)</p>

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	<p>Verify that dental amalgam solids are removed from all amalgam process wastewater by one of the following methods:</p> <ul style="list-style-type: none"> <li>– an amalgam separator</li> <li>– an amalgam removal device other than a separator.</li> </ul> <p>Verify that, if an amalgam separator is used, it is installed, operated and maintained as follows:</p> <ul style="list-style-type: none"> <li>– compliant with either the American National Standards Institute (ANSI) American National Standard/American Dental Association (ADA) Specification 108 for Amalgam Separators (2009) with Technical Addendum (2011) or the International Organization for Standardization (ISO) 11143 Standard (2008) or subsequent versions so long as that version requires amalgam separators to achieve at least a 95% removal efficiency as assessed by an accredited testing laboratory under ANSI's accreditation program for product certification or a testing laboratory that is a signatory to the International Laboratory Accreditation Cooperation's Mutual Recognition Arrangement. The testing laboratory's scope of accreditation must include ANSI/ADA108-2009 or ISO 11143</li> <li>– the amalgam separator(s) are sized to accommodate the maximum discharge rate of amalgam process wastewater</li> <li>– the amalgam separator(s) are inspected in accordance with the manufacturer's operating manual to ensure proper operation and maintenance of the separator(s) and to confirm that all amalgam process wastewater is flowing through the amalgam retaining portion of the amalgam separator(s)</li> <li>– in the event that an amalgam separator is not functioning properly, the amalgam separator is repaired consistent with manufacturer instructions or replaced with a unit that meets the requirements as soon as possible, but no later than 10 business days after the malfunction is discovered by the dental discharger, or an agent or representative of the dental discharger</li> <li>– the amalgam retaining units are replaced in accordance with the manufacturer's schedule as specified in the manufacturer's operating manual or when the amalgam retaining unit has reached the maximum level, as specified by the manufacturer in the operating manual, at which the amalgam separator can perform to the specified efficiency, whichever comes first.</li> </ul> <p>Verify that, if an amalgam removal device(s) other than an amalgam separator is used, it is installed, operated and maintained according to the following requirements:</p> <ul style="list-style-type: none"> <li>– it has a removal efficiency of at least 95 percent of the mass of solids from all amalgam process wastewater where the removal efficiency is calculated in grams recorded to three decimal places, on a dry weight basis and is demonstrated at the maximum water flow rate through the device as established by the device manufacturer's instructions for use</li> </ul>

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	<ul style="list-style-type: none"> <li>– the removal efficiency is determined using the average performance of three samples and is demonstrated using a test sample of dental amalgam that meets the following particle size distribution specifications using a representative distributions of particle size:               <ul style="list-style-type: none"> <li>– 60 percent by mass of particles that pass through a 3150 [micro]m sieve but which do not pass through a 500 [micro]m sieve</li> <li>– 10 percent by mass of particles that pass through a 500 [micro]m sieve but which do not pass through a 100 [micro]m sieve</li> <li>– 30 percent by mass of particles that pass through a 100 [micro]m sieve</li> </ul> </li> <li>– the device(s) are sized to accommodate the maximum discharge rate of amalgam process wastewater</li> <li>– the device(s) are accompanied by the manufacturer's manual providing instructions for use including the frequency for inspection and collecting container replacement such that the unit is replaced once it has reached the maximum filling level at which the device can perform to the specified efficiency</li> <li>– the device(s) are inspected in accordance with the manufacturer's operation manual to ensure proper operation and maintenance, including confirmation that amalgam process wastewater is flowing through the amalgam separating portion of the device(s)</li> <li>– in the event that a device is not functioning properly, it is repaired consistent with manufacturer instructions or replaced with a unit that meets the requirements as soon as possible, but no later than 10 business days after the malfunction is discovered by the dental discharger, or an agent or representative of the dental discharger</li> <li>– the amalgam retaining unit(s) of the device(s) is replaced as specified in the manufacturer's operating manual, or when the collecting container has reached the maximum filling level, as specified by the manufacturer in the operating manual, at which the amalgam separator can perform to the specified efficiency, whichever comes first</li> <li>– the demonstration of the device(s) is documented in the One-Time Compliance Report.</li> </ul> <p>Verify that dental dischargers implement the following best management practices (BMPs):</p> <ul style="list-style-type: none"> <li>– waste amalgam including, but not limited to, dental amalgam from chair-side traps, screens, vacuum pump filters, dental tools, cuspidors, or collection devices, is not be discharged to a POTW</li> <li>– dental unit water lines, chair-side traps, and vacuum lines that discharge amalgam process wastewater to a POTW are not cleaned with oxidizing or acidic cleaners, including but not limited to bleach, chlorine, iodine and peroxide that have a pH lower than 6 or greater than 8.</li> </ul> <p>(NOTE: Unless otherwise designated by the Control Authority, dental dischargers subject to 40 CFR 441 are not Significant Industrial Users as defined in 40 CFR 403, and are not “Categorical Industrial Users” or “industrial users subject to</p>

<p style="text-align: center;"><b>COMPLIANCE CATEGORY</b>  <b>WASTEWATER MANAGEMENT</b>  <b>U.S. TEAM Guide</b></p>	
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<p><b>WA.81.3.US.</b> Dental dischargers must meet certain reporting and recordkeeping requirements (40 CFR 441.10, 441.50(a)(1), 441.50(a)(2), 441.50(a)(3)(ii), 441.50(a)(4), 441.50(a)(5), and 441.50(b)) [Added July 2017].</p>	<p>categorical pretreatment standards” as those terms and variations are used in 40 CFR 403.)</p> <p>(NOTE: This checklist item does not apply to:</p> <ul style="list-style-type: none"> <li>– dental dischargers that exclusively practice one or more of the following dental specialties: Oral pathology, oral and maxillofacial radiology, oral and maxillofacial surgery, orthodontics, periodontics, or prosthodontics</li> <li>– wastewater discharges from a mobile unit operated by a dental discharger</li> <li>– dental dischargers that do not discharge any amalgam process wastewater to a POTW, such as dental dischargers that collect all dental amalgam process wastewater for transfer to a Centralized Waste Treatment facility as defined in 40 CFR part 437.)</li> </ul> <p>(NOTE: Dental dischargers that do not place dental amalgam, and do not remove amalgam except in limited emergency or unplanned, unanticipated circumstances, and that certify such to the Control Authority as required in are exempt from any requirements of this checklist item.)</p> <p>(NOTE: Dental dischargers are defined as a facility where the practice of dentistry is performed, including, but not limited to, institutions, permanent or temporary offices, clinics, home offices, and facilities owned and operated by Federal, state or local governments, that discharges wastewater to a publicly owned treatment works (POTW).)</p> <p>Verify that, for existing sources, a One-Time Compliance Report is submitted to the Control Authority no later than 12 October 2020, or 90 days after a transfer of ownership.</p> <p>Verify that, for new sources, a One-Time Compliance Report is submitted to the Control Authority no later than 90 days following the introduction of wastewater into a POTW.</p> <p>Verify that the One-Time Compliance Report is signed and certified by a responsible corporate officer, a general partner or proprietor if the dental discharger is a partnership or sole proprietorship, or a duly authorized representative in accordance with the requirements of 40 CFR 403.12(l).</p> <p>(NOTE: If a dental discharger transfers ownership of the facility, the new owner must submit a new One-Time Compliance Report to the Control Authority no later than 90 days after the transfer.)</p> <p>Verify that the One-Time Compliance Report includes:</p> <ul style="list-style-type: none"> <li>– the facility name, physical address, mailing address, and contact information</li> <li>– name(s) of the operator(s) and owner(s)</li> <li>– a description of the operation at the dental facility including:</li> </ul>

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	<ul style="list-style-type: none"> <li>– the total number of chairs,</li> <li>– the total number of chairs at which dental amalgam may be present in the resulting wastewater</li> <li>– a description of any existing amalgam separator(s) or equivalent device(s) currently operated to include, at a minimum, the make, model, year of installation</li> <li>– certification that the amalgam separator(s) or equivalent device is designed and will be operated and maintained to meet the requirements specified in 40 CFR 441.30 [see checklist item WA.81.1.US] or 40 CFR 441.40 [see checklist item WA.81.2.US]</li> <li>– certification that the dental discharger is implementing BMPs specified in 40 CFR 441.30(b) [see checklist item WA.81.1.US] or 40 CFR 441.40(b) [see checklist item WA.81.2.US] and will continue to do so</li> <li>– the name of the third-party service provider that maintains the amalgam separator(s) or equivalent device(s) operated at the dental office, if applicable, or a brief description of the practices employed by the facility to ensure proper operation and maintenance in accordance with 40 CFR 441.30 [see checklist item WA.81.1.US] or 40 CFR 441.40 [see checklist item WA.81.2.US].</li> </ul> <p>Verify that the dental discharger maintains a copy of the One-Time Compliance Report and makes it available for inspection in either physical or electronic form as long as they are in operation or until ownership is transferred.</p> <p>Verify that dental dischargers or an agent or representative of the dental discharger maintain and make available for inspection in either physical or electronic form, for a minimum of 3 yr the following information:</p> <ul style="list-style-type: none"> <li>– documentation of the date, person(s) conducting the inspection, and results of each inspection of the amalgam separator(s) or equivalent device(s), and a summary of follow-up actions, if needed</li> <li>– documentation of amalgam retaining container or equivalent container replacement (including the date, as applicable)</li> <li>– documentation of all dates that collected dental amalgam is picked up or shipped for proper disposal in accordance with 40 CFR 261.5(g)(3), and the name of the permitted or licensed treatment, storage or disposal facility receiving the amalgam retaining containers</li> <li>– documentation of any repair or replacement of an amalgam separator or equivalent device, including the date, person(s) making the repair or replacement, and a description of the repair or replacement (including make and model).</li> </ul> <p>Verify that dental dischargers or an agent or representative of the dental discharger maintains and make available for inspection in either physical or electronic form the manufacturers operating manual for the current device.</p> <p>(NOTE: Unless otherwise designated by the Control Authority, dental dischargers subject to 40 CFR 441 are not Significant Industrial Users as defined in 40 CFR</p>

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<p><b>WA.81.4.US.</b> Dental dischargers that do not place or remove dental amalgam except in limited emergency or unplanned, unanticipated circumstances must submit certification to the Control Authority (40 CFR 441.50(a)(3)) [Added July 2017].</p>	<p>403, and are not “Categorical Industrial Users” or “industrial users subject to categorical pretreatment standards” as those terms and variations are used in 40 CFR 403.)</p> <p>(NOTE: This checklist item does not apply to:</p> <ul style="list-style-type: none"> <li>– dental dischargers that exclusively practice one or more of the following dental specialties: oral pathology, oral and maxillofacial radiology, oral and maxillofacial surgery, orthodontics, periodontics, or prosthodontics</li> <li>– wastewater discharges from a mobile unit operated by a dental discharger</li> <li>– dental dischargers that do not discharge any amalgam process wastewater to a POTW, such as dental dischargers that collect all dental amalgam process wastewater for transfer to a Centralized Waste Treatment facility as defined in 40 CFR part 437.)</li> </ul> <p>(NOTE: Dental dischargers that do not place dental amalgam, and do not remove amalgam except in limited emergency or unplanned, unanticipated circumstances, and that certify such to the Control Authority as required in are exempt from any further requirements of this checklist item.)</p> <p>Verify that the One-Time Compliance Report for dental dischargers that do not place or remove dental amalgam includes the facility name, physical address, mailing address, contact information, name of the operator(s) and owner(s); and a certification statement that the dental discharger does not place dental amalgam and does not remove amalgam except in limited circumstances.</p> <p>Verify that the One-Time Compliance Report includes:</p> <ul style="list-style-type: none"> <li>– the facility name, physical address, mailing address, and contact information</li> <li>– name(s) of the operator(s) and owner(s)</li> <li>– a description of the operation at the dental facility including: <ul style="list-style-type: none"> <li>– the total number of chairs,</li> <li>– the total number of chairs at which dental amalgam may be present in the resulting wastewater</li> <li>– a description of any existing amalgam separator(s) or equivalent device(s) currently operated to include, at a minimum, the make, model, year of installation</li> </ul> </li> <li>– certification that the amalgam separator(s) or equivalent device is designed and will be operated and maintained to meet the requirements specified in 40 CFR 441.30 or 40 CFR 441.40.</li> <li>– certification that the dental discharger is implementing BMPs specified in 40 CFR 441.30(b) or 40 CFR 441.40(b) and will continue to do so.</li> <li>– the name of the third-party service provider that maintains the amalgam separator(s) or equivalent device(s) operated at the dental office, if applicable, or a brief description of the practices employed by the facility to ensure proper</li> </ul>

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	operation and maintenance in accordance with 40 CFR 441.30 or 40 CFR 441.40.

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<p><b>WA.83</b></p> <p><b>DISCHARGES FROM LANDFILLS</b></p> <p><b>WA.83.1.US.</b> Landfills regulated under 40 CFR 445 are required to comply with 40 CFR 403 when discharging wastewater pollutants to a POTW (40 CFR 445.1 and 445.3) [Added April 2000].</p> <p><b>WA.83.2.US.</b> The discharge of wastewater from landfills regulated under 40 CFR 264 or</p>	<p>Verify that landfills regulated under 40 CFR 445 are required to comply with 40 CFR 403 when discharging wastewater pollutants to a POTW.</p> <p>(NOTE: This checklist item applies to discharges of wastewater from landfill units, except as follows:</p> <ul style="list-style-type: none"> <li>– wastewater discharges from land application or land treatment units, surface impoundments, underground injection wells, waste piles, salt dome formations, salt bed formations, underground mines or caves as these terms are defined in 40 CFR 257.2 and 260.10</li> <li>– wastewaters generated offsite of a landfill facility, including wastewater generated offsite from washing vehicles or from waste transfer stations.</li> <li>– discharges of contaminated groundwater or wastewater from recovery pumping wells</li> <li>– discharges of landfill wastewater from landfills operated in conjunction with other industrial or commercial operations when the landfill only receives wastes generated by the industrial or commercial operation directly associated with the landfill.</li> <li>– discharges of landfill wastewater from landfills operated in conjunction with other industrial or commercial operations when the landfill receives wastes generated by the industrial or commercial operation directly associated with the landfill and also receives other wastes provided the other wastes received for disposal are generated by a facility that is subject to the same provisions in 40 CFR Subchapter N as the industrial or commercial operation or the other wastes received are of similar nature to the wastes generated by the industrial or commercial operation</li> <li>– landfills operated in conjunction with Centralized Waste Treatment (CWT) facilities subject to 40 CFR 437 so long as the CWT facility commingles the landfill wastewater with other non-landfill wastewater for discharge. A landfill directly associated with a CWT facility is subject to these requirements if the CWT facility discharges landfill wastewater separately from other CWT wastewater or commingles the wastewater from its landfill only with wastewater from other landfills</li> <li>– landfills operated in conjunction with other industrial or commercial operations when the landfill receives wastes from public service activities so long as the company owning the landfill does not receive a fee or other remuneration for the disposal service.)</li> </ul> <p>(NOTE: This checklist item applies to discharges of wastewater from landfills subject to the provisions of 40 CFR 264, Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities, Subpart N-</p>

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<p>40 CFR 265 is required to meet certain parameters (40 CFR 445.1 and 445.10 through 445.14 [Added April 2000].</p> <p><b>WA.83.3.US.</b> The discharge of wastewater from landfills regulated under 40 CFR 257 or 40 CFR 258 is required to meet certain parameters (40 CFR 445.1 and 445.20 through 445.24 [Added April 2000].</p>	<p>(Landfills); and 40 CFR 265, Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities, Subpart N-(Landfills).)</p> <p>(NOTE: See checklist item WA.83.1.US for a list of exceptions.)</p> <p>Verify that, except as provided in 40 CFR 125.30 through 125.32, existing point sources achieve the effluent limitations in Appendix 12-4a for the application of BPT.</p> <p>Verify that, except as provided in 40 CFR 125.30 through 125.32, existing point sources achieve the effluent limitations for BOD<sub>5</sub>, TSS, and pH in Appendix 12-4a for the application of BCT:</p> <p>Verify that, except as provided in 40 CFR 125.30 through 125.32, existing point sources achieve the effluent limitations for ammonia (as N), a-terpineol, aniline, benzoic acid, naphthalene, p-cresol, phenol, pyridine, arsenic, chromium, and zinc in Appendix 12-4a for the application of BAT.</p> <p>Verify that any new source achieves the performance standards in Appendix 12-4a.</p> <p>(NOTE: This checklist item applies to discharges of wastewater from landfills subject to the provisions of 40 CFR 258, Criteria for Municipal Solid Waste Landfills; and 40 CFR, Criteria for Classification of Solid Waste Disposal Facilities and Practices.)</p> <p>(NOTE: See checklist item WA.83.1.US for a list of exceptions.)</p> <p>Verify that, except as provided in 40 CFR 125.30 through 125.32, existing point sources achieve effluent limitations in Appendix 12-4b for the application of BPT.</p> <p>Verify that, except as provided in 40 CFR 125.30 through 125.32, existing point sources achieve the effluent limitations for BOD<sub>5</sub>, TSS, and pH in Appendix 12-4b for the application of BCT.</p> <p>Verify that, except as provided in 40 CFR 125.30 through 125.32, existing point sources achieve the effluent limitations for ammonia (as N), a-terpineol, benzoic acid, p-cresol, phenol, and zinc in Appendix 12-4b for the application of BAT.</p> <p>Verify that any new source achieves the performance standards in Appendix 12-4b.</p>

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<p><b>WA.85</b></p> <p><b>EFFLUENT LIMITATIONS FOR PHOTO LABS</b></p> <p><b>WA.85.1.US.</b> Point source discharges resulting from the development or printing of paper prints, slides, negatives, enlargements, movie film, and other sensitized materials are subject to certain limitations (40 CFR 459.10 and 459.12).</p>	<p>Determine if there are point source discharges resulting from the development or printing of paper prints, slides, negatives, enlargements, movie film, and other sensitized materials.</p> <p>Verify that the photographic processing point source effluent is limited according to the specifications in Appendix 12-4.</p> <p>(NOTE: Photo labs processing 150 m2 (16,000 ft2) per day or less are not covered.)</p> <p>(NOTE: Photo labs that discharge to an FOTW are not allowed to discharge a hazardous waste. Ensure that effluent from silver recovery equipment is nonhazardous before discharge to a FOTW. If effluent is hazardous, and discharge to a FOTW, it should be contained and treated by other means to eliminate the hazardous characteristic.)</p>



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<p><b>WA.86.</b></p> <p><b>EFFLUENT LIMITATIONS FOR TRANSPORTATION CLEANING EQUIPMENT</b></p> <p><b>WA.86.1.US.</b> Facilities discharging wastewater resulting from the cleaning of tank trucks and intermodal tank containers that have been used to transport chemical or petroleum cargos are required to meet certain discharge requirements (40 CFR 442.1, 442.10 through 442.16) [Added October 2000; Revised April 2005].</p>	<p>(NOTE: This checklist item applies to discharges resulting from cleaning the interior of tanks used to transport chemical, petroleum or food grade cargos. This checklist item does not apply to facilities that clean only the exteriors of transportation equipment. Operations that may be subject to these requirements typically are reported under a wide variety of Standard Industrial Classification (SIC) codes. Several of the most common SIC codes include: SIC 7699, SIC 4741, or SIC 4491 (1987 SIC Manual). These requirements are not applicable to the following discharges:</p> <ul style="list-style-type: none"> <li>– wastewaters associated with tank cleanings operated in conjunction with other industrial, commercial, or POTW operations, provided that the cleaning is limited to tanks that previously contained raw materials, by-products, or finished products that are associated with the facility's onsite processes</li> <li>– wastewaters resulting from cleaning the interiors of drums, intermediate bulk containers, or closed-top hoppers</li> <li>– wastewater from a facility that discharges less than 100,000 gal/yr of transportation equipment cleaning process wastewater.)</li> </ul> <p>Verify that any existing facilities discharging wastewater resulting from the cleaning of tank trucks and intermodal tank containers that have been used to transport chemical or petroleum cargos achieve effluent limitations representing the application of BPT, BCT, or BAT in Appendix 12-4aa.</p> <p>(NOTE: The effluent limitations that are required to be achieved after the application of BPT, BCT, or BAT apply except as provided in 40 CFR 125.30 through 40 CFR 125.32 on the application of alternative limitations.)</p> <p>Verify that any new facilities discharging wastewater resulting from the cleaning of tank trucks and intermodal tank containers that have been used to transport chemical or petroleum cargos achieve the new source performance standards outlined in Appendix 12-4aa.</p> <p>Verify that, except as provided in 40 CFR 403.7 and 403.13, no later than 14 August 2003, any existing facility discharging wastewater resulting from the cleaning of tank trucks and intermodal tank containers which have been used to transport chemical or petroleum cargos which introduces pollutants into a POTW achieve the PSES outlined in Appendix 12-4aa.</p>

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	<p>(NOTE: As an alternative to achieving PSES, any existing source may have a pollution prevention allowable discharge of wastewater pollutants if the source agrees to control mechanism with the control authority as follows:</p> <ul style="list-style-type: none"> <li>– the discharger prepares a Pollutant Management Plan and the discharger conducts its operations in accordance with that plan (see Appendix 12-4bb for content requirements of the Pollutant Management Plan)</li> <li>– the discharger notifies its local control authority prior to renewing or modifying its individual control mechanism or pretreatment agreement of its intent to achieve the pollution prevention allowable discharge pretreatment standard by submitting to the local control authority a certification statement of its intent to utilize a Pollutant Management Plan and the certification statement is signed by the responsible corporate officer</li> <li>– the discharger submits a copy of its Pollutant Management Plan to the appropriate control authority at the time he/she applies to renew, or modify its individual control mechanism or pretreatment agreement</li> <li>– the discharger maintains at the offices of the facility and makes available for inspection the Pollutant Management Plan.</li> </ul> <p>Verify that, except as provided in 40 CFR 403.7 and 403.13, any existing facilities discharging wastewater resulting from the cleaning of tank trucks and intermodal tank containers which have been used to transport chemical or petroleum cargos which introduces pollutants into a POTW achieve the PSNS outlined in Appendix 12-4aa.</p> <p>(NOTE: As an alternative to achieving PSNS, any new source may have a pollution prevention allowable discharge of wastewater pollutants, if the source agrees to a control mechanism with the control authority as follows:</p> <ul style="list-style-type: none"> <li>– the discharger prepares a Pollutant Management Plan (see Appendix 12-4bb) and conducts its operations in accordance with that plan</li> <li>– the discharger notifies its local control authority prior to obtaining, renewing, or modifying its individual control mechanism or pretreatment agreement of its intent to achieve the pollution prevention allowable discharge pretreatment standard by submitting to the local control authority a certification statement of its intent to utilize a Pollutant Management Plan and the certification statement is signed by the responsible corporate officer</li> <li>– the discharger submits a copy of its Pollutant Management Plan to the appropriate control authority at the time he/she applies to renew, or modify its individual control mechanism or pretreatment agreement</li> <li>– the discharger maintains at the offices of the facility and makes available for inspection the Pollutant Management Plan.)</li> </ul>
<b>WA.86.2.US.</b> Facilities discharging wastewater resulting from the cleaning of rail tank cars which have been used to transport chemical or	<p>(NOTE: This checklist item applies to discharges resulting from cleaning the interior of tanks used to transport chemical, petroleum or food grade cargos. This checklist item does not apply to facilities that clean only the exteriors of transportation equipment. Operations that may be subject to these requirements typically are reported under a wide variety of Standard Industrial Classification</p>

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<p>petroleum cargos are required to meet certain discharge requirements (40 CFR 442.1, 442.20 through 442.26) [Added October 2000].</p>	<p>(SIC) codes. Several of the most common SIC codes include: SIC 7699, SIC 4741, or SIC 4491 (1987 SIC Manual). These requirements are not applicable to the following discharges:</p> <ul style="list-style-type: none"> <li>– wastewaters associated with tank cleanings operated in conjunction with other industrial, commercial, or POTW operations, provided that the cleaning is limited to tanks that previously contained raw materials, by-products, or finished products that are associated with the facility's onsite processes</li> <li>– wastewaters resulting from cleaning the interiors of drums, intermediate bulk containers, or closed-top hoppers</li> <li>– wastewater from a facility that discharges less than 100,000 gal/yr of transportation equipment cleaning process wastewater.)</li> </ul> <p>Verify that facilities discharging wastewater resulting from the cleaning of rail tank cars that have been used to transport chemical or petroleum cargos achieve effluent limitations representing the application of BPT, BCT, or BAT in Appendix 12-4cc.</p> <p>(NOTE: The effluent limitations that are required to be achieved after the application of BPT, BCT, or BAT apply except as provided in 40 CFR 125.30 through 40 CFR 125.32 on the application of alternative limitations.)</p> <p>Verify that any new facilities discharging wastewater resulting from the cleaning of rail tank cars that have been used to transport chemical or petroleum cargos achieve the new source performance standards outlined in Appendix 12-4cc.</p> <p>Verify that, except as provided in 40 CFR 403.7 and 403.13, no later than 14 August 2003, any existing facility discharging wastewater resulting from the cleaning of rail tank cars which have been used to transport chemical or petroleum cargos which introduces pollutants into a POTW achieve the PSES outlined in Appendix 12-4cc.</p> <p>(NOTE: As an alternative to achieving PSES, any existing source may have a pollution prevention allowable discharge of wastewater pollutants if the source agrees to a control mechanism with the control authority as follows:</p> <ul style="list-style-type: none"> <li>– the discharger prepares a Pollutant Management Plan (see Appendix 12-4bb) and conducts its operations in accordance with that plan</li> <li>– the discharger notifies its local control authority prior to obtaining, renewing, or modifying its individual control mechanism or pretreatment agreement of its intent to achieve the pollution prevention allowable discharge pretreatment standard by submitting to the local control authority a certification statement of its intent to utilize a Pollutant Management Plan and the certification statement is signed by the responsible corporate officer</li> <li>– the discharger submits a copy of its Pollutant Management Plan to the appropriate control authority at the time he/she applies to renew, or modify its individual control mechanism or pretreatment agreement</li> <li>– the discharger maintains at the offices of the facility and makes available for inspection the Pollutant Management Plan.)</li> </ul>

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<p><b>WA.86.3.US.</b> Facilities discharging wastewater resulting from the cleaning of tank barges and ocean/sea tankers that have been used to transport chemical or petroleum cargos are required to meet certain discharge requirements (40 CFR 442.1, 442.30 through 442.36) [Added October 2000].</p>	<p>Verify that, except as provided in 40 CFR 403.7 and 403.13, any new facilities discharging wastewater resulting from the cleaning of rail tank cars which have been used to transport chemical or petroleum cargos which introduces pollutants into a POTW achieve the PSNS outlined in Appendix 12-4cc.</p> <p>(NOTE: As an alternative to achieving PSNS, any new source may have a pollution prevention allowable discharge of wastewater pollutants if the source agrees to a control mechanism with the control authority as follows:</p> <ul style="list-style-type: none"> <li>– the discharger prepares a Pollutant Management Plan (see Appendix 12-4bb) and conducts its operations in accordance with that plan</li> <li>– the discharger notifies its local control authority prior to obtaining, renewing, or modifying its individual control mechanism or pretreatment agreement of its intent to achieve the pollution prevention allowable discharge pretreatment standard by submitting to the local control authority a certification statement of its intent to utilize a Pollutant Management Plan and the certification statement is signed by the responsible corporate officer</li> <li>– the discharger submits a copy of its Pollutant Management Plan to the appropriate control authority at the time he/she applies to renew, or modify its individual control mechanism or pretreatment agreement</li> <li>– the discharger maintains at the offices of the facility and makes available for inspection the Pollutant Management Plan.)</li> </ul> <p>(NOTE: This checklist item applies to discharges resulting from cleaning the interior of tanks used to transport chemical, petroleum or food grade cargos. This checklist item does not apply to facilities that clean only the exteriors of transportation equipment. Operations that may be subject to these requirements typically are reported under a wide variety of Standard Industrial Classification (SIC) codes. Several of the most common SIC codes include: SIC 7699, SIC 4741, or SIC 4491 (1987 SIC Manual). These requirements are not applicable to the following discharges:</p> <ul style="list-style-type: none"> <li>– wastewaters associated with tank cleanings operated in conjunction with other industrial, commercial, or POTW operations, provided that the cleaning is limited to tanks that previously contained raw materials, by-products, or finished products that are associated with the facility's onsite processes</li> <li>– wastewaters resulting from cleaning the interiors of drums, intermediate bulk containers, or closed-top hoppers</li> <li>– wastewater from a facility that discharges less than 100,000 gal/yr of transportation equipment cleaning process wastewater.)</li> </ul> <p>Verify that facilities discharging wastewater resulting from the cleaning of tank barges or ocean/sea tankers that have been used to transport chemical or petroleum cargos achieve effluent limitations representing the application of BPT, BCT, or BAT in Appendix 12-4dd.</p> <p>(NOTE: The effluent limitations that are required to be achieved after the application of BPT, BCT, or BAT apply except as provided in 40 CFR 125.30 through 40 CFR 125.32 on the application of alternative limitations.)</p>

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<p><b>WA.86.4.US.</b> Facilities discharging wastewater resulting from the cleaning of tanks transporting food grade cargos are required to meet certain discharge requirements (40 CFR 442.1, 442.40 through 442.44) <b>[Added October 2000]</b>.</p>	<p>Verify that new facilities discharging wastewater resulting from the cleaning of tank barges or ocean/sea tankers that have been used to transport chemical or petroleum cargos achieve the NSPS outlined in Appendix 12-4dd.</p> <p>Verify that, except as provided in 40 CFR 403.7 and 403.13, existing facilities discharging wastewater resulting from the cleaning of tank barges or ocean/sea tankers which have been used to transport chemical or petroleum cargos achieve the PSES outlined in Appendix 12-4dd.</p> <p>Verify that, except as provided in 40 CFR 403.7, new facilities discharging wastewater resulting from the cleaning of tank barges or ocean/sea tankers which have been used to transport chemical or petroleum cargos achieve the PSNS outlined in Appendix 12-4dd.</p> <p>(NOTE: This checklist item applies to discharges resulting from cleaning the interior of tanks used to transport chemical, petroleum or food grade cargos. This checklist item does not apply to facilities that clean only the exteriors of transportation equipment. Operations that may be subject to these requirements typically are reported under a wide variety of Standard Industrial Classification (SIC) codes. Several of the most common SIC codes include: SIC 7699, SIC 4741, or SIC 4491 (1987 SIC Manual). These requirements are not applicable to the following discharges:</p> <ul style="list-style-type: none"> <li>– wastewaters associated with tank cleanings operated in conjunction with other industrial, commercial, or POTW operations, provided that the cleaning is limited to tanks that previously contained raw materials, by-products, or finished products that are associated with the facility's onsite processes</li> <li>– wastewaters resulting from cleaning the interiors of drums, intermediate bulk containers, or closed-top hoppers</li> <li>– wastewater from a facility that discharges less than 100,000 gal/yr of transportation equipment cleaning process wastewater.)</li> </ul> <p>(NOTE: This checklist item applies to discharges resulting from the cleaning of tank trucks, intermodal tank containers, rail tank cars, tank barges and ocean/sea tankers which have been used to transport food grade cargos. If wastewater generated from cleaning tanks used to transport food grade cargos is mixed with wastewater resulting from cleaning tanks used to transport chemical or petroleum cargos, then the combined wastewater is subject to the provisions established for the corresponding tanks (i.e., truck, railcar or barge).)</p> <p>Verify that facilities discharging wastewater resulting from the cleaning of tank trucks, intermodal tank containers, rail tank cars, tank barges and ocean/sea tankers which have been used to transport food grade cargos achieve effluent limitations representing the application of BPT or BCT in Appendix 12-4ee.</p>

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	<p>(NOTE: The effluent limitations that are required to be achieved after the application of BPT or BCT apply except as provided in 40 CFR 125.30 through 40 CFR 125.32 on the application of alternative limitations.)</p> <p>Verify that new facilities discharging wastewater resulting from the cleaning of tank trucks, intermodal tank containers, rail tank cars, tank barges and ocean/sea tankers that have been used to transport food grade cargos achieve NSPS outlined in Appendix 12-4ee.</p>

<p style="text-align: center;"><b>COMPLIANCE CATEGORY</b>  <b>WASTEWATER MANAGEMENT</b>  <b>U.S. TEAM Guide</b></p>	
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<p><b>WA.95.</b></p> <p><b>OTHER DISCHARGES AND DISCHARGERS</b></p> <p><b>Armed Forces Vessels</b></p> <p><b>WA.95.1.US.</b> Discharges incidental to the normal operation of Armed Forces vessels must have a marine pollution control device (MPCD) to mitigate adverse impacts on the marine environment and prevent certain discharges (40 CFR 1700.1, 1700.2(a), 1700.4, 1700.5, 1700.14, 1700.16, 1700.22, 1700.23, 1700.25, 1700.29 through 1700.33, and 1700.38 through 1700.42) [Added July 1999; Revised April 2017].</p>	<p>(NOTE: These requirements apply to the owners and operators of Armed Forces vessels, except where the Secretary of Defense finds that compliance with this part is not in the interest of the national security of the United States. This part does not apply to vessels while they are under construction, vessels in drydock, amphibious vehicles, or vessels under the jurisdiction of the Department of Transportation other than those of the Coast Guard. These requirements are not applicable beyond the contiguous zone. )</p> <p>Verify that the following have an MPCD:</p> <ul style="list-style-type: none"> <li>– aqueous film-forming foam: the firefighting foam and seawater mixture discharged during training, testing, or maintenance operations</li> <li>– catapult water brake tank and post-launch retraction exhaust: the oily water skimmed from the water tank used to stop the forward motion of an aircraft carrier catapult, and the condensed steam discharged when the catapult is retracted</li> <li>– chain locker effluent: the accumulated precipitation and seawater that is emptied from the compartment used to store the vessel's anchor chain</li> <li>– clean ballast: the seawater taken into, and discharged from, dedicated ballast tanks to maintain the stability of the vessel and to adjust the buoyancy of submarines</li> <li>– compensated fuel ballast: the seawater taken into, and discharged from, ballast tanks designed to hold both ballast water and fuel to maintain the stability of the vessel</li> <li>– controllable pitch propeller hydraulic fluid: the hydraulic fluid that discharges into the surrounding seawater from propeller seals as part of normal operation, and the hydraulic fluid released during routine maintenance of the propellers</li> <li>– deck runoff: the precipitation, washdowns, and seawater falling on the weather deck of a vessel and discharged overboard through deck openings</li> <li>– dirty ballast: the seawater taken into, and discharged from, empty fuel tanks to maintain the stability of the vessel</li> <li>– distillation and reverse osmosis brine: the concentrated seawater (brine) produced as a byproduct of the processes used to generate freshwater from seawater</li> <li>– elevator pit effluent: the liquid that accumulates in, and is discharged from, the sumps of elevator wells on vessels</li> <li>– firemain systems: the seawater pumped through the firemain system for firemain testing, maintenance, and training, and to supply water for the operation of certain vessel systems</li> </ul>

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	<ul style="list-style-type: none"> <li>– gas turbine water wash: the water released from washing gas turbine components</li> <li>– graywater: galley, bath, and shower water, as well as wastewater from lavatory sinks, laundry, interior deck drains, water fountains, and shop sinks</li> <li>– hull coating leachate: the constituents that leach, dissolve, ablate, or erode from the paint on the hull into the surrounding seawater</li> <li>– motor gasoline and compensating discharge: the seawater taken into, and discharged from, motor gasoline tanks to eliminate free space where vapors could accumulate</li> <li>– non-oily machinery wastewater: the combined wastewater from the operation of distilling plants, water chillers, valve packings, water piping, low- and high-pressure air compressors, and propulsion engine jacket coolers</li> <li>– photographic laboratory drains: the laboratory wastewater resulting from processing of photographic film</li> <li>– seawater cooling overboard discharge: the discharge of seawater from a dedicated system that provides noncontact cooling water for other vessel systems</li> <li>– seawater piping biofouling prevention: the discharge of seawater containing additives used to prevent the growth and attachment of biofouling organisms in dedicated seawater cooling systems on selected vessels</li> <li>– small boat engine wet exhaust: the seawater that is mixed and discharged with small boat propulsion engine exhaust to cool the exhaust and quiet the engine</li> <li>– sonar dome discharge: the leaching of antifoulant materials into the surrounding seawater and the release of seawater or freshwater retained within the sonar dome</li> <li>– submarine bilgewater: the wastewater from a variety of sources that accumulates in the lowest part of the submarine (i.e., bilge)</li> <li>– surface vessel bilgewater/oil water separator effluent: the wastewater from a variety of sources that accumulates in the lowest part of the vessel (the bilge), and the effluent produced when the wastewater is processed by an oil water separator</li> <li>– underwater ship husbandry: the materials discharged during the inspection, maintenance, cleaning, and repair of hulls performed while the vessel is waterborne</li> <li>– welldeck discharges: the water that accumulates from seawater flooding of the docking well (welldeck) of a vessel used to transport, load, and unload amphibious vessels, and from maintenance and freshwater washings of the welldeck and equipment and vessels stored in the welldeck.</li> </ul> <p>(NOTE: The following are not required to have MPCD:</p> <ul style="list-style-type: none"> <li>– boiler blowdown: the water and steam discharged when a steam boiler is blown down, or when a steam safety valve is tested</li> <li>– catapult wet accumulator discharge: the water discharged from a catapult wet accumulator, which stores a steam/water mixture for launching aircraft from an aircraft carrier</li> </ul>

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	<ul style="list-style-type: none"> <li>–cathodic protection: the constituents released into surrounding water from sacrificial anode or impressed current cathodic hull corrosion protection systems</li> <li>–freshwater lay-up: the potable water that is discharged from the seawater cooling system while the vessel is in port, and the cooling system is in lay-up mode (a standby mode where seawater in the system is replaced with potable water for corrosion protection)</li> <li>–mine countermeasures equipment lubrication: the constituents released into the surrounding seawater by erosion or dissolution from lubricated mine countermeasures equipment when the equipment is deployed and towed</li> <li>–portable damage control drain pump discharge: the seawater pumped through the portable damage control drain pump and discharged overboard during testing, maintenance, and training activities</li> <li>–portable damage control drain pump wet exhaust: the seawater mixed and discharged with portable damage control drain pump exhaust to cool the exhaust and quiet the engine</li> <li>–refrigeration and air-conditioning condensate: the drainage of condensed moisture from air-conditioning units, refrigerators, freezers, and refrigerated spaces</li> <li>–rudder bearing lubrication: the oil or grease released by the erosion or dissolution from lubricated bearings that support the rudder and allow it to turn freely</li> <li>–steam condensate: the condensed steam discharged from a vessel in port, where the steam originates from port facilities</li> <li>–stern tube seals and underwater bearing lubrication: the seawater pumped through stern tube seals and underwater bearings to lubricate and cool them during normal operation</li> <li>–submarine acoustic countermeasures launcher discharge: the seawater that is mixed with acoustic countermeasure device propulsion gas following a countermeasure launch that is then exchanged with surrounding seawater, or partially drained when the launch assembly is removed from the submarine for maintenance</li> <li>–submarine emergency diesel engine wet exhaust: the seawater that is mixed and discharged with submarine emergency diesel engine exhaust to cool the exhaust and quiet the engine</li> <li>–submarine outboard equipment grease and external hydraulics: the grease released into the surrounding seawater by erosion or dissolution from submarine equipment exposed to seawater.)</li> </ul> <p>Verify that there is no discharge of aqueous film-forming foam (AFFF) from all vessels that sail seaward of waters subject to UNDS at least once per month.</p> <p>(NOTE: AFFF refers only to firefighting foam and seawater mixture discharged during training, testing, or maintenance operations.)</p> <p>Verify that, for vessels that do not sail seaward of waters subject to UNDS at least once per month:</p>

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	<ul style="list-style-type: none"> <li>– there is no discharge of fluorinated AFFF</li> <li>– there are no discharges of non-fluorinated or alternative foaming agent in port or in or near federally-protected waters, and the discharges which do happen occur as far from shore as possible.</li> </ul> <p>Verify that for all vessels, except submarines, the anchor chain is carefully and thoroughly washed down (i.e., more than a cursory rinse) as it is being hauled out of the water to remove sediment and organisms.</p> <p>Verify that, for all vessels, the chain lockers are cleaned periodically to eliminate accumulated sediments and any potential accompanying pollutants.</p> <p>Verify that the dates of all chain locker inspections are recorded in the ship's log or other vessel recordkeeping documentation.</p> <p>Verify that, for all vessels that sail seaward of waters subject to UNDS at least once per month, There is no rinsing or pumping out of chain lockers.</p> <p>Verify that, for all vessels that do not sail seaward of waters subject to UNDS at least once per month, the rinsing or pumping out of chain lockers occur as far from shore as possible and, if technically feasible, the rinsing or pumping out of chain lockers does not occur in federally-protected waters.</p> <p>Verify that there is no discharge of brine from the distillation system or the discharge of reverse osmosis reject water if the discharges come in contact with machinery or industrial equipment (other than distillation or reverse osmosis machinery), toxic or hazardous materials, or wastes.</p> <p>Verify that there is no direct discharge of elevator pit effluent.</p> <p>(NOTE: If the elevator pit effluent is commingled with any other discharge for the purposes of treatment prior to discharge, then under no circumstances may oils, including oily mixtures, be discharged from that combined discharge in quantities that meet any of the following:</p> <ul style="list-style-type: none"> <li>– cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines</li> <li>– cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines</li> <li>– contain an oil content above 15 ppm as measured by EPA Method 1664a or other appropriate method for determination of oil content as accepted by the International Maritime Organization (IMO) (e.g., ISO Method 9377) or U.S. Coast Guard</li> <li>– otherwise are harmful to the public health or welfare of the United States.)</li> </ul> <p>Verify that there is no direct discharge of gas turbine water wash.</p>

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	<p>(NOTE: To the greatest extent practicable, gas turbine water wash must be collected separately and disposed of onshore in accordance with any applicable solid waste and hazardous substance management and disposal requirements.)</p> <p>(NOTE: If the gas turbine water wash is commingled with any other discharge for the purposes of treatment prior to discharge then under no circumstances may oils, including oily mixtures be discharged from that combined discharge in quantities that meet any of the following:</p> <ul style="list-style-type: none"> <li>– cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines</li> <li>– cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines</li> <li>– contain an oil content above 15 ppm as measured by EPA Method 1664a or other appropriate method for determination of oil content as accepted by the International Maritime Organization (IMO) (e.g., ISO Method 9377) or U.S. Coast Guard</li> <li>– otherwise are harmful to the public health or welfare of the United States.</li> </ul> <p>Verify that the discharge of non-oily machinery wastewater does not contain any additives that are toxic or bioaccumulative in nature.</p> <p>Verify that, under no circumstances are oils, including oily mixtures, discharged in quantities that meet any of the following :</p> <ul style="list-style-type: none"> <li>– cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines</li> <li>– cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines</li> <li>– contain an oil content above 15 ppm as measured by EPA Method 1664a or other appropriate method for determination of oil content as accepted by the International Maritime Organization (IMO) (e.g., ISO Method 9377) or U.S. Coast Guard</li> <li>– otherwise are harmful to the public health or welfare of the United States.</li> </ul> <p>Verify that there is no discharge of photographic laboratory drains.</p> <p>Verify that, to control discharges from vessels that are less than 79 ft in length:</p> <ul style="list-style-type: none"> <li>– to the greatest extent practicable, non-contact engine cooling water, hydraulic system cooling water, refrigeration cooling water and other seawater cooling overboard discharges are minimized when the vessel is in port</li> <li>– to reduce the production and discharge of seawater cooling overboard discharge, the vessel uses shore based power when in port if: <ul style="list-style-type: none"> <li>– shore power is readily available for the vessel from utilities or port authorities</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– shore based power supply systems are capable of providing all needed electricity required for vessel operations</li> <li>– the vessel is equipped to connect to shore-based power and such systems are compatible with the available shore power</li> <li>– fouling organisms are removed from seawater piping on a regular basis and there is no discharge of fouling organisms removed during cleanings.</li> </ul> <p>Verify that, to control discharges from vessels that are greater than or equal to 79 ft in length:</p> <ul style="list-style-type: none"> <li>– to the greatest extent practicable, non-contact engine cooling water, hydraulic system cooling water, refrigeration cooling water and other seawater cooling overboard discharges are minimized when the vessel is in port.</li> <li>– to reduce the production and discharge of seawater cooling overboard discharge, the vessel uses shore based power when in port if: <ul style="list-style-type: none"> <li>– shore power is readily available for the vessel from utilities or port authorities</li> <li>– shore based power supply systems are capable of providing all needed electricity required for vessel operations</li> <li>– the vessel is equipped to connect to shore-based power and such systems are compatible with the available shore power</li> </ul> </li> <li>– for all vessels, except submarines, fouling organisms removed during maintenance are not discharged.</li> </ul> <p>Verify that seawater piping biofouling chemicals subject to registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) (7 U.S.C. 136 et seq.) are used in accordance with the FIFRA label.</p> <p>Verify that pesticides or chemicals banned for use in the United States are not discharged.</p> <p>Verify that, to the greatest extent practicable, only the minimum amount of biofouling chemicals are used to keep fouling under control.</p> <p>Verify that fouling organisms are removed from seawater piping on a regular basis.</p> <p>(NOTE: For all vessels, except submarines, the discharge of fouling organisms removed during cleanings is prohibited.)</p> <p>Verify that vessels generating small boat engine wet exhaust are maintained in good operating order, well-tuned, and functioning according to manufacturer specifications, in order to decrease pollutant concentrations and volumes in small boat engine wet exhaust.</p> <p>(NOTE: The requirements for small boat engine wet exhaust discharges refer only to discharges from vessels that are less than 79 ft in length.)</p>

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	<p>Verify that, to the greatest extent practicable, low sulfur or alternative fuels are used to reduce the concentration of pollutants in discharges from small boat engine wet exhaust.</p> <p>Verify that, to the greatest extent practicable, four-stroke engines are used instead of two-stroke engines for vessels generating small boat engine wet exhaust.</p> <p>Verify that vessels using two-stroke engines use environmentally acceptable lubricants unless use of such lubricants is technologically infeasible.</p> <p>(NOTE: If technologically infeasible, the use and justification for the use of a non-environmentally acceptable lubricant must be recorded in the vessel recordkeeping documentation.)</p> <p>Verify that there are no welldeck discharges that contain graywater from smaller vessels,</p> <p>Verify that there are no welldeck discharges containing washdown from gas turbine engines within three miles of the United States</p> <p>Verify that, to the greatest extent practicable, welldeck discharges containing washdown from gas turbine engines are discharged seaward of waters subject to UNDS.</p> <p>Verify that welldeck discharges from equipment and vehicle washdowns do not contain garbage and do not contain oil in quantities that meet any of the following parameters:</p> <ul style="list-style-type: none"> <li>– cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines</li> <li>– cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines</li> <li>– contain an oil content above 15 ppm as measured by EPA Method 1664a or other appropriate method for determination of oil content as accepted by the International Maritime Organization (IMO) (e.g., ISO Method 9377) or U.S. Coast Guard</li> <li>– otherwise are harmful to the public health or welfare of the United States.</li> </ul> <p>(NOTE: Notwithstanding each of the MPCD performance standards established in 40 CFR 1700, a vessel of the Armed Forces is authorized to discharge, into waters subject to UNDS, when the PIC or their designated representative determines that such discharge is necessary to prevent loss of life, personal injury, vessel endangerment, or severe damage to the vessel.)</p>

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	<p>Verify that a vessel of the Armed Forces maintains the following records for discharges which are necessary to prevent loss of life, personal injury, vessel endangerment, or severe damage to the vessel:</p> <ul style="list-style-type: none"> <li>– name and title of the PIC who determined the necessity of the discharge</li> <li>– date, location, and estimated volume of the discharge</li> <li>– explanation of the reason the discharge occurred</li> <li>– actions taken to avoid, minimize, or otherwise mitigate the discharge.</li> </ul> <p>Verify that, if two or more regulated discharge streams are combined into one, the resulting discharge stream meets the requirements applicable to all discharge streams that are combined prior to discharge.</p> <p>Verify that all records are generated and maintained in the ship's logs (main, engineering, and/or damage control) or an UNDS Record Book and include the following information:</p> <ul style="list-style-type: none"> <li>– vessel owner information (e.g., U.S. Navy, U.S. Coast Guard)</li> <li>– vessel name and class</li> <li>– Name of the PIC.</li> </ul> <p>Verify that the PIC maintains complete records of the following information:</p> <ul style="list-style-type: none"> <li>– any inspection or recordkeeping requirement</li> <li>– any instance of an exception and the associated recordkeeping requirements</li> <li>– any instance of non-compliance with any of the performance standards including the following: <ul style="list-style-type: none"> <li>– description of any non-compliance and its cause</li> <li>– date of non-compliance</li> <li>– period of non-compliance (time and duration)</li> <li>– location of the vessel during non-compliance</li> <li>– corrective action taken</li> <li>– steps taken or planned to reduce, eliminate, and prevent non-compliance in the future</li> <li>– if the non-compliance has not been corrected, an estimate of the time the non-compliance is expected to continue.</li> </ul> </li> </ul> <p>Verify that all records are maintained for 5 yr from the date they are created and are available to the EPA, states, or the U.S. Coast Guard upon request.</p> <p>(NOTE: Any information made available upon request must be appropriately classified, as applicable, and handled in accordance with applicable legal requirements regarding national security.)</p> <p>Verify that the PIC reports any non-compliance, including the required information listed above, to the Armed Service's designated office in writing and/or</p>

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<b>Aquatic Animal Production</b>  <b>WA.95.2.US.</b> Facilities that produce 100,000 lbs or more of aquatic animals per year in a flow-through, recirculating, net pen or submerged cage system must meet general reporting requirements (40 CFR 451.1 and 451.3) [Added October 2004].	<p>electronically within five days of the time the PIC becomes aware of the circumstances.</p> <p>(NOTE: This checklist item applies to the discharges of pollutants from facilities that produce 100,000 lbs or more of aquatic animals per year in a flow-through, recirculating, net pen or submerged cage system.)</p> <p>Verify that a permittee notifies the permitting authority of the use in a concentrated aquatic animal production facility subject of any investigational new animal drug (INAD) or any extralabel drug use where such a use may lead to a discharge of the drug to waters of the U.S.</p> <p>(NOTE: Reporting is not required for an INAD or extralabel drug use that has been previously approved by FDA for a different species or disease if the INAD or extralabel use is at or below the approved dosage and involves similar conditions of use.)</p> <p>Verify that the permittee provides a written report to the permitting authority of an INAD's impending use within 7 days of agreeing or signing up to participate in an INAD study.</p> <p>Verify that the written report identifies the INAD to be used, method of use, the dosage, and the disease or condition the INAD is intended to treat.</p> <p>Verify that for INADs and extralabel drug uses:</p> <ul style="list-style-type: none"> <li>– the permittee provides an oral report to the permitting authority as soon as possible, preferably in advance of use, but no later than 7 days after initiating use of that drug</li> <li>– the oral report identifies the drugs used, method of application, and the reason for using that drug</li> <li>– the permittee provides a written report to the permitting authority within 30 days after initiating use of that drug</li> <li>– the written report identifies the drug used and includes: the reason for treatment, date(s) and time(s) of the addition (including duration), method of application; and the amount added.</li> </ul> <p>Verify that permittees notify the permitting authority when there is failure in, or damage to, the structure of an aquatic animal containment system resulting in an unanticipated material discharge of pollutants to waters of the U.S.</p> <p>(NOTE: The permitting authority may specify in the permit what constitutes reportable damage and/or a material discharge of pollutants, based on a consideration of production system type, sensitivity of the receiving waters and other relevant factors.)</p>

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<p><b>WA.95.3.US.</b> Concentrated aquatic animal production facility that produces 100,000 lb or more per year of aquatic animals in a flow-through or recirculating system must apply best practicable control technology currently available (BPT), best available technology economically achievable (BAT), best conventional technology (BCT), and NSPS (40 CFR 451.10 through 451.14) [Added October 2004].</p>	<p>Verify that the permittee provides an oral report within 24 h of discovery of any reportable failure or damage that results in a material discharge of pollutants, describing the cause of the failure or damage in the containment system and identifying materials that have been released to the environment as a result of this failure.</p> <p>Verify that the permittee provides a written report within 7 days of discovery of the failure or damage documenting the cause, the estimated time elapsed until the failure or damage was repaired, an estimate of the material released as a result of the failure or damage, and steps being taken to prevent a recurrence.</p> <p>Verify that, in the event a spill of drugs, pesticides or feed occurs that results in a discharge to waters of the U.S., the permittee provides an oral report of the spill to the permitting authority within 24 h of its occurrence and a written report within 7 days including the identity and quantity of the material spilled.</p> <p>Verify that permittees:</p> <ul style="list-style-type: none"> <li>– develop and maintain a plan onsite describing how the facility will achieve the requirements of 40 CFR 451.11(a) through 451.11(e) (see checklist item WA.95.3.US) or 40 CFR 451.21(a) through 451.21(h) (see checklist item WA.95.4.US), as applicable</li> <li>– makes the plan available to the permitting authority upon request</li> <li>– certifies in writing to the permitting authority that a BMP plan has been developed.</li> </ul> <p>(NOTE: This checklist item applies to a concentrated aquatic animal production facility that produces 100,000 lb or more per year of aquatic animals in a flow-through or recirculating system.)</p> <p>(NOTE: Currently, BPT, BAT, BCT, and NSPS are the same.)</p> <p>Verify that the permittee:</p> <ul style="list-style-type: none"> <li>– employs efficient feed management and feeding strategies that limit feed input to the minimum amount reasonably necessary to achieve production goals and sustain targeted rates of aquatic animal growth in order to minimize potential discharges of uneaten feed and waste products to waters of the U.S</li> <li>– in order to minimize the discharge of accumulated solids from settling ponds and basins and production systems, identifies and implements procedures for routine cleaning of rearing units and off-line settling basins, and procedures to minimize any discharge of accumulated solids during the inventorying, grading and harvesting aquatic animals in the production system</li> </ul>

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<p><b>WA.95.4.US.</b> Concentrated aquatic animal production facility that produces 100,000 lb or more per year of aquatic animals in net pen or submerged cage systems must meet BPT, BAT, BCT, and NSPS (40 CFR 451.20 through 451.24) <b>[Added October 2004].</b></p>	<ul style="list-style-type: none"> <li>– removes and disposes of aquatic animal mortalities properly on a regular basis to prevent discharge to waters of the U.S., except in cases where the permitting authority authorizes such discharge in order to benefit the aquatic environment</li> <li>– ensures proper storage of drugs, pesticides, and feed in a manner designed to prevent spills that may result in the discharge of drugs, pesticides or feed to waters of the U.S.</li> <li>– implements procedures for properly containing, cleaning, and disposing of any spilled material</li> <li>– inspects the production system and the wastewater treatment system on a routine basis in order to identify and promptly repair any damage</li> <li>– conducts regular maintenance of the production system and the wastewater treatment system in order to ensure that they are properly functioning.</li> </ul> <p>Verify that the permittee maintains the following records:</p> <ul style="list-style-type: none"> <li>– in order to calculate representative feed conversion ratios, records for aquatic animal rearing units documenting the feed amounts and estimates of the numbers and weight of aquatic animals</li> <li>– records documenting the frequency of cleaning, inspections, maintenance and repairs.</li> </ul> <p>Verify that, in order to ensure the proper clean-up and disposal of spilled material, all relevant facility personnel are adequately trained in spill prevention and how to respond in the event of a spill.</p> <p>Verify that staff is trained on the proper operation and cleaning of production and wastewater treatment systems including training in feeding procedures and proper use of equipment.</p> <p>(NOTE: This checklist item applies to the discharge of pollutants from a concentrated aquatic animal production facility that produces 100,000 lb or more per year of aquatic animals in net pen or submerged cage systems, except for net pen facilities rearing native species released after a growing period of no longer than 4 mo to supplement commercial and sport fisheries.)</p> <p>(NOTE: Currently, BPT, BAT, BCT, and NSPS are the same.)</p> <p>Verify that the facility employs efficient feed management and feeding strategies that limit feed input to the minimum amount reasonably necessary to achieve production goals and sustain targeted rates of aquatic animal growth.</p> <p>Verify that the efficient feed strategies minimize the accumulation of uneaten food beneath the pens through the use of active feed monitoring and management practices, including</p> <ul style="list-style-type: none"> <li>– use of real-time feed monitoring, including devices such as video cameras, digital scanning sonar, and upweller systems</li> </ul>

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<b>Concentrated Feeding (CAFOs)</b>	<p>– monitoring of sediment quality beneath the pens monitoring of benthic community quality beneath the pens</p> <p>– capture of waste feed and feces</p> <p>– other good husbandry practices approved by the permitting authority.</p> <p>Verify that the facility collects, returns to shore, and properly disposes of all feed bags, packaging materials, waste rope and netting.</p> <p>Verify that the facility minimizes any discharge associated with the transport or harvesting of aquatic animals including blood, viscera, aquatic animal carcasses, or transport water containing blood.</p> <p>Verify that the facility removes and dispose of aquatic animal mortalities properly on a regular basis to prevent discharge to waters of the U.S.</p> <p>Verify that the facility stores drugs, pesticides and feed in a manner designed to prevent spills that may result in the discharge of drugs, pesticides or feed to waters of the U.S.</p> <p>Verify that procedures are implemented for properly containing, cleaning, and disposing of any spilled material.</p> <p>Verify that the following maintenance is done:</p> <ul style="list-style-type: none"> <li>– inspect the production system on a routine basis in order to identify and promptly repair any damage</li> <li>– conduct regular maintenance of the production system in order to ensure that it is properly functioning.</li> </ul> <p>Verify that, in order to calculate representative feed conversion ratios, the facility maintains records for aquatic animal net pens documenting the feed amounts and estimates of the numbers and weight of aquatic animals.</p> <p>Verify that records are kept of the net changes, inspections and repairs.</p> <p>Verify that, in order to ensure the proper clean-up and disposal of spilled material, all relevant facility personnel are adequately trained in spill prevention and how to respond in the event of a spill.</p> <p>Verify that staff is trained on the proper operation and cleaning of production and wastewater treatment systems including training in feeding procedures and proper use of equipment.</p>
<b>Animal Operations</b>	

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<p><b>WA.95.5.US.</b> Any concentrated animal feeding operations (CAFOs) that introduces process wastewater pollutants into a publicly owned treatment works (POTW) must comply with 40 CFR 403 (40 CFR 412.1, 412.3) [Added July 2005].</p>	<p>(NOTE: This checklist item applies to manure, litter, and/or process wastewater discharges resulting from concentrated animal feeding operations [CAFOs]. Manufacturing and/or agricultural activities which may be subject to this part are generally reported under one or more of the following Standard Industrial Classification [SIC] codes: SIC 0211, SIC 0213, SIC 0214, SIC 0241, SIC 0251, SIC 0252, SIC 0253, SIC 0254, SIC 0259, or SIC 0272 (1987 SIC Manual).)</p> <p>Verify that a CAFO that introduces process wastewater pollutants into a POTW complies with 40 CFR 403.</p>
<p><b>WA.95.6.US.</b> Discharges resulting from the production areas at horse and sheep CAFOs must meet specific parameters (40 CFR 412.10, 412.12, 412.13, 412.15) [Added July 2005].</p>	<p>(NOTE: This checklist item applies to discharges resulting from the production areas at horse and sheep CAFOs. This checklist item does not apply to such CAFOs with less than the following capacities: 10,000 sheep or 500 horses.)</p> <p>Verify that, except as provided in 40 CFR 125.30 through 125.32, with the application of the best practicable control technology available at existing point sources there is no discharge of process waste water pollutants to navigable waters.</p> <p>(NOTE: Process waste pollutants in the overflow may be discharged to navigable waters whenever rainfall events, either chronic or catastrophic, cause an overflow of process waste water from a facility designed, constructed and operated to contain all process generated waste waters plus the runoff from a 10-yr, 24-h rainfall event for the location of the point source.)</p> <p>Verify that, except as provided in 40 CFR 125.30 through 125.32, with the application of the best available technology economically achievable at existing point sources, there is no discharge of process waste water pollutants to U.S. waters.</p> <p>(NOTE: Whenever rainfall events cause an overflow of process wastewater from a facility designed, constructed, operated, and maintained to contain all process-generated wastewaters plus the runoff from a 25-yr, 24-h rainfall event at the location of the point source, any process wastewater pollutants in the overflow may be discharged into U.S. waters.)</p> <p>Verify that, the new source performance standards (NSPS) being achieved are no discharge of process wastewater pollutants into U.S. waters.</p> <p>(NOTE: Whenever rainfall events cause an overflow of process wastewater from a facility designed, constructed, operated, and maintained to contain all process-generated wastewaters plus the runoff from a 25-yr, 24-h rainfall event at the location of the point source, any process wastewater pollutants in the overflow may be discharged into U.S. waters.)</p>
<p><b>WA.95.7.US.</b> Discharges resulting from the production areas at dry lot and wet lot duck CAFOs must meet specific parameters (40 CFR 412.20,</p>	<p>(NOTE: This checklist item applies to discharges resulting from the production areas at dry lot and wet lot duck CAFOs. This checklist item does not apply to such CAFOs with capacity less than 5,000 ducks.)</p>

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412.22, 412.25, 412.26) <b>[Added July 2005].</b>	<p>Verify that, except as provided in 40 CFR 125.30 through 125.32, any existing point source at dry lot and wet lot duck CAFOs achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the (BPT):</p> <ul style="list-style-type: none"> <li>– BOD<sub>5</sub>: <ul style="list-style-type: none"> <li>– Maximum Daily1: 3.66</li> <li>– Maximum Monthly Average1: 2.0</li> <li>– Maximum Daily 2: 1.66</li> <li>– Maximum Monthly Average2: 0.93</li> </ul> </li> <li>– Fecal Coliform <ul style="list-style-type: none"> <li>– Maximum Daily 1: (3)</li> <li>– Maximum Monthly Average1: (3)</li> <li>– Maximum Daily 2: (3)</li> <li>– Maximum Monthly Average2: (3)</li> <li>– 1 Pounds per 1000 ducks.</li> <li>– 2 Kilograms per 1000 ducks.</li> <li>– 3 Not to exceed MPN of 400 per 100 ml at any time.</li> </ul> </li> </ul> <p>Verify that any new point source at dry lot or wet lot duck CAFOs achieve the new source performance standard (NSPS) of no discharge of process wastewater pollutants into U.S. waters.</p> <p>(NOTE: Whenever rainfall events cause an overflow of process wastewater from a facility designed, constructed, operated, and maintained to contain all process-generated wastewaters plus the runoff from a 25-yr, 24-h rainfall event at the location of the point source, any process wastewater pollutants in the overflow may be discharged into U.S. waters.)</p> <p>Verify that except as provided in 40 CFR 403.7 any new dry lot or wet lot duck CAFOs achieve the pretreatment standards for new sources (PSNS) of no introduction of process waste water pollutants to a POTW.</p> <p>(NOTE: Whenever rainfall events cause an overflow of process wastewater from a facility designed, constructed, operated, and maintained to contain all process-generated wastewaters plus the runoff from a 25-yr, 24-h rainfall event at the location of the point source, any process wastewater pollutants in the overflow may be introduced to a POTW.)</p>	
<b>WA.95.8.US.</b> Discharges resulting from CAFOs including mature dairy cows, either milking or dry; cattle other than mature dairy cows or veal calves must meet specific parameters (40 CFR 412.30, 412.31, 412.32,	<p>(NOTE: This checklist item applies to operations defined as concentrated animal feeding operations (CAFOs) under 40 CFR 122.23 and includes the following animals: mature dairy cows, either milking or dry; cattle other than mature dairy cows or veal calves. Cattle other than mature dairy cows include, but are not limited to, heifers, steers, and bulls. This checklist item does not apply to CAFOs with less than the following capacities: 700 mature dairy cows whether milked or dry; 1,000 cattle other than mature dairy cows or veal calves.)</p>	

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<p>412.33, and 412.35) [Added July 2005; Revised April 2006; Revised January 2009].</p>	<p>Verify that, except as provided in 40 CFR 125.30 through 125.32, any existing CAFO production areas, there is no discharge of manure, litter, or process wastewater pollutants into waters of the U.S. from the production area, except that whenever precipitation causes an overflow of manure, litter, or process wastewater, pollutants in the overflow may be discharged into U.S. waters provided:</p> <ul style="list-style-type: none"> <li>– the production area is designed, constructed, operated and maintained to contain all manure, litter, and process wastewater including the runoff and the direct precipitation from a 25-yr, 24-h rainfall event</li> <li>– the production area is operated in accordance with the additional measures and records required by 40 CFR 412.37(a) and (b) (see checklist item WA.95.9.US).</li> </ul> <p>(NOTE: The above standards achieve effluent limitations representing the application of BPT.)</p> <p>(NOTE: Any CAFO subject to this checklist item may request the Director to establish NPDES permit effluent limitations based upon site-specific alternative technologies that achieve a quantity of pollutants discharged from the production area equal to or less than the quantity of pollutants that would be discharged under the baseline performance standards above.)</p> <p>Verify that the CAFO attains the limitations and requirements of this checklist item as of the date of permit coverage.</p> <p>Verify that discharges from CAFO land application areas meet the following requirements:</p> <ul style="list-style-type: none"> <li>– the best management practices specified in 40 CFR 412.4 (see checklist item WA.95.10.US) are developed and implemented</li> <li>– the records specified at 40 CFR 412.37(c) (see checklist item WA.95.9.US.) are maintained</li> <li>– the CAFO attains these limitations and requirements by 27 February 2009.</li> </ul> <p>Verify that, except as provided in 40 CFR 125.30 through 125.32, any existing CAFO including mature dairy cows, either milking or dry; cattle other than mature dairy cows or veal calves achieves the following effluent limitations representing the application of BCT:</p> <ul style="list-style-type: none"> <li>– for CAFO production areas, the same effluent limitations representing the application of BPT</li> <li>– or CAFO land application areas: <ul style="list-style-type: none"> <li>– the best management practices specified in 40 CFR 412.4 (see checklist item WA.95.10.US) are developed and implemented</li> <li>– the records specified at 40 CFR 412.37(c) (see checklist item WA.95.9.US.) are maintained</li> </ul> </li> <li>– the CAFO attains these limitations and requirements by 31 July 2007.</li> </ul>

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	<p>Verify that, except as provided in 40 CFR 125.30 through 125.32, any existing CAFO including mature dairy cows, either milking or dry; cattle other than mature dairy cows or veal calves achieves the following effluent limitations representing the application of BAT:</p> <ul style="list-style-type: none"> <li>– for CAFO production areas, the same effluent limitations representing the application of BPT</li> <li>– or CAFO land application areas: <ul style="list-style-type: none"> <li>– the best management practices specified in 40 CFR 412.4 (see checklist item WA.95.10.US) are developed and implemented</li> <li>– the records specified at 40 CFR 412.37(c) (see checklist item WA.95.9.US.) are maintained</li> </ul> </li> <li>– the CAFO attains these limitations and requirements by 31 July 2007.</li> </ul> <p>Verify that any new CAFO production areas subject to these requirements achieves the following effluent limitations representing the application of NSPS:</p> <ul style="list-style-type: none"> <li>– for CAFO production areas, there must be no discharge of manure, litter, or process wastewater pollutants into waters of the U.S. from the production area, except: <ul style="list-style-type: none"> <li>– whenever precipitation causes an overflow of manure, litter, or process wastewater, pollutants in the overflow may be discharged into U.S. waters provided: <ul style="list-style-type: none"> <li>– the production area is designed, constructed, operated and maintained to contain all manure, litter, and process wastewater including the runoff and the direct precipitation from a 25-yr, 24-h rainfall event</li> <li>– the production area is operated in accordance with the additional measures and records required by 40 CFR 412.37(a) and (b) (see checklist item WA.95.9.US.)</li> </ul> </li> </ul> </li> <li>– any CAFO subject to this regulation may request the Director to establish NPDES permit effluent limitations based upon site-specific alternative technologies that achieve a quantity of pollutants discharged from the production area equal to or less than the quantity of pollutants that would be discharged under the baseline performance standards above, if: <ul style="list-style-type: none"> <li>– in requesting site-specific effluent limitations to be included in the NPDES permit, the CAFO owner or operator submits a supporting technical analysis and any other relevant information and data that would support such site-specific effluent limitations within the time frame provided by the Director</li> <li>– the supporting technical analysis includes calculation of the quantity of pollutants discharged, on a mass basis where appropriate, based on a site-specific analysis of a system designed, constructed, operated, and maintained to contain all manure, litter, and process wastewater, including the runoff from a 25-yr, 24-h rainfall event</li> <li>– the technical analysis of the discharge of pollutants includes:</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– all daily inputs to the storage system, including manure, litter, all process waste waters, direct precipitation, and runoff</li> <li>– all daily outputs from the storage system, including losses due to evaporation, sludge removal, and the removal of wastewater for use on cropland at the CAFO or transport off site</li> <li>– a calculation determining the predicted median annual overflow volume based on a 25-yr period of actual rainfall data applicable to the site</li> <li>– site-specific pollutant data, including N, P, BOD<sub>5</sub>, TSS, for the CAFO from representative sampling and analysis of all sources of input to the storage system, or other appropriate pollutant data</li> <li>– predicted annual average discharge of pollutants, expressed where appropriate as a mass discharge on a daily basis (lbs/day)</li> <li>– any additional information requested by the Director to supplement the supporting technical analysis, including inspection of the CAFO.</li> </ul> <p>Verify that any new CAFO land application areas subject to these requirements achieves the following effluent limitations representing the application of NSPS:</p> <ul style="list-style-type: none"> <li>– the best management practices specified in 40 CFR 412.4 (see checklist item WA.95.10.US) are developed and implemented</li> <li>– the records specified at 40 CFR 412.37(c) (see checklist item WA.95.9.US.) are maintained</li> </ul> <p>Verify that the CAFO attains the limitations and requirements representing the application of NSPS as of the date of permit coverage.</p> <p>(NOTE: Any CAFO including mature dairy cows, either milking or dry; cattle other than mature dairy cows or veal calves that commenced discharging after 14 April 1993, and prior to 14 April 2003, which was a new source subject to the standards specified in 40 CFR 412.15 (see checklist item WA.95.6.US), revised as of 1 July 2002, must continue to achieve those standards for the applicable time period specified in 40 CFR 122.29(d)(1). Thereafter, the source must achieve the standards specified in this checklist item.)</p>
<b>WA.95.9.US.</b> CAFOs including mature dairy cows, either milking or dry; cattle other than mature dairy cows or veal calves must meet inspection and recordkeeping parameters (40 CFR 412.37) [Added July 2005; Revised January 2009].	<p>Verify that there are routine visual inspections of the CAFO production area and, at a minimum, the following are visually inspected:</p> <ul style="list-style-type: none"> <li>– weekly inspections of all stormwater diversion devices, runoff diversion structures, and devices channeling contaminated stormwater to the wastewater and manure storage and containment structure</li> <li>– daily inspection of water lines, including drinking water or cooling water lines</li> <li>– weekly inspections of the manure, litter, and process wastewater impoundments; the inspection will note the level in liquid impoundments as indicated by the depth marker.</li> </ul>

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	<p>Verify that all open surface liquid impoundments have a depth marker which clearly indicates the minimum capacity necessary to contain the runoff and direct precipitation of the 25-yr, 24-h rainfall event.</p> <p>Verify that, for new sources subject to the requirements in 40 CFR 412.46(a)(1), all open surface manure storage structures associated with the new sources includes a depth marker which clearly indicates the minimum capacity necessary to contain the maximum runoff and direct precipitation associated with the design storm used in sizing the impoundment for no discharge.</p> <p>Verify that any deficiencies found as a result of inspections are corrected as soon as possible.</p> <p>Verify that mortalities are not disposed of in any liquid manure or process wastewater system, and are handled in such a way as to prevent the discharge of pollutants to surface water, unless alternative technologies are approved by the Director and are designed to handle mortalities.</p> <p>Verify that each CAFO production area maintains onsite for a period of 5 yr from the date they are created, a complete copy of the information required by 40 CFR 122.21(i)(1) and 40 CFR 122.42(e)(1)(ix) and the following records:</p> <ul style="list-style-type: none"> <li>– records documenting the required inspections</li> <li>– weekly records of the depth of the manure and process wastewater in the liquid impoundment as indicated by the depth marker</li> <li>– records documenting any actions taken to correct deficiencies (NOTE: Deficiencies not corrected within 30 days must be accompanied by an explanation of the factors preventing immediate correction.)</li> <li>– records of mortalities management and practices used by the CAFO</li> <li>– records documenting the current design of any manure or litter storage structures, including volume for solids accumulation, design treatment volume, total design volume, and approximate number of days of storage capacity</li> <li>– records of the date, time, and estimated volume of any overflow.</li> </ul> <p>Verify that the CAFO makes all records available to the Director and, in an authorized State, the Regional Administrator, or his or her designee, for review upon request.</p> <p>Verify that for the CAFO land application records, each CAFO maintains onsite:</p> <ul style="list-style-type: none"> <li>– a copy of its site-specific nutrient management plan.</li> <li>– for a period of five years from the date they are created a complete copy of the information required by 40 CFR 412.4 (see checklist item WA.95.10.US) and 40 CFR 122.42(e)(1)(ix) and the following records: <ul style="list-style-type: none"> <li>– expected crop yields</li> <li>– the date(s) manure, litter, or process waste water is applied to each field</li> </ul> </li> </ul>

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<p><b>WA.95.10.US.</b> Certain management practices should be applied at CAFOs for dairy and beef Cattle, swine, and poultry (MP) [Added July 2005].</p>	<ul style="list-style-type: none"> <li>– weather conditions at time of application and for 24 h prior to and following application</li> <li>– test methods used to sample and analyze manure, litter, process waste water, and soil</li> <li>– results from manure, litter, process waste water, and soil sampling</li> <li>– explanation of the basis for determining manure application rates, as provided in the technical standards established by the Director</li> <li>– calculations showing the total nitrogen and phosphorus to be applied to each field, including sources other than manure, litter, or process wastewater</li> <li>– total amount of nitrogen and phosphorus actually applied to each field, including documentation of calculations for the total amount applied</li> <li>– the method used to apply the manure, litter, or process wastewater</li> <li>– date(s) of manure application equipment inspection.</li> </ul> <p>(NOTE: This checklist item is based on Best Management Practices published in 40 CFR 412.4.)</p> <p>Verify that land application of manure, litter, or process wastewater, develops and implements a nutrient management plan that incorporates the following based on a field-specific assessment of the potential for nitrogen and phosphorus transport from the field and that addresses the form, source, amount, timing, and method of application of nutrients on each field to achieve realistic production goals, while minimizing nitrogen and phosphorus movement to surface waters:</p> <ul style="list-style-type: none"> <li>– application rates for manure, litter, and other process wastewater applied to land under the ownership or operational control of the CAFO which minimize phosphorus and nitrogen transport from the field to surface waters in compliance with the technical standards for nutrient management established by the Director</li> <li>– analysis of manure a minimum of once annually for nitrogen and phosphorus content, and soil analyzed a minimum of once every 5 yr for phosphorus content.</li> <li>– periodic inspection of equipment used for land application of manure, litter, or process wastewater</li> <li>– manure, litter, and process wastewater are not applied closer than 100 ft to any down-gradient surface waters, open tile line intake structures, sinkholes, agricultural well heads, or other conduits to surface waters.</li> </ul> <p>(NOTE: One of the following alternatives may be used instead of complying with the 100 ft setback requirement:</p> <ul style="list-style-type: none"> <li>– the CAFO may substitute the 100-ft setback with a 35-ft wide vegetated buffer where applications of manure, litter, or process wastewater are prohibited</li> <li>– the CAFO may demonstrate that a setback or buffer is not necessary because implementation of alternative conservation practices or field-specific conditions will provide pollutant reductions equivalent or better than the reductions that would be achieved by the 100-ft setback. )</li> </ul>

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<b>WA.95.11.US.</b> Discharges resulting from CAFOs including swine; chickens; turkeys; and veal calves must meet specific parameters (40 CFR 412.40, 412.43, 412.44, 412.45, 412.46, and 412.47) [Added July 2005; Revised April 2006; Revised January 2009].	<p>(NOTE: The results of analyses for nitrogen and phosphorus are to be used in determining application rates for manure, litter, and other process wastewater.)</p> <p>(NOTE: This checklist item applies to CAFOs including swine; chickens; turkeys; and veal calves. This checklist item does not apply to such CAFOs with less than the following capacities:</p> <ul style="list-style-type: none"> <li>– 2,500 swine each weighing 55 lbs. or more</li> <li>– 10,000 swine each weighing less than 55 lbs</li> <li>– 30,000 laying hens or broilers if the facility uses a liquid manure handling system</li> <li>– 82,000 laying hens if the facility uses other than a liquid manure handling system</li> <li>– 125,000 chickens other than laying hens if the facility uses other than a liquid manure handling system</li> <li>– 55,000 turkeys</li> <li>– 1,000 veal calves.)</li> </ul> <p>Verify that, except as provided in 40 CFR 125.30 through 125.32, any existing CAFOs including swine; chickens; turkeys; and veal calves achieves the effluent limitations representing the application of BPT in 40 CFR 412.31 (see checklist item WA.95.8.US).</p> <p>Verify that the CAFO production area attains the BPT limitations and requirements as of the date of permit coverage.</p> <p>Verify that discharges from CAFO land application areas meet the BPT requirements by 31 July 2007.</p> <p>Verify that, except as provided in 40 CFR 125.30 through 125.32, any existing CAFO achieves the same effluent limitations representing the application of BCT as those representing the application of BPT.</p> <p>Verify that, except as provided in 40 CFR 125.30 through 125.32, any existing CAFO achieves the same effluent limitations representing the application of BAT as those representing the application of BPT.</p> <p>Verify that any new CAFO achieves the following effluent limitations representing the application of NSPS and the limitations and requirements are attained as of the date of permit coverage:</p> <ul style="list-style-type: none"> <li>– for CAFO production areas there is no discharge of manure, litter, or process wastewater pollutants into waters of the U.S. from the production area, subject to the following:             <ul style="list-style-type: none"> <li>– the production area is operated in accordance with the additional measures required by 40 CFR 412.37(a) and 412.37(b) (see checklist item WA.95.9.US)</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– provisions for upset/bypass, as provided in 40 CFR 122.41(m) through 122.41(n) (see checklist item WA.10.7.US), apply to a new source</li> <li>– for CAFO land application areas: the CAFO attains the same limitations and requirements as representing the application of BPT in 40 CFR 412.31 (see checklist item WA.95.8.US).</li> </ul> <p>(NOTE: Any CAFO production area subject NSPS may request that the Director establish NPDES permit best management practice effluent limitations designed to ensure no discharge of manure, litter, or process wastewater based upon a site-specific evaluation of the CAFO's open surface manure storage structure. In the case of any CAFO using an open surface manure storage structure for which the Director establishes such effluent limitations, “no discharge of manure, litter, or process wastewater pollutants,” means that the storage structure is designed, operated, and maintained in accordance with best management practices established by the Director on a site-specific basis after a technical evaluation of the storage structure.)</p> <p>(NOTE: Any source subject the requirements of this checklist item that commenced discharging after 14 April 1993, and prior to 14 April 2003, which was a new source must continue to achieve those standards for the applicable time period specified in 40 CFR 122.29(d)(1). Thereafter, the source must achieve the standards for effluent limitations attainable by the application of BPT.)</p> <p>(NOTE: Any source subject the requirements of this checklist item that commenced discharging after 14 April 2003, and prior to 20 January 2009, which was a new source must continue to achieve the NSPS for the applicable time period specified in 40 CFR 122.29(d)(1).)</p> <p>(NOTE: According to 40 CFR 122.29(d)(1), any new discharger which commenced construction after 18 October 1972, or a new source which meets the applicable promulgated NSPS before the commencement of discharge, is not subject to any more stringent new source performance standards or to any more stringent technology-based standards under section 301(b)(2) of CWA for the soonest ending of the following periods:</p> <ul style="list-style-type: none"> <li>– 10 yr from the date that construction is completed</li> <li>– 10 yr from the date the source begins to discharge process or other nonconstruction related wastewater</li> <li>– the period of depreciation or amortization of the facility for the purposes of section 167 or 169 (or both) of the Internal Revenue Code of 1954.)</li> </ul> <p>Verify that each CAFO including swine; chickens; turkeys; and veal calves meets the inspection and recordkeeping requirements of 40 CFR 412.37 (see checklist item WA.95.9.US).</p>



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<b>INDIVIDUAL SEWAGE SYSTEMS</b>  <b>WA.100</b>  <b>WA.100.1.US.</b> Vessels with installed toilet facilities must meet certain operational parameters (33 CFR 159.7) [Added January 2012].	<p>Verify that no vessel equipped with installed toilet facilities is operated unless it is equipped with one of the following depending on the size of the vessel:</p> <ul style="list-style-type: none"> <li>– an operable Type II or III device that is labeled by a Coast Guard approved manufacturer or that is Coast Guard certified</li> <li>– an operable Type I device that is labeled by a Coast Guard approved manufacturer or that Coast Guard certified if the vessel is 19.7 m (65 ft) or less in length.</li> </ul> <p>Verify that, when a vessel is operating on a body of water where the discharge of treated or untreated sewage is prohibited by the EPA, the operator secures each Type I or Type II device in a manner which prevents discharge of treated or untreated sewage.</p> <p>(NOTE: Acceptable methods of securing the Type I or Type II device include:</p> <ul style="list-style-type: none"> <li>– closing the seacock and removing the handle</li> <li>– padlocking the seacock in the closed position</li> <li>– using a non-releasable wire-tie to hold the seacock in the closed position;</li> <li>– locking the door to the space enclosing the toilets with a padlock or door handle key lock.)</li> </ul> <p>Verify that, when operating a vessel on a body of water where the discharge of untreated sewage is prohibited by the EPA, the operator secures each Type III device in a manner which prevents discharge of sewage.</p> <p>(NOTE: Acceptable methods of securing the Type III device include:</p> <ul style="list-style-type: none"> <li>– closing each valve leading to an overboard discharge and removing the handle</li> <li>– padlocking each valve leading to an overboard discharge in the closed position</li> <li>– using a non-releasable wire-tie to hold each valve leading to an overboard discharge in the closed position.)</li> </ul>





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<p>503.12(e)(2)) [Revised October 1999].</p>	<p>(NOTE: If bulk sewage sludge subject to the cumulative pollutant loading rates in Table 2, Appendix 12-6 has not been applied to the site since 20 July 1993, the cumulative amount for each pollutant listed in Table 2, Appendix 12-6 may be applied to agricultural land, a forest, a public contact site, or a reclamation site.)</p> <p>Verify that, if bulk sewage sludge subject to the cumulative pollutant loading rates in Table 2, Appendix 12-6 has been applied to the site since 20 July 1993, and the cumulative amount of each pollutant applied to the site in the bulk sewage sludge since that date is known, the cumulative amount of each pollutant applied to the site is used to determine the additional amount of each pollutant that can be applied to agricultural land, a forest, a public contact site, or a reclamation site.</p> <p>Verify that, if bulk sewage sludge subject to the cumulative pollutant loading rates in Table 2, Appendix 12-6 has been applied to the site since 20 July 1993, and the cumulative amount of each pollutant applied to the site in the bulk sewage sludge since that date is not known, an additional amount of each pollutant is not applied to the agricultural land, a forest, a public contact site, or a reclamation site.</p> <p>(NOTE: These requirements do not apply when the following meets the ceiling concentrations and pollutant concentrations in Tables 1 and 3 of Appendix 12-6, the Class A pathogen requirements (see definitions), and one of the vector attraction reduction requirements (see definitions):</p> <ul style="list-style-type: none"> <li>– when bulk sewage sludge is applied to the land</li> <li>– when a bulk material derived from sewage sludge is applied to the land</li> <li>– when sewage sludge is sold or given away in a bag or other container for application to the land</li> <li>– when a material derived from sewage sludge is sold or given away in a bag or other container for application to the land.</li> </ul> <p>(NOTE: The Regional Administrator of USEPA or, in the case of a state with an approved sludge management program, the State Director, may apply any or all of these requirements to the bulk sewage sludge or to bulk material derived from sewage sludge on a case-by-case basis after determining that the general requirements are needed to protect public health and the environment from any reasonably anticipated adverse effect that may occur from any pollutant in the bulk sewage sludge or the bulk material derived from sewage sludge.)</p> <p>(NOTE: These requirements apply to sludge generated during the treatment of domestic sewage in a treatment works. For exclusions see the definitions of the term “excluded sludge.” A summary of the important compliance dates is found in Appendix 12-5.)</p> <p>(NOTE: See checklist item WA.105.1.US for applicability information.)</p> <p>Verify that bulk sewage sludge or sewage sludge sold or given away in a bag or other container is not applied to the land if the concentration of any pollutant in the</p>

**WA.105.3.US.** Bulk sewage sludge or sewage sludge sold or given away in a bag or other container must meet specific standards (40 CFR 503.10(b),

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503.10(c),            503.10(e), 503.10(f),            503.13(a)(1), 503.13(a)(4),        503.14(e), 503.15(a)(3),        503.15(c)(3), 503.32(a),            503.33(a)(3)) <b>[Revised October 1999].</b>		<p>sewage sludge exceeds the ceiling concentration for the pollutant in Table 3, Appendix 12-6.</p> <p>Verify that, if sewage sludge is sold or given away in a bag or other container for application to the land, one of the following is met:</p> <ul style="list-style-type: none"> <li>– the concentration of each pollutant in the sewage sludge does not exceed the concentration for the pollutant in Table 1, Appendix 12-6</li> <li>– the product of the concentration of each pollutant in the sewage sludge and the annual whole sludge application rate for the sewage sludge does not cause the annual pollutant loading rate for the pollutant in Table 4, Appendix 12-6 to be exceeded.</li> </ul> <p>(NOTE: The procedure used to determine the annual whole sludge application rate is presented in Appendix A of 40 CFR 503.)</p> <p>Verify that either a label is affixed to the bag or other container in which sewage sludge that is sold or given away for application to the land, or an information sheet is provided to the person who receives sewage sludge sold or given away in another container for application to the land.</p> <p>Verify that the label or information sheet contains the following information:</p> <ul style="list-style-type: none"> <li>– the name and address of the person who prepared the sewage sludge that is sold or given away in a bag or other container for application to the land</li> <li>– statement that application of the sewage sludge to the land is prohibited except in accordance with the instructions on the label or information sheet</li> <li>– the annual whole sludge application rate for the sewage sludge that does not cause any of the annual pollutant loading rates in Table 4, Appendix 12-6, to be exceeded.</li> </ul> <p>(NOTE: These labeling requirements do not apply when the following meets the ceiling concentrations and pollutant concentrations in Tables 1 and 3 of Appendix 12-6, the Class A pathogen requirements (see definitions), and one of the vector attraction reduction requirements in 40 CFR 503.33(b)(1) through 503.33(b)(8) (see definitions):</p> <ul style="list-style-type: none"> <li>– when bulk sewage sludge is applied to the land</li> <li>– when a bulk material derived from sewage sludge is applied to the land</li> <li>– when sewage sludge is sold or given away in a bag or other container for application to the land</li> <li>– when a material derived from sewage sludge is sold or given away in a bag or other container for application to the land.)</li> </ul> <p>(NOTE: The Regional Administrator of USEPA or, in the case of a State with an approved sludge management program, the State Director, may apply any or all of these labeling requirements to the bulk sewage sludge or to bulk material derived from sewage sludge on a case-by-case basis after determining that the general</p>

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<p><b>WA.105.4.US.</b> The application of bulk sewage sludge is not permitted in specific circumstances (40 CFR 503.10(b), 503.10(c), 503.10(e), 503.10(f), 503.14(a) through 503.14(c)) [Revised October 1999].</p>	<p>requirements are needed to protect public health and the environment from any reasonably anticipated adverse effect that may occur from any pollutant in the bulk sewage sludge or the bulk material derived from sewage sludge.)</p> <p>Verify that sewage sludge meets the Class A pathogen requirements.</p> <p>(NOTE: See the definition of Class A Sludge for the alternatives that can be used to attain this classification.)</p> <p>Verify that the Class A pathogen requirements are met either prior to or at the same time as meeting the vector attraction reduction requirements (see definitions), except when the following vector reduction requirements are used:</p> <ul style="list-style-type: none"> <li>– the pH of sewage sludge is be raised to 12 or higher by alkali addition and, without the addition of more alkali, remains at 12 or higher for 2 h and then at 11.5 or higher for an additional 22 h</li> <li>– the percent solids of sewage sludge that does not contain unstabilized solids generated in a primary wastewater treatment process is equal to or greater than 75 percent based on the moisture content and total solids prior to mixing with other materials</li> <li>– the percent solids of sewage sludge that contains unstabilized solids generated in a primary wastewater treatment process is equal to or greater than 90 percent based on the moisture content and total solids prior to mixing with other materials.</li> </ul> <p>Verify that one of the vector reduction requirements listed in paragraphs 1 through 8 of the definition for vector reduction requirements is used.</p> <p>(NOTE: These requirements apply to sludge generated during the treatment of domestic sewage in a treatment works. For exclusions see the definitions of the term “excluded sludge.” A summary of the important compliance dates is found in Appendix 12-5.)</p> <p>(NOTE: See checklist item WA.105.1.US for applicability information.)</p> <p>Verify that bulk sewage sludge is not applied to the land if it is likely to adversely affect a threatened or endangered species listed under section 4 of the <i>Endangered Species Act</i> or its designated critical habitat.</p> <p>Verify that bulk sewage sludge is not applied to agricultural land, forest, a public contact site, or a reclamation site that is flooded, frozen, or snow-covered so that the bulk sewage sludge enters a wetland or other waters of the United States, as defined in 40 CFR 122.2, except as provided in a permit issued under section 402 or 404 of the CWA.</p>

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<p><b>WA.105.5.US.</b> Bulk sewage sludge applied to agricultural land, forest, a public contact site, or a reclamation site must meet specific standards (40 CFR 503.10(b), 503.10(c), 503.10(e), 503.10(f), 503.12(b), 503.13(a)(2), 503.14(d), 503.15(a)(1), 503.15(c)(1), 503.32(a), 503.32(b), 503.33(a)(1), 503.33(b)) <b>[Revised October 1999]</b>.</p>	<p>Verify that bulk sewage sludge is not applied to agricultural land, forest, or a reclamation site that is 10 m or less from waters of the United States, as defined in 40 CFR 122.2, unless otherwise specified by the permitting authority.</p> <p>(NOTE: These requirements do not apply when the following meets the ceiling concentrations and pollutant concentrations in Tables 1 and 3 of Appendix 12-6, the Class A pathogen requirements (see definitions), and one of the vector attraction reduction requirements in 40 CFR 503.33(b)(1) through (b)(8) (see definitions):</p> <ul style="list-style-type: none"> <li>– when bulk sewage sludge is applied to the land</li> <li>– when a bulk material derived from sewage sludge is applied to the land</li> <li>– when sewage sludge is sold or given away in a bag or other container for application to the land</li> <li>– when a material derived from sewage sludge is sold or given away in a bag or other container for application to the land.)</li> </ul> <p>(NOTE: The Regional Administrator of USEPA or, in the case of a state with an approved sludge management program, the State Director may apply any or all of these requirements to the bulk sewage sludge or to bulk material derived from sewage sludge on a case-by-case basis after determining that the general requirements are needed to protect public health and the environment from any reasonably anticipated adverse effect that may occur from any pollutant in the bulk sewage sludge or the bulk material derived from sewage sludge.)</p> <p>(NOTE: These requirements apply to sludge generated during the treatment of domestic sewage in a treatment works. For exclusions see the definitions of the term “excluded sludge.” A summary of the important compliance dates is found in Appendix 12-5.)</p> <p>(NOTE: See checklist item WA.105.1.US for applicability information.)</p> <p>Verify that, if bulk sewage sludge is applied to agricultural land, forest, a public contact site, or a reclamation site, either of the following are met:</p> <ul style="list-style-type: none"> <li>– the cumulative loading rate for each pollutant does not exceed the cumulative pollutant loading rate for the pollutant in Table 2, Appendix 12-6</li> <li>– the concentration of each pollutant in the sewage sludge does not exceed the concentration for the pollutant in Table 1, Appendix 12-6.</li> </ul> <p>(NOTE: The requirements for cumulative loading rates do not apply when the following meets the ceiling concentrations and pollutant concentrations in Tables 1 and 3 of Appendix 12-6, the Class A pathogen requirements (see definitions), and one of the vector attraction reduction requirements in 40 CFR 503.33(b)(1) through (b)(8) (see definitions):</p> <ul style="list-style-type: none"> <li>– when bulk sewage sludge is applied to the land</li> <li>– when a bulk material derived from sewage sludge is applied to the land</li> </ul>

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	<ul style="list-style-type: none"> <li>– when sewage sludge is sold or given away in a bag or other container for application to the land</li> <li>– when a material derived from sewage sludge is sold or given away in a bag or other container for application to the land.)</li> </ul> <p>(NOTE: The Regional Administrator of USEPA or, in the case of a state with an approved sludge management program, the State Director, may apply any or all of these cumulative loading rate requirements to the bulk sewage sludge or to bulk material derived from sewage sludge on a case-by-case basis after determining that the general requirements are needed to protect public health and the environment from any reasonably anticipated adverse effect that may occur from any pollutant in the bulk sewage sludge or the bulk material derived from sewage sludge.)</p> <p>Verify that bulk sewage sludge is applied to agricultural land, forest, a public contact site, or a reclamation site at a whole sludge application rate that is equal to or less than the agronomic rate for the bulk sewage sludge, unless, in the case of a reclamation site, otherwise specified by the permitting authority.</p> <p>Verify that sewage sludge meets either the Class A or the Class B pathogen requirements.</p> <p>(NOTE: See the definition of Class A Sludge or Class B Sludge for the alternatives that can be used to attain this classification.)</p> <p>Verify that the Class A pathogen requirements are met either prior to or at the same time as meeting the vector attraction reduction requirements (see definitions), except when the following vector reduction requirements are used:</p> <ul style="list-style-type: none"> <li>– the pH of sewage sludge is be raised to 12 or higher by alkali addition and, without the addition of more alkali, remains at 12 or higher for 2 h and then at 11.5 or higher for an additional 22 h</li> <li>– the percent solids of sewage sludge that does not contain unstabilized solids generated in a primary wastewater treatment process is equal to or greater than 75 percent based on the moisture content and total solids prior to mixing with other materials</li> <li>– the percent solids of sewage sludge that contains unstabilized solids generated in a primary wastewater treatment process is equal to or greater than 90 percent based on the moisture content and total solids prior to mixing with other materials.</li> </ul> <p>Verify that, if sewage sludge meets the Class B requirements, the following site restrictions are met:</p> <ul style="list-style-type: none"> <li>– food crops with harvested parts that touch the sewage sludge/soil mixture and are totally above the land surface are not harvested for 14 mo after application of sewage sludge</li> </ul>

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<p><b>WA.105.6.US.</b> Bulk sewage sludge applied to a lawn or home garden must meet certain standards (40 CFR 503.13(a)(3), 503.15(a)(2), 503.15(c)(2), 503.32(a), 503.33(a)(2)) <b>[Revised October 1999].</b></p>	<ul style="list-style-type: none"> <li>– food crops with harvested parts below the surface of the land are not harvested for 20 mo after application of sewage sludge when the sewage sludge remains on the land surface for 4 mo or longer prior to incorporation into the soil</li> <li>– food crops with harvested parts below the surface of the land are not harvested for 38 mo after application of sewage sludge when the sewage sludge remains on the land surface for less than 4 mo prior to incorporation into the soil</li> <li>– food crops, feed crops, and fiber crops are not harvested for 30 days after application of sewage sludge</li> <li>– animals are not grazed on the land for 30 days after application of sewage sludge</li> <li>– turf grown on land where sewage sludge is applied is not harvested for 1 yr after application of the sewage sludge when the harvested turf is placed on either land with a high potential for public exposure or a lawn, unless otherwise specified by the permitting authority</li> <li>– public access to land with a high potential for public exposure is restricted for 1 yr after application of sewage sludge</li> <li>– public access to land with a low potential for public exposure is restricted for 30 days after application of sewage sludge.</li> </ul> <p>Verify that one of the vector reduction requirements listed in paragraphs 1 through 11 of the definition for vector reduction requirements is used.</p> <p>(NOTE: These requirements apply to sludge generated during the treatment of domestic sewage in a treatment works. For exclusions see the definitions of the term “excluded sludge.” A summary of the important compliance dates is found in Appendix 12-5.)</p> <p>(NOTE: See checklist item WA.105.1.US for applicability information.)</p> <p>Verify that, if bulk sewage sludge is applied to a lawn or home garden, it does not contain pollutants in excess of the limits in Table 1, Appendix 12-6.</p> <p>Verify that sewage sludge meets the Class A pathogen requirements.</p> <p>(NOTE: See the definition of Class A Sludge for the alternatives that can be used to attain this classification.)</p> <p>Verify that the Class A pathogen requirements are met either prior to or at the same time as meeting the vector attraction reduction requirements (see definitions), except when the following vector reduction requirements are used:</p> <ul style="list-style-type: none"> <li>– the pH of sewage sludge is be raised to 12 or higher by alkali addition and, without the addition of more alkali, remains at 12 or higher for 2 h and then at 11.5 or higher for an additional 22 h</li> <li>– the percent solids of sewage sludge that does not contain unstabilized solids generated in a primary wastewater treatment process is equal to or greater than</li> </ul>

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<p><b>WA.105.7.US.</b> The application of domestic septage to agricultural land, forest, or a reclamation site must meet specific requirements (40 CFR 503.10(b), 503.10(c), 503.10(e), 503.10(f), 503.12(c), 503.13(c), 503.15(b), 503.15(d), 503.32(c), 503.33(a)(5)) [Revised October 1999].</p>	<p>75 percent based on the moisture content and total solids prior to mixing with other materials</p> <ul style="list-style-type: none"> <li>– the percent solids of sewage sludge that contains unstabilized solids generated in a primary wastewater treatment process is equal to or greater than 90 percent based on the moisture content and total solids prior to mixing with other materials.</li> </ul> <p>Verify that one of the vector reduction requirements listed in paragraphs 1 through 8 of the definition for vector reduction requirements is met.</p> <p>(NOTE: These requirements apply to sludge generated during the treatment of domestic sewage in a treatment works. For exclusions see the definitions of the term “excluded sludge.” A summary of the important compliance dates is found in Appendix 12-5.)</p> <p>(NOTE: See checklist item WA.105.1.US for applicability information.)</p> <p>Verify that the annual application rate for domestic septage applied to agricultural lands, forest or a reclamation site during a 365-day period does not exceed the annual application rate calculated using the following equation:</p> $AAR = \frac{N}{0.0026}$ <p>AAR = annual application rate in gallons per acre per 365-day period</p> <p>N = amount of nitrogen in pounds per acre per 365-day period needed by the crop or vegetation grown on the land.</p> <p>(NOTE: The annual application rate requirements do not apply when the following meets the pollutant concentrations in Table 1, Appendix 12-6, the Class A pathogen requirements (see definitions), and one of the vector attraction reduction requirements in 40 CFR 503.33(b)(1) through 503.33(b)(8) (see definitions):</p> <ul style="list-style-type: none"> <li>– when bulk sewage sludge is applied to the land</li> <li>– when a bulk material derived from sewage sludge is applied to the land</li> <li>– when sewage sludge is sold or given away in a bag or other container for application to the land</li> <li>– when a material derived from sewage sludge is sold or given away in a bag or other container for application to the land.)</li> </ul> <p>(NOTE: The Regional Administrator of USEPA or, in the case of a state with an approved sludge management program, the State Director may apply any or all of these annual application rate requirements to the bulk sewage sludge or to bulk material derived from sewage sludge on a case-by-case basis after determining that the general requirements are needed to protect public health and the environment</p>

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	<p>from any reasonably anticipated adverse effect that may occur from any pollutant in the bulk sewage sludge or the bulk material derived from sewage sludge.)</p> <p>Verify that one of the following is met when domestic septage is applied to agricultural land, forest, or a reclamation site:</p> <ul style="list-style-type: none"> <li>– site restrictions as follows: <ul style="list-style-type: none"> <li>– food crops with harvested parts that touch the sewage sludge/soil mixture and are totally above the land surface are not harvested for 14 mo after application of sewage sludge</li> <li>– food crops with harvested parts below the surface of the land are not harvested for 20 mo after application of sewage sludge when the sewage sludge remains on the land surface for 4 mo or longer prior to incorporation into the soil</li> <li>– food crops with harvested parts below the surface of the land are not harvested for 38 mo after application of sewage sludge when the sewage sludge remains on the land surface for less than 4 mo prior to incorporation into the soil</li> <li>– food crops, feed crops, and fiber crops are not harvested for 30 days after application of sewage sludge</li> <li>– animals are not grazed on the land for 30 days after application of sewage sludge</li> <li>– turf grown on land where sewage sludge is applied is not harvested for 1 yr after application of the sewage sludge when the harvested turf is placed on either land with a high potential for public exposure or a lawn, unless otherwise specified by the permitting authority</li> <li>– public access to land with a high potential for public exposure is restricted for 1 yr after application of sewage sludge</li> <li>– public access to land with a low potential for public exposure is restricted for 30 days after application of sewage sludge.</li> </ul> </li> <li>– the pH is raised to 12 or higher by alkali addition and, without the addition of more alkali, remains at 12 or higher for 30 min and the following site restrictions are met: <ul style="list-style-type: none"> <li>– food crops with harvested parts that touch the sewage sludge/soil mixture and are totally above the land surface are not harvested for 14 mo after application of sewage sludge</li> <li>– food crops with harvested parts below the surface of the land are not harvested for 20 mo after application of sewage sludge when the sewage sludge remains on the land surface for 4 mo or longer prior to incorporation into the soil</li> <li>– food crops with harvested parts below the surface of the land are not harvested for 38 mo after application of sewage sludge when the sewage sludge remains on the land surface for less than 4 mo prior to incorporation into the soil</li> <li>– food crops, feed crops, and fiber crops are not harvested for 30 days after application of sewage sludge.</li> </ul> </li> </ul>

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<p><b>WA.105.8.US.</b> When applying sewage sludge to an active sewage sludge unit, certain requirements must be met (40 CFR 503.33(a)(4) and 503.33(a)(5)) <b>[Added October 1999].</b></p>	<p>Verify that one of the following vector reduction requirements is used:</p> <ul style="list-style-type: none"> <li>– sewage sludge is injected below the surface of the land; no significant amount of the sewage sludge is present on the land surface within 1 h after the sewage sludge is injected; when the sewage sludge that is injected below the surface of the land is Class A with respect to pathogens, the sewage sludge is injected below the land surface within 8 h after being discharged from the pathogen treatment process</li> <li>– sewage sludge applied to the land surface or placed on a surface disposal site is incorporated into the soil within 6 h after application to or placement on the land; when sewage sludge that is incorporated into the soil is Class A with respect to pathogens, the sewage sludge is applied to or placed on the land within 8 h after being discharged from the pathogen treatment process</li> <li>– the pH of domestic septage is raised to 12 or higher by alkali addition and, without the addition of more alkali, shall remain at 12 or higher for 30 min.</li> </ul> <p>(NOTE: These requirements apply to sludge generated during the treatment of domestic sewage in a treatment works. For exclusions see the definitions of the term “excluded sludge.” A summary of the important compliance dates is found in Appendix 12-5.)</p> <p>(NOTE: See checklist item WA.105.1.US for applicability information.)</p> <p>Verify that one of the vector reduction requirements listed in paragraphs 1 through 11 of the definition for vector reduction requirements is met when sewage sludge, other than domestic septage, is placed on an active sewage sludge unit.</p> <p>Verify that one of the following vector reduction requirements is met when applying domestic septage on an active sewage sludge unit:</p> <ul style="list-style-type: none"> <li>– sewage sludge is injected below the surface of the land; no significant amount of the sewage sludge is present on the land surface within 1 h after the sewage sludge is injected; when the sewage sludge that is injected below the surface of the land is Class A with respect to pathogens, the sewage sludge is injected below the land surface within 8 h after being discharged from the pathogen treatment process</li> <li>– sewage sludge applied to the land surface or placed on a surface disposal site is incorporated into the soil within 6 h after application to or placement on the land; when sewage sludge that is incorporated into the soil is Class A with respect to pathogens, the sewage sludge is applied to or placed on the land within 8 h after being discharged from the pathogen treatment process</li> <li>– sewage sludge placed on an active sewage sludge unit is covered with soil or other material at the end of each operating day</li> <li>– the pH of domestic septage is raised to 12 or higher by alkali addition and, without the addition of more alkali, shall remain at 12 or higher for 30 min.</li> </ul>

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	<p>(NOTE: These requirements apply to sludge generated during the treatment of domestic sewage in a treatment works. For exclusions see the definitions of the term “excluded sludge.” A summary of the important compliance dates is found in Appendix 12-5.)</p>







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<b>LAND APPLICATION OF SLUDGE</b>  <b>WA.115 Notifications</b>  <b>WA.115.1.US.</b> Persons who prepare sewage sludge are required to provide specific notifications (40 CFR 503.10(b), 503.10(c), 503.10(e), 503.10(f), 503.12(d), 503.12(f), 503.12(g), and 503.12(I)) <b>[Revised October 1999].</b>	<p>(NOTE: See checklist item WA.105.1.US for applicability information.)</p> <p>(NOTE: These requirements apply to sewage sludge generated during the treatment of domestic sewage in a treatment works. For exclusions see the definition of the term “exempted sludge.”)</p> <p>Verify that the person who prepares bulk sewage sludge that is applied to agricultural land, forest, a public contact site, or a reclamation site provides the person who applies the bulk sewage sludge written notification of the concentration of total nitrogen (as N on a dry weight basis) in the bulk sewage sludge.</p> <p>Verify that, when a person who prepares bulk sewage sludge provides the bulk sewage sludge to a person who applies the bulk sewage sludge to the land, the preparer of the sewage sludge provides the person who applies the sewage sludge notice and necessary information to comply with the requirements in 40 CFR 503.10 through 503.18.</p> <p>Verify that, when a person who prepares sewage sludge provides the sewage sludge to another person who prepares the sewage sludge, the provider of the sewage sludge provides the receiver of the sewage sludge notice and necessary information to comply with the requirements in 40 CFR 503.10 through 503.18.</p> <p>Verify that any person who prepares bulk sewage sludge that is applied to land in a state other than the state in which the bulk sewage sludge is prepared provides written notice containing the following information, prior to the initial application of bulk sewage sludge to the land application site by the applier, to the permitting authority for the State in which the bulk sewage sludge is proposed to be applied:</p> <ul style="list-style-type: none"> <li>– the location, by either street address or latitude and longitude, of each land application site</li> <li>– the approximate time period in which bulk sewage sludge will be applied to the site</li> <li>– the name, address, telephone number, and NPDES permit number (if appropriate) for the person who prepares the bulk sewage sludge</li> <li>– the name, address, telephone number, and NPDES permit number (if appropriate) for the person who will apply the bulk sewage sludge.</li> </ul> <p>(NOTE: These requirements do not apply when the following meets the ceiling concentrations and pollutant concentrations in Tables 1 and 3 of Appendix 12-6, the Class A pathogen requirements (see definitions), and one of the vector attraction reduction requirements in 40 CFR 503.33(b)(1) through (b)(8) (see definitions):</p>

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<p><b>WA.115.2.US.</b> Checklist item deleted. <b>[Deleted October 1999]</b>.</p> <p><b>WA.115.3.US.</b> Persons who apply bulk sewage sludge to the land are required to provide notice to the landowner or lease holder (40 CFR 503.10(b), 503.10(c), 503.10(e), and 503.10(f), and 503.12(h)) [Revised October 1999].</p>	<ul style="list-style-type: none"> <li>– when bulk sewage sludge is applied to the land</li> <li>– when a bulk material derived from sewage sludge is applied to the land</li> <li>– when sewage sludge is sold or given away in a bag or other container for application to the land</li> <li>– when a material derived from sewage sludge is sold or given away in a bag or other container for application to the land.)</li> </ul> <p>(NOTE: The Regional Administrator of USEPA or, in the case of a state with an approved sludge management program, the State Director, may apply any or all of these requirements to the bulk sewage sludge or to bulk material derived from sewage sludge on a case-by-case basis after determining that the general requirements are needed to protect public health and the environment from any reasonably anticipated adverse effect that may occur from any pollutant in the bulk sewage sludge or the bulk material derived from sewage sludge.)</p> <p>This checklist item was incorporated into WA.115.1.US.</p> <p>(NOTE: See checklist item WA.105.1.US for applicability information.)</p> <p>(NOTE: These requirements apply to sewage sludge generated during the treatment of domestic sewage in a treatment works. For exclusions see the definition of the term “exempted sludge.”)</p> <p>Verify that notice is given that includes the information needed to verify compliance with the land application regulations.</p> <p>(NOTE: These requirements do not apply when the following meets the ceiling concentrations and pollutant concentrations in Tables 1 and 3 of Appendix 12-6, the Class A pathogen requirements (see definitions), and one of the vector attraction reduction requirements in 40 CFR 503.33(b)(1) through (b)(8) (see definitions):</p> <ul style="list-style-type: none"> <li>– when bulk sewage sludge is applied to the land</li> <li>– when a bulk material derived from sewage sludge is applied to the land</li> <li>– when sewage sludge is sold or given away in a bag or other container for application to the land</li> <li>– when a material derived from sewage sludge is sold or given away in a bag or other container for application to the land.)</li> </ul> <p>(NOTE: The Regional Administrator of USEPA or, in the case of a state with an approved sludge management program, the State Director, may apply any or all of these requirements to the bulk sewage sludge or to bulk material derived from sewage sludge on a case-by-case basis after determining that the general requirements are needed to protect public health and the environment from any reasonably anticipated adverse effect that may occur from any pollutant in the bulk sewage sludge or the bulk material derived from sewage sludge.)</p>

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<p><b>WA.115.4.US.</b> Checklist item deleted. <b>[Deleted October 1999].</b></p> <p><b>WA.115.5.US.</b> When applying bulk sewage sludge subject to the cumulative loading rates in Table 2, Appendix 12-6, written notice is required to be provided prior to the initial application of the sludge (40 CFR 503.10(b), 503.10(c), 503.10(e), and 503.10(f), and 503.12(j)) <b>[Revised October 1999].</b></p>	<p>This checklist item was incorporated into WA.115.1.US.</p> <p>(NOTE: See checklist item WA.105.1.US for applicability information.)</p> <p>(NOTE: These requirements apply to sewage sludge generated during the treatment of domestic sewage in a treatment works. For exclusions see the definition of the term “exempted sludge.”)</p> <p>Verify that, any person who applies bulk sewage sludge subject to the cumulative pollutant loading rates in Table 2, Appendix 12-6 to the land provides written notice to the permitting authority for the state in which the bulk sewage sludge will be applied.</p> <p>Verify that the notice includes:</p> <ul style="list-style-type: none"> <li>– the location, by either street address or latitude and longitude, of the land application site</li> <li>– the name, address, telephone number, and NPDES permit number (if appropriate) of the person who will apply the bulk sewage sludge.</li> </ul> <p>Verify that notice is provided prior to the initial application of bulk sewage sludge to a land application site by the applier.</p> <p>(NOTE: These requirements do not apply when the following meets the ceiling concentrations and pollutant concentrations in Tables 1 and 3 of Appendix 12-6, the Class A pathogen requirements (see definitions), and one of the vector attraction reduction requirements in 40 CFR 503.33(b)(1) through (b)(8) (see definitions):</p> <ul style="list-style-type: none"> <li>– when bulk sewage sludge is applied to the land</li> <li>– when a bulk material derived from sewage sludge is applied to the land</li> <li>– when sewage sludge is sold or given away in a bag or other container for application to the land</li> <li>– when a material derived from sewage sludge is sold or given away in a bag or other container for application to the land.</li> </ul> <p>(NOTE: The Regional Administrator of USEPA or, in the case of a state with an approved sludge management program, the State Director, may apply any or all of these requirements to the bulk sewage sludge or to bulk material derived from sewage sludge on a case-by-case basis after determining that the general requirements are needed to protect public health and the environment from any reasonably anticipated adverse effect that may occur from any pollutant in the bulk sewage sludge or the bulk material derived from sewage sludge.)</p>

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<b>LAND APPLICATION OF SLUDGE</b>  <b>WA.120 Monitoring</b>  <b>WA.120.1.US.</b> Monitoring for the limitations in Tables 1 through 4 of Appendix 12-6, pathogen density in Class A and Class B pathogens, and vector attraction reduction requirements must be done according to the frequency in Table 5, Appendix 12-6 (40 CFR 503.16(a)) <b>[Revised October 1999]</b> .  <b>WA.120.2.US.</b> In specific instances, when domestic sewage is applied to agricultural land, forest, or a reclamation site, each container of domestic septage is required to be monitored for compliance (40 CFR 503.16(b)) <b>[Revised October 1999]</b> .	<p>(NOTE: See checklist item WA.105.1.US for applicability information.)</p> <p>Verify that monitoring for the limitations in Tables 1 through 4 of Appendix 12-6, pathogen density in Class A and Class B pathogens, and vector attraction reduction requirements is done according to the frequency in Table 5 of Appendix 12-6.</p> <p>(NOTE: After the sewage sludge has been monitored for 2 yr, the permitting authority may reduce the frequency of monitoring for pollutant concentrations and for pathogen density requirements.)</p> <p>(NOTE: These requirements apply to sewage sludge generated during the treatment of domestic sewage in a treatment works. For exclusions see the definition of the term “exempted sludge.”)</p> <p>(NOTE: See checklist item WA.105.1.US for applicability information.)</p> <p>Verify that each container of domestic septage is monitored if the pH has been raised to 12 or higher by alkali addition, and kept there for 30 min.</p> <p>(NOTE: See checklist item WA.120.1.US for applicability information.)</p> <p>(NOTE: These requirements apply to sewage sludge generated during the treatment of domestic sewage in a treatment works. For exclusions see the definition of the term “exempted sludge.”)</p>



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<b>LAND APPLICATION OF SLUDGE</b>  <b>WA.125</b> <b>Recordkeeping and Reporting</b>  <b>WA.125.1.US.</b> When bulk sewage sludge is applied to the land or sold in a bag or container, specific recordkeeping requirements must be met (40 CFR 503.17(a)(1), 503.17(a)(6)) <b>[Revised October 1999]</b> .	<p>(NOTE: See checklist item WA.105.1.US for applicability information.)</p> <p>(NOTE: These requirements apply to sewage sludge generated during the treatment of domestic sewage in a treatment works. For exclusions see the definition of the term “exempted sludge.”)</p> <p>Determine if bulk sewage sludge is applied to the land, or if bulk sewage sludge is sold or given away in a bag or container.</p> <p>Verify that, if the sludge meets the requirements in Table 1, Appendix 12-6, Class A pathogen requirements, and vector attraction reduction requirements (see definitions) the following information is retained for 5 yr:</p> <ul style="list-style-type: none"> <li>– the concentration of each pollutant listed in Table 1, Appendix 12-6 in the sewage sludge</li> <li>– the following certification statement:             <ul style="list-style-type: none"> <li>– “I certify, under penalty of law, that the information that will be used to determine compliance with the Class A pathogen requirements in Sec. 503.32(a) and the vector attraction reduction requirement in [insert one of the vector attraction reduction requirements in Sec. 503.33(b)(1) through Sec. 503.33(b)(8)] was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.”</li> </ul> </li> <li>– a description of how the Class A pathogen requirements are met</li> <li>– a description of how one of the vector attraction reduction requirements is met.</li> </ul> <p>Verify that, when bulk sewage sludge is given away or sold in a bag or container and it meets the requirements in Table 4, Appendix 12-6, the preparer retains the following information for 5 yr:</p> <ul style="list-style-type: none"> <li>– the annual whole sludge application rate for the sewage sludge that does not cause the annual pollutant loading rates in Table 4, Appendix 12-6 to be exceeded</li> <li>– the concentration of each pollutant listed in Table 4, Appendix 12-6 in the sewage sludge</li> <li>– the following certification statement:             <ul style="list-style-type: none"> <li>– “I certify, under penalty of law, that the information that will be used to determine compliance with the management practice in Sec. 503.14(e),</li> </ul> </li> </ul>

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<p><b>WA.125.2.US.</b> When bulk material is derived from sewage sludge for application to the land or material derived from sewage sludge is to be sold or given away in a bag or container, specific recordkeeping requirements must be met (40 CFR 503.17(a)(2)) [Revised October 1999].</p> <p><b>WA.125.3.US.</b> When bulk sewage sludge is applied to agricultural land, forest, a public contact site, or a reclamation site, specific reporting requirements must be met (40 CFR 503.17(a)(3) through 503.17(a)(5)) [Revised October 1999].</p>	<p>the Class A pathogen requirement in Sec. 503.32(a), and the vector attraction reduction requirement in (insert one of the vector attraction reduction requirements in Sec. 503.33(b)(1) through Sec. 503.33(b)(8)) was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.”</p> <ul style="list-style-type: none"> <li>– a description of how the Class A pathogen requirements are met</li> <li>– a description of how one of the vector attraction requirements is met.</li> </ul> <p>(NOTE: See checklist item WA.105.1.US for applicability information.)</p> <p>(NOTE: These requirements apply to sewage sludge generated during the treatment of domestic sewage in a treatment works. For exclusions see the definition of the term “exempted sludge.”)</p> <p>Verify that, if the derived material meets the requirements in Table 1, Appendix 12-6, Class A pathogen requirements, and vector attraction reduction requirements (see definitions), the following information is retained for 5 yr:</p> <ul style="list-style-type: none"> <li>– the concentration of each pollutant listed in Table 1, Appendix 12-6</li> <li>– the following certification statement: <ul style="list-style-type: none"> <li>– “I certify, under penalty of law, that the information that will be used to determine compliance with the Class A pathogen requirements in Sec. 503.32(a) and the vector attraction reduction requirement in (insert one of the vector attraction reduction requirements in Sec. 503.33(b)(1) through (b)(8)) was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.”</li> </ul> </li> <li>– a description of how the Class A pathogen requirements are being met</li> <li>– a description of how the vector attraction reduction is being met.</li> </ul> <p>(NOTE: See checklist item WA.105.1.US for applicability information.)</p> <p>Determine if bulk sewage sludge is applied to agricultural land, forest, a public contact site, or reclamation site.</p> <p>Verify that, if bulk sewage sludge material applied to agricultural land, forest, a public contact site, or a reclamation site meets the requirements in Table 1, Appendix 12-6, Class A pathogen requirements, and vector attraction reduction requirements (see definitions), the following information is retained for 5 yr by the person who prepares the sludge:</p> <ul style="list-style-type: none"> <li>– the concentration of each pollutant listed in Table 1, Appendix 12-6</li> </ul>

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	<ul style="list-style-type: none"> <li>– the following statement: <ul style="list-style-type: none"> <li>– “I certify, under penalty of law, the information that will be used to determine compliance with the Class A pathogen requirements in Sec. 503.32(a) was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.”</li> </ul> </li> <li>– a description of how the Class A pathogen requirements are being met</li> <li>– a description of how the vector attraction reduction is being met.</li> </ul> <p>Verify that, if bulk sewage sludge material applied to agricultural land, forest, a public contact site, or a reclamation site meets the requirements in Table 1, Appendix 12-6, Class A pathogen requirements, and vector attraction reduction requirements, the following information is retained for 5 yr by the person who applies the sludge:</p> <ul style="list-style-type: none"> <li>– the following statement: <ul style="list-style-type: none"> <li>– “I certify, under penalty of law, that the information that will be used to determine compliance with the management practices in Sec. 503.14 and the vector attraction reduction requirement in (insert either Sec. 503.33(b)(9) or (b)(10)) was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.”</li> </ul> </li> <li>– a description of how required management practices are implemented</li> <li>– a description of how the vector reduction requirements are met.</li> </ul> <p>Verify that, if bulk sewage sludge material applied to agricultural land, forest, a public contact site, or a reclamation site meets the requirements in Table 1, Appendix 12-6, Class B pathogen requirements, and vector attraction reduction requirements, the following information is retained for 5 yr by the person who prepares the sludge:</p> <ul style="list-style-type: none"> <li>– the concentration of each pollutant listed in Table 1, Appendix 12-6</li> <li>– the following statement: <ul style="list-style-type: none"> <li>– “I certify under, penalty of law, that the information that will be used to determine compliance with the Class B pathogen requirements in Sec. 503.32(b) and the vector attraction reduction requirement in (insert one of the vector attraction reduction requirements in Sec. 503.33(b)(1) through (b)(8) if one of those requirements is met) was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.”</li> </ul> </li> <li>– a description of how the Class A pathogen requirements are being met</li> </ul>

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	<p>– a description of how the vector attraction reduction is being met.</p> <p>Verify that, if bulk sewage sludge material applied to agricultural land, forest, a public contact site, or a reclamation site meets the requirements in Table 1, Appendix 12-6, Class B pathogen requirements, and vector attraction reduction requirements, the following information is retained for 5 yr by the person who applies the sludge:</p> <ul style="list-style-type: none"> <li>– the following statement: <ul style="list-style-type: none"> <li>– “I certify, under penalty of law, that the information that will be used to determine compliance with the management practices in Sec. 503.14, the site restrictions in Sec. 503.32(b)(5), and the vector attraction reduction requirement in (insert either Sec. 503.33(b)(9) or (b)(10) if one of those requirements is met) was prepared for each site on which bulk sewage sludge is applied under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.”</li> </ul> </li> <li>– a description of how required management practices are implemented</li> <li>– a description of how the vector reduction requirements are met</li> <li>– the date bulk sewage sludge is applied to each site.</li> </ul> <p>Verify that, if bulk sewage sludge material applied to agricultural land, forest, a public contact site, or a reclamation site meets the requirements in Table 2, Appendix 12-6, the following information is retained for 5 yr by the person who prepares the sludge:</p> <ul style="list-style-type: none"> <li>– the concentration of each pollutant listed in Table 3, Appendix 12-6</li> <li>– the following statement: <ul style="list-style-type: none"> <li>– “I certify, under penalty of law, that the information that will be used to determine compliance with the pathogen requirements in (insert either Sec. 503.32(a) or Sec. 503.32(b)) and the vector attraction reduction requirement in (insert one of the vector attraction reduction requirements in Sec. 503.33(b)(1) through (b)(8) if one of those requirements is met) was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.”</li> </ul> </li> <li>– a description of how the pathogen requirements are being met</li> <li>– a description of how the vector attraction reduction is being met when used.</li> </ul> <p>Verify that, if bulk sewage sludge material applied to agricultural land, forest, a public contact site, or a reclamation site meets the requirements in Table 2, Appendix 12-6, the following information is retained indefinitely by the person who applies the sludge:</p>

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	<ul style="list-style-type: none"> <li>– the location, by either street address or latitude and longitude, of each site on which bulk sewage sludge is applied</li> <li>– the number of hectares in each site on which bulk sewage sludge is applied</li> <li>– the date bulk sewage sludge is applied to each site</li> <li>– the cumulative amount of each pollutant (i.e., kilograms) listed in Table 2, Appendix 12-6 in the bulk sewage sludge applied to each site, including the amount applied since July 30, 1993</li> <li>– the amount of sewage sludge (i.e., metric tons) applied to each site</li> <li>– the following certification statement: <ul style="list-style-type: none"> <li>– “I certify, under penalty of law, that the information that will be used to determine compliance with the requirement to obtain information in Sec. 503.12(e)(2) was prepared for each site on which bulk sewage sludge was applied under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.”</li> </ul> </li> <li>– a description of how the requirements to obtain information in 40 CFR 503.12(e)(2) (see checklist item WA.105.2.US.) are met.</li> </ul> <p>Verify that, if bulk sewage sludge material applied to agricultural land, forest, a public contact site, or a reclamation site meets the requirements in Table 2, Appendix 12-6, the following information is retained for 5 yr by the person who applies the sludge:</p> <ul style="list-style-type: none"> <li>– the following certification statement: <ul style="list-style-type: none"> <li>– “I certify, under penalty of law, that the information that will be used to determine compliance with the management practices in Sec. 503.14 was prepared for each site on which bulk sewage sludge was applied under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.”</li> </ul> </li> <li>– a description of how the management practices in 40 CFR 503.14 are met for each site on which bulk sewage sludge is applied</li> <li>– the following certification statement when the bulk sewage sludge meets the Class B pathogen requirements: <ul style="list-style-type: none"> <li>– “I certify, under penalty of law, that the information that will be used to determine compliance with the site restrictions in Sec. 503.32(b)(5) for each site on which Class B sewage sludge was applied was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.”</li> </ul> </li> <li>– a description of how the site restrictions are met for each site on which Class B bulk sewage sludge is applied</li> </ul>

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<p><b>WA.125.4.US.</b> Checklist item deleted <b>[Deleted October 1999]</b>.</p> <p><b>WA.125.5.US.</b> Checklist item deleted <b>[Deleted October 1999]</b>.</p> <p><b>WA.125.6.US.</b> Checklist item deleted <b>[Deleted October 1999]</b>.</p> <p><b>WA.125.7.US.</b> When domestic septage is applied to agricultural land, forest, or a reclamation site, specific recordkeeping requirements must be met (40 CFR 503.17(b)) <b>[Revised October 1999]</b>.</p>	<ul style="list-style-type: none"> <li>– the following certification statement               <ul style="list-style-type: none"> <li>– “I certify, under penalty of law, that the information that will be used to determine compliance with the vector attraction reduction requirement in (insert either Sec. 503.33(b)(9) or Sec. 503.33(b)(10)) was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.”</li> </ul> </li> <li>– a description of how the vector attraction reduction requirements are met.</li> </ul> <p>(NOTE: These requirements apply to sewage sludge generated during the treatment of domestic sewage in a treatment works. For exclusions see the definition of the term “exempted sludge.”)</p> <p>This checklist item has been incorporated into WA.125.3.US.</p> <p>This checklist item has been incorporated into WA.125.3.US.</p> <p>This checklist item has been incorporated into WA.125.1.US.</p> <p>(NOTE: See checklist item WA.105.1.US for applicability information.)</p> <p>Determine if domestic septage is applied to agricultural land, forest, a public contact site, or reclamation site.</p> <p>Verify that the following information is retained for 5 yr by the person who applies the domestic septage:</p> <ul style="list-style-type: none"> <li>– the location of each site on which domestic septage is applied</li> <li>– the number of acres in each site on which domestic septage is applied</li> <li>– the date of application at each site</li> <li>– the nitrogen requirements for the crop or vegetation grown on each site during a 365-day period</li> <li>– the rate in gal/acre per 365-day period at which domestic septage is applied to each site</li> <li>– the following statement:               <ul style="list-style-type: none"> <li>– “I certify, under penalty of law, that the information that will be used to determine compliance with the pathogen requirements (insert either Sec. 503.32(c)(1) or Sec. 503.32(c)(2)) and the vector attraction reduction requirement in [insert Sec. 503.33(b)(9), 503.33(b)(10), or Sec. 503.33(b)(12)] was prepared under my direction and supervision in</li> </ul> </li> </ul>

<p style="text-align: center;"><b>COMPLIANCE CATEGORY</b>  <b>WASTEWATER MANAGEMENT</b>  <b>U.S. TEAM Guide</b></p>	
<p style="text-align: center;"><b>REGULATORY REQUIREMENTS</b></p>	<p style="text-align: center;"><b>REVIEWER CHECKS</b>  <b>December 2018</b></p>
<p><b>WA.125.8.US.</b> Class I sludge management facilities, POTW/FOTWs with a design flow rate equal to or greater than 1 million gal/day, and POTW/FOTWs that serve 10,000 people or more are required to submit specific information to the permitting authority (40 CFR 503.18) <b>[Revised October 1999].</b></p>	<p>accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.”</p> <ul style="list-style-type: none"> <li>– a description of how the pathogen requirements are being met</li> <li>– a description of how the vector attraction reduction is being met.</li> </ul> <p>(NOTE: These requirements apply to sewage sludge generated during the treatment of domestic sewage in a treatment works. For exclusions see the definition of the term “exempted sludge.”)</p> <p>(NOTE: See checklist item WA.105.1.US for applicability information.)</p> <p>Verify that the following information is submitted to the permitting authority by 19 February of each year:</p> <ul style="list-style-type: none"> <li>– the concentration of each pollutant listed in Table 1, Appendix 12-6</li> <li>– a statement certifying which form of vector attraction reduction is being used and that Class A pathogen requirements are being met</li> <li>– a description of how the Class A pathogen requirements are being met</li> <li>– a description of how the vector attraction reduction is being met.</li> </ul> <p>Verify that the following information is submitted on 19 February of each year when 90 percent or more of any of the cumulative loading rates in Table 2, Appendix 12-6 are reached at a land application site:</p> <ul style="list-style-type: none"> <li>– the concentration of each pollutant listed in Table 2, Appendix 12-6</li> <li>– the number of hectares in each site upon which bulk sewage sludge is applied</li> <li>– the date and time bulk sewage sludge is applied to each site</li> <li>– the cumulative amount of each pollutant from Table 2, Appendix 12-6 in the bulk sewage sludge applied to each site</li> <li>– amount applied to each site</li> <li>– a certification statement indicating that required information for each site has been obtained</li> <li>– a description of how the requirements to obtain information were met.</li> </ul> <p>(NOTE: These requirements apply to sewage sludge generated during the treatment of domestic sewage in a treatment works. For exclusions see the definition of the term “exempted sludge.”)</p>



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<p><b>WA.135.3.US.</b> Active sewage sludge units without a liner and leachate collection system are required to meet specific standards (40 CFR 503.23) [Revised October 1999].</p>	<p>(NOTE: These requirements apply to sewage sludge generated during the treatment of domestic sewage in a treatment works. For exclusions see the definition of the term “exempted sludge.”)</p> <p>(NOTE: See checklist item WA.135.1.US for applicability information.)</p> <p>Verify that the following concentrations are not exceeded in sewage sludge placed on an active sewage sludge unit without a liner and leachate collection system:</p> <ul style="list-style-type: none"> <li>– arsenic: 73 mg/kg</li> <li>– chromium: 600 mg/kg</li> <li>– nickel: 420 mg/kg.</li> </ul> <p>(NOTE: Amounts are based on a dry weight basis.)</p> <p>(NOTE: At the time of permit application, the owner/operator of a surface disposal site may request site-specific pollutant limits for an active sewage sludge unit without a liner and leachate collection system when the existing values for site parameters specified by the permitting authority are different from the values for those parameters used to develop the above pollutant limits and when the permitting authority determines that site-specific pollutant limits are appropriate for the active sewage sludge unit.)</p> <p>Verify that the concentration of each pollutant listed above in sewage sludge placed on an active sewage sludge unit without a liner and leachate collection system, does not exceed either the concentration for the pollutant determined during a site-specific assessment, as specified by the permitting authority, or the existing concentration of the pollutant in the sewage sludge, whichever is lower.</p> <p>Verify that, except when there are site-specific limits, the concentration of arsenic, chromium, and nickel in sewage sludge placed on an active sewage sludge unit with a boundary less than 150 m from the property line of the surface disposal site does not exceed the concentration determined using the following procedure:</p> <ul style="list-style-type: none"> <li>– the actual distance from the active sewage sludge unit boundary to the property line of the surface disposal site is determined</li> <li>– the concentration of each pollutant listed in Table 6, Appendix 12-6 in the sewage sludge does not exceed the concentration that corresponds to the actual distance in the Table.</li> </ul> <p>(NOTE: These requirements apply to sewage sludge generated during the treatment of domestic sewage in a treatment works. For exclusions see the definition of the term “exempted sludge.”)</p>

<p style="text-align: center;"><b>COMPLIANCE CATEGORY</b>  <b>WASTEWATER MANAGEMENT</b>  <b>U.S. TEAM Guide</b></p>	
<b>REGULATORY REQUIREMENTS</b>	<b>REVIEWER CHECKS</b> <b>December 2018</b>
<p><b>WA.135.4.US.</b> Checklist item deleted <b>[Deleted October 1999]</b>.</p> <p><b>WA.135.5.US.</b> Sewage sludge units are required to be operated according to specific operation and management standards (40 CFR 503.24) <b>[Revised October 1999]</b>.</p>	<p>This checklist item was incorporated into WA.135.3.US.</p> <p>(NOTE: See checklist item WA.135.1.US for applicability information.)</p> <p>Verify that sewage sludge is not placed in an active sewage sludge unit if it is likely to adversely affect a threatened or endangered species or its designated critical habitat.</p> <p>Verify that active sewage sludge units:</p> <ul style="list-style-type: none"> <li>– do not restrict the flow of a base flood</li> <li>– are located 60 m or more from a fault that has displacement in Holocene time, unless otherwise specified by the permitting authority</li> <li>– are not located in an unstable area</li> <li>– will not contaminate an aquifer</li> <li>– are not located in a wetland unless by permit.</li> </ul> <p>(NOTE: The results of a groundwater monitoring program developed by a qualified groundwater scientist or a certification by a qualified groundwater scientist will be used to demonstrate that sewage sludge placed on an active sewage sludge unit does not contaminate an aquifer.)</p> <p>Verify that, when a surface disposal site is located in a seismic impact zone, the unit is designed to withstand the maximum recorded horizontal ground level acceleration.</p> <p>Verify that the following occurs for runoff:</p> <ul style="list-style-type: none"> <li>– the runoff is collected and disposed of in accordance with an NPDES permit and any other applicable requirements</li> <li>– the runoff collection system has the capacity to handle runoff from a 24-h, 25-yr storm event.</li> </ul> <p>Verify that leachate is handled so that:</p> <ul style="list-style-type: none"> <li>– the leachate collection system for an active sewage sludge unit that has a liner and leachate collection system is operated and maintained during the period the sewage sludge unit is active and for 3 yr after the sewage sludge unit closes</li> <li>– leachate from an active sewage sludge unit that has a liner and a leachate collection system is collected and disposed of in accordance with the applicable requirements from when the unit is active and for 3 yr after the sewage sludge unit closes.</li> </ul> <p>Verify that the following occurs when a cover is placed on a sewage sludge unit:</p>

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<p><b>WA.135.6.US.</b> Class A or one of the Class B pathogen requirements (see definitions) must be met when placing sewage sludge on an active sewage sludge unit unless it is covered with soil or other material at the end of each operating day (40 CFR 503.25(a)) <b>[Revised October 1999]</b>.</p> <p><b>WA.135.7.US.</b> Vector attraction reduction must be done when sewage sludge or</p>	<ul style="list-style-type: none"> <li>– the concentration of methane gas in the air in any structure within the surface disposal site of an active unit does not exceed 25 percent of the lower explosive limit for methane gas during the period that the unit is active and the concentration of the methane gas in air at the property line of the surface disposal site does not exceed the lower explosive limit for methane gas during the period that the sewage sludge unit is active</li> <li>– at closure when the final cover is placed the concentration of methane gas in air in any structure within any structure within the surface disposal site does not exceed 25 percent of the lower explosive limit for methane gas for 3 yr after the unit closes, and the concentration of methane gas in air at the property line of the unit does not exceed the lower explosive limit for methane gas 3 yr after closure unless otherwise specified by the permitting authority.</li> </ul> <p>Verify that a food or feed crop or a fiber crop are not grown on an active sewage sludge unit unless it has been demonstrated to the permitting authority that through management practices, public health and the environment are protected from any reasonably anticipated adverse effects.</p> <p>Verify that animals are not grazed on an active sewage sludge unit unless it has been demonstrated to the permitting authority that through management practices, public health and the environment are protected from any reasonably anticipated adverse effects.</p> <p>Verify that public access is restricted for the period that the surface disposal site contains an active unit, and for 3 yr after the last active sewage sludge unit in the surface disposal site closes.</p> <p>(NOTE: These requirements apply to sewage sludge generated during the treatment of domestic sewage in a treatment works. For exclusions see the definition of the term “exempted sludge.”)</p> <p>(NOTE: See checklist item WA.135.1.US for applicability information.)</p> <p>Verify that sewage sludge being placed on an active sewage sludge unit meets Class A or Class B pathogen requirements.</p> <p>Verify that if the sludge does not meet pathogen requirements, it is covered with soil or other material at the end of each operating day.</p> <p>(NOTE: These requirements apply to sewage sludge generated during the treatment of domestic sewage in a treatment works. For exclusions see the definition of the term “exempted sludge.”)</p> <p>(NOTE: See checklist item WA.135.1.US for applicability information.)</p>

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<p>domestic septage is placed on an active sewage sludge unit (40 CFR 503.25(b) and 503.25(c)) <b>[Revised October 1999]</b>.</p> <p><b>WA.135.8.US.</b> The owner of a surface disposal site is required to provide written notification to the subsequent owner of the site that sewage sludge was placed on the land (40 CFR 503.22(d)) <b>[Added October 1999]</b>.</p>	<p>Verify that, when other than domestic septage is placed on an active sewage sludge unit, one of the vector attraction reduction requirements in paragraphs 1 through 11 of the vector attraction reduction alternatives (see definitions) are met when sewage sludge is placed on an active sewage sludge unit.</p> <p>Verify that, when domestic septage is placed on an active sewage sludge unit, one of the vector attraction reduction requirements in paragraphs 9 through 12 of the vector attraction reduction alternatives (see definitions) are met when domestic septage is placed on an active sewage sludge unit.</p> <p>(NOTE: These requirements apply to sewage sludge generated during the treatment of domestic sewage in a treatment works. For exclusions see the definition of the term “exempted sludge.”)</p> <p>(NOTE: See checklist item WA.135.1.US for applicability information.)</p> <p>Verify that, if there are plans to turn the surface disposal site over to another owner, the subsequent owner is notified that sewage sludge was placed on the land.</p> <p>(NOTE: These requirements apply to sewage sludge generated during the treatment of domestic sewage in a treatment works. For exclusions see the definition of the term “exempted sludge.”)</p>



<p style="text-align: center;"><b>COMPLIANCE CATEGORY</b>  <b>WASTEWATER MANAGEMENT</b>  <b>U.S. TEAM Guide</b></p>	
<p style="text-align: center;"><b>REGULATORY REQUIREMENTS</b></p>	<p style="text-align: center;"><b>REVIEWER CHECKS</b>  <b>December 2018</b></p>
<p><b>SURFACE DISPOSAL OF SLUDGE</b></p> <p><b>WA.140</b>  <b>Monitoring and Documentation</b></p> <p><b>WA.140.1.US.</b> Monitoring for pollutants, pathogens, and vector attraction reduction requirements for sewage sludge placed on an active sewage sludge unit must be done according to the frequency in Table 5, Appendix 12-6 (40 CFR 503.26(a)) <b>[Revised October 1999].</b></p> <p><b>WA.140.2.US.</b> If, when domestic septage is placed on an active sewage sludge unit, the pH of the septage is raised to 12 or higher by alkali addition and remains at 12 or higher without alkali addition for 30 min, each container of domestic septage must be monitored (40 CFR 503.26(b)) <b>[Revised October 1999].</b></p> <p><b>WA.140.3.US.</b> In specific circumstances, air in structures within a surface disposal site and at property lines of the surface disposal site are required to be monitored continuously for methane gas (40 CFR 503.26(c)) <b>[Revised October 1999].</b></p> <p><b>WA.140.4.US.</b> Specific recordkeeping requirements must be met when sewage sludge, other than domestic</p>	<p>(NOTE: See checklist item WA.135.1.US for applicability information.)</p> <p>Verify that monitoring for pollutants, pathogens, and vector attraction reduction requirements for sewage sludge, other than domestic septage, placed on an active sewage sludge unit is done according to the frequency in Table 5, Appendix 12-6.</p> <p>(NOTE: The permitting authority may reduce the frequency of monitoring after the sewage sludge has been monitored for 2 yr at the required frequencies.)</p> <p>(NOTE: These requirements apply to sewage sludge generated during the treatment of domestic sewage in a treatment works. For exclusions see the definition of the term “exempted sludge.”)</p> <p>(NOTE: See checklist item WA.135.1.US for applicability information.)</p> <p>Verify that when domestic septage is placed on an active sewage sludge unit and the pH of the septage is raised to 12 or higher by alkali addition and remains at 12 or higher without alkali addition for 30 min, each container of domestic septage is monitored.</p> <p>(NOTE: These requirements apply to sewage sludge generated during the treatment of domestic sewage in a treatment works. For exclusions see the definition of the term “exempted sludge.”)</p> <p>(NOTE: See checklist item WA.135.1.US for applicability information.)</p> <p>Verify that continuous monitoring occurs during the period that the surface disposal site contains an active sewage sludge unit on which the sewage sludge is covered and for 3 yr after a unit closes when a final cover is placed on the sewage sludge.</p> <p>(NOTE: These requirements apply to sewage sludge generated during the treatment of domestic sewage in a treatment works. For exclusions see the definition of the term “exempted sludge.”)</p> <p>(NOTE: See checklist item WA.135.1.US for applicability information.)</p> <p>Verify that the person who prepares sewage sludge retains the following information for 5 yr:</p>

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<p>septage, is placed on an active sewage sludge unit (40 CFR 503.27(a)) <b>[Revised October 1999]</b>.</p> <p><b>WA.140.5.US.</b> Specific recordkeeping requirements must be met when domestic septage is placed on an active sewage sludge unit (40 CFR</p>	<ul style="list-style-type: none"> <li>– the concentration of arsenic, chromium, and nickel in the sludge</li> <li>– the following certification statement: <ul style="list-style-type: none"> <li>– “I certify, under penalty of law, that the information that will be used to determine compliance with the pathogen requirements in (insert Sec. 503.32(a), Sec. 503.32(b)(2), Sec. 503.32(b)(3), or Sec. 503.32(b)(4) when one of those requirements is met) and the vector attraction reduction requirement in (insert one of the vector attraction reduction requirements in Sec. 503.33(b)(1) through (b)(8) if one of those requirements is met) was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.”</li> </ul> </li> <li>– a description of how the pathogen requirements are being met when done</li> <li>– a description of how the vector attraction reduction requirements are being met when done.</li> </ul> <p>Verify that the owner/operator of the surface disposal site retains the following for 5 yr:</p> <ul style="list-style-type: none"> <li>– the concentrations of the pollutants listed in Table 6, Appendix 12-6</li> <li>– the following certification statement: <ul style="list-style-type: none"> <li>– “I certify, under penalty of law, that the information that will be used to determine compliance with the management practices in Sec. 503.24 and the vector attraction reduction requirement in (insert one of the requirements in Sec. 503.33(b)(9) through Sec. 503.33(b)(11) if one of those requirements is met) was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.”</li> </ul> </li> <li>– a description of how the management practices in 40 CFR 503.24 (see checklist item WA.135.3.US.) are being met</li> <li>– a description of how the vector attraction reduction requirements are being met when they are done.</li> </ul> <p>(NOTE: These requirements apply to sewage sludge generated during the treatment of domestic sewage in a treatment works. For exclusions see the definition of the term “exempted sludge.”)</p> <p>(NOTE: See checklist item WA.135.1.US for applicability information.)</p> <p>Verify that the person who applies domestic septage with a pH of greater than 12 retains the following information for 5 yr:</p> <ul style="list-style-type: none"> <li>– the following statement:</li> </ul>



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	<p>[pathogen requirements and vector attraction reduction requirements if appropriate] have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.”</p> <ul style="list-style-type: none"> <li>– a description of how the pathogen requirements are being met when done</li> <li>– a description of how the vector attraction reduction requirements are being met when done</li> <li>– the concentrations of the pollutants listed in Table 6, Appendix 12-6</li> <li>– the following certification statement: <ul style="list-style-type: none"> <li>– “I certify, under penalty of law, that the management practices in Sec. 503.24 and the vector attraction reduction requirement in [insert one of the requirements in 40 CFR 503.33(b)(9) through 503.33(b)(11) if one of those requirements is met] have been met. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the management practices [and the vector attraction reduction requirements if appropriate] have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.”</li> </ul> </li> <li>– a description of how the management practices in 40 CFR 503.24 (see checklist item WA.135.5.US.) are being met</li> </ul> <p>(NOTE: These requirements apply to sewage sludge generated during the treatment of domestic sewage in a treatment works. For exclusions see the definition of the term “exempted sludge.”)</p>

## Appendix 12-0

### Population Parameters (40 CFR 122, Appendices F through I) [Added January 2000]

<b>Table 1: Incorporated Places With Populations Greater Than 250,000 According to the 1990 Decennial Census by the Bureau of the Census (40 CFR 122, Appendix F)</b>	
<b>State</b>	<b>Incorporated Place</b>
Alabama	Birmingham
Arizona	Phoenix Tucson
California	Long Beach Los Angeles Oakland Sacramento San Diego San Francisco San Jose
Colorado	Denver
District of Columbia	
Florida	Jacksonville Miami Tampa
Georgia	Atlanta
Illinois	Chicago
Indiana	Indianapolis
Kansas	Wichita
Kentucky	Louisville
Louisiana	New Orleans
Maryland	Baltimore
Massachusetts	Boston
Michigan	Detroit
Minnesota	Minneapolis St. Paul
Missouri	Kansas City St. Louis

<b>Table 1: Incorporated Places With Populations Greater Than 250,000 According to the 1990 Decennial Census by the Bureau of the Census (40 CFR 122, Appendix F)</b>	
<b>State</b>	<b>Incorporated Place</b>
Nebraska	Omaha
New Jersey	Newark
New Mexico	Albuquerque
New York	Buffalo Bronx Borough Brooklyn Borough Manhattan Borough Queens Borough Staten Island Borough
North Carolina	Charlotte
Ohio	Cincinnati Cleveland Columbus Toledo
Oklahoma	Oklahoma City Tulsa
Oregon	Portland
Pennsylvania	Philadelphia Pittsburgh
Tennessee	Memphis Nashville/Davidson
Texas	Austin Dallas El Paso Fort Worth Houston San Antonio
Virginia	Norfolk Virginia Beach
Washington	Seattle
Wisconsin	Milwaukee

**Table 2: Incorporated Places With Populations Greater Than 100,000 But Less Than 250,000 According to the 1990 Decennial Census by the Bureau of the Census  
(40 CFR 122, Appendix G)**

State	Incorporated Place
Alabama	Huntsville Mobile Montgomery
Alaska	Anchorage
Arizona	Mesa Tempe
Arkansas	Little Rock.
California	Anaheim Bakersfield Berkeley Chula Vista Concord El Monte Escondido Fremont Fresno Fullerton Garden Grove Glendale Hayward Huntington Beach Inglewood Irvine Modesto Moreno Valley Oceanside Ontario Orange
Colorado	Aurora Colorado Springs Lakewood Pueblo
Connecticut	Bridgeport Hartford New Haven Stamford Waterbury
Florida	Fort Lauderdale Hialeah Hollywood Orlando St. Petersburg

<b>Table 2: Incorporated Places With Populations Greater Than 100,000 But Less Than 250,000 According to the 1990 Decennial Census by the Bureau of the Census (40 CFR 122, Appendix G)</b>	
<b>State</b>	<b>Incorporated Place</b>
	Tallahassee
Georgia	Columbus Macon Savannah
Idaho	Boise City
Illinois	Peoria Rockford
Indiana	Evansville Fort Wayne Gary South Bend
Iowa	Cedar Rapids Davenport Des Moines
Kansas	Kansas City Topeka
Kentucky	Lexington-Fayette
Louisiana	Baton Rouge Shreveport
Massachusetts	Springfield Worcester
Michigan	Ann Arbor Flint Grand Rapids Lansing Livonia Sterling Heights Warren
Mississippi	Jackson
Missouri	Independence Springfield
Nebraska	Lincoln
Nevada	Las Vegas Reno

<b>Table 2: Incorporated Places With Populations Greater Than 100,000 But Less Than 250,000 According to the 1990 Decennial Census by the Bureau of the Census (40 CFR 122, Appendix G)</b>	
<b>State</b>	<b>Incorporated Place</b>
New Jersey	Elizabeth Jersey City Paterson
New York	Albany Rochester Syracuse Yonkers
North Carolina	Durham Greensboro Raleigh Winston-Salem
Ohio	Akron Dayton Youngstown
Oregon	Eugene
Pennsylvania	Allentown Erie
Rhode Island	Providence
South Carolina	Columbia
Tennessee	Chattanooga Knoxville
Texas	Abilene Amarillo Arlington Beaumont Corpus Christi Garland Irving Laredo Lubbock Mesquite Pasadena Plano Waco
Utah	Salt Lake City
Virginia	Alexandria Chesapeake Hampton Newport News

<b>Table 2: Incorporated Places With Populations Greater Than 100,000 But Less Than 250,000 According to the 1990 Decennial Census by the Bureau of the Census (40 CFR 122, Appendix G)</b>	
State	Incorporated Place
	Portsmouth Richmond Roanoke
Washington	Spokane Tacoma
Wisconsin	Madison

<b>Table 3: Counties With Unincorporated Urbanized Areas With a Population of 250,000 or More According to the 1990 Decennial Census by the Bureau of the Census (40 CFR 122, Appendix H)</b>		
State	County	Unincorporated Urbanized Population
California	Los Angeles Sacramento San Diego	886,780 594,889 250,414
Delaware	New Castle	296,996
Florida	Dade	1,014,504
Georgia	DeKalb	448,686
Hawaii	Honolulu 1	114,506
Maryland	Anne Arundel Baltimore Montgomery Prince George's	344,654 627,593 599,028 494,369
Texas	Harris	729,206
Utah	Salt Lake	270,989
Virginia	Fairfax	760,730
Washington	King	520,468

1 County was previously listed in this appendix; however, population dropped to below 250,000 in the 1990 Census.

<b>Table 4: Counties With Unincorporated Urbanized Areas Greater Than 100,000 But Less Than 250,000 According to the 1990 Decennial Census by the Bureau of the Census (40 CFR 122, Appendix I)</b>		
<b>State</b>	<b>County</b>	<b>Unincorporated Urbanized Population</b>
Alabama	Jefferson	78,608
Arizona	Pima	162,202
California	Alameda Contra Costa Kern Orange Riverside San Bernardino	115,082 131,082 128,503 223,081 166,509 162,202
Colorado	Arapahoe	103,248
Florida	Broward Escambia Hillsborough Lee Manatee Orange Palm Beach Pasco Pinellas Polk Sarasota Seminole	142,329 167,463 398,593 102,337 123,828 378,611 360,553 148,907 255,772 121,528 172,600 127,873
Georgia	Clayton Cobb Fulton Gwinnett Richmond	133,237 322,595 127,776 237,305 126,476
Kentucky	Jefferson	239,430
Louisiana	East Baton Rouge Parish Jefferson Parish	102,539 331,307
Maryland	Howard	157,972
North Carolina	Cumberland	146,827
Nevada	Clark	327,618
Oregon	Multnomah 1 Washington	52,923 116,687
South Carolina	Greenville	147,464

<b>Table 4: Counties With Unincorporated Urbanized Areas Greater Than 100,000 But Less Than 250,000 According to the 1990 Decennial Census by the Bureau of the Census (40 CFR 122, Appendix I)</b>		
<b>State</b>	<b>County</b>	<b>Unincorporated Urbanized Population</b>
	Richland	130,589
Virginia	Arlington	170,936
	Chesterfield	174,488
	Henrico	201,367
	Prince William	157,131
Washington	Pierce	258,530
	Snohomish	157,218

1 County was previously listed in this appendix; however, population dropped to below 100,000 in the 1990 Census.

## Appendix 12-0a

### Areas Cover By the EPA's Pesticide General Permit (EPA's NPDES Pesticide General Permit, Appendix C) [Added January 2000; Revised April 2012]

#### **EPA Region 1:** Connecticut, Massachusetts, Maine, New Hampshire, Rhode Island, Vermont

Where EPA is Permitting Authority

MAG87####	Massachusetts, including Indian Country lands within Massachusetts
CTG87####E	Indian Country lands within Connecticut
NHG87####	New Hampshire
RIG87####E	Indian Country lands within Rhode Island
VTG87####E	Federal facilities within Vermont

#### **EPA Region 2:** New Jersey, New York, Puerto Rico, United States Virgin Islands

Where EPA is Permitting Authority

NYG87####E	Indian Country lands within New York State
PRG87####	Puerto Rico

#### **EPA Region 3:** Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, West Virginia

Where EPA is Permitting Authority

DCG87####	The District of Columbia
DEG87####E	Federal facilities within Delaware

#### **EPA Region 4:** Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee

Where EPA is Permitting Authority

ALG87####E	Indian Country lands within Alabama
FLG87####E	Indian Country lands within Florida
MSG87####E	Indian Country lands within Mississippi
NCG87####E	Indian Country lands within North Carolina

#### **EPA Region 5:** Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin

Where EPA is Permitting Authority

MIG87####E	Indian Country lands within Michigan
MNG87####E	Indian Country lands within Minnesota, excluding Sokaogon Chippewa Community
WIG87####E	Indian Country lands within Wisconsin, excluding Lac du Flambeau Band of Lake Superior Chippewa Indians and Fond du Lac Reservation

#### **EPA Region 6:** Arkansas, Louisiana, Oklahoma, Texas, New Mexico (except see Region 9 for Navajo lands, and see Region 8 for Ute Mountain Reservation lands)

Where EPA is Permitting Authority

LAG87###E Indian Country lands within Louisiana  
 NMG87#### New Mexico, including Indian Country lands within New Mexico, except Navajo Reservation Lands (see Region 9) and Ute Mountain Reservation Lands (see Region 8)  
 OKG87#### Oklahoma, including Indian Country lands  
 TXG87###E Discharges in Texas that are not under the authority of the Texas Commission on Environmental Quality (formerly TNRCC), including activities associated with the exploration, development, or production of oil or gas or geothermal resources, including transportation of crude oil or natural gas by pipeline, including Indian Country lands.

**EPA Region 7:** Iowa, Kansas, Missouri, Nebraska (except see Region 8 for Pine Ridge Reservation Lands)

Where EPA is Permitting Authority

IAG87###E Indian Country lands within Iowa  
 KSG87###E Indian Country lands within Kansas  
 NEG87###E Indian Country lands within Nebraska, except Pine Ridge Reservation lands (see Region 8)

**EPA Region 8:** Colorado, Montana, North Dakota, South Dakota, Wyoming, Utah (except see Region 9 for Goshute Reservation and Navajo Reservation Lands), the Ute Mountain Reservation in NM, and the Pine Ridge Reservation in Nebraska

Where EPA is Permitting Authority

COG87###E Federal facilities within Colorado, including those on Indian Country lands within Colorado as well as the portion of the Ute Mountain Reservation located in New Mexico  
 MTG87###E Indian Country lands within Montana  
 NDG87###E Indian Country lands within North Dakota  
 SDG87###E Indian Country lands within South Dakota as well as the portion of the Pine Ridge Reservation located within Nebraska (see Region 7)  
 UTG87###E Indian Country lands within Utah, except Goshute and Navajo Reservation lands (see Region 9)  
 WYG87###E Indian Country lands within Wyoming

**EPA Region 9:** California, Hawaii, Nevada, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, the Goshute Reservation in Utah and Nevada, the Navajo Reservation in Utah, New Mexico, and Arizona, the Duck Valley Reservation in Idaho, and the Fort McDermitt Reservation in Oregon

Where EPA is Permitting Authority

ASG87#### The Island of American Samoa  
 AZG87###E Indian Country lands within Arizona, as well as Navajo Reservation lands within New Mexico (see Region 6) and Utah (See Region 8), excluding for Hualapai Reservation  
 CAG87###E Indian Country lands within California  
 GUG87#### The Island of Guam  
 JAG87#### Johnston Atoll  
 MWG87#### Midway Island, Wake Island, and other unincorporated U.S. possessions  
 NIG87#### Commonwealth of the Northern Mariana Islands  
 NVG87###E Indian Country lands within Nevada, as well as the Duck Valley Reservation within Idaho, the Fort McDermitt Reservation within Oregon (see Region 10) and the Goshute Reservation within Utah (see Region 8)

**EPA Region 10:** Alaska, Washington, Idaho (except see Region 9 for Duck Valley Reservation Lands), and Oregon (except see Region 9 for Fort McDermitt Reservation)

Where EPA is Permitting Authority

AKG87#### Alaska, including Indian Country lands within Alaska  
IDG87#### Idaho, including Indian Country lands within Idaho, except Duck Valley Reservation lands  
(see Region 9), excluding Puyallup Tribe Reservation  
ORG87###E Indian Country lands within Oregon, except Fort McDermitt Reservation lands (see Region  
9)  
WAG87###E Federal Facilities in Washington, including those on Indian Country lands within  
Washington, excluding Puyallup Tribe Reservation

## Appendix 12-0b

### CWT Wastewater Discharges: Metal Treatment and Recovery (40 CFR 437.11 through 437.16) [Added April 2001; Revised April 2004]

<b>BPT Limitations Metal Treatment and Recovery</b>		
<b>Regulated Parameter</b>	<b>Maximum Daily <sup>1</sup></b>	<b>Maximum Monthly Avg. <sup>1</sup></b>
<i>Conventional Parameters</i>		
O&G	205	50.2
pH	( <sup>2</sup> )	( <sup>2</sup> )
TSS	60.0	31.0
<i>Metal Parameters</i>		
Antimony	0.249	0.206
Arsenic	0.162	0.104
Cadmium	0.474	0.0962
Chromium	15.5	3.07
Cobalt	0.192	0.124
Copper	4.14	1.06
Lead	1.32	0.283
Mercury	0.00234	0.000739
Nickel	3.95	1.45
Silver	0.120	0.0351
Tin	0.409	0.120
Titanium	0.0947	0.0618
Vanadium	0.218	0.0662
Zinc	2.87	0.641

<sup>1</sup> mg/L (ppm)

<sup>2</sup> Within the range 6 to 9

<b>BCT Limitations Metal Treatment and Recovery</b>		
<b>Regulated Parameter</b>	<b>Maximum Daily <sup>1</sup></b>	<b>Maximum Monthly Avg. <sup>1</sup></b>
O&G	205	50.2
pH	( <sup>2</sup> )	( <sup>2</sup> )
TSS	60.0	31.0

<sup>1</sup> mg/L (ppm)

<sup>2</sup> Within the range 6 to 9

<b>BAT Limitations Metal Treatment and Recovery</b>		
<b>Regulated Parameter</b>	<b>Maximum Daily <sup>1</sup></b>	<b>Maximum Monthly Avg. <sup>1</sup></b>
Antimony	0.249	0.206
Arsenic	0.162	0.104
Cadmium	0.474	0.0962
Chromium	15.5	3.07
Cobalt	0.192	0.124
Copper	4.14	1.06
Lead	1.32	0.283
Mercury	0.00234	0.000739
Nickel	3.95	1.45
Silver	0.120	0.0351
Selenium	1.64	0.408
Tin	0.409	0.120
Titanium	0.0947	0.0618
Vanadium	0.218	0.0662
Zinc	2.87	0.641

<sup>1</sup> mg/L (ppm)

<b>New Source Performance Standards (NSPS) Metal Treatment and Recovery</b>		
<b>Regulated Parameter</b>	<b>Maximum Daily <sup>1</sup></b>	<b>Maximum Monthly Avg. <sup>1</sup></b>
<i>Conventional Parameters</i>		
O&G	205	50.2
pH	( <sup>2</sup> )	( <sup>2</sup> )
TSS	29.6	11.3
<i>Metal Parameters</i>		
Antimony	0.111	0.0312
Arsenic	0.0993	0.0199
Cadmium	0.782	0.163
Chromium	0.167	0.0522
Cobalt	0.182	0.0703
Copper	0.659	0.216
Lead	1.32	0.283
Mercury	0.000641	0.000246
Nickel	0.794	0.309
Selenium	0.176	0.0698
Silver	0.0318	0.0122
Tin	0.0955	0.0367
Titanium	0.0159	0.00612
Vanadium	0.0628	0.0518
Zinc	0.657	0.252

<sup>1</sup> mg/L (ppm)

<sup>2</sup> Within the range 6 to 9

Pretreatment Standards for Existing Sources (PSES) Metal Treatment and Recovery		
Regulated Parameter	Maximum Daily <sup>1</sup>	Maximum Monthly Avg. <sup>1</sup>
Antimony	0.249	0.206
Arsenic	0.162	0.104
Cadmium	0.474	0.0962
Chromium	15.5	3.07
Cobalt	0.192	0.124
Copper	4.14	1.06
Lead	1.32	0.283
Mercury	0.00234	0.000739
Nickel	3.95	1.45
Silver	0.120	0.0351
Tin	0.409	0.120
Titanium	0.0947	0.0618
Vanadium	0.218	0.0662
Zinc	2.87	0.641

<sup>1</sup> mg/L (ppm)

Pretreatment Standards for New Sources (PSNS) Metal Treatment and Recovery		
Regulated Parameter	Maximum Daily <sup>1</sup>	Maximum Monthly Avg. <sup>1</sup>
Antimony	0.249	0.206
Arsenic	0.162	0.104
Cadmium	0.474	0.0962
Chromium	15.5	3.07
Cobalt	0.192	0.124
Copper	4.14	1.06
Lead	1.32	0.283
Mercury	0.00234	0.000739
Nickel	3.95	1.45
Silver	0.120	0.0351
Tin	0.409	0.120
Titanium	0.0947	0.0618
Vanadium	0.218	0.0662
Zinc	2.87	0.641

<sup>1</sup> mg/L (ppm)



## Appendix 12-0c

### CWT Wastewater Discharges: Oils Treatment and Recovery (40 CFR 437.21 through 437.26) [Added April 2001; Revised April 2004]

<b>BPT Limitations Oils Treatment and Recovery</b>		
<b>Regulated Parameter</b>	<b>Maximum Daily <sup>1</sup></b>	<b>Maximum Monthly Avg. <sup>1</sup></b>
<i>Conventional Parameters</i>		
O&G	127	38.0
pH	( <sup>2</sup> )	( <sup>2</sup> )
TSS	74.1	30.6
<i>Metal Parameters</i>		
Arsenic	2.95	1.33
Cadmium	0.0172	0.0102
Chromium	0.746	0.323
Cobalt	56.4	18.8
Copper	0.500	0.242
Lead	0.350	0.160
Mercury	0.0172	0.00647
Tin	0.335	0.165
Zinc	8.26	4.50
<i>Organic Parameters</i>		
Bis(2-ethylhexyl) phthalate	0.215	0.101
Butylbenzyl phthalate	0.188	0.0887
Carbazole	0.598	0.276
n-Decane	0.948	0.437
Fluoranthene	0.0537	0.0268
n-Octadecane	0.589	0.302

<sup>1</sup> mg/L (ppm)

<sup>2</sup> Within the range 6 to 9

<b>BCT Limitations Oils Treatment and Recovery</b>		
<b>Regulated Parameter</b>	<b>Maximum Daily <sup>1</sup></b>	<b>Maximum Monthly Avg. <sup>1</sup></b>
O&G	127	38.0
pH	( <sup>2</sup> )	( <sup>2</sup> )
TSS	74.1	30.6

<sup>1</sup> mg/L (ppm)

<sup>2</sup> Within the range 6 to 9

BAT Limitations Oils Treatment and Recovery		
Regulated Parameter	Maximum Daily <sup>1</sup>	Maximum Monthly Avg. <sup>1</sup>
<i>Metal Parameters</i>		
Arsenic	2.95	1.33
Cadmium	0.0172	0.0102
Chromium	0.746	0.323
Cobalt	56.4	18.8
Copper	0.500	0.242
Lead	0.350	0.160
Mercury	0.0172	0.00647
Tin	0.335	0.165
Zinc	8.26	4.50
<i>Organic Parameters</i>		
Bis(2-ethylhexyl) phthalate	0.215	0.101
Butylbenzyl phthalate	0.188	0.0887
Carbazole	0.598	0.276
n-Decane	0.948	0.437
Fluoranthene	0.0537	0.0268
n-Octadecane	0.589	0.302

<sup>1</sup> mg/L (ppm)

New Source Performance Standards (NSPS) Oils Treatment and Recovery		
Regulated Parameter	Maximum Daily <sup>1</sup>	Maximum Monthly Avg. <sup>1</sup>
<i>Conventional Parameters</i>		
O&G	127	38.0
pH	( <sup>2</sup> )	( <sup>2</sup> )
TSS	74.1	30.6
<i>Metal Parameters</i>		
Arsenic	2.95	1.33
Cadmium	0.0172	0.0102
Chromium	0.746	0.323
Cobalt	56.4	18.8
Copper	0.500	0.242
Lead	0.350	0.160
Mercury	0.0172	0.00647
Tin	0.335	0.165
Zinc	8.26	4.50
<i>Organic Parameters</i>		
Bis(2-ethylhexyl) phthalate	0.215	0.101
Butylbenzyl phthalate	0.188	0.0887
Carbazole	0.598	0.276
n-Decane	0.948	0.437
Fluoranthene	0.0537	0.0268
n-Octadecane	0.589	0.302

<sup>1</sup> mg/L (ppm)

<sup>2</sup> Within the range 6 to 9

Pretreatment Standards for Existing Sources (PSES) Oils Treatment and Recovery		
Regulated Parameter	Maximum Daily <sup>1</sup>	Maximum Monthly Avg. <sup>1</sup>
<i>Metal Parameters</i>		
Chromium	0.947	0.487
Cobalt	56.4	18.8
Copper	0.405	0.301
Lead	0.222	0.172
Tin	0.249	0.146
Zinc	6.95	4.46
<i>Organic Parameters</i>		
Bis(2-ethylhexyl) phthalate	0.267	0.158
Carbazole	0.392	0.233
n-Decane	5.79	3.31
Fluoranthene	0.787	0.393
n-Octadecane	1.22	0.925

<sup>1</sup> mg/L (ppm)

Pretreatment Standards for New Sources (PSNS) Oils Treatment and Recovery		
Regulated Parameter	Maximum Daily <sup>1</sup>	Maximum Monthly Avg. <sup>1</sup>
<i>Metal Parameters</i>		
Chromium	0.746	0.323
Cobalt	56.4	18.8
Copper	0.500	0.242
Lead	0.350	0.160
Tin	0.335	0.165
Zinc	8.26	4.50
<i>Organic Parameters</i>		
Bis(2-ethylhexyl) phthalate	0.215	0.101
Carbazole	0.598	0.276
n-Decane	0.948	0.437
Fluoranthene	0.0537	0.0268
n-Octadecane	0.589	0.302



## Appendix 12-0d

### CWT Wastewater Discharges: Organics Treatment and Recovery (40 CFR 437.31 through 437.36) [Added April 2001; Revised April 2004]

BPT Limitations Organics Treatment and Recovery		
Regulated Parameter	Maximum Daily <sup>1</sup>	Maximum Monthly Avg. <sup>1</sup>
<i>Conventional Parameters</i>		
BOD <sub>5</sub>	163	53.0
pH	( <sup>2</sup> )	( <sup>2</sup> )
TSS	216	61.3
<i>Metal Parameters</i>		
Copper	0.865	0.757
Zinc	0.497	0.420
<i>Organic Parameters</i>		
Acetone	30.2	7.97
Acetophenone	0.114	0.0562
2-Butanone	4.81	1.85
0-Cresol	1.92	0.561
p-Cresol	0.698	0.205
Phenol	3.65	1.08
Pyridine	0.370	0.182
2,4,6-Trichlorophenol	0.155	0.106

<sup>1</sup> mg/L (ppm)

<sup>2</sup> Within the range 6 to 9

BCT Limitations Organics Treatment and Recovery		
Regulated Parameter	Maximum Daily <sup>1</sup>	Maximum Monthly Avg. <sup>1</sup>
<i>Conventional Parameters</i>		
BOD <sub>5</sub>	163	53.0
pH	( <sup>2</sup> )	( <sup>2</sup> )
TSS	216	61.3

<sup>1</sup> mg/L (ppm)

<sup>2</sup> Within the range 6 to 9

<b>BAT Limitations Organics Treatment and Recovery</b>		
<b>Regulated Parameter</b>	<b>Maximum Daily <sup>1</sup></b>	<b>Maximum Monthly Avg. <sup>1</sup></b>
<i>Metal Parameters</i>		
Copper	0.865	0.757
Zinc	0.497	0.420
<i>Organic Parameters</i>		
Acetone	30.2	7.97
Acetophenone	0.114	0.0562
2-Butanone	4.81	1.85
o-Cresol	1.92	0.561
p-Cresol	0.698	0.205
Phenol	3.65	1.08
Pyridine	0.370	0.182
2,4,6-Trichlorophenol	0.155	0.106

<sup>1</sup> mg/L (ppm)

<sup>2</sup> Within the range 6 to 9

<b>New Source Performance Standards Organics Treatment and Recovery</b>		
<b>Regulated Parameter</b>	<b>Maximum Daily <sup>1</sup></b>	<b>Maximum Monthly Avg. <sup>1</sup></b>
<i>Conventional Parameters</i>		
BOD <sub>5</sub>	163	53.0
pH	(2)	(2)
TSS	216	61.3
<i>Metal Parameters</i>		
Copper	0.865	0.757
Zinc	0.497	0.420
<i>Organic Parameters</i>		
Acetone	30.2	7.97
Acetophenone	0.114	0.0562
2-Butanone	4.81	1.85
o-Cresol	1.92	0.561
p-Cresol	0.698	0.205
Phenol	3.65	1.08
Pyridine	0.370	0.182
2,4,6-Trichlorophenol	0.155	0.106

<sup>1</sup> mg/L (ppm)

<sup>2</sup> Within the range 6 to 9

Pretreatment Standards for Existing Sources (PSES) Organics Treatment and Recovery		
Regulated Parameter	Maximum Daily <sup>1</sup>	Maximum Monthly Avg. <sup>1</sup>
<i>Organic Parameters</i>		
0-Cresol	1.92	0.561
p-Cresol	0.698	0.205
2,4,6-Trichlorophenol	0.155	0.106

<sup>1</sup> mg/L (ppm)

<sup>2</sup> Within the range 6 to 9

Pretreatment Standards for New Sources (PSNS) Organics Treatment and Recovery		
Regulated Parameter	Maximum Daily <sup>1</sup>	Maximum Monthly Avg. <sup>1</sup>
<i>Organic Parameters</i>		
0-Cresol	1.92	0.561
p-Cresol	0.698	0.205
2,4,6-Trichlorophenol	0.155	0.106

<sup>1</sup> mg/L (ppm)

<sup>2</sup> Within the range 6 to 9



## Appendix 12-0e

### CWT Wastewater Discharges: Multiple Waste Streams (40 CFR 437.41 through 437.47)

[Added April 2001; Revised April 2004]

A. Limitations and Standards for Combined Waste Receipts from Metals Treatment and Recovery, Oils Treatment and Recovery, and Organic Treatment and Recovery:

<b>BPT Limitations For Combined Waste Receipt from Metals Treatment and Recovery, Oils Treatment and Recovery, and Organics Treatment and Recovery</b>		
<b>Regulated Parameter</b>	<b>Maximum Daily <sup>1</sup></b>	<b>Maximum Monthly Avg. <sup>1</sup></b>
<i>Conventional Parameters</i>		
BOD <sub>5</sub>	163	53.0
O&G	127	38.0
pH	(2)	(2)
TSS	74.1	30.6
<i>Metal Parameters</i>		
Antimony	0.249	0.206
Arsenic	0.162	0.104
Cadmium	0.0172	0.0102
Chromium	0.746	0.323
Cobalt	0.192	0.124
Copper	0.500	0.242
Lead	0.350	0.160
Mercury	0.00234	0.000739
Nickel	3.95	1.45
Silver	0.120	0.0351
Tin	0.409	0.120
Titanium	0.0947	0.0618
Vanadium	0.218	0.0662
Zinc	0.497	0.420
<i>Organic Parameters</i>		
Acetone	30.2	7.97
Acetophenone	0.114	0.0562
Bis(2-ethylhexyl) phthalate	0.215	0.101
2-Butanone	4.81	1.85
Butylbenzyl phthalate	0.188	0.0887
Carbazole	0.598	0.276
o-Cresol	1.92	0.561
p-Cresol	0.698	0.205
n-Decane	0.948	0.437
Fluoranthene	0.0537	0.0268
n-Octadecane	0.589	0.302
Phenol	3.65	1.08
Pyridine	0.370	0.182
2,4,6-Trichlorophenol	0.155	0.106

<sup>1</sup> mg/L (ppm)

<sup>2</sup> Within the range 6 to 9

<b>BCT Limitations For Combined Waste Receipt from Metals Treatment and Recovery, Oils Treatment and Recovery, and Organics Treatment and Recovery</b>		
<b>Regulated Parameter</b>	<b>Maximum Daily <sup>1</sup></b>	<b>Maximum Monthly Avg. <sup>1</sup></b>
<i>Conventional Parameters</i>		
BOD <sub>5</sub>	163	53.0
O&G	127	38.0
pH	(2)	(2)
TSS	74.1	30.6

<sup>1</sup> mg/L (ppm)

<sup>2</sup> Within the range 6 to 9

<b>BAT Limitations For Combined Waste Receipt from Metals Treatment and Recovery, Oils Treatment and Recovery, and Organics Treatment and Recovery</b>		
<b>Regulated Parameter</b>	<b>Maximum Daily <sup>1</sup></b>	<b>Maximum Monthly Avg. <sup>1</sup></b>
<i>Metal Parameters</i>		
Antimony	0.237	0.141
Arsenic	0.162	0.104
Cadmium	0.0172	0.0102
Chromium	0.746	0.323
Cobalt	0.192	0.124
Copper	0.500	0.242
Lead	0.350	0.160
Mercury	0.00234	0.000739
Nickel	3.95	1.45
Silver	0.120	0.0351
Tin	0.409	0.120
Titanium	0.0510	0.0299
Vanadium	0.218	0.0662
Zinc	0.497	0.420
<i>Organic Parameters</i>		
Acetone	30.2	7.97
Acetophenone	0.114	0.0562
Bis(2-ethylhexyl) phthalate	0.215	0.101
2-Butanone	4.81	1.85
Butylbenzyl phthalate	0.188	0.0887
Carbazole	0.598	0.276
o-Cresol	1.92	0.561
p-Cresol	0.698	0.205
n-Decane	0.948	0.437
Fluoranthene	0.0537	0.0268
n-Octadecane	0.589	0.302
Phenol	3.65	1.08
Pyridine	0.370	0.182
2,4,6-Trichlorophenol	0.155	0.106

<sup>1</sup> mg/L (ppm)

<sup>2</sup> Within the range 6 to 9

**New Source Performance Standards For Combined Waste Receipt from Metals Treatment and Recovery, Oils Treatment and Recovery, and Organics Treatment and Recovery**

<b>Regulated Parameter</b>	<b>Maximum Daily <sup>1</sup></b>	<b>Maximum Monthly Avg. <sup>1</sup></b>
<i>Conventional Parameters</i>		
BOD <sub>5</sub>	163	53.0
O&G	127	38.0
pH	<sup>(2)</sup>	<sup>(2)</sup>
TSS	29.6	11.3
<i>Metal Parameters</i>		
Antimony	0.111	0.0312
Arsenic	0.0993	0.0199
Cadmium	0.0172	0.0102
Chromium	0.167	0.0522
Cobalt	0.182	0.0703
Copper	0.659	0.216
Lead	0.350	0.160
Mercury	0.000641	0.000246
Nickel	0.794	0.309
Selenium	0.176	0.0698
Silver	0.0318	0.0122
Tin	0.0955	0.0367
Titanium	0.0159	0.00612
Vanadium	0.0628	0.0518
Zinc	0.657	0.252
<i>Organic Parameters</i>		
Acetone	30.2	7.97
Acetophenone	0.114	0.0562
Bis(2-ethylhexyl) phthalate	0.215	0.101
2-Butanone	4.81	1.85
Butylbenzyl phthlate	0.188	0.0887
Carbazole	0.598	0.276
o-Cresol	1.92	0.561
p-Cresol	0.698	0.205
n-Decane	0.948	0.437
Fluoranthene	0.0537	0.0268
n-Octadecane	0.589	0.302
Phenol	3.65	1.08
Pyridine	0.370	0.182
2,4,6-Trichlorophenol	0.155	0.106

<sup>1</sup> mg/L (ppm)

<sup>2</sup> Within the range 6 to 9

PSES For Combined Waste Receipt from Metals Treatment and Recovery, Oils Treatment and Recovery, and Organics Treatment and Recovery		
Regulated Parameter	Maximum Daily <sup>1</sup>	Maximum Monthly Avg. <sup>1</sup>
<i>Metal Parameters</i>		
Antimony	0.249	0.206
Arsenic	0.162	0.104
Cadmium	0.474	0.0962
Chromium	0.947	0.487
Cobalt	0.192	0.124
Copper	0.405	0.301
Lead	0.222	0.172
Mercury	0.00234	0.000739
Nickel	3.95	1.45
Silver	0.120	0.0351
Tin	0.409	0.120
Titanium	0.0947	0.0618
Vanadium	0.218	0.0662
Zinc	2.87	0.641
<i>Organic Parameters</i>		
Bis(2-ethylhexyl) phthalate	0.267	0.158
Carbazole	0.392	0.233
o-Cresol	1.92	0.561
p-Cresol	0.698	0.205
n-Decane	5.79	3.31
Fluoranthene	0.787	0.393
n-Octadecane	1.22	0.925
2,4,6-Trichlorophenol	0.155	0.106

<sup>1</sup> mg/L (ppm)

<sup>2</sup> Within the range 6 to 9

PSNS For Combined Waste Receipt from Metals Treatment and Recovery, Oils Treatment and Recovery, and Organics Treatment and Recovery		
Regulated Parameter	Maximum Daily <sup>1</sup>	Maximum Monthly Avg. <sup>1</sup>
<i>Metal Parameters</i>		
Antimony	0.249	0.206
Arsenic	0.162	0.104
Cadmium	0.474	0.0962
Chromium	0.746	0.323
Cobalt	0.192	0.124
Copper	0.500	0.242
Lead	0.350	0.160
Mercury	0.00234	0.000739
Nickel	3.95	1.45
Silver	0.120	0.0351
Tin	0.409	0.120
Titanium	0.0947	0.0618
Vanadium	0.218	0.0662
Zinc	2.87	0.641
<i>Organic Parameters</i>		

PSNS For Combined Waste Receipt from Metals Treatment and Recovery, Oils Treatment and Recovery, and Organics Treatment and Recovery		
Regulated Parameter	Maximum Daily <sup>1</sup>	Maximum Monthly Avg. <sup>1</sup>
Bis(2-ethylhexyl) phthalate	0.215	0.101
Carbazole	0.598	0.276
o-Cresol	1.92	0.561
p-Cresol	0.698	0.205
n-Decane	0.948	0.437
Fluoranthene	0.0537	0.0268
n-Octadecane	0.589	0.302
2,4,6-Trichlorophenol	0.155	0.106

<sup>1</sup> mg/L (ppm)

<sup>2</sup> Within the range 6 to 9

B. Limitations and Standards for Combined Waste Receipts from Metals Treatment and Recovery, and Oils Treatment and Recovery:

<b>BPT Limitations For Combined Waste Receipts from Metals Treatment and Recovery, and Oils Treatment and Recovery</b>		
<b>Regulated Parameter</b>	<b>Maximum Daily <sup>1</sup></b>	<b>Maximum Monthly Avg. <sup>1</sup></b>
<i>Conventional Parameters</i>		
O&G	127	38.0
pH	( <sup>2</sup> )	( <sup>2</sup> )
TSS	74.1	30.6
<i>Metal Parameters</i>		
Antimony	0.249	0.206
Arsenic	0.162	0.104
Cadmium	0.0172	0.0102
Chromium	0.746	0.323
Cobalt	0.192	0.124
Copper	0.500	0.242
Lead	0.350	0.160
Mercury	0.00234	0.000739
Nickel	3.95	1.45
Silver	0.120	0.0351
Tin	0.409	0.120
Titanium	0.0947	0.0618
Vanadium	0.218	0.0662
Zinc	2.87	0.641
<i>Organic Parameters</i>		
Bis(2-ethylhexyl) phthalate	0.215	0.101
Butylbenzyl phthlate	0.188	0.0887
Carbazole	0.598	0.276
n-Decane	0.948	0.437
Fluoranthene	0.0537	0.0268
n-Octadecane	0.589	0.302

<sup>1</sup> mg/L (ppm)

<sup>2</sup> Within the range 6 to 9

<b>BCT Limitations For Combined Waste Receipts from Metals Treatment and Recovery, and Oils Treatment and Recovery</b>		
<b>Regulated Parameter</b>	<b>Maximum Daily <sup>1</sup></b>	<b>Maximum Monthly Avg. <sup>1</sup></b>
<i>Conventional Parameters</i>		
O&G	127	38.0
pH	( <sup>2</sup> )	( <sup>2</sup> )
TSS	74.1	30.6

<sup>1</sup> mg/L (ppm)

<sup>2</sup> Within the range 6 to 9

BAT Limitations For Combined Waste Receipts from Metals Treatment and Recovery and Oils Treatment and Recovery		
Regulated Parameter	Maximum Daily <sup>1</sup>	Maximum Monthly Avg. <sup>1</sup>
<i>Metal Parameters</i>		
Antimony	0.237	0.141
Arsenic	0.162	0.104
Cadmium	0.0172	0.0102
Chromium	0.746	0.323
Cobalt	0.192	0.124
Copper	0.500	0.242
Lead	0.350	0.160
Mercury	0.00234	0.000739
Nickel	3.95	1.45
Silver	0.120	0.0351
Tin	0.409	0.120
Titanium	0.0510	0.0299
Vanadium	0.218	0.0662
Zinc	2.87	0.641
<i>Organic Parameters</i>		
Bis(2-ethylhexyl) phthalate	0.215	0.101
Butylbenzyl phthalate	0.188	0.0887
Carbazole	0.598	0.276
n-Decane	0.948	0.437
Fluoranthene	0.0537	0.0268
n-Octadecane	0.589	0.302

<sup>1</sup> mg/L (ppm)

<sup>2</sup> Within the range 6 to 9

New Source Performance Standards For Combined Waste Receipts from Metals Treatment and Recovery and Oils Treatment and Recovery		
Regulated Parameter	Maximum Daily <sup>1</sup>	Maximum Monthly Avg. <sup>1</sup>
<i>Conventional Parameters</i>		
O&G	127	38.0
pH	( <sup>2</sup> )	( <sup>2</sup> )
TSS	29.6	11.3
<i>Metal Parameters</i>		
Antimony	0.111	0.0312
Arsenic	0.0993	0.0199
Cadmium	0.0172	0.0102
Chromium	0.167	0.0522
Cobalt	0.182	0.0703
Copper	0.659	0.216
Lead	0.350	0.160
Mercury	0.000641	0.000246
Nickel	0.794	0.309
Selenium	0.176	0.0698
Silver	0.0318	0.0122
Tin	0.0955	0.0367
Titanium	0.0159	0.00612
Vanadium	0.0628	0.0518
Zinc	0.657	0.252
<i>Organic Parameters</i>		
Bis(2-ethylhexyl) phthalate	0.215	0.101
Butylbenzyl phthlate	0.188	0.0887
Carbazole	0.598	0.276
n-Decane	0.948	0.437
Fluoranthene	0.0537	0.0268
n-Octadecane	0.589	0.302

<sup>1</sup> mg/L (ppm)

<sup>2</sup> Within the range 6 to 9

PSES For Combined Waste Receipts from Metals Treatment and Recovery and Oils Treatment and Recovery		
Regulated Parameter	Maximum Daily <sup>1</sup>	Maximum Monthly Avg. <sup>1</sup>
<i>Metal Parameters</i>		
Antimony	0.249	0.206
Arsenic	0.162	0.104
Cadmium	0.474	0.0962
Chromium	0.947	0.487
Cobalt	0.192	0.124
Copper	0.405	0.301
Lead	0.222	0.172
Mercury	0.00234	0.000739
Nickel	3.95	1.45
Silver	0.120	0.0351
Tin	0.409	0.120
Titanium	0.0947	0.0618
Vanadium	0.218	0.0662
Zinc	2.87	0.641
<i>Organic Parameters</i>		
Bis(2-ethylhexyl) phthalate	0.267	0.158
Carbazole	0.392	0.233
n-Decane	5.79	3.31
Fluoranthene	0.787	0.393
n-Octadecane	1.22	0.925

<sup>1</sup> mg/L (ppm)

<sup>2</sup> Within the range 6 to 9

PSNS For Combined Waste Receipts from Metals Treatment and Recovery and Oils Treatment and Recovery		
Regulated Parameter	Maximum Daily <sup>1</sup>	Maximum Monthly Avg. <sup>1</sup>
<i>Metal Parameters</i>		
Antimony	0.249	0.206
Arsenic	0.162	0.104
Cadmium	0.474	0.0962
Chromium	0.746	0.323
Cobalt	0.192	0.124
Copper	0.500	0.242
Lead	0.350	0.160
Mercury	0.00234	0.000739
Nickel	3.95	1.45
Silver	0.120	0.0351
Tin	0.409	0.120
Titanium	0.0947	0.0618
Vanadium	0.218	0.0662
Zinc	2.87	0.641
<i>Organic Parameters</i>		
Bis(2-ethylhexyl) phthalate	0.215	0.101

PSNS For Combined Waste Receipts from Metals Treatment and Recovery and Oils Treatment and Recovery		
Regulated Parameter	Maximum Daily <sup>1</sup>	Maximum Monthly Avg. <sup>1</sup>
Carbazole	0.598	0.276
n-Decane	0.948	0.437
Fluoranthene	0.0537	0.0268
n-Octadecane	0.589	0.302

<sup>1</sup> mg/L (ppm)

<sup>2</sup> Within the range 6 to 9

**C. Limitations and Standards for Combined Waste Receipts from Metals Treatment and Recovery and Organic Treatment and Recovery:**

BPT Limitations For Combined Waste Receipt from Metals Treatment and Recovery and Organics Treatment and Recovery		
Regulated Parameter	Maximum Daily <sup>1</sup>	Maximum Monthly Avg. <sup>1</sup>
<i>Conventional Parameters</i>		
BOD <sub>5</sub>	163	53.0
O&G	127	38.0
pH	(2)	(2)
TSS	60.0	31.0
<i>Metal Parameters</i>		
Antimony	0.249	0.206
Arsenic	0.162	0.104
Cadmium	0.474	0.0962
Chromium	15.5	3.07
Cobalt	0.192	0.124
Copper	0.865	0.757
Lead	1.32	0.283
Mercury	0.00234	0.000739
Nickel	3.95	1.45
Silver	0.120	0.0351
Tin	0.409	0.120
Titanium	0.0947	0.0618
Vanadium	0.218	0.0662
Zinc	0.497	0.420
<i>Organic Parameters</i>		
Acetone	30.2	7.97
Acetophenone	0.114	0.0562
2-Butanone	4.81	1.85
o-Cresol	1.92	0.561
p-Cresol	0.698	0.205
Phenol	3.65	1.08
Pyridine	0.370	0.182
2,4,6-Trichlorophenol	0.155	0.106

<sup>1</sup> mg/L (ppm)

<sup>2</sup> Within the range 6 to 9

<b>BPT Limitations For Combined Waste Receipt from Metals Treatment and Recovery and Organics Treatment and Recovery</b>		
<b>Regulated Parameter</b>	<b>Maximum Daily <sup>1</sup></b>	<b>Maximum Monthly Avg. <sup>1</sup></b>
<i>Conventional Parameters</i>		
BOD <sub>5</sub>	163	53.0
O&G	127	38.0
pH	(2)	(2)
TSS	60.0	31.0

<sup>1</sup> mg/L (ppm)

<sup>2</sup> Within the range 6 to 9

<b>BAT Limitations For Combined Waste Receipt from Metals Treatment and Recovery and Organics Treatment and Recovery</b>		
<b>Regulated Parameter</b>	<b>Maximum Daily <sup>1</sup></b>	<b>Maximum Monthly Avg. <sup>1</sup></b>
<i>Metal Parameters</i>		
Antimony	0.249	0.206
Arsenic	0.162	0.104
Cadmium	0.474	0.0962
Chromium	15.5	3.07
Cobalt	0.192	0.124
Copper	0.865	0.757
Lead	1.32	0.283
Mercury	0.00234	0.000739
Nickel	3.95	1.45
Silver	0.120	0.0351
Tin	0.409	0.120
Titanium	0.0947	0.0618
Vanadium	0.218	0.0662
Zinc	0.497	0.420
<i>Organic Parameters</i>		
Acetone	30.2	7.97
Acetophenone	0.114	0.0562
2-Butanone	4.81	1.85
o-Cresol	1.92	0.561
p-Cresol	0.698	0.205
2,3-Dichloraniline	0.0731	0.0361
Phenol	3.65	1.08
Pyridine	0.370	0.182
2,4,6-Trichlorophenol	0.155	0.106

<sup>1</sup> mg/L (ppm)

<sup>2</sup> Within the range 6 to 9

New Source Performance Standards For Combined Waste Receipt from Metals Treatment and Recovery and Organics Treatment and Recovery		
Regulated Parameter	Maximum Daily <sup>1</sup>	Maximum Monthly Avg. <sup>1</sup>
<i>Conventional Parameters</i>		
BOD <sub>5</sub>	163	53.0
O&G	205	50.2
pH	( <sup>2</sup> )	( <sup>2</sup> )
TSS	29.6	11.3
<i>Metal Parameters</i>		
Antimony	0.111	0.0312
Arsenic	0.0993	0.0199
Cadmium	0.782	0.163
Chromium	0.167	0.0522
Cobalt	0.182	0.0703
Copper	0.659	0.216
Lead	1.32	0.283
Mercury	0.000641	0.000246
Nickel	0.794	0.309
Selenium	0.176	0.0698
Silver	0.0318	0.0122
Tin	0.0955	0.0367
Titanium	0.0159	0.00612
Vanadium	0.0628	0.0518
Zinc	0.657	0.252
<i>Organic Parameters</i>		
Acetone	30.2	7.97
Acetophenone	0.114	0.0562
2-Butanone	4.81	1.85
o-Cresol	1.92	0.561
p-Cresol	0.698	0.205
Phenol	3.65	1.08
Pyridine	0.370	0.182
2,4,6-Trichlorophenol	0.155	0.106

<sup>1</sup> mg/L (ppm)

<sup>2</sup> Within the range 6 to 9

<b>PSES For Combined Waste Receipt from Metals Treatment and Recovery and Organics Treatment and Recovery</b>		
<b>Regulated Parameter</b>	<b>Maximum Daily <sup>1</sup></b>	<b>Maximum Monthly Avg. <sup>1</sup></b>
<i>Metal Parameters</i>		
Arsenic	0.162	0.104
Cadmium	0.474	0.0962
Chromium	15.5	3.07
Cobalt	0.192	0.124
Copper	4.14	1.06
Lead	1.32	0.283
Mercury	0.00234	0.000739
Nickel	3.95	1.45
Selenium	1.64	0.408
Silver	0.120	0.0351
Tin	0.409	0.120
Titanium	0.0947	0.0618
Vanadium	0.218	0.0662
Zinc	2.87	0.641
<i>Organic Parameters</i>		
o-Cresol	1.92	0.561
p-Cresol	0.698	0.205
2,4,6-Trichlorophenol	0.155	0.106

<sup>1</sup> mg/L (ppm)

<sup>2</sup> Within the range 6 to 9

<b>PSNS For Combined Waste Receipt from Metals Treatment and Recovery, Oils Treatment and Recovery, and Organics Treatment and Recovery</b>		
<b>Regulated Parameter</b>	<b>Maximum Daily <sup>1</sup></b>	<b>Maximum Monthly Avg. <sup>1</sup></b>
<i>Metal Parameters</i>		
Antimony	0.249	0.206
Arsenic	0.162	0.104
Cadmium	0.474	0.0962
Chromium	15.5	3.07
Cobalt	0.192	0.124
Copper	4.14	1.06
Lead	1.32	0.283
Mercury	0.00234	0.000739
Nickel	3.95	1.45
Silver	0.120	0.0351
Tin	0.409	0.120
Titanium	0.0947	0.0618
Vanadium	0.218	0.0662
Zinc	2.87	0.641
<i>Organic Parameters</i>		
o-Cresol	1.92	0.561
p-Cresol	0.698	0.205
2,4,6-Trichlorophenol	0.155	0.106

<sup>1</sup> mg/L (ppm)

<sup>2</sup> Within the range 6 to 9

**D. Limitations and Standards for Combined Waste Receipts from Oils Treatment and Recovery and Organic Treatment and Recovery:**

<b>BPT Limitations For Combined Waste Receipt from Oils Treatment and Recovery and Organics Treatment and Recovery</b>		
<b>Regulated Parameter</b>	<b>Maximum Daily <sup>1</sup></b>	<b>Maximum Monthly Avg. <sup>1</sup></b>
<i>Conventional Parameters</i>		
BOD <sub>5</sub>	163	53.0
O&G	127	38.0
pH	( <sup>2</sup> )	( <sup>2</sup> )
TSS	74.1	30.6
<i>Metal Parameters</i>		
Arsenic	2.95	1.33
Cadmium	0.0172	0.0102
Chromium	0.746	0.323
Cobalt	56.4	18.8
Copper	0.500	0.242
Lead	0.350	0.160
Mercury	0.0172	0.00647
Tin	0.335	0.165
Zinc	0.497	0.420
<i>Organic Parameters</i>		
Acetone	30.2	7.97
Acetophenone	0.114	0.0562
Bis(2-ethylhexyl) phthalate	0.215	0.101
2-Butanone	4.81	1.85
Butylbenzyl phthalate	0.188	0.0887
Carbazole	0.598	0.276
o-Cresol	1.92	0.561
p-Cresol	0.698	0.205
n-Decane	0.948	0.437
Fluoranthene	0.0537	0.0268
n-Octadecane	0.589	0.302
Phenol	3.65	1.08
Pyridine	0.370	0.182
2,4,6-Trichlorophenol	0.155	0.106

<sup>1</sup> mg/L (ppm)

<sup>2</sup> Within the range 6 to 9

<b>BCT Limitations For Combined Waste Receipt from Oils Treatment and Recovery and Organics Treatment and Recovery</b>		
<b>Regulated Parameter</b>	<b>Maximum Daily <sup>1</sup></b>	<b>Maximum Monthly Avg. <sup>1</sup></b>
<i>Conventional Parameters</i>		
BOD <sub>5</sub>	163	53.0
O&G	127	38.0
pH	( <sup>2</sup> )	( <sup>2</sup> )
TSS	74.1	30.6

<sup>1</sup> mg/L (ppm)

<sup>2</sup> Within the range 6 to 9

<b>BAT Limitations For Combined Waste Receipt from Oils Treatment and Recovery and Organics Treatment and Recovery</b>		
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Regulated Parameter	Maximum Daily <sup>1</sup>	Maximum Monthly Avg. <sup>1</sup>
<i>Metal Parameters</i>		
Arsenic	2.95	1.33
Cadmium	0.0172	0.0102
Chromium	0.746	0.323
Cobalt	56.4	18.8
Copper	0.500	0.242
Lead	0.350	0.160
Mercury	0.0172	0.00647
Tin	0.335	0.165
Zinc	0.497	0.420
<i>Organic Parameters</i>		
Acetone	30.2	7.97
Acetophenone	0.114	0.0562
Bis(2-ethylhexyl) phthalate	0.215	0.101
2-Butanone	4.81	1.85
Butylbenzyl phthalate	0.188	0.0887
Carbazole	0.598	0.276
o-Cresol	1.92	0.561
p-Cresol	0.698	0.205
n-Decane	0.948	0.437
Fluoranthene	0.0537	0.0268
n-Octadecane	0.589	0.302
Phenol	3.65	1.08
Pyridine	0.370	0.182
2,4,6-Trichlorophenol	0.155	0.106

<sup>1</sup> mg/L (ppm)

<sup>2</sup> Within the range 6 to 9

New Source Performance Standards For Combined Waste Receipt from Oils Treatment and Recovery and Organics Treatment and Recovery		
Regulated Parameter	Maximum Daily <sup>1</sup>	Maximum Monthly Avg. <sup>1</sup>
<i>Conventional Parameters</i>		
BOD <sub>5</sub>	163	53.0
O&G	127	38.0
pH	( <sup>2</sup> )	( <sup>2</sup> )
TSS	74.1	30.6
<i>Metal Parameters</i>		
Arsenic	2.95	1.33
Cadmium	0.0172	0.0102
Chromium	0.746	0.323
Cobalt	56.4	18.8
Copper	0.500	0.242
Lead	0.350	0.160
Mercury	0.0172	0.00647
Tin	1.01	0.965
Zinc	0.497	0.420
<i>Organic Parameters</i>		
Acetone	30.2	7.97
Acetophenone	0.114	0.0562

Bis(2-ethylhexyl) phthalate	0.215	0.101
2-Butanone	4.81	1.85
Butylbenzyl phthalate	0.188	0.0887
Carbazole	0.598	0.276
o-Cresol	1.92	0.561
p-Cresol	0.698	0.205
n-Decane	0.948	0.437
Fluoranthene	0.0537	0.0268
n-Octadecane	0.589	0.302
Phenol	3.65	1.08
Pyridine	0.370	0.182
2,4,6-Trichlorophenol	0.155	0.106

<sup>1</sup> mg/L (ppm)

<sup>2</sup> Within the range 6 to 9

PSES For Combined Waste Receipt from Oils Treatment and Recovery and Organics Treatment and Recovery		
Regulated Parameter	Maximum Daily <sup>1</sup>	Maximum Monthly Avg. <sup>1</sup>
<i>Metal Parameters</i>		
Chromium	0.947	0.487
Cobalt	56.4	18.8
Copper	0.405	0.301
Lead	0.222	0.172
Tin	0.249	0.146
Titanium	0.0947	0.0618
Zinc	6.95	4.46
<i>Organic Parameters</i>		
Bis(2-ethylhexyl) phthalate	0.267	0.158
Carbazole	0.392	0.233
o-Cresol	1.92	0.561
p-Cresol	0.698	0.205
n-Decane	5.79	3.31
Fluoranthene	0.787	0.393
n-Octadecane	1.22	0.925
2,4,6-Trichlorophenol	0.155	0.106

<sup>1</sup> mg/L (ppm)

<sup>2</sup> Within the range 6 to 9

PSNS For Combined Waste Receipt from Oils Treatment and Recovery and Organics Treatment and Recovery		
Regulated Parameter	Maximum Daily <sup>1</sup>	Maximum Monthly Avg. <sup>1</sup>
<i>Metal Parameters</i>		

Chromium	0.746	0.323
Cobalt	56.4	18.8
Copper	0.500	0.242
Lead	0.350	0.160
Tin	0.335	0.165
Zinc	8.26	4.50
<i>Organic Parameters</i>		
Bis(2-ethylhexyl) phthalate	0.215	0.101
Carbazole	0.598	0.276
o-Cresol	1.92	0.561
p-Cresol	0.698	0.205
n-Decane	0.948	0.437
Fluoranthene	0.0537	0.0268
n-Octadecane	0.589	0.302
2,4,6-Trichlorophenol	0.155	0.106

<sup>1</sup> mg/L (ppm)

<sup>2</sup> Within the range 6 to 9

## Appendix 12-0f

### Oily Operations Definitions (Appendix B to Part 438) [Added July 2003]

Note: The definitions in this appendix shall not be used to differentiate between the six ``core" metal finishing operations (i.e., Electroplating, Electroless Plating, Anodizing, Coating (chromating, phosphating, and coloring), Chemical Etching and Milling, and Printed Circuit Board Manufacture) and forty ``ancillary" process operations listed at 40 CFR 433.10(a).

Abrasive Blasting involves removing surface film from a part by using abrasive directed at high velocity against the part. Abrasive blasting includes bead, grit, shot, and sand blasting, and may be performed either dry or with water. The primary applications of wet abrasive blasting include: Removing burrs on precision parts; producing satin or matte finishes; removing fine tool marks; and removing light mill scale, surface oxide, or welding scale. Wet blasting can be used to finish fragile items such as electronic components. Also, some aluminum parts are wet blasted to achieve a fine-grained matte finish for decorative purposes. In abrasive blasting, the water and abrasive typically are reused until the particle size diminishes due to impacting and fracture.

Adhesive Bonding involves joining parts using an adhesive material. Typically, an organic bonding compound is used as the adhesive. This operation usually is dry; however, aqueous solutions may be used as bonding agents or to contain residual organic bonding materials.

Alkaline Cleaning for Oil Removal is a general term for the application of an alkaline cleaning agent to a metal part to remove oil and grease during the manufacture, maintenance, or rebuilding of a metal product. This unit operation does not include washing of the finished products after routine use (as defined in "Washing (Finished Products)" in this appendix), or applying an alkaline cleaning agent to remove non-oily contaminants such as dirt and scale (as defined in "Alkaline Treatment Without Cyanide" in this appendix and "Alkaline Treatment With Cyanide" in appendix C of this part). Wastewater generated includes spent cleaning solutions and rinse waters.

- (1) Alkaline cleaning is performed to remove foreign contaminants from parts. This operation usually is done prior to finishing (e.g., electroplating).
- (2) Emulsion cleaning is an alkaline cleaning operation that uses either complex chemical enzymes or common organic solvents (e.g., kerosene, mineral oil, glycols, and benzene) dispersed in water with the aid of an emulsifying agent. The pH of the solvent usually is between 7 and 9, and, depending on the solvent used, cleaning is performed at temperatures from room temperature to 82 degrees C (180 degrees F). This operation often is used as a replacement for vapor degreasing.

Alkaline Treatment Without Cyanide is a general term used to describe the application of an alkaline solution not containing cyanide to a metal surface to clean the metal surface or prepare the metal surface for further surface finishing.

Aqueous Degreasing involves cleaning metal parts using aqueous-based cleaning chemicals primarily to remove residual oils and greases from the part. Residual oils can be from previous operations (e.g., machine coolants), oil from product use in a dirty environment, or oil coatings used to inhibit corrosion. Wastewater generated by this operation includes spent cleaning solutions and rinse waters.

Assembly/Disassembly involves fitting together previously manufactured or rebuilt parts or components into a complete metal product or machine or taking a complete metal product or machine apart. Assembly/disassembly operations are typically dry; however, special circumstances can require water for cooling or buoyancy. Also, rinsing may be necessary under some conditions.

Burnishing involves finish sizing or smooth finishing a part (previously machined or ground) by displacing, rather than removing, minute surface irregularities with smooth point or line-contact, fixed or rotating tools. Lubricants or soap solutions can be used to cool the tools used in burnishing operations. Wastewaters generated during burnishing include process solutions and rinse water.

Calibration is performed to provide reference points for the use of a product. This unit operation typically is dry, although water may be used in some cases (e.g., pumping water for calibration of a pump). Water used in this unit operation usually does not contain additives.

Corrosion Preventive Coating involves applying removable oily or organic solutions to protect metal surfaces against corrosive environments. Corrosion preventive coatings include, but are not limited to: Petrolatum compounds, oils, hard dry-film compounds, solvent-cutback petroleum-based compounds, emulsions, water-displacing polar compounds, and fingerprint removers and neutralizers. Corrosion preventive coating does not include electroplating, or chemical conversion coating operations. Many corrosion preventive materials also are formulated to function as lubricants or as a base for paint. Typical applications include: Assembled machinery or equipment in standby storage; finished parts in stock or spare parts for replacement; tools such as drills, taps, dies, and gauges; and mill products such as sheet, strip, rod and bar. Wastewater generated during corrosion preventive coating includes spent process solutions and rinses. Process solutions are discharged when they become contaminated with impurities or are depleted of constituents. Corrosion preventive coatings typically do not require an associated rinse, but parts are sometimes rinsed to remove the coating before further processing.

Electrical Discharge Machining involves removing metals by a rapid spark discharge between different polarity electrodes, one the part and the other the tool, separated by a small gap. The gap may be filled with air or a dielectric fluid. This operation is used primarily to cut tool alloys, hard nonferrous alloys, and other hard-to-machine materials. Most electrical discharge machining processes are operated dry; however, in some cases, the process uses water and generates wastewater containing dielectric fluid.

Floor Cleaning (in Process Area) removes dirt, debris, and process solution spills from process area floors. Floors can be cleaned using wet or dry methods, such as vacuuming, mopping, dry sweeping, and hose rinsing. Non-process area floor cleaning in offices and other similar non-process areas is not included in this unit operation.

Grinding involves removing stock from a part by using abrasive grains held by a rigid or semi-rigid binder. Grinding shapes or deburrs the part. The grinding tool usually is a disk (the basic shape of grinding wheels), but can also be a cylinder, ring, cup, stick, strip, or belt. The most commonly used abrasives are aluminum oxide, silicon carbide, and diamond. The process may use a grinding fluid to cool the part and remove debris or metal fines. Wastewater generated during grinding includes spent coolants and rinses. Metal-working fluids become spent for a number of reasons, including increased biological activity (i.e., the fluids become rancid) or decomposition of the coolant additives. Rinse waters typically are assimilated into the working fluid or treated on site.

Heat Treating involves modifying the physical properties of a part by applying controlled heating and cooling cycles. This operation includes tempering, carburizing, cyaniding, nitriding, annealing, aging, normalizing, austenitizing, austempering, siliconizing, martempering, and malleablizing. Parts are heated in furnaces or molten salt baths, and then may be cooled by quenching in aqueous solutions (e.g., brine solutions), neat oils (pure oils with little or no impurities), or oil/water emulsions. Heat treating typically is a dry operation, but is considered a wet operation if aqueous quenching solutions are used. Wastewater includes spent quench water and rinse water.

Impact Deformation involves applying impact force to a part to permanently deform or shape it. Impact deformation may include mechanical processes such as hammer forging, shot peening, peening, coining, high-energy-rate forming, heading, or stamping. Natural and synthetic oils, light greases, and pigmented lubricants are used in impact deformation operations. Pigmented lubricants include whiting, lithapone, mica, zinc oxide, molybdenum disulfide, bentonite, flour, graphite, white lead, and soap-like materials. These operations typically are dry, but wastewater can be generated from lubricant discharge and from rinsing operations associated with the operation.

Iron Phosphate Conversion Coating is the process of applying a protective coating on the surface of a metal using a bath consisting of a phosphoric acid solution containing no metals (e.g., manganese, nickel, or zinc) or a phosphate salt solution (i.e., sodium or potassium salts of phosphoric acid solutions) containing no metals (e.g., manganese, nickel, or zinc) other than sodium or potassium. Any metal concentrations in the bath are from the substrate.

Machining involves removing stock from a part (as chips) by forcing a cutting tool against the part. This includes machining processes such as turning, milling, drilling, boring, tapping, planing, broaching, sawing, shaving,

shearing, threading, reaming, shaping, slotting, hobbing, and chamfering. Machining processes use various types of metal-working fluids, the choice of which depends on the type of machining being performed and the preference of the machine shop. The fluids can be categorized into four groups: Straight oil (neat oils), synthetic, semisynthetic, and water-soluble oil. Machining operations generate wastewater from working fluid or rinse water discharge. Metal-working fluids periodically are discarded because of reduced performance or development of a rancid odor. After machining, parts are sometimes rinsed to remove coolant and metal chips. The coolant reservoir is sometimes rinsed, and the rinse water is added to the working fluid.

Painting-Spray or Brush (Including Water Curtains) involves applying an organic coating to a part. Coatings such as paint, varnish, lacquer, shellac, and plastics are applied by spraying, brushing, roll coating, lithographing, powder coating, and wiping. Water is used in painting operations as a solvent (water-borne formulations) for rinsing, for cleanup, and for water-wash (or curtain) type spray booths. Paint spray booths typically use most of the water in this unit operation. Spray booths capture overspray (i.e., paint that misses the product during application), and control the introduction of pollutants into the workplace and environment.

Polishing involves removing stock from a part using loose or loosely held abrasive grains carried to the part by a flexible support. Usually, the objective is to achieve a desired surface finish or appearance rather than to remove a specified amount of stock. Buffing is included in this unit operation, and usually is performed using a revolving cloth or sisal buffing wheel, which is coated with a suitable compound. Liquid buffing compounds are used extensively for large-volume production on semiautomated or automated buffing equipment. Polishing operations typically are dry, although liquid compounds and associated rinses are used in some polishing processes.

Pressure Deformation involves applying force (other than impact force) to permanently deform or shape a part. Pressure deformation may include rolling, drawing, bending, embossing, sizing, extruding, squeezing, spinning, necking, forming, crimping or flaring. These operations use natural and synthetic oils, light greases, and pigmented lubricants. Pigmented lubricants include whiting, lithapone, mica, zinc oxide, molybdenum disulfide, bentonite, flour, graphite, white lead, and soap-like materials. Pressure deformation typically is dry, but wastewater is sometimes generated from the discharge of lubricants or from rinsing associated with the process.

Solvent Degreasing removes oils and grease from the surface of a part using organic solvents, including aliphatic petroleum (e.g., kerosene, naphtha), aromatics (e.g., benzene, toluene), oxygenated hydrocarbons (e.g., ketones, alcohol, ether), and halogenated hydrocarbons (e.g., 1,1,1-trichloroethane, trichloroethylene, methylene chloride). Solvent cleaning takes place in either the liquid or vapor phase. Solvent vapor degreasing normally is quicker than solvent liquid degreasing. However, ultrasonic vibration is sometimes used with liquid solvents to decrease the required immersion time of complex shapes. Solvent cleaning often is used as a precleaning operation prior to alkaline cleaning, as a final cleaning of precision parts, or as surface preparation for some painting operations. Solvent degreasing operations typically are not followed by rinsing, although rinsing is performed in some cases.

Steam Cleaning removes residual dirt, oil, and grease from parts after processing through other unit operations. Typically, additives are not used in this operation; the hot steam removes the pollutants. Wastewater is generated when the cleaned parts are rinsed.

Testing (e.g., hydrostatic, dye penetrant, ultrasonic, magnetic flux) involves applying thermal, electrical, mechanical, hydraulic, or other energy to determine the suitability or functionality of a part, assembly, or complete unit. Testing also may include applying surface penetrant dyes to detect surface imperfections. Other examples of tests frequently performed include electrical testing, performance testing, and ultrasonic testing; these tests typically are dry but may generate wastewater under certain circumstances. Testing usually is performed to replicate some aspect of the working environment. Wastewater generated during testing includes spent process solutions and rinses.

Thermal Cutting involves cutting, slotting, or piercing a part using an oxy-acetylene oxygen lance, electric arc cutting tool, or laser. Thermal cutting typically is a dry process, except for the use of contact cooling waters and rinses.

Tumbling/Barrel Finishing/Mass Finishing/Vibratory Finishing involves polishing or deburring a part using a rotating or vibrating container and abrasive media or other polishing materials to achieve a desired surface appearance. Parts to be finished are placed in a rotating barrel or vibrating unit with an abrasive media (e.g., ceramic

chips, pebbles), water, and chemical additives (e.g., alkaline detergents). As the barrel rotates, the upper layer of the part slides toward the lower side of the barrel, causing the abrading or polishing. Similar results can be achieved in a vibrating unit, where the entire contents of the container are in constant motion, or in a centrifugal unit, which compacts the load of media and parts as the unit spins and generates up to 50 times the force of gravity. Spindle finishing is a similar process, where parts to be finished are mounted on fixtures and exposed to a rapidly moving abrasive slurry. Wastewater generated during barrel finishing includes spent process solutions and rinses. Following the finishing process, the contents of the barrel are unloaded. Process wastewater is discharged continuously during the process, discharged after finishing, or collected and reused. The parts are sometimes given a final rinse to remove particles of abrasive media.

Washing (Finished Products) involves cleaning finished metal products after use or storage using fresh water or water containing a mild cleaning solution. This unit operation applies only to the finished products that do not require maintenance or rebuilding.

Welding involves joining two or more pieces of material by applying heat, pressure, or both, with or without filler material, to produce a metallurgical bond through fusion or recrystallization across the interface. This includes gas welding, resistance welding, arc welding, cold welding, electron beam welding, and laser beam welding. Welding typically is a dry process, except for the occasional use of contact cooling waters or rinses.

Wet Air Pollution Control for Organic Constituents involves using water to remove organic constituents that are entrained in air streams exhausted from process tanks or production areas. Most frequently, wet air pollution control devices are used with cleaning and coating processes. A common type of wet air pollution control is the wet packed scrubber consisting of a spray chamber that is filled with packing material. Water is continuously sprayed onto the packing and the air stream is pulled through the packing by a fan. Pollutants in the air stream are absorbed by the water droplets and the air is released to the atmosphere. A single scrubber often serves numerous process tanks.

## Appendix 12-0g

### Metal-Bearing Operations Definitions

(Appendix C to 40 CFR 438)

[Added July 2003]

Note: The definitions in this appendix shall not be used to differentiate between the six "core" metal finishing operations (i.e., Electroplating, Electroless Plating, Anodizing, Coating (chromating, phosphating, and coloring), Chemical Etching and Milling, and Printed Circuit Board Manufacture) and forty "ancillary" process operations listed at 40 CFR 433.10(a).

Abrasive Jet Machining includes removing stock material from a part by a high-speed stream of abrasive particles carried by a liquid or gas from a nozzle. Abrasive jet machining is used for deburring, drilling, and cutting thin sections of metal or composite material. Unlike abrasive blasting, this process operates at pressures of thousands of pounds per square inch. The liquid streams typically are alkaline or emulsified oil solutions, although water also can be used.

Acid Pickling Neutralization involves using a dilute alkaline solution to raise the pH of acid pickling rinse water that remains on the part after pickling. The wastewater from this operation is the acid pickling neutralization rinse water.

Acid Treatment With Chromium is a general term used to describe any application of an acid solution containing chromium to a metal surface. Acid cleaning, chemical etching, and pickling are types of acid treatment. Chromic acid is used occasionally to clean cast iron, stainless steel, cadmium and aluminum, and bright dipping of copper and copper alloys. Also, chromic acid solutions can be used for the final step in acid cleaning phosphate conversion coating systems. Chemical conversion coatings formulated with chromic acid are defined as "Chromate Conversion Coating (or Chromating)" in this appendix. Wastewater generated during acid treatment includes spent solutions and rinse waters. Spent solutions typically are batch discharged and treated or disposed of off site. Most acid treatment operations are followed by a water rinse to remove residual acid.

Acid Treatment Without Chromium is a general term used to describe any application of an acid solution not containing chromium to a metal surface. Acid cleaning, chemical etching, and pickling are types of acid treatment. Wastewater generated during acid treatment includes spent solutions and rinse waters. Spent solutions typically are batch discharged and treated or disposed of off site. Most acid treatment operations are followed by a water rinse to remove residual acid.

Alcohol Cleaning involves removing dirt and residue material from a part using alcohol.

Alkaline Cleaning Neutralization involves using a dilute acid solution to lower the pH of alkaline cleaning rinse water that remains on the part after alkaline cleaning. Wastewater from this operation is the alkaline cleaning neutralization rinse water.

Alkaline Treatment With Cyanide is the cleaning of a metal surface with an alkaline solution containing cyanide. Wastewater generated during alkaline treatment includes spent solutions and rinse waters. Alkaline treatment solutions become contaminated from the introduction of soils and dissolution of the base metal. They usually are treated and disposed of on a batch basis. Alkaline treatment typically is followed by a water rinse that is discharged to a treatment system.

Anodizing With Chromium involves producing a protective oxide film on aluminum, magnesium, or other light metal, usually by passing an electric current through an electrolyte bath in which the metal is immersed. Anodizing may be followed by a sealant operation. Chromic acid anodic coatings have a relatively thick boundary layer and are more protective than are sulfuric acid coatings. For these reasons, chromic acid is sometimes used when the part cannot be rinsed completely. These oxide coatings provide corrosion protection, decorative surfaces, a base for painting and other coating processes, and special electrical and mechanical properties. Wastewaters generated during anodizing include spent anodizing solutions, sealants, and rinse waters. Because of the anodic nature of the process, anodizing solutions become contaminated with the base metal being processed. These solutions eventually reach an

intolerable concentration of dissolved metal and require treatment or disposal. Rinse water following anodizing, coloring, and sealing typically is discharged to a treatment system.

Anodizing Without Chromium involves applying a protective oxide film to aluminum, magnesium, or other light metal, usually by passing an electric current through an electrolyte bath in which the metal is immersed. Phosphoric acid, sulfuric acid, and boric acid are used in anodizing. Anodizing also may include sealant baths. These oxide coatings provide corrosion protection, decorative surfaces, a base for painting and other coating processes, and special electrical and mechanical properties. Wastewater generated during anodizing includes spent anodizing solutions, sealants, and rinse waters. Because of the anodic nature of the process, anodizing solutions become contaminated with the base metal being processed. These solutions eventually reach an intolerable concentration of dissolved metal and require treatment or disposal. Rinse water following anodizing, coloring, and sealing steps typically is discharged to a treatment system.

Carbon Black Deposition involves coating the inside of printed circuit board holes by dipping the circuit board into a tank that contains carbon black and potassium hydroxide. After excess solution dips from the circuit boards, they are heated to allow the carbon black to adhere to the board.

Catalyst Acid Pre-Dip uses rinse water to remove residual solution from a part after the part is processed in an acid bath. The wastewater generated in this unit operation is the rinse water.

Chemical Conversion Coating without Chromium is the process of applying a protective coating on the surface of a metal without using chromium. Such coatings are applied through phosphate conversion (except for "Iron Phosphate Conversion Coating," see appendix B of this part), metal coloring, or passivation. Coatings are applied to a base metal or previously deposited metal to increase corrosion protection and lubricity, prepare the surface for additional coatings, or formulate a special surface appearance. This unit process includes sealant operations that use additives other than chromium.

- (1) In phosphate conversion, coatings are applied for one or more of the following reasons: to provide a base for paints and other organic coatings; to condition surfaces for cold forming operations by providing a base for drawing compounds and lubricants; to impart corrosion resistance to the metal surface; or to provide a suitable base for corrosion-resistant oils or waxes. Phosphate conversion coatings are formed by immersing a metal part in a dilute solution of phosphoric acid, phosphate salts, and other reagents.
- (2) Metal coloring by chemical conversion coating produces a large group of decorative finishes. Metal coloring includes the formation of oxide conversion coatings. In this operation, the metal surface is converted into an oxide or similar metallic compound, giving the part the desired color. The most common colored finishes are used on copper, steel, zinc, and cadmium.
- (3) Passivation forms a protective coating on metals, particularly stainless steel, by immersing the part in an acid solution. Stainless steel is passivated to dissolve embedded iron particles and to form a thin oxide film on the surface of the metal. Wastewater generated during chemical conversion coating includes spent solutions and rinses (i.e., both the chemical conversion coating solutions and post-treatment sealant solutions). These solutions commonly are discharged to a treatment system when contaminated with the base metal or other impurities. Rinsing normally follows each process step, except when a sealant dries on the part surface.

Chemical Milling (or Chemical Machining) involves removing metal from a part by controlled chemical attack, or etching, to produce desired shapes and dimensions. In chemical machining, a masking agent typically is applied to cover a portion of the part's surface; the exposed (unmasked) surface is then treated with the chemical machining solution. Wastewater generated during chemical machining includes spent solutions and rinses. Process solutions typically are discharged after becoming contaminated with the base metal. Rinsing normally follows chemical machining.

Chromate Conversion Coating (or Chromating) involves forming a conversion coating (protective coating) on a metal by immersing or spraying the metal with a hexavalent chromium compound solution to produce a hexavalent or trivalent chromium compound coating. This also is known as chromate treatment, and is most often applied to aluminum, zinc, cadmium or magnesium surfaces. Sealant operations using chromium also are included in this unit operation. Chromate solutions include two types: (1) those that deposit substantial chromate films on the substrate metal and are complete treatments themselves, and (2) those that seal or supplement oxide, phosphate, or other types of protective coatings. Wastewater generated during chromate conversion coating includes spent process solutions

(i.e., both the chromate conversion coating solutions and post-treatment sealant solutions) and rinses. These solutions typically are discharged to a treatment system when contaminated with the base metal or other impurities. Also, chromium-based solutions, which are typically formulated with hexavalent chromium, lose operating strength when the hexavalent chromium reduces to trivalent chromium during use. Rinsing normally follows each process step, except for sealants that dry on the surface of the part.

Chromium Drag-out Destruction is a unit operation performed following chromium-bearing operations to reduce hexavalent chromium that is "dragged out" of the process bath. Parts are dipped in a solution of a chromium-reducing chemical (e.g., sodium metabisulfite) to prevent the hexavalent chromium from contaminating subsequent process baths. This operation typically is performed in a stagnant drag-out rinse tank that contains concentrated chromium-bearing wastewater.

Cyanide Drag-out Destruction involves dipping part in a cyanide oxidation solution (e.g., sodium hypochloride) to prevent cyanide that is "dragged out" of a process bath from contaminating subsequent process baths. This operation typically is performed in a stagnant drag-out rinse tank.

Cyaniding Rinse is generated during cyaniding hardening of a part. The part is heated in a molten salt solution containing cyanide. Wastewater is generated when excess cyanide salt solution is removed from the part in rinse water.

Electrochemical Machining is a process in which the part becomes the anode and a shaped cathode is the cutting tool. By pumping electrolyte between the electrodes and applying a current, metal is rapidly but selectively dissolved from the part. Wastewater generated during electrochemical machining includes spent electrolytes and rinses.

Electroless Catalyst Solution involves adding a catalyst just prior to an electroless plating operation to accelerate the plating operation.

Electroless Plating involves applying a metallic coating to a part using a chemical reduction process in the presence of a catalyst. An electric current is not used in this operation. The metal to be plated onto a part typically is held in solution at high concentrations using a chelating agent. This plates all areas of the part to a uniform thickness regardless of the configuration of the part. Also, an electroless-plated surface is dense and virtually nonporous. Copper and nickel electroless plating operations are the most common. Sealant operations (i.e., other than hot water dips) following electroless plating are considered separate unit operations if they include any additives. Wastewater generated during electroless plating includes spent process solutions and rinses. The wastewater contains chelated metals, which require separate preliminary treatment to break the metal chelates prior to conventional chemical precipitation. Rinsing follows most electroless plating processes to remove residual plating solution and prevent contamination of subsequent process baths.

Electrolytic Cleaning involves removing soil, scale, or surface oxides from a part by electrolysis. The part is one of the electrodes and the electrolyte is usually alkaline. Electrolytic alkaline cleaning and electrolytic acid cleaning are the two types of electrolytic cleaning.

- (1) Electrolytic alkaline cleaning produces a cleaner surface than do nonelectrolytic methods of alkaline cleaning. This operation uses strong agitation, gas evolution in the solution, and oxidation-reduction reactions that occur during electrolysis. In addition, dirt particles become electrically charged and are repelled from the part surface.
- (2) Electrolytic acid cleaning sometimes is used as a final cleaning before electroplating. Sulfuric acid is most frequently used as the electrolyte. As with electrolytic alkaline cleaning, the mechanical scrubbing effect from the evolution of gas enhances the effectiveness of the process.

Wastewater generated during electrolytic cleaning includes spent process solutions and rinses. Electrolytic cleaning solutions become contaminated during use due to the dissolution of the base metal and the introduction of pollutants. The solutions typically are batch discharged for treatment or disposal after they weaken. Rinsing following electrolytic cleaning removes residual cleaner to prevent contamination of subsequent process baths.

Electroplating with Chromium involves producing a chromium metal coating on a surface by electrodeposition. Electroplating provides corrosion protection, wear or erosion resistance, lubricity, electrical conductivity, or

decoration. In electroplating, metal ions in acid, alkaline, or neutral solutions are reduced on the cathodic surfaces of the parts being plated. Metal salts or oxides typically are added to replenish the solutions. Chromium trioxide often is added as a source of chromium. In addition to water and the metal being deposited, electroplating solutions often contain agents that form complexes with the metal being deposited, stabilizers to prevent hydrolysis, buffers for pH control, catalysts to assist in deposition, chemical aids to dissolve anodes, and miscellaneous ingredients that modify the process to attain specific properties. Sealant operations performed after this operation are considered separate unit operations if they include any additives (i.e., other than hot water dips). Wastewater generated during electroplating includes spent process solutions and rinses. Electroplating solutions occasionally become contaminated during use due to the base metal dissolving and the introduction of other pollutants, diminishing the effectiveness of the electroplating solutions. Spent concentrated solutions typically are treated to remove pollutants and reused, processed in a wastewater treatment system, or disposed of off site. Rinse waters, including some drag-out rinse tank solutions, typically are treated on site.

Electroplating with Cyanide involves producing metal coatings on a surface by electrodeposition using cyanide. Electroplating provides corrosion protection, wear or erosion resistance, electrical conductivity, or decoration. In electroplating, metal ions in acid, alkaline, or neutral solutions are reduced on the cathodic surfaces of the parts being plated. The metal ions in solution typically are replenished by dissolving metal from anodes contained in inert wire or metal baskets. Sealant operations performed after this operation are considered separate unit operations if they include any additives (i.e., any sealant operations other than hot water dips). In addition to water and the metal being deposited, electroplating solutions often contain agents that form complexes with the metal being deposited, stabilizers to prevent hydrolysis, buffers to control pH, catalysts to assist in deposition, chemical aids to dissolve anodes, and miscellaneous ingredients that modify the process to attain specific properties. Cyanide, usually in the form of sodium or potassium cyanide, frequently is used as a complexing agent for zinc, cadmium, copper, and precious metal baths. Wastewater generated during electroplating includes spent process solutions and rinses. Electroplating solutions occasionally become contaminated during use due to dissolution of the base metal and the introduction of other pollutants, diminishing the performance of the electroplating solutions. Spent concentrated solutions typically are treated to remove pollutants and reused, processed in a wastewater treatment system, or disposed of off site. Rinse waters, including some drag-out rinse tank solutions, typically are treated on site.

Electroplating without Chromium or Cyanide involves the production of metal coatings on a surface by electrodeposition, without using chromium or cyanide. Commonly electroplated metals include nickel, copper, tin/lead, gold, and zinc. Electroplating provides corrosion protection, wear or erosion resistance, lubricity, electrical conductivity, or decoration. In electroplating, metal ions in acid, alkaline, or neutral solutions are reduced on the cathodic surfaces of the parts being plated. The metal ions in solution typically are replenished by dissolving metal from anodes contained in inert wire or metal baskets. Sealant operations performed after this operation are considered separate unit operations if they include any additives (i.e., any sealant operations other than hot water dips). In addition to water and the metal being deposited, electroplating solutions often contain agents that form complexes with the metal being deposited, stabilizers to prevent hydrolysis, buffers to control pH, catalysts to assist in deposition, chemical aids to dissolve anodes, and miscellaneous ingredients that modify the process to attain specific properties. Wastewater generated during electroplating without chromium or cyanide includes spent process solutions and rinses. Electroplating solutions occasionally become contaminated during use due to dissolution of the base metal and the introduction of other pollutants, diminishing the effectiveness of the electroplating solutions. Spent concentrated solutions typically are treated for pollutant removal and reused, processed in a wastewater treatment system, or disposed of off site. Rinse waters, including some drag-out rinse tank solutions, typically are treated on site.

Electropolishing involves producing a highly polished surface on a part using reversed electrodeposition in which the anode (part) releases some metal ions into the electrolyte to reduce surface roughness. When current is applied, a polarized film forms on the metal surface, through which metal ions diffuse. In this operation, areas of surface roughness on parts serve as high-current density areas and are dissolved at rates greater than the rates for smoother portions of the metal surface. Metals are electropolished to improve appearance, reflectivity, and corrosion resistance. Base metals processed by electropolishing include aluminum, copper, zinc, low-alloy steel, and stainless steel. Common electrolytes include sodium hydroxide and combinations of sulfuric acid, phosphoric acid, and chromic acid. Wastewater generated during electropolishing includes spent process solutions and rinses. Eventually, the concentration of dissolved metals increases to the point where the process becomes ineffective. Typically, a

portion of the bath is decanted and either fresh chemicals are added or the entire solution is discharged to treatment and replaced with fresh chemicals. Rinsing can involve several steps and can include hot immersion or spray rinses.

Galvanizing/Hot Dip Coating involves using various processes to coat an iron or steel surface with zinc. In hot dipping, a base metal is coated by dipping it into a tank that contains a molten metal.

Hot Dip Coating involves applying a metal coating (usually zinc) to the surface of a part by dipping the part in a molten metal bath. Wastewater is generated in this operation when residual metal coating solution is removed from the part in rinse water.

Kerfing uses a tool to remove small amounts of metal from a product surface. Water and synthetic coolants may be used to lubricate the area between the tool and the metal, to maintain the temperature of the cutting tool, and to remove metal fines from the surface of the part. This operation generates oily wastewater that contains metal fines and dust.

Laminating involves applying a material to a substrate using heat and pressure.

Mechanical and Vapor Plating involves applying a metallic coating to a part. For mechanical plating, the part is rotated in a drum containing a water-based solution, glass beads, and metal powder. In vapor plating, a metallic coating is applied by atomizing the metal and applying an electric charge to the part, which causes the atomized (vapor phase) metal to adhere to the part. Wastewater generated in this operation includes spent solutions from the process bath and rinse water. Typically, the wastewater contains high concentrations of the applied metal.

Metallic Fiber Cloth Manufacturing involves weaving thin metallic fibers to create a mesh cloth.

Metal Spraying (Including Water Curtain) involves applying a metallic coating to a part by projecting molten or semimolten metal particles onto a substrate. Coatings can be sprayed from rod or wire stock or from powdered material. The process involves feeding the material (e.g., wire) into a flame where it is melted. The molten stock then is stripped from the end of the wire and atomized by a high-velocity stream of compressed air or other gas that propels the material onto a prepared substrate or part. Metal spraying coatings are used in a wide range of special applications, including: insulating layers in applications such as induction heating coils; electromagnetic interference shielding; thermal barriers for rocket engines; nuclear moderators; films for hot isostatic pressing; and dimensional restoration of worn parts. Metal spraying is sometimes performed in front of a “water curtain” (a circulated water stream used to trap overspray) or a dry filter exhaust hood that captures the overspray and fumes. With water curtain systems, water is recirculated from a sump or tank. Wastewater is generated when the sump or tank is discharged periodically. Metal spraying typically is not followed by rinsing.

Painting-Immersion (Including Electrophoretic, “E-coat”) involves applying an organic coating to a part using processes such as autophoretic and electrophoretic painting.

- (1) Autophoretic Painting involves applying an organic paint film by electrophoresis when a part is immersed in a suitable aqueous bath.
- (2) Electrophoretic Painting is coating a part by making it either anodic or cathodic in a bath that is generally an aqueous emulsion of the organic coating material.
- (3) Other Immersion Painting includes all other types of immersion painting such as dip painting.

Water is used in immersion paint operations as a carrier for paint particles and to rinse the part. Aqueous painting solutions and rinses typically are treated through an ultrafiltration system. The concentrate is returned to the painting solution, and the permeate is reused as rinse water. Sites typically discharge a bleed stream to treatment. The painting solution and rinses are batch discharged periodically to treatment.

Photo Imaging is the process of exposing a photoresist-laden printed wiring board to light to impact the circuitry design to the board. Water is not used in this operation.

Photo Image Developing is an operation in which a water-based solution is used to develop the exposed circuitry in a photoresist-laden printed wiring board. Wastewater generated in this operation includes spent process solution and rinse water.

Photoresist Application is an operation that uses heat and pressure to apply a photoresist coating to a printed wiring board. Water is not used in this operation.

Photoresist Strip involves removing organic photoresist material from a printed wiring board using an acid solution.

Phosphor Deposition is the application of a phosphorescent coating to a part. Wastewater generated in this unit operation includes water used to keep the parts clean and wet while the coating is applied, and rinse water used to remove excess phosphorescent coating from the part.

Physical Vapor Deposition involves physically removing a material from a source through evaporation or sputtering, using the energy of the vapor particles in a vacuum or partial vacuum to transport the removed material, and condensing the removed material as a film onto the surface of a part or other substrate.

Plasma Arc Machining involves removing material or shaping a part by a high-velocity jet of high-temperature, ionized gas. A gas (nitrogen, argon, or hydrogen) is passed through an electric arc, causing the gas to become ionized, and heated to temperatures exceeding 16,650 degrees C (30,000 degrees F). The relatively narrow plasma jet melts and displaces the material in its path. Because plasma arc machining does not depend on a chemical reaction between the gas and the part, and because plasma temperatures are extremely high, the process can be used on almost any metal, including those that are resistant to oxygen-fuel gas cutting. The method is used mainly for profile cutting of stainless steel and aluminum alloys. Although plasma arc machining typically is a dry process, water is used for water injection plasma arc torches. In these cases, a constricted swirling flow of water surrounds the cutting arc. This operation also may be performed immersed in a water bath. In both cases, water is used to stabilize the arc, to cool the part, and to contain smoke and fumes.

Plastic Wire Extrusion involves applying a plastic material to a metal wire through an extrusion process.

Salt Bath Descaling involves removing surface oxides or scale from a part by immersing the part in a molten salt bath or hot salt solution. Salt bath descaling solutions can contain molten salts, caustic soda, sodium hydride, and chemical additives. Molten salt baths are used in a salt bath-water quench-acid dip sequence to remove oxides from stainless steel and other corrosion-resistant alloys. In this process, the part typically is immersed in the molten salt, quenched with water, and then dipped in acid. Oxidizing, reducing, or electrolytic salt baths can be used depending on the oxide to be removed. Wastewater generated during salt bath descaling includes spent process solutions, quenches, and rinses.

Shot Tower--Lead Shot Manufacturing involves dropping molten lead from a platform on the top of a tower through a sieve-like device and into a vat of cold water.

Soldering involves joining metals by inserting a thin (capillary thickness) layer of nonferrous filler metal into the space between them. Bonding results from the intimate contact produced by the metallic bond formed between the substrate metal and the solder alloy. The term soldering is used where the melting temperature of the filler is below 425 degree C (800 degree F). Some soldering operations use a solder flux, which is an aqueous or nonaqueous material used to dissolve, remove, or prevent the formation of surface oxides on the part. Except for the use of aqueous fluxes, soldering typically is a dry operation; however, a quench or rinse sometimes follows soldering to cool the part or remove excess flux or other foreign material from its surface. Recent developments in soldering technology have focused on fluxless solders and fluxes that can be cleaned off with water.

Solder Flux Cleaning involves removing residual solder flux from a printed circuit board using either an alkaline or alcohol cleaning solution.

Solder Fusing involves coating a tin-lead plated circuit board with a solder flux and then passing the board through a hot oil. The hot oil fuses the tin-lead to the board and creates a solder-like finish on the board.

Solder Masking involves applying a resistive coating to certain areas of a circuit board to protect the areas during subsequent processing.

Sputtering is a vacuum evaporation process in which portions of a coating material are physically removed from a substrate and deposited a thin film onto a different substrate.

Stripping (Paint) involves removing a paint (or other organic) coating from a metal basis material. Stripping commonly is performed as part of the manufacturing process to recover parts that have been improperly coated or as part of maintenance and rebuilding to restore parts to a usable condition. Organic coatings (including paint) are stripped using thermal, mechanical, and chemical means. Thermal methods include burn-off ovens, fluidized beds of sand, and molten salt baths. Mechanical methods include scraping and abrasive blasting (as defined in "Abrasive Blasting" in appendix B of this part). Chemical paint strippers include alkali solutions, acid solutions, and solvents (e.g., methylene chloride). Wastewater generated during organic coating stripping includes process solutions (limited mostly to chemical paint strippers and rinses).

Stripping (Metallic Coating) involves removing a metallic coating from a metal basis material. Stripping is commonly part of the manufacturing process to recover parts that have been improperly coated or as part of maintenance and rebuilding to restore parts to a usable condition. Metallic coating stripping most often uses chemical baths, although mechanical means (e.g., grinding, abrasive blasting) also are used. Chemical stripping frequently is performed as an aqueous electrolytic process. Wastewater generated during metallic coating stripping includes process solutions and rinses. Stripping solutions become contaminated from dissolution of the base metal. Typically, the entire solution is discharged to treatment. Rinsing is used to remove the corrosive film remaining on the parts.

Thermal Infusion uses heat to infuse metal powder or dust onto the surface of a part. Typically, thermal infusion is a dry operation. In some cases, however, water may be used to remove excess metal powder, metal dust, or molten metal.

Ultrasonic Machining involves forcing an abrasive liquid between a vibrating tool and a part. Particles in the abrasive liquid strike the part, removing any microscopic flakes on the part.

Vacuum Impregnation is used to reduce the porosity of the part. A filler material (usually organic) is applied to the surface of the part and polymerized under pressure and heat. Wastewater is generated in this unit operation when rinse water is used to remove residual organic coating from the part.

Vacuum Plating involves applying a thin layer of metal oxide onto a part using molten metal in a vacuum chamber.

Water Shedder involves applying a dilute water-based chemical compound to a part to accelerate drying. This operation typically is used to prevent a part from streaking when excess water remains on the part.

Wet Air Pollution Control involves using water to remove chemicals, fumes, or dusts that are entrained in air streams exhausted from process tanks or production areas. Most frequently, wet air pollution control devices are used with electroplating, cleaning, and coating processes. A common type of wet air pollution control is the wet packed scrubber consisting of a spray chamber that is filled with packing material. Water is continuously sprayed onto the packing and the air stream is pulled through the packing by a fan. Pollutants in the air stream are absorbed by the water droplets and the air is released to the atmosphere. A single scrubber often serves numerous process tanks; however, the air streams typically are segregated by source into chromium, cyanide, and acid/alkaline sources. Wet air pollution control can be divided into several suboperations, including:

- (1) Wet Air Pollution Control for Acid Alkaline Baths;
- (2) Wet Air Pollution Control for Cyanide Baths;
- (3) Wet Air Pollution Control for Chromium-Bearing Baths; and
- (4) Wet Air Pollution Control for Fumes and Dusts.

Wire Galvanizing Flux involves using flux to remove rust and oxide from the surface of steel wire prior to galvanizing. This provides

## Appendix 12-0h

### Areas Cover By the EPA's Construction General Permit (EPA's NPDES Construction General Permit, Appendix B) [Added April 2012]

Permit coverage for stormwater discharges from construction activity occurring within the following areas is provided by legally separate and distinctly numbered permits:

#### **EPA Region 1: CT, MA, ME, NH, RI, VT**

US EPA, Region 01  
Office of Ecosystem Protection  
NPDES Stormwater Program  
5 Post Office Square  
Boston, MA 02109-3912

The States of Connecticut, Maine, Rhode Island, and Vermont are the NPDES Permitting Authority for the majority of discharges within their respective states.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
CTR12000I	Indian country within the State of Connecticut
MAR120000	Commonwealth of Massachusetts (except Indian country)
MAR12000I	Indian country within the State of Massachusetts
NHR120000	State of New Hampshire
RIR12000I	Indian country within the State of Rhode Island
VTR12000F	Areas in the State of Vermont subject to construction by a Federal Operator

#### **EPA Region 2: NJ, NY, PR, VI**

For NJ, NY, and VI:  
US EPA, Region 02  
NPDES Stormwater Program  
290 Broadway, 24th Floor  
New York, NY 10007-1866

For PR:  
US EPA, Region 02  
Caribbean Environmental Protection Division  
NPDES Stormwater Program  
1492 Ponce de Leon Ave  
Central Europa Building, Suite 417  
San Juan, PR 00907-4127

The State of New York is the NPDES Permitting Authority for the majority of discharges within its state.

The State of New Jersey and the Virgin Islands are the NPDES Permitting Authority for all discharges within their respective states.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
NYR12000I	Indian country within the State of New York
PRR120000	Commonwealth of Puerto Rico

**EPA Region 3: DE, DC, MD, PA, VA, WV**

US EPA, Region 03  
NPDES Stormwater Program  
1650 Arch St  
Philadelphia, PA 19103

The State of Delaware is the NPDES Permitting Authority for the majority of discharges within its state. Maryland, Pennsylvania, Virginia, and West Virginia are the NPDES Permitting Authority for all discharges within their respective states.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
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DCR120000	District of Columbia
DER12000F	Areas in the State of Delaware subject to construction by a Federal Operator

**EPA Region 4: AL, FL, GA, KY, MS, NC, SC, TN**

US EPA, Region 04  
Water Protection Division  
NPDES Stormwater Program  
61 Forsyth St SW  
Atlanta, GA 30303-3104

The States of Alabama, Florida, Mississippi, and North Carolina are the NPDES Permitting Authority for the majority of discharges within their respective States. EPA Region 4 is the NPDES Permitting Authority for all Indian country lands within any other Region 4 State except Catawba lands in South Carolina.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
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ALR12000I	Indian country within the State of Alabama
FLR12000I	Indian country within the State of Florida
MSR12000I	Indian country within the State of Mississippi
NCR12000I	Indian country within the State of North Carolina
RE412000I	Indian country within any other Region 4 State (except Catawba lands in South Carolina)

**EPA Region 5: IL, IN, MI, MN, OH, WI**

US EPA, Region 05  
NPDES & Technical Support  
NPDES Stormwater Program  
77 W Jackson Blvd  
(WN-16J)  
Chicago, IL 60604-3507

The States of Michigan, Minnesota, and Wisconsin are the NPDES Permitting Authority for the majority of discharges within their respective states. The States of Illinois, Indiana, and Ohio are the NPDES Permitting Authorities for all discharges within their respective states.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
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MIR10000I	Indian country within the State of Michigan
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MNR10000I	Indian country within the State of Minnesota, except the Fond Du Lac Band and Grand Portage Band of Lake Superior Chippewa
WIR10000I	Indian country within the State of Wisconsin, except the Bad River , Lac Du Flambeau and Sokaogon Chippewa (Mole Lake) Community

**EPA Region 6:** AR, LA, OK, TX, NM (except see Region 9 for Navajo lands, and see Region 8 for Ute Mountain Reservation lands)

US EPA, Region 06  
NPDES Stormwater Program  
1445 Ross Ave, Suite 1200  
Dallas, TX 75202-2733

The States of Louisiana, Oklahoma, and Texas are the NPDES Permitting Authority for the majority of discharges within their respective state. The State of Arkansas is the NPDES Permitting Authority for all discharges within its respective state.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
LAR12000I	Indian country within the State of Louisiana
NMR120000	State of New Mexico, except Indian country
NMR12000I	Indian country within the State of New Mexico, except Navajo Reservation Lands that are covered under Arizona permit AZR10000I and Ute Mountain Reservation Lands that are covered under Colorado permit COR10000I.
OKR12000I	Indian country within the State of Oklahoma
OKR12000F	Discharges in the State of Oklahoma that are not under the authority of the Oklahoma Department of Environmental Quality, including activities associated with oil and gas exploration, drilling, operations, and pipelines (includes SIC Groups 13 and 46, and SIC codes 492 and 5171), and point source discharges associated with agricultural production, services, and silviculture (includes SIC Groups 01, 02, 07, 08, 09).
TXR12000F	Discharges in the State of Texas that are not under the authority of the Texas Commission on Environmental Quality (formerly TNRCC), including activities associated with the exploration, development, or production of oil or gas or geothermal resources, including transportation of crude oil or natural gas by pipeline.
TXR12000I	Indian country within the State of Texas

**EPA Region 7:** IA, KS, MO, NE (except see Region 8 for Pine Ridge Reservation Lands)

US EPA, Region 07  
NPDES Stormwater Program  
901 N 5th St  
Kansas City, KS 66101

The States of Iowa, Kansas, and Nebraska are the NPDES Permitting Authority for the majority of discharges within their respective states. The State of Missouri is the NPDES Permitting Authority for all discharges within its state.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
IAR12000I	Indian country within the State of Iowa
KSR12000I	Indian country within the State of Kansas

NER12000I Indian country within the State of Nebraska, except Pine Ridge Reservation lands (see Region 8)

**EPA Region 8:** CO, MT, ND, SD, WY, UT (except see Region 9 for Goshute Reservation and Navajo Reservation Lands), the Ute Mountain Reservation in NM, and the Pine Ridge Reservation in NE.

US EPA, Region 08  
NPDES Stormwater Program  
999 18th St, Suite 300  
(EPR-EP)  
Denver, CO 80202-2466

The States of Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming are the NPDES Permitting Authority for the majority of discharges within their respective states.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
COR12000F	Areas in the State of Colorado, except those located on Indian country, subject to construction activity by a Federal Operator
COR12000I	Indian country within the State of Colorado, as well as the portion of the Ute Mountain Reservation located in New Mexico
MTR12000I	Indian country within the State of Montana
NDR12000I	Indian country within the State of North Dakota, as well as that portion of the Standing Rock Reservation located in South Dakota (except for the portion of the lands within the former boundaries of the Lake Traverse Reservation which is covered under South Dakota permit SDR10000I listed below)
SDR12000I	Indian country within the State of South Dakota, as well as the portion of the Pine Ridge Reservation located in Nebraska and the portion of the lands within the former boundaries of the Lake Traverse Reservation located in North Dakota (except for the Standing Rock Reservation which is covered under North Dakota permit NDR10000I listed above)
UTR12000I	Indian country within the State of Utah, except Goshute and Navajo Reservation lands (see Region 9)
WYR12000I	Indian country within the State of Wyoming

**EPA Region 9:** CA, HI, NV, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, the Goshute Reservation in UT and NV, the Navajo Reservation in UT, NM, and AZ, the Duck Valley Reservation in ID, and the Fort McDermitt Reservation in OR.

US EPA, Region 09  
NPDES Stormwater Program  
75 Hawthorne St  
San Francisco, CA 94105-3901

The States of Arizona, California and Nevada are the NPDES Permitting Authority for the majority of discharges within their respective states. The State of Hawaii is the NPDES Permitting Authority for all discharges within its state.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
ASR120000	Island of American Samoa
AZR12000I	Indian country within the State of Arizona, as well as Navajo Reservation lands in New Mexico and Utah
CAR12000I	Indian country within the State of California

GUR120000	Island of Guam
JAR120000	Johnston Atoll
MPR120000	Commonwealth of the Northern Mariana Islands
MWR120000	Midway Island and Wake Island
NVR12000I	Indian country within the State of Nevada, as well as the Duck Valley Reservation in Idaho, the Fort McDermitt Reservation in Oregon and the Goshute Reservation in Utah

**EPA Region 10:** AK, WA, ID (except see Region 9 for Duck Valley Reservation Lands), and OR (except see Region 9 for Fort McDermitt Reservation).

US EPA, Region 10  
NPDES Stormwater Program  
1200 6th Ave (OW-130)  
Seattle, WA 98101-1128  
Phone: (206) 553-6650

The States of Oregon and Washington are the NPDES Permitting Authority for the majority of discharges within their respective states.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
AKR12000I	Indian country within the State of Alaska
AKR12-000F	Areas in the Denali National Park and Preserve subject to construction by a Federal Operator
IDR120000	State of Idaho, except Indian country
IDR12000I	Indian country within the State of Idaho, except Duck Valley Reservation lands (see Region 9)
ORR12000I	Indian country within the State of Oregon, except Fort McDermitt Reservation lands (see Region 9)
WAR12000F	Areas in the State of Washington, except those located on Indian country, subject to construction activity by a Federal Operator
<b>WAR12000I</b>	<b>Indian country within the State of Washington</b>

## Appendix 12-1

### Steam Electric Power Generating Point Sources (40 CFR 423) [Revised October 2017]

**Table 1**

Pollutant or pollutant property	BPT and NSPS Effluent Limitations	
	Maximum for any 1 day (mg/L)	Maximum average values for 30 consecutive days (mg/L)
TSS	100.0	30.0
Oil and Grease	20.0	15.0
From 40 CFR 423.12(b)(3), 423.12(b)(4), 423.15(c) and 423.15(f)		

**Table 2**

Pollutant or pollutant property	BPT Effluent Limitations	
	Maximum for any 1 day (mg/L)	Maximum average values for 30 consecutive days (mg/L)
TSS	100.0	20.0
Oil and Grease	20.0	15.0
Copper, total	1.0	1.0
Iron, total	1.0	1.0
From 40 CFR 423.12(b)(5) and 423.12(b)(6)		

**Table 3**

Pollutant or pollutant property	BAT and NSPS Effluent Limitations	
	Maximum for any 1 day (mg/L)	Maximum average values for 30 consecutive days (mg/L)
The 126 priority pollutants (see next page) contained in chemicals added for cooling tower maintenance, except	( <sup>1</sup> )	( <sup>1</sup> )
Chromium, total	0.2	0.2
Zinc, total	1.0	1.0

<sup>1</sup> No detectable amount
From 40 CFR 423.13(d)(1) and 423.16(j)(1)

**Table 4**

Pollutant or pollutant property	BAT Effluent Limitations	
	Maximum for any 1 day (mg/L)	Maximum average values for 30 consecutive days (mg/L)
Copper, total	1.0	1.0
Iron, total	1.0	1.0
From 40 CFR 423.13(e)		

**Table 5**

Pollutant or pollutant property	NSPS Effluent Limitations	
	Maximum for any 1 day (mg/L)	Maximum average values for 30 consecutive days (mg/L)
TSS	100.0	30.0
Oil and Grease	20.0	15.0
Copper, total	1.0	1.0
Iron, total	1.0	1.0
From 40 CFR 423.12(b)(3) and 423.12(b)(4)		

**Table 6**

Pollutant or Pollutant Property	PSES Effluent Limitations Maximum for any time (mg/L)
The 126 priority pollutants (see next page) contained in chemicals added for cooling tower maintenance, except:	( <sup>1</sup> )
Chromium, total	0.2
Zinc, total	1.0
<sup>1</sup> No detectable amount	
From 40 CFR 423.16(d)(1)	

Table 7

<b>Pollutant or Pollutant Property</b>	<b>PSES Effluent Limitations Maximum for any time (mg/L)</b>
The 126 priority pollutants (see next page) contained in chemicals added for cooling tower maintenance, except:	( <sup>1</sup> )
Chromium, total	0.2
Zinc, total	1.0
<sup>1</sup> No detectable amount	
From 40 CFR 423.17(d)(1)	

Table 8

<b>Pollutant or pollutant property</b>	<b>BAT Effluent limitations</b>	
	<b>Maximum for any 1 day</b>	<b>Average of daily values for 30 consecutive days shall not exceed</b>
Arsenic, total (ug/L)	11	8
Mercury, total (ng/L)	788	356
Selenium, total (ug/L)	23	12
Nitrate/nitrite as N (mg/L)	17.0	4.4
From 40 CFR 423.12(g)(1)(i)		

Table 9

<b>Pollutant or pollutant property</b>	<b>BAT Effluent limitations</b>	
	<b>Maximum for any 1 day</b>	<b>Average of daily values for 30 consecutive days shall not exceed</b>
Arsenic, total (ug/L)	4	
Mercury, total (ng/L)	39	24
Selenium, total (ug/L)	5	
TDS (mg/L)	50	24
From 40 CFR 423.12(g)(3)(i)		

**Table 10**

Pollutant or pollutant property	PSES	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
Arsenic, total (ug/L)	11	8
Mercury, total (ng/L)	788	356
Selenium, total (ug/L)	23	12
Nitrate/nitrite as N (mg/L)	17.0	4.4
From 40 CFR 423.16(e)		

**Table 11**

Pollutant or pollutant property	PSES	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
Arsenic, total (µg/L)	4	
Mercury, total (ng/L)	1.8	1.3
Selenium, total (µg/L)	453	227
Total dissolved solids (mg/L)	38	22
From 40 CFR 423.16(i)		

The 126 Priority Pollutants
Acenaphthene
Acrolein
Acrylonitrile
Benzene

The 126 Priority Pollutants	
Benzidine	
Carbon tetrachloride (tetrachloromethane)	
Chlorobenzene	
1,2,4-Trichlorobenzene	
Hexachlorobenzene	
1,2-Dichloroethane	
1,1,2-Trichloroethane	
1,1,2,2-Tetrachloroethane	
Chloroethane	
Bis (2-chloroethyl)ether	
2-Chloroethyl vinyl ether (mixed)	
2-Chloronaphthalene	
2,4,6-Trichlorophenol	
Parachlormeta-cresol	
Chloroform (trichloromethane)	
2-Chlorophenol	
1,2-Dichlorobenzene	
1,3-Dichlorobenzene	
1,4-Dichlorobenzene	
3,3-Dichlorobenzidine	
1,1-Dichloroethylene	
1,2-Trans-dichloroethylene	
2,3-Dichlorophenol	
1,2-Dichloropropane	
1,3-Dichloropropylene (1,3-dichloropropene)	
2,4-Dimethylphenol	
2,4-Dinitrotoluene	

The 126 Priority Pollutants	
2,6-Dinitrotoluene	
1,2-Diphenylhydrazine	
Ethylbenzene	
Fluoranthene	
4-Chlorophenyl phenyl ether	
4-Bromophenyl phenyl ether	
Bis (2-chloroisopropyl) ether	
Bis (2-chloroethoxy) methane	
Methylene Chloride (dychloromethane	
Methyl chloride (dichloromethane)	
Methyl bromide (bromomethane)	
Bromoform (tribromomethane)	
Dichlorobromomethane	
Chlorodibromomethane	
Hexachlorobetadiene	
Hexachlorocyclo-entadiene	
Isophorone	
Naphthalene	
Nitrobenzene	
2-Nitrophenol	
4-Nitrophenol	
2,4-Dinitrophenol	
4,6-Dinitro-o-cresol	
N-nitrosodimethylamine	
N-nitrosodiphenylamine	
N-nitrosodi-n-propylamine	
Pentachlorophenol	

The 126 Priority Pollutants
<p>Phenol</p> <p>Bis (2-ethylhexyl) phthalate</p> <p>Butyl benzyl phthalate</p> <p>Di-n-butyl phthalate</p> <p>Di-n-octyl phthalate</p> <p>Diethyl phthalate</p> <p>Dimethyl phthalate</p> <p>1,2-Benzanthracene (benzo(a)anthracene)</p> <p>Benzo(a)pyrene (3,4-benzopyrene)</p> <p>3,4-Benzofluoranthene (benzo(b)fluoranthene)</p> <p>11,12-Benzofluoroanthene (benzo(k)fluoranthene)</p> <p>Chrysens</p> <p>Acenaphthylene</p> <p>Anthracene</p> <p>1,12-Benzoperylene (benzo(gh)perylene)</p> <p>Fluorene</p> <p>Phenanthrene</p> <p>1,2,5,6-Dibenzanthracene (dibenso(a,h)anthracene)</p> <p>Indeno(1,2,3-cd) pyrene (2,3-o-phenylene pyrene)</p> <p>Pyrene</p> <p>Tetrachloroethylene</p> <p>Toluene</p> <p>Trichloroethylene</p> <p>Vinyl chloride (chloroethylene)</p> <p>Aldrin</p> <p>Dieldrin</p> <p>Chlordane (technical mixture and metabolites)</p>

The 126 Priority Pollutants	
4,4-DDT	
4,4-DDE (p,p-DDX)	
4,4-DDD (p,p-TDE)	
Alpha-endosulfa	
Beta-endosulfan	
Endosulfan sulfate	
Endrin	
Endrin aldehyde	
Heptachlor	
Heptachlor epoxide (BHC-hexachloro-cyclohexane)	
Alpha-BHC	
Beta-BHC	
Gamma-BHC	
Delta-BHC	
PCB-polychlorinated biphenyls	
PCB-1242 (arochlor 1242)	
PCB-1254 (Arochlor 1254)	
PCB-1221 (Arochlor 1221)	
PCB-1232 (Arochlor 1232)	
PCB 1248 (Srochlor 1248)	
PCB-1260 (Arochlor 1260)	
PCB-1016 (Arochlor 1016)	
Toxaphene	
Antimony	
Arsenic	
Asbestos	
Beryllium	

The 126 Priority Pollutants	
Cadmium	
Chromium	
Copper	
Cyanide, Total	
Lead	
Mercury	
Nickel	
Selenium	
Silver	
Thallium	
Zinc	
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	

## Appendix 12-2

### Operations Excepted from Electroplating Point Source Effluent Limitations (40 CFR 413)

Operations similar to electroplating but which are specifically excepted include:

1. electrowinning and electrorefining conducted as part of nonferrous metal smelting and refining
2. metal surface preparation and conversion coating conducted as part of coil coating
3. metal surface preparation and immersion plating or electroless plating conducted as part of porcelain enameling
4. electrodeposition of active electrode materials, electroimpregnation, and electroforming conducted as a part of battery manufacturing
5. metallic platemaking and gravure cylinder preparation conducted with or for printing and publishing facilities, and continuous strip electroplating conducted within iron and steel manufacturing facilities which introduce pollutants into a publicly owned treatment works.

<b>Table 1</b>		
<b>If the maximum for any one day is</b>	<b>And the 4 day average is</b>	<b>Then the 30 day average is</b>
0.6	0.4	0.3
1.2	.7	.5
1.9	1	.55
4.1	2.6	1.8
4.2	2.6	1.8
4.2	2.6	1.8
4.5	2.7	1.8
5.0	2.7	1.5
7.0	4	2.5
10.5	6.8	5
20.0	13.4	10
23	16	12
47	29	20
53	36	27
74	39	21
107	65	45
169	89	49
160	100	70

<b>Table 1</b>		
<b>If the maximum for any one day is</b>	<b>And the 4 day average is</b>	<b>Then the 30 day average is</b>
164	102	70
176	105	70
273	156	98
365	229	160
374	232	160
401	241	160
410	267	195
623	257	223
935	609	445

From 40 CFR 413.04

**Table 2**  
**All Subcategory Facilities Discharging Less than 38,000 L (10,000 gal)**  
**Per Day PSES Limitations (mg/L)**

<b>Pollutant or pollutant property</b>	<b>Maximum for any 1 day</b>	<b>Maximum average values for 4 consecutive days</b>
CN,A	5.0	2.7
Pb	0.6	0.4
Cd	1.2	0.7

From 40 CFR 413.14(b), 413.54(b), and 413.74(b)

**Table 3**  
**All Subcategory Facilities Discharging 38,000 L (10,000 gal)**  
**Or More Per Day Limitations (mg/L)**

<b>Pollutant or pollutant property</b>	<b>Maximum for any 1 day</b>	<b>Maximum average values for 4 consecutive days</b>
CN,T	1.9	1.0
Cu	4.5	2.7
Ni	4.1	2.6
Cr	7.0	4.0
Zn	4.2	2.6
Pb	0.6	0.4
Cd	1.2	0.7
Total metals	10.5	6.8

From 40 CFR 413.14(c), 413.54(c), and 413.74(c)

**Table 4**  
**All Subcategory Facilities Discharging 38,000 L (10,000 gal)**  
**or More Per Day PSES Limitations (mg/L)**

<b>Pollutant or pollutant property</b>	<b>Maximum for any 1 day</b>	<b>Maximum average values for 4 consecutive days</b>
CN,T	1.9	1.0
Pb	0.6	0.4
Cd	1.2	0.7
TSS	20.0	13.4
pH	*	*

\*Within the range 7.5 to 10.0

From 40 CFR 413.14(e), 413.54(e), and 413.74(e)



## Appendix 12-3

### Metal Finishing Point Sources (40 CFR 433)

#### Process Operations with Point Source Effluent Limitations

Nonferrous metal smelting and refining

Coil coating

Porcelain enameling

Battery manufacturing

Iron and steel

Metal casting foundries

Aluminum forming

Copper forming

Plastic molding and forming

Nonferrous forming

Electrical and electronic components

**Table 1**  
**BPT and BAT**

<b>Pollutant or pollutant property</b>	<b>Maximum for any 1 day (mg/L)</b>	<b>Maximum monthly average</b>
Cadmium (T)	0.69	0.26
Chromium (T)	2.77	1.71
Copper (T)	3.38	2.07
Lead (T)	0.69	0.43
Nickel (T)	3.98	2.38
Silver (T)	0.43	0.24
Zinc (T)	2.61	1.48
Cyanide (T)	1.20	0.65
TTO	2.13	.....

From 40 CFR 433.13(a) and 40 CFR 433.14(a)

**Table 2**  
**NSPS**

<b>Pollutant or pollutant property</b>	<b>Maximum for any 1 day (mg/L)</b>	<b>Maximum monthly average</b>
Cadmium (T)	0.11	0.07
Chromium (T)	2.77	1.71
Copper (T)	3.38	2.07
Lead (T)	0.69	0.43
Nickel (T)	3.98	2.38
Silver (T)	0.43	0.24
Zinc (T)	2.61	1.48
Cyanide (T)	1.20	0.65
TTO	2.13	.....
Oil and Grease	52.00	26.00
TSS	60.00	31.00
pH	*	*

\* Within 6.0 - 9.0

From 40 CFR 433.16(a)

**Table 3**  
**PSNS**

<b>Pollutant or pollutant property</b>	<b>Maximum for any 1 day (mg/L)</b>	<b>Maximum monthly average</b>
Cadmium (T)	0.11	0.07
Chromium (T)	2.77	1.71
Copper (T)	3.38	2.07
Lead (T)	0.69	0.43
Nickel (T)	3.98	2.38
Silver (T)	0.43	0.24
Zinc (T)	2.61	1.48
Cyanide (T)	1.20	0.65

TTO 2.13 .....

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From 40 CFR 433.17(a)



## Appendix 12-4

### Effluent Standards for Hospitals and Photographic Point Sources (40 CFR 459.12 and 460.10)

**Table 1**  
**Effluent Standards for Hospitals**

Effluent characteristic	Effluent limitations Maximum for any 1 day	Maximum average values for 30 consecutive days
	Metric units (kg/1000 occupied beds)	
BOD <sub>5</sub>	41.0	33.6
TSS	55.6	33.8
pH	*	*
	English units (lb/1000 occupied beds)	
BOD <sub>5</sub>	90.4	74.0
TSS	122.4	74.5
pH	*	*

\* Within the range 6.0-9.0  
From 40 CFR 460.10

**Table 2**  
**Effluent Limitations for Photographic Point Sources**

Effluent characteristic	Effluent limitations Maximum for any 1 day	Maximum average values for 30 consecutive days
	Metric units (kg/1000 m2 of product)	
Ag	0.14	0.07
CN	0.18	0.09
pH	*	*
	English units (lb per 1000 ft2 of product)	
Ag	0.030	0.015
CN	0.038	0.019
pH	*	*

\* Within the range 6.0-9.0

From 40 CFR 459.12



## Appendix 12-4aa

### Discharge Limitations for the Cleaning of Tank Trucks and Intermodal Tank Containers Used to Transport Chemical or Petroleum Cargos (442.11(a) and 442.12 through 442.16)

Best Practicable Control Technology (BPT) Limitations		
Regulated Parameter	Maximum Daily <sup>1</sup>	Maximum Monthly <sup>1</sup>
BOD5	61	22
TSS	58	26
Oil and grease (HEM)	36	16
Copper	0.84	
Mercury	0.0031	
PH	<sup>2</sup>	<sup>2</sup>

<sup>1</sup> Mg/L (ppm).

<sup>2</sup> Within 6 to 9 at all times.

BCT Limitations		
Regulated Parameter	Maximum Daily <sup>1</sup>	Maximum Monthly <sup>1</sup>
BOD5	61	22
TSS	58	26
Oil and grease (HEM)	36	16
PH	<sup>2</sup>	<sup>2</sup>

<sup>1</sup> Mg/L (ppm).

<sup>2</sup> Within 6 to 9 at all times.

BAT Limitations		
Regulated Parameter	Maximum Daily <sup>1</sup>	Maximum Monthly <sup>1</sup>
Oil and grease (HEM)	36	16
Copper	0.84	
Mercury	0.0031	

<sup>1</sup> Mg/L (ppm).

NSPS		
Regulated Parameter	Maximum Daily <sup>1</sup>	Maximum Monthly <sup>1</sup>
BOD5	61	22
TSS	58	26
Oil and grease (HEM)	36	16
Copper	0.84	
Mercury	0.0031	
PH	<sup>2</sup>	<sup>2</sup>

<sup>1</sup> Mg/L (ppm).

<sup>2</sup> Within 6 to 9 at all times.

PSES	
Regulated Parameter	Maximum Daily <sup>1</sup>
Non-polar material (SGT-HEM)	26
Copper	0.84
Mercury	0.0031

<sup>1</sup> Mg/L (ppm).

PSNS	
Regulated Parameter	Maximum Daily <sup>1</sup>
<b>Non-polar material (SGT-HEM)</b>	<b>26</b>
<b>Copper</b>	<b>0.84</b>
<b>Mercury</b>	<b>0.0031</b>

<sup>1</sup> Mg/L (ppm).

## **Appendix 12-4bb**

### **Pollutant Management Plan (40 CFR 442.15(b) and 442.16(b))**

The Pollutant Manager Plan includes:

1. procedures for identifying cargos, the cleaning of which is likely to result in discharges of pollutants that would be incompatible with treatment at the POTW;
2. for cargos identified as being incompatible with treatment at the POTW, the Plan shall provide that heels be fully drained, segregated from other wastewaters, and handled in an appropriate manner;
3. for cargos identified as being incompatible with treatment at the POTW, the Plan shall provide that the tank be prerinsed or presteamed as appropriate and the wastewater segregated from wastewaters to be discharged to the POTW and handled in an appropriate manner, where necessary to ensure that they do not cause or contribute to a discharge that would be incompatible with treatment at the POTW;
4. all spent cleaning solutions, including interior caustic washes, interior presolve washes, interior detergent washes, interior acid washes, and exterior acid brightener washes shall be segregated from other wastewaters and handled in an appropriate manner, where necessary to ensure that they do not cause or contribute to a discharge that would be incompatible with treatment at the POTW;
5. provisions for appropriate recycling or reuse of cleaning agents;
6. provisions for minimizing the use of toxic cleaning agents (solvents, detergents, or other cleaning or brightening solutions);
7. provisions for appropriate recycling or reuse of segregated wastewaters (including heels and prerinse/pre-steam wastes);
8. provisions for off-site treatment or disposal, or effective pre-treatment of segregated wastewaters (including heels, prerinse/pre-steam wastes, spent cleaning solutions);
9. information on the volumes, content, and chemical characteristics of cleaning agents used in cleaning or brightening operations; and
10. provisions for maintaining appropriate records of heel management procedures, prerinse/pre-steam management procedures, cleaning agent management procedures, operator training, and proper operation and maintenance of any pre-treatment system;

For PSNS the Pollutant Management Plan shall include:

1. Procedures for identifying cargos, the cleaning of which is likely to result in discharges of pollutants that would be incompatible with treatment at the POTW;
2. For cargos identified as being incompatible with treatment at the POTW, the Plan shall provide that heels be fully drained, segregated from other wastewaters, and handled in an appropriate manner;
3. For cargos identified as being incompatible with treatment at the POTW, the Plan shall provide that the tank be prerinsed or presteamed as appropriate and the wastewater segregated from wastewaters to be discharged to the POTW and handled in an appropriate manner, where necessary to ensure that they do not cause or contribute to a discharge that would be incompatible with treatment at the POTW;
4. All spent cleaning solutions, including interior caustic washes, interior presolve washes, interior detergent washes, interior acid washes, and exterior acid brightener washes shall be segregated from other wastewaters and handled in an appropriate manner, where necessary to ensure that they do not cause or contribute to a discharge that would be incompatible with treatment at the POTW;
5. Provisions for appropriate recycling or reuse of cleaning agents;
6. Provisions for minimizing the use of toxic cleaning agents (solvents, detergents, or other cleaning or brightening solutions);
7. Provisions for appropriate recycling or reuse of segregated wastewaters (including heels and prerinse/pre-steam wastes);
8. Provisions for off-site treatment or disposal, or effective pre-treatment of segregated wastewaters (including heels, prerinse/pre-steam wastes, spent cleaning solutions);
9. Information on the volumes, content, and chemical characteristics of cleaning agents used in cleaning or brightening operations; and

10. Provisions for maintaining appropriate records of heel management procedures, prerinse/pre-steam management procedures, cleaning agent management procedures, operator training, and proper operation and maintenance of any pre-treatment system.

## Appendix 12-4cc

### Discharge Limitations for the Cleaning of Rail Tank Cars Used to Transport Chemical or Petroleum Cargos (40 CFR 442.21 through 442.26)

BPT Limitations		
Regulated Parameter	Maximum Daily <sup>1</sup>	Maximum Monthly <sup>1</sup>
BOD <sub>5</sub>	61	22
TSS	58	26
Oil and grease (HEM)	36	16
Fluoranthene	0.076	
Phenanthrene	0.34	
PH	<sup>2</sup>	<sup>2</sup>

<sup>1</sup> Mg/L (ppm).

<sup>2</sup> Within 6 to 9 at all times.

BCT Limitations		
Regulated Parameter	Maximum Daily <sup>1</sup>	Maximum Monthly <sup>1</sup>
BOD <sub>5</sub>	61	22
TSS	58	26
Oil and grease (HEM)	36	16
PH	<sup>2</sup>	<sup>2</sup>

<sup>1</sup> Mg/L (ppm).

<sup>2</sup> Within 6 to 9 at all times.

BAT Limitations		
Regulated Parameter	Maximum Daily <sup>1</sup>	Maximum Monthly <sup>1</sup>
Oil and grease (HEM)	36	16
Fluoranthene	0.076	
Phenanthrene	0.34	

<sup>1</sup> Mg/L (ppm).

NSPS		
Regulated Parameter	Maximum Daily <sup>1</sup>	Maximum Monthl <sup>y1</sup>
BOD <sub>5</sub>	61	22
TSS	58	26
Oil and grease (HEM)	36	16
Fluoranthene	0.076	
Phenanthrene	0.34	
PH	2	2

<sup>1</sup> Mg/L (ppm).

<sup>2</sup> Within 6 to 9 at all times.

PSES	
Regulated Parameter	Maximum Daily <sup>1</sup>
Non-polar material (SGT-HEM)	26
Fluoranthene	0.076
Phenanthrene	0.34

<sup>1</sup> Mg/L (ppm).

PSNS	
Regulated Parameter	Maximum Daily <sup>1</sup>
Non-polar material (SGT-HEM)	26
Fluoranthene	0.076
Phenanthrene	0.34

<sup>1</sup> Mg/L (ppm).

## Appendix 12-4dd

### Discharge Limitations for the Cleaning of Tank Barges and Ocean/Sea Tankers Transporting Chemical or Petroleum Cargos (40 CFR 442.31 through 442.36)

BPT		
Regulated Parameter	Maximum Daily <sup>1</sup>	Maximum Monthly <sup>1</sup>
BOD <sub>5</sub>	61	22
TSS	58	26
Oil and grease (HEM)	36	16
Cadmium	0.020	
Chromium	0.42	
Copper	0.10	
Lead	0.14	
Mercury	0.0013	
Nickel	0.58	
Zinc	8.3	
pH	2	2

<sup>1</sup> Mg/L (ppm).

<sup>2</sup> Within 6 to 9 at all times.

BCT		
Regulated Parameter	Maximum Daily <sup>1</sup>	Maximum Monthly <sup>1</sup>
BOD <sub>5</sub>	61	22
TSS	58	26
Oil and grease (HEM)	36	16
pH	2	2

<sup>1</sup> Mg/L (ppm).

<sup>2</sup> Within 6 to 9 at all times.

BAT		
Regulated Parameter	Maximum Daily <sup>1</sup>	Maximum Monthly <sup>1</sup>
Cadmium	0.020	
Chromium	0.42	
Copper	0.10	
Lead	0.14	
Mercury	0.0013	
Nickel	0.58	
Zinc	8.3	

<sup>1</sup> Mg/L (ppm).

NSPS		
Regulated Parameter	Maximum Daily <sup>1</sup>	Maximum Monthly <sup>1</sup>
BOD5	61	22
TSS	58	26
Oil and grease (HEM)	36	16
Cadmium	0.020	
Chromium	0.42	
Copper	0.10	
Lead	0.14	
Mercury	0.0013	
Nickel	0.58	
Zinc	8.3	
pH	<sup>2</sup>	<sup>2</sup>

<sup>1</sup> Mg/L (ppm).

<sup>2</sup> Within 6 to 9 at all times.

PSES	
Regulated Parameter	Maximum Daily <sup>1</sup>
Non-polar material (SGT-HEM)	26
Cadmium	0.020
Chromium	0.42
Copper	0.10
Lead	0.14
Mercury	0.0013
Nickel	0.58
Zinc	8.3

<sup>1</sup> Mg/L (ppm).

PSNS	
Regulated Parameter	Maximum Daily <sup>1</sup>
Non-polar material (SGT-HEM)	26
Cadmium	0.020
Chromium	0.42
Copper	0.10
Lead	0.14
Mercury	0.0013
Nickel	0.58
Zinc	8.3

<sup>1</sup> Mg/L (ppm).



## Appendix 12-4ee

### Discharge Limitations for the Cleaning of Tanks Transporting Food Grade Cargos (442.41, 442.42, and 442.44)

Best Practicable Control Technology (BPT) Limitations		
Regulated Parameter	Maximum Daily <sup>1</sup>	Maximum Monthly <sup>1</sup>
BOD5	56	24
TSS	230	86
Oil and grease (HEM)	20	8.8
PH	<sup>2</sup>	<sup>2</sup>

<sup>1</sup> Mg/L (ppm).

<sup>2</sup> Within 6 to 9 at all times.

BCT Limitations		
Regulated Parameter	Maximum Daily <sup>1</sup>	Maximum Monthly <sup>1</sup>
BOD5	56	24
TSS	230	86
Oil and grease (HEM)	20	8.8
PH	<sup>2</sup>	<sup>2</sup>

<sup>1</sup> Mg/L (ppm).

<sup>2</sup> Within 6 to 9 at all times.

NSPS Limitations		
Regulated Parameter	Maximum Daily <sup>1</sup>	Maximum Monthly <sup>1</sup>
BOD <sub>5</sub>	56	24
TSS	230	86
Oil and grease (HEM)	20	8.8
PH	<sup>2</sup>	<sup>2</sup>

<sup>1</sup> Mg/L (ppm).

<sup>2</sup> Within 6 to 9 at all times.

## Appendix 12-4a

### Application of BPT, BCT, BAT, and NSPS at Landfills Regulated Under 40 CFR 264 and 40 CFR 265 (40 CFR 445.11 through 445.14)

Effluent Limitations		
Regulated Parameter	Maximum daily <sup>1</sup>	Maximum monthly avg. <sup>1</sup>
BOD <sub>5</sub>	220	56
TSS	88	27
Ammonia (as N)	10	4.9
α-Terpineol	0.042	0.019
Aniline	0.024	0.015
Benzoic acid	0.119	0.073
Naphthalene	0.059	0.022
p-Cresol	0.024	0.015
Phenol	0.048	0.029
Pyridine	0.072	0.025
Arsenic	1.1	0.54
Chromium	1.1	0.46
Zinc	0.535	0.296
pH	(2)	(2)

<sup>1</sup> Mg/L (ppm).

<sup>2</sup> Within 6 to 9 at all times.



## Appendix 12-4b

### Application of BPT, BCT, BAT, and NSPS at Landfills Regulated Under 40 CFR 257 and 40 CFR 258 (40 CFR 445.21 through 445.24)

Effluent Limitations		
Regulated Parameter	Maximum daily <sup>1</sup>	Maximum monthly avg. <sup>1</sup>
BOD <sub>5</sub>	140	37
TSS	88	27
Ammonia (as N)	10	4.9
$\alpha$ -Terpineol	0.033	0.016
Benzoic acid	0.12	0.071
p-Cresol	0.025	0.014
Phenol	0.026	0.015
Zinc	0.20	0.11
pH	(2)	(2)

<sup>1</sup> Mg/L (ppm).

<sup>2</sup> Within 6 to 9 at all times.



## Appendix 12-5

### Relevant Dates for the Sewage Sludge Program (40 CFR 503)

Publication of 40 CFR 503 in 58 FR 9248	19 February 1993
Publication of amendments to Sewage Sludge Permit Program regulations in 58 FR 9404	19 February 1993
Effective date of 40 CFR 503	22 March 1993
Requirements for monitoring and recordkeeping under 40 CFR 503 become effective (except for THC)	20 July 1993
Permit applications due from facilities required to have (or requesting) site-specific limits	18 August 1993
Compliance date for 40 CFR 503 requirements other than monitoring, recordkeeping and reporting (where construction is not required)	19 February 1993
Requirements for monitoring, recordkeeping and reporting for THC under 40 CFR 503 become effective (where construction is not required)	19 February 1993
Requirements for reporting under 40 CFR 503 become effective	19 February 1993
Limited permit application information due from sludge-only facilities (not needing site-specific limits)	19 February 1993
Due for closure of active sewage sludge units:	22 March 1993
<ol style="list-style-type: none"> <li>1. located within 60 m of a fault that has displacement in Holocene time (unless authorized by the permitting authority)</li> <li>2. located in a wetland (unless authorized under an NPDES permit</li> <li>3. located in an unstable area</li> </ol>	
Compliance date for 40 CFR 503 requirements other than monitoring, recordkeeping, and reporting (where construction is required)	19 February 1993
Requirements for monitoring, recordkeeping, and reporting for THC under 40 CFR 503 become effective (where construction is required)	19 February 1993
Date when active sewage sludge unit owners/operators must submit closure plans	180 days prior to the date the unit closes
Permit application information due from facilities with NPDES permits (not needing site-specific limits)	At the time of the next NPDES permit renewal
Permit application information due from facilities who commence operations after 19 February 1993	180 days prior to the date proposed for commencing operation



## Appendix 12-6

**Use or Disposal of Sewage Sludge**  
**(40 CFR 503.13(b)(1) through 503.13(b)(4); 503.16, Table 1;**  
**503.23, Table 1; 503.26, Table 1; 503.46, Table 1)**  
**[Revised October 1999]**

**Table 1: Pollutant Concentrations for Sludge**

<b>Pollutant</b>	<b>Monthly Average Concentrations (mg/kg, dry weight basis)</b>
Arsenic	41
Cadmium	39
Copper	1500
Lead	300
Mercury	17
Nickel	420
Selenium	36
Zinc	2800

**Table 2: Cumulative Pollutant Loading Rates for Sludge**

<b>Pollutant</b>	<b>Cumulative Pollutant Loading Rate (kg/hectare)</b>
Arsenic	41
Cadmium	39
Copper	1500
Lead	300
Mercury	17
Nickel	420
Selenium	100
Zinc	2800

**Table 3: Ceiling Concentrations for Sludge**

<b>Pollutant</b>	<b>Ceiling Concentration (mg/kg, dry weight basis)</b>
Arsenic	75
Cadmium	85
Copper	4300
Lead	840
Mercury	57
Molybdenum	75
Nickel	420
Selenium	100
Zinc	7500

**Table 4: Annual Pollutant Loading Rates**

<b>Pollutant</b>	<b>Annual Pollutant Loading Rates (kg/hectare/365-day period)</b>
Arsenic	2.0
Cadmium	1.9
Copper	75
Lead	15
Mercury	0.85
Nickel	21
Selenium	5.0
Zinc	140

**Table 5: Frequency of Monitoring - Land Application and Surface Disposal**

<b>Amount of sewage sludge* (metric tons/365-day period)</b>	<b>Frequency</b>
Greater than zero but less than 290	Once per year
Equal to or greater than 290 but less than 1500	Once per quarter (four times per year)
Equal to or greater than 1500 but less than 15,000	Once per 60 days (six times per year)
Equal to or greater than 15,000	Once per month (12 times per year)

\* Either the amount of bulk sewage sludge applied to the land or the amount of sewage sludge received by a person who prepares sewage sludge that is sold or given away in a bag or other container for application to the land (dry weight basis).

**Table 6: Pollutant Concentrations for an Active Sewage Sludge Unit**

<b>Unit Boundary to Property Site</b>	<b>Pollutant Concentration 1</b>		
<b>Distance *(meters)</b>	<b>Arsenic mg/kg</b>	<b>Chromium mg/kg</b>	<b>Nickel mg/kg</b>
0 to less than 25	30	200	210
25 to less than 50	34	220	240
50 to less than 75	39	260	270
75 to less than 100	46	300	320
100 to less than 125	53	360	390
125 to less than 150	62	450	420
1 Dry weight basis			



**Appendix 12-7**

**This Appendix has been incorporated into Appendix 12-6.**

**Appendix 12-8**

**This Appendix has been incorporated into Appendix 12-6.**

**Appendix 12-9**

**This Appendix has been incorporated into Appendix 12-6.**

**Appendix 12-10**

**This Appendix has been incorporated into Appendix 12-6.**

**Appendix 12-11**

**This Appendix has been incorporated into Appendix 12-6.**



## SECTION 13

### WATER QUALITY MANAGEMENT U.S. TEAM Guide, December 2018

#### A. Applicability

This section identifies rules, regulations, and requirements for any facility that has jurisdiction over any public water supply system. A public water system is defined as a system for providing piped water to the public for human consumption, if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year. This term includes:

1. any collection, treatment, storage, and distribution facilities under control of the operator of such system
2. any collection or pretreatment storage facilities not under such control that are used primarily in connection with such system.

A public water system is either a community water system or a noncommunity water system (40 CFR 141.2).

Facilities that meet all the criteria listed below are not required to comply with the requirements of the *Safe Drinking Water Act* (SDWA) since, by definition, they are not public water systems (40 CFR 141.3):

1. system consists only of distribution and storage facilities and does not have any collection and treatment facilities
2. the facility gets all of its water from a public water system that is owned or operated by another party
3. the facility does not sell water to any person
4. is not a carrier which conveys passengers in interstate commerce.

Assessors are required to review state and local regulations and, if applicable, the appropriate Agency Supplement, to perform a comprehensive assessment.

Select portions of this section (i.e., Review of Federal Legislation, State and Local Regulations, Key Compliance Requirements, Key Terms and Definitions, Typical Records to Review, Typical Physical Features to Inspect, and the Checklist) have been reviewed by USEPA personnel from the Office of Enforcement and Compliance Assurance (OECA) and USEPA's Office of General Counsel. USEPA's comments and suggestions for changes have been incorporated in this version of the TEAM Guide. USEPA did not review all portions of this section. USEPA also did not review and comment on items pertaining to federal Executive Orders, DOT regulations, OSHA regulations or any other area outside of Title 40 of the Code of Federal Regulations. Portions that have been added or revised as a result of this review are identified as being reviewed, revised or added in March 2000, for example **[Added March 2000]**.

#### B. Federal Legislation

- *The Safe Drinking Water Act* (SDWA). This act, Public Law (PL) 99-339, 42 U.S. Code (USC) 201, 300f--300j-25, 6939b, 6979a, 6979b, 7401--742, etc., is the Federal legislation which regulates the safety of drinking water in the country. Each department, agency, and instrument of the executive, legislative, and judicial branches of the Federal Government having jurisdiction over any potential source of contaminants identified by a state program must be subject to and observe all requirements of the state program applicable to such potential source of contaminants, both substantive and procedural, in the same manner, and to the same extent, as any other person, including payment of reasonable charges and fees (42 USC 300h-7(h)).

If a Federal agency has jurisdiction over any Federally owned or maintained public water system, or is engaged in any activity resulting, or which may result in, underground water injection which endangers drinking water, it is subject to, and must observe, any Federal, state, and local regulations, administrative authorities, and process and sanctions respecting the provision of safe drinking water and respecting any underground injection program in the same manner, and to the same extent as any nongovernmental entity. This requirement applies (42 USC 300j-6(a)):

1. to any rules, substantive or procedural (including any recordkeeping or reporting, permits, and other requirements)
2. to the exercise of any Federal, state, or local authorities
3. to any process or sanction, whether enforced in Federal, state, or local courts or in any other manner.

National primary drinking water regulations apply to each public water system in each state. However, such regulations do not apply to a public water system (42 USC 300g):

1. which consists only of distribution and storage facilities (and does not have any collection and treatment facilities)
2. which obtains all its water from, but is not owned or operated by, a public water system to which such regulations apply
3. which does not sell water to any person
4. which is not a carrier that conveys passengers in interstate commerce.

As a provision of the *Safe Drinking Water Act Amendments of 1996*, states are allowed to grant small systems (serving a population of no more than 10,000) a variance if they cannot afford to comply. The amendments expressly waive sovereign immunity for Federal agencies, including immunity from punitive and coercive fines and penalties relating to the provision of safe drinking water or underground injection. The amendments do not subject any Federal department or agency to criminal sanctions but does subject federal agents and employees to criminal sanctions.

- *Public Health Security and Bioterrorism Preparedness and Response Act of 2002* – Title IV, Section 401, dated 12 June 2002, amends the *Safe Drinking Water Act*. In this amendment, every community water system that serves a population of greater than 3,300 persons is required to **[Added April 2003; Revised April 2009]**:
  1. Conduct a vulnerability assessment;
  2. Certify and submit a copy of the assessment to the USEPA Administrator (see schedule below);
  3. Maintain a copy of the emergency response plan (ERP) for 5 yr;
  4. Prepare or revise an emergency response plan that incorporates the results of the vulnerability assessment; and
  5. Certify to the USEPA Administrator, within 6 months of completing the vulnerability assessment, that the system has completed or updated their emergency response plan.
- EO 12088, *Federal Compliance with Pollution Standards*. This EO, dated 13 October 1978, requires federally owned and operated facilities to comply with applicable Federal, state, and local pollution control standards. It makes the head of each executive agency responsible for ensuring that the agencies, facilities, programs, and activities the Agency funds meet applicable Federal, state, and local environmental requirements for correcting situations that are not in compliance with such requirements. In addition, the EO requires that each agency ensure that sufficient funds for environmental compliance are included in the agency budget. Sections 1-4, “Pollution Control Plan” was revoked by EO 13148 **[Revised October 2002]**.
- Executive Order (EO) 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*. This EO, dated 24 January 2007, requires Federal agencies to lead by example in advancing the nation’s energy security and environmental performance by achieving goals outlined in the EO. In relation to water, agencies are required reduce water consumption intensity by 2% annually through 2015.

### C. State/Local Regulations **[Revised April 2001]**

- For information on regulations in specific states, see the State Supplements to TEAM Guide.

The SDWA intends USEPA, states and federally-recognized Indian tribes to work as partners to ensure delivery of safe drinking water to the public. Any state or tribe can request responsibility for operation and oversight of the

drinking water program within its borders. In order to receive this responsibility (also called primary enforcement authority or primacy), a state or tribe must adopt regulations that are at least as stringent as federal regulations, demonstrate its capacity to enforce those regulations, and implement other activities necessary to ensure compliance. In the absence of state or tribal primacy, USEPA assumes responsibility for administering the drinking water program including enforcement responsibilities for that area. Of the 56 eligible states (defined to include Commonwealths, Territories, and the District of Columbia), all but Wyoming and the District of Columbia have primacy. USEPA Regional Offices administer the drinking water program within these two jurisdictions and on all tribal lands.

States that have primacy may establish drinking water regulations, monitoring schedules and reporting requirements at least as stringent, or in addition to, those in the federal regulations. Public water systems in these states are required to comply with these additional requirements. Generally speaking, most states that have primacy adopt drinking water regulations that closely reflect the federal requirements. Some states also require the certification of operators of public water systems. Furthermore, some states require operators to receive approval of plans and specifications prior to constructing or modifying a public water system. In addition, all states will need to adopt/implement a certification program by February 2001 to avoid withholding of federal "state revolving fund" (SRF) monies.

States may also have more stringent requirements for drinking water treatment plant operations. Many states have operator licensing and certification programs that require that an operator pass an exam and have a required amount of experience.

As outlined in 40 CFR 145, each State must meet the requirements outlined in 40 CFR 144 in order to obtain primary enforcement authority for the UIC program in that State. The regulations in 40 CFR 144 also constitutes a part of the UIC program for States listed in 40 CFR 147 to be administered directly by USEPA. The SDWA required all States to submit an UIC program within 270 days after 24 July 1980, the effective date of 40 CFR 146, which was the final element of the UIC minimum requirements to be originally promulgated, unless the Administrator grants an extension, which can be for a period not to exceed an additional 270 days. If a State failed to submit an approvable program, USEPA established a program for that State. Once a program is established, SDWA provides that all underground injections in listed States are unlawful and subject to penalties unless authorized by a permit or a rule. 40 CFR 144 sets forth the requirements governing all UIC programs, authorizations by permit or rule and prohibits certain types of injection. The technical regulations governing these authorizations appear in 40 CFR 146 [Added July 2003].

#### **D. Key Compliance Requirements**

- **Recordkeeping Requirements** - any owner or operator of a public water system must retain, on the premises or at a nearby and convenient location, certain records pertaining to system performance. These records include analytical results for bacteriological and chemical analysis, actions taken by the system to correct violations of primary drinking water standards, copies of any written reports, summaries of communications relating to sanitary surveys and records concerning a variance or exemption granted to the system. Each of these different records must be kept for different time periods ranging from 3 to 10 yr. These requirements are found under 40 CFR 141.33.
- **Drinking Water Standards** - USEPA has developed primary and secondary drinking water standards that are contaminant-specific concentration limits that apply to certain types of public water supplies. Primary drinking water standards consist of maximum contaminant level goals (MCLG), which are non-enforceable health-based goals, and maximum contaminant levels (MCLs) which are enforceable limits set as close to MCLGs as possible, considering cost and feasibility of attainment. Drinking water must either meet MCL standards or be treated to meet these standards (see the individual checklist items and appendices in this document for details on the standards). The secondary drinking water regulations cover contaminants that affect the aesthetic quality of drinking water and are intended as guidelines that are not enforceable by USEPA but may be enforced by a state that chooses to enforce some or all of the secondary drinking water regulations. States with primacy, or USEPA where it administers the program, may grant a public water system a variance and exemption from national primary drinking water standards, *provided* that the terms of the variance and exemption adequately protect public health. USEPA regulations pertaining to drinking water standards are found under 40 CFR 141 (40 CFR 141.11(a), 141.11(b), 141.11(d), 141.12, 141.60 through 141.63, and 141.80(c)) [Revised January 2001].

- **Monitoring** - the monitoring schedule and the type of constituents required to be monitored is based on the type of water supply system, the size of the service population, and the source of the water supply. For example, community water systems and nontransient noncommunity water systems are required to monitor for organic and inorganic contaminants. However, all public water systems are required to conduct monitoring to determine compliance for nitrate and nitrite levels and total coliforms. Monitoring requirements for public water systems are contained in 40 CFR 141.21, 141.24, 141.26 and 141.30. All analysis of samples used to determine compliance with MCLs must be performed in a state-approved laboratory or by a state-approved individual (40 CFR 141.28, 141.30, 141.41, and 141.42)
- **Total Coliform Sampling** - the Total Coliform Rule promulgated by USEPA requires all public water systems to monitor for total coliforms. Their presence in water can indicate a lapse in treatment and potential contamination by pathogens. Total coliform samples are required to be collected at regular intervals throughout the month. The number of samples required is based on the size of the system. When a routine sample is total coliform-positive, the public water system must collect a set of repeat samples within 24 h of being notified of the positive results. In addition, positive results for total coliform must be followed by tests for other microbial pathogens, such as *E. Coli*, that can endanger human health (40 CFR 141.21).
- **Filtration and Disinfection** - all public water systems that get their water from a surface water source or a ground water source that comes into contact with a surface water source must disinfect and filter that water. Compliance with USEPA's Surface Water Treatment Rule (SWTR) indicates that a public water system has taken steps to reduce exposure to microbiological contamination filtration and disinfection, and watershed control. Treatment technique requirements have been established under the SWTR to protect people against viruses and other microbial pathogens that are a threat to human health.

The 1996 amendments to the SDWA required USEPA to issue several new rules to control microbial contaminants and the byproducts of the chemicals used to control them. On December 3, 1998, USEPA issued the first set of the Interim Enhanced Surface Water Treatment Rule (IESWTR) and the Stage 1 Disinfectants/Disinfection Byproduct Rule. Public water systems regulated under 40 CFR 141 Subpart H serving at least 10,000 people must meet the requirements of the IESWTR by January 1, 2002. Community and nontransient noncommunity water systems that perform disinfection are required to meet specific MCLs and MRDLs, and monitor for disinfection byproducts, disinfection byproduct precursors, and disinfection residuals (40 CFR 141.70 through 141.75, 40 CFR 141.30, 141.64 through 141.65, 141.130 through 141.135).

- **Notification and Reporting Requirements** - public water systems are required to report all monitoring results to the primary enforcement authority. States with primacy, or USEPA where it administers the program, analyze the monitoring results determine compliance and report violations to USEPA on a quarterly basis. A public water systems is required under Section 1414(c) of the SDWA to provide notification to its customers whenever: 1) a violation of certain drinking water regulations occurs (including MCLs, treatment technique, and monitoring/reporting requirements); 2) a variance and exception (V&E) is in place or the conditions of the V&E are violated, or; 3) results from unregulated contaminant monitoring required under Section 1445 of the SDWA are received.

The 1996 amendments to the SDWA do not change the basic requirement for public water systems with violations of drinking water standards to give public notification, however the amendments: 1) alter the timing of the notification for certain violations; 2) establish a specific requirement for USEPA consultation with the states in issuing revised regulations; 3) allow the state to prescribe alternative notification requirements by rule with respect to the form and content of the notice, and; 4) add a new requirement for the state to prepare an annual report on violations and for USEPA to prepare a follow-on report summarizing states' reports and public notices submitted by public water systems serving Indian Tribes. In addition to requiring state and national compliance reports, the 1996 amendments include a requirement for public water systems to prepare an annual consumer confidence report that contains information on the source of the water supply, the levels of detected contaminants found in the drinking water, information on the health effects of contaminants found in drinking water, information on the health effects found in violation of national standards, and information on unregulated contaminants (40 CFR 141.31 through 141.32).

- **Lead and Copper in Drinking Water** - all community and nontransient noncommunity (NTNC) water systems must monitor and control the amount of lead and copper delivered to the tap, usually by maintaining a water pH level that will not leach these metals from pipes. In community and NTNC water systems:
  1. the concentration of lead must not exceed 0.015 mg/L in more than 10 percent of tap water samples collected during any monitoring period.
  2. the concentration of copper does not exceed 1.3 mg/L in more than 10 percent of tap water samples collected during any monitoring period.

When a system exceeds the action level for lead, it must distribute public education materials no later than 30 days after the system learns of the tap monitoring results. The amount and location of sampling required after a failure to meet the lead and/or copper action level on the basis of tap samples depends on whether the system is a groundwater or a surface water system. Sampling results will determine the need for corrosion control efforts on the part of the water system. The water systems regulated under these requirements is also required to fulfill specific reporting requirements and retain onsite all the original records of sampling data, analysis, reports, surveys, letters, evaluations, state determinations, and any other pertinent documents for at least 12 yr (40 CFR 141.80 through 141.91) **[Revised January 2008]**.

- **Vulnerability Assessments** – these assessments are required to be done by community water systems serving a population of greater than 3,300 persons. The assessment is done to determine the vulnerability of a system to a terrorist attack or other intentional acts intended to substantially disrupt the ability of the system to provide a safe and reliable supply of drinking water (Public Law 107–188, Section 401) **[Added April 2003]**.
- **The UIC Permit Program** - this program regulates underground injections by five classes of wells. The five classes of wells are set forth in 40 CFR 144.6 (see the Definitions). All owners or operators of these injection wells must be authorized either by permit or rule by the USEPA Director. No injection shall be authorized by permit or rule if it results in the movement of fluid containing any contaminant into Underground Sources of Drinking Water if the presence of that contaminant may cause a violation of any primary drinking water regulation under 40 CFR 141 or may adversely affect the health of persons. Existing Class IV wells that inject hazardous waste directly into an underground source of drinking water are to be eliminated over a period of 6 mo and new Class IV wells are prohibited (40 CFR 144.13). For Class V wells, if remedial action appears necessary, a permit may be required or the Director must require remedial action or closure by order. During UIC program development, the Director may identify aquifers and portions of aquifers that are actual or potential sources of drinking water **[Added July 2003]**.
- **Unregulated Contaminant Monitoring Rule (UCMR)** - The determination of whether a Community water system or a NTNC water system is required to monitor for unregulated contaminants is based on whether the public water system purchases all of its water, as finished water, from another system; and its population served as of 30 June 30, 2005. EPA or the State will specify the month(s) and year(s) in which monitoring must occur. Reporting can be done electronically to the State and EPA using EPA's electronic data reporting system within 120 days from the sample collection date at <http://www.epa.gov/safewater/ucmr/ucmr2/reporting.html>. Persons served by the public water system must be notified of the availability of the results of unregulated contaminant sampling no later than 12 mo after the monitoring results are known. Included in the list of unregulated contaminants are the following: Dimethoate; Terbufos sulfone; 1, 3-dinitrobenzene; and 2, 4, 6-trinitrotoluene (TNT). The UCMR does not apply to transient noncommunity water systems or water systems that purchase all of their finished water from another public water system (40 CFR 141.40) **[Added January 2008; Revised April 2009]**.

#### **D. Key Compliance Definitions**

- *Abandoned Well* - well whose use has been permanently discontinued or which is in a state of disrepair such that it cannot be used for its intended purpose or for observation purposes (40 CFR 146.3) **[Added July 2003]**.
- *Action Level* - the concentration of lead or copper in the water specified in 40 CFR 141.80(c) which determines, in some cases, the treatment requirements that a water system is required to complete (40 CFR 141.2) **[Reviewed March 2000]**.

- *Administrator* - the Administrator of the United States Environmental Protection Agency, or an authorized representative (40 CFR 144.3) **[Added July 2003]**.
- *Application* - the USEPA standard national forms for applying for a permit, including any additions, revisions or modifications to the forms; or forms approved by USEPA for use in approved States, including any approved modifications or revisions (40 CFR 144.3 and 146.3) **[Added July 2003]**.
- *Appropriate Act and Regulations* - the *Solid Waste Disposal Act*, as amended by the *Resource Conservation and Recovery Act (RCRA)*; or *SDWA*, whichever is applicable; and applicable regulations promulgated under those statutes (40 CFR 144.3) **[Added July 2003]**.
- *Approved State Program* - a UIC program administered by the State or Indian Tribe that has been approved by USEPA according to SDWA sections 1422 and/or 1425 (40 CFR 144.3) **[Added July 2003]**.
- *Aquifer* - a geological “formation,” group of formations, or part of a formation that is capable of yielding a significant amount of water to a well or spring (40 CFR 144.3 and 146.3) **[Added July 2003]**.
- *Area of Review* - the area surrounding an injection well described according to the criteria set forth in 40 CFR 146.06 or in the case of an area permit, the project area plus a circumscribing area the width of which is either ¼ of a mile or a number calculated according to the criteria set forth in 40 CFR 146.06 (40 CFR 144.3 and 146.3) **[Added July 2003]**.
- *Bag Filters* - pressure-driven separation devices that remove particulate matter larger than 1 micrometer using an engineered porous filtration media. They are typically constructed of a non-rigid, fabric filtration media housed in a pressure vessel in which the direction of flow is from the inside of the bag to outside (40 CFR 141.2) **[Added April 2006]**.
- *Bank Filtration* - a water treatment process that uses a well to recover surface water that has naturally infiltrated into ground water through a river bed or bank(s). Infiltration is typically enhanced by the hydraulic gradient imposed by a nearby pumping water supply or other well(s) (40 CFR 141.2) **[Added April 2006]**.
- *Best Available Technology (BAT)* - the best technology treatment techniques, or other means which the administrator finds, examined for efficacy under field conditions and not solely under lab conditions that are available (taking cost into consideration). For the purposes of setting MCLs for synthetic organic chemicals, any BAT must be at least as effective as granular activated carbon (40 CFR 141.2) **[Reviewed March 2000]**.
- *Cartridge Filters* - pressure-driven separation devices that remove particulate matter larger than 1 micrometer using an engineered porous filtration media. They are typically constructed as rigid or semi-rigid, self-supporting filter elements housed in pressure vessels in which flow is from the outside of the cartridge to the inside (40 CFR 141.2) **[Added April 2006]**.
- *Casing* - a pipe or tubing of appropriate material, of varying diameter and weight, lowered into a borehole during or after drilling in order to support the sides of the hole and thus prevent the walls from caving, to prevent loss of drilling mud into porous ground, or to prevent water, gas, or other fluid from entering or leaving the hole (40 CFR 146.3) **[Added July 2003]**.
- *Catastrophic Collapse* - the sudden and utter failure of overlying “strata” caused by removal of underlying materials (40 CFR 146.3) **[Added July 2003]**.
- *Cementing* - the operation whereby a cement slurry is pumped into a drilled hole and/or forced behind the casing (40 CFR 146.3) **[Added July 2003]**.
- *Cesspool* - a “drywell” that receives untreated sanitary waste containing human excreta, and which sometimes has an open bottom and/or perforated sides (40 CFR 144.3 and 146.3) **[Added July 2003]**.

- *Class I Injection Well* – this includes (40 CFR 144.6(a), 144.80(a), and 146.5) [**Added July 2003**]:
  1. Wells used by generators of hazardous waste or owners or operators of hazardous waste management facilities to inject hazardous waste beneath the lowermost formation containing, within 1/4 mi of the well bore, an underground source of drinking water (see Appendix 13-15).
  2. Other industrial and municipal disposal wells which inject fluids beneath the lowermost formation containing, within 1/4 mile of the well bore, an underground source of drinking water.
  3. Radioactive waste disposal wells which inject fluids below the lowermost formation containing an underground source of drinking water within 1/4 mi of the well bore.
- *Class II Injection Wells* - wells which inject fluids (40 CFR 144.6(b), 144.80(b), and 146.5) [**Added July 2003**]:
  1. Which are brought to the surface in connection with natural gas storage operations, or conventional oil or natural gas production and may be commingled with wastewaters from gas plants which are an integral part of production operations, unless those waters are classified as a hazardous waste at the time of injection.
  2. For enhanced recovery of oil or natural gas; and
  3. For storage of hydrocarbons which are liquid at standard temperature and pressure.
- *Class III Injection Wells* - wells which inject for extraction of minerals including (40 CFR 144.6(c), 144.80(c), and 146.5) [**Added July 2003**]:
  1. Mining of sulfur by the Frasch process;
  2. In situ production of uranium or other metals; this category includes only in-situ production from ore bodies which have not been conventionally mined. Solution mining of conventional mines such as stopes leaching is included in Class V.
  3. Solution mining of salts or potash.
- *Class IV Injection Wells* – these include (40 CFR 144.6(d), 144.80(d), and 146.5) [**Added July 2003**]:
  1. Wells used by generators of hazardous waste or of radioactive waste, by owners or operators of hazardous waste management facilities, or by owners or operators of radioactive waste disposal sites to dispose of hazardous waste or radioactive waste into a formation which within 1/4 mile of the well contains an underground source of drinking water.
  2. Wells used by generators of hazardous waste or of radioactive waste, by owners or operators of hazardous waste management facilities, or by owners or operators of radioactive waste disposal sites to dispose of hazardous waste or radioactive waste above a formation which within 1/4 mile of the well contains an underground source of drinking water.
  3. Wells used by generators of hazardous waste or owners or operators of hazardous waste management facilities to dispose of hazardous waste, which cannot be classified under the following:
    - a. Wells used by generators of hazardous waste or owners or operators of hazardous waste management facilities to inject hazardous waste beneath the lowermost formation containing, within 1/4 mi of the well bore, an underground source of drinking water.
    - b. Wells used by generators of hazardous waste or of radioactive waste, by owners or operators of hazardous waste management facilities, or by owners or operators of radioactive waste disposal sites to dispose of hazardous waste or radioactive waste into a formation which within one-quarter (1/4) mile of the well contains an underground source of drinking water.
    - c. Wells used by generators of hazardous waste or of radioactive waste, by owners or operators of hazardous waste management facilities, or by owners or operators of radioactive waste disposal sites to dispose of hazardous waste or radioactive waste above a formation which within 1/4 mi of the well contains an underground source of drinking water.
- *Class V Injection Wells* - injection wells not included in Class I, II, III, or IV. Specific types of Class V injection wells are (40 CFR 144.6(e), 144.81, and 146.5) [**Added July 2003**]:

1. Air conditioning return flow wells used to return to the supply aquifer the water used for heating or cooling in a heat pump;
  2. Large capacity cesspools including multiple dwelling, community or regional cesspools, or other devices that receive sanitary wastes, containing human excreta, which have an open bottom and sometimes perforated sides. The UIC requirements do not apply to single family residential cesspools nor to non-residential cesspools which receive solely sanitary waste and have the capacity to serve fewer than 20 persons a day.
  3. Cooling water return flow wells used to inject water previously used for cooling;
  4. Drainage wells used to drain surface fluids, primarily storm runoff, into a subsurface formation;
  5. Dry wells used for the injection of wastes into a subsurface formation;
  6. Recharge wells used to replenish the water in an aquifer;
  7. Salt water intrusion barrier wells used to inject water into a fresh aquifer to prevent the intrusion of salt water into the fresh water;
  8. Sand backfill and other backfill wells used to inject a mixture of water and sand, mill tailings or other solids into mined out portions of subsurface mines whether what is injected is a radioactive waste or not.
  9. Septic system wells used to inject the waste or effluent from a multiple dwelling, business establishment, community or regional business establishment septic tank. The UIC requirements do not apply to single family residential septic system wells, nor to non-residential septic system wells which are used solely for the disposal of sanitary waste and have the capacity to serve fewer than 20 persons a day.
  10. Subsidence control wells (not used for the purpose of oil or natural gas production) used to inject fluids into a non-oil or gas producing zone to reduce or eliminate subsidence associated with the overdraft of fresh water;
  11. Injection wells associated with the recovery of geothermal energy for heating, aquaculture and production of electric power;
  12. Wells used for solution mining of conventional mines such as stopes leaching;
  13. Wells used to inject spent brine into the same formation from which it was withdrawn after extraction of halogens or their salts;
  14. Injection wells used in experimental technologies.
  15. Injection wells used for in situ recovery of lignite, coal, tar sands, and oil shale.
  16. Motor vehicle waste disposal wells that receive or have received fluids from vehicular repair or maintenance activities, such as an auto body repair shop, automotive repair shop, new and used car dealership, specialty repair shop (e.g., transmission and muffler repair shop), or any facility that does any vehicular repair work. Fluids disposed in these wells may contain organic and inorganic chemicals in concentrations that exceed the maximum contaminant levels (MCLs) established by the primary drinking water regulations (see 40 CFR 141). These fluids also may include waste petroleum products and may contain contaminants, such as heavy metals and volatile organic compounds, which pose risks to human health.
- *Clean Compliance History* - for the purposes of 40 CFR 141subpart Y, a record of no MCL violations under 40 CFR 141.63; no monitoring violations under 40 CFR 141.21 or subpart Y; and no coliform treatment technique trigger exceedances or treatment technique violations under subpart Y (40 CFR 141.2) [**Added April 2013**].
  - *Coagulation* - a process using coagulant chemicals and mixing by which colloidal and suspended materials are destabilized and agglomerated into flocs (40 CFR 141.2) [**Reviewed March 2000**].
  - *Combined Distribution System* - the interconnected distribution system consisting of the distribution systems of wholesale systems and of the consecutive systems that receive finished water (40 CFR 141.2) [**Added April 2006**].
  - *Community Water System* - a public water system that serves at least 15 service connections used by year round residents or regularly serves at least 25 yr-round residents (40 CFR 141.2 and 144.86(d)) [**Reviewed March 2000; Revised July 2003**].
  - *Complete Local Source Water Assessment for Ground Water Protection Areas* - when EPA has approved a State's Drinking Water Source Assessment and Protection Program, States will begin to conduct local assessments for

each public water system in their State. For the purposes of this rule, local assessments for community water systems and non-transient non-community systems are complete when four requirements are met: First, a State must delineate the boundaries of the assessment area for community and non-transient non-community water systems. Second, the State must identify significant potential sources of contamination in these delineated areas. Third, the State must “determine the susceptibility of community and non-transient non-community water systems in the delineated area to such contaminants.” Lastly, each State will develop its own plan for making the completed assessments available to the public (40 CFR 144.86(b)) **[Added July 2003]**.

- *Compliance Cycle* - the 9-yr calendar year cycle during which public water systems must monitor. Each compliance cycle consists of three three-year compliance periods. The first calendar year cycle begins 1 January 1993 and ends 31 December 2001; the second begins 1 January 2002 and ends 31 December 2010; the third begins 1 January 2011 and ends 31 December 2019 (40 CFR 141.2) **[Added March 2000]**.
- *Compliance Period* - a 3-yr calendar year period within a compliance cycle. Each compliance cycle has three 3-yr compliance periods. Within the first compliance cycle, the first compliance period runs from 1 January 1993 to 31 December 1995; the second from 1 January 1996 to 31 December 1998; the third from 1 January 1999 to 31 December 2001 (40 CFR 141.2) **[Added March 2000]**.
- *Comprehensive Performance Evaluation (CPE)* - a thorough review and analysis of a treatment plant's performance-based capabilities and associated administrative, operation and maintenance practices. It is conducted to identify factors that may be adversely impacting a plant's capability to achieve compliance and emphasizes approaches that can be implemented without significant capital improvements. For purpose of compliance with subparts P and T of this part, the comprehensive performance evaluation must consist of at least the following components: Assessment of plant performance; evaluation of major unit processes; identification and prioritization of performance limiting factors; assessment of the applicability of comprehensive technical assistance; and preparation of a CPE report. (40 CFR 141.2) **[Reviewed March 2000; Revised April 2002]**.
- *Confluent Growth* - a continuous bacterial growth covering the entire filtration area of a membrane filter, or a portion thereof, in which bacterial colonies are not discrete (40 CFR 141.2) **[Added March 2000]**.
- *Consecutive System* - a public water system that receives some or all of its finished water from one or more wholesale systems. Delivery may be through a direct connection or through the distribution system of one or more consecutive systems (40 CFR 141.2) **[Added April 2006]**.
- *Contaminant* - any physical, chemical, biological, or radiological substance or matter in water (40 CFR 141.2, 144.3, and 146.3) **[Added July 2003]**.
- *Conventional Filtration Treatment* - a series of processes including coagulation, flocculation, sedimentation, and filtration resulting in substantial particulate removal (40 CFR 141.2) **[Reviewed March 2000]**.
- *Corrosion Inhibitor* - a substance capable of reducing the corrosivity of water toward metal plumbing materials, especially lead and copper, by forming a protective film on the interior surface of those materials (40 CFR 141.2) **[Added March 2000]**.
- *Delineation* - once a State's Drinking Water Source Assessment and Protection Program is approved, the States will begin delineating their local assessment areas. Delineation is the first step in the assessment process in which the boundaries of ground water protection areas are identified (40 CFR 144.86(f)) **[Added July 2003]**.
- *Diatomaceous Earth Filtration* - a process resulting in substantial particulate removal in which (40 CFR 141.2) **[Reviewed March 2000]**:
  1. a precoat cake of diatomaceous earth filter media is deposited on a support membrane (septum)
  2. while the water is filtered by passing through the cake on the septum, additional filter media known as body feed is continuously added to the feed water to maintain the permeability of the filter cake.

- *Direct Filtration* - a series of processes including coagulation and filtration but excluding sedimentation resulting in substantial particulate removal (40 CFR 141.2) [**Reviewed March 2000**].
- *Director* - the Regional Administrator, the State director or the Tribal director as the context requires, or an authorized representative. When there is no approved State or Tribal program, and there is an USEPA administered program, “Director” means the Regional Administrator. When there is an approved State or Tribal program, “Director” normally means the State or Tribal director. In some circumstances, however, USEPA retains the authority to take certain actions even when there is an approved State or Tribal program. In such cases, the term “Director” means the Regional Administrator and not the State or Tribal director (40 CFR 144.3 and 146.3) [**Added July 2003**].
- *Disinfectant* - any oxidant, including but not limited to chlorine, chlorine dioxide, chloramines, and ozone added to water in any part of the treatment or distribution process that is intended to kill or inactivate pathogenic microorganisms (40 CFR 141.2) [**Reviewed March 2000**].
- *Disinfection* - a process which inactivates pathogenic organisms in water by chemical oxidants or equivalent agents (40 CFR 141.2) [**Reviewed March 2000**].
- *Disinfection Profile* - a summary of *Giardia lamblia* inactivation through the treatment plant. The procedure for developing a disinfection profile is contained in 40 CFR 141.172 (Disinfection profiling and benchmarking) and 40 CFR 141.530-141.536 (Disinfection profile). (40 CFR 141.2) [**Added January 1999; Reviewed March 2000; Revised April 2002**].
- *Disposal Well* – a well used for the disposal of waste into a subsurface stratum (40 CFR 146.3) [**Added July 2003**].
- *Domestic or Other Non-distribution System Plumbing Problem* - a coliform contamination problem in a public water system with more than one service connection that is limited to the specific service connection from which the coliform-positive sample was taken (40 CFR 141.2) [**Reviewed March 2000**].
- *Dose Equivalent* - the product of the absorbed dose from ionizing radiation and such factors as account for differences in biological effectiveness due to the type of radiation and its distribution in the body as specified by the International Commission on Radiological Units and Measurements (ICRU) (40 CFR 141.2) [**Added March 2000**].
- *Draft Permit* - a document prepared under 40 CFR 124.6 indicating the Director's tentative decision to issue or deny, modify, revoke and reissue, terminate, or reissue a “permit.” A notice of intent to terminate a permit, and a notice of intent to deny a permit, as discussed in 40 CFR 124.5 are types of “draft permits.” A denial of a request for modification, revocation and reissuance, or termination, as discussed in 40 CFR 124.5 is not a “draft permit” (40 CFR 144.3) [**Added July 2003**].
- *Drilling Mud* - a heavy suspension used in drilling an “injection well,” introduced down the drill pipe and through the drill bit (40 CFR 144.3) [**Added July 2003**].
- *Drywell* - a well, other than an improved sinkhole or subsurface fluid distribution system, completed above the water table so that its bottom and sides are typically dry except when receiving fluids (40 CFR 144.3) [**Added July 2003**].
- *Dual Sample Set* - a set of two samples collected at the same time and same location, with one sample analyzed for TTHM and the other sample analyzed for HAA5. Dual sample sets are collected for the purposes of conducting an IDSE and determining compliance with the TTHM and HAA5 MCLs under the Stage 2 disinfection byproducts requirements (40 CFR 141.2) [**Added April 2006**].
- *Effective Corrosion Inhibitor Residual* - for the purpose of Subpart I of 40 CFR 141, means a concentration sufficient to form a passivating film on the interior walls of a pipe (40 CFR 141.2) [**Added March 2000**].

- *Effective Date of a UIC Program* – the date that a State UIC program is approved or established by the Administrator (40 CFR 146.3) [**Added July 2003**].
- *Eligible Indian Tribe* - a Tribe that meets the statutory requirements established at 42 U.S.C. 300j-11(b)(1) (40 CFR 144.3) [**Added July 2003**].
- *Emergency Permit* - a UIC “permit” issued in accordance with 40 CFR 144.34 (40 CFR 144.3) [**Added July 2003**].
- *Enhanced Coagulation* - the addition of sufficient coagulant for improved removal of disinfection byproduct precursors by conventional filtration treatment (40 CFR 141.2) [**Added January 1999; Reviewed March 2000**].
- *Enhanced Softening* - the improved removal of disinfection byproduct precursors by precipitative softening (40 CFR 141.2) [**Reviewed March 2000**].
- *Exempted Aquifer* - an “aquifer” or its portion that meets the criteria in the definition of “underground source of drinking water” but which has been exempted according to the procedures in 40 CFR 144.7 or 144.8(b) (40 CFR 144.3 and 146.3) [**Added July 2003**].

(NOTE: In 40 CFR 146.4, an exempt aquifer must meet the following criteria:

1. It does not currently serve as a source of drinking water; and
  2. It cannot now and will not in the future serve as a source of drinking water because:
    - a. It is mineral, hydrocarbon or geothermal energy producing, or can be demonstrated by a permit applicant as part of a permit application for a Class II or III operation to contain minerals or hydrocarbons that considering their quantity and location are expected to be commercially producible.
    - b. It is situated at a depth or location which makes recovery of water for drinking water purposes economically or technologically impractical;
    - c. It is so contaminated that it would be economically or technologically impractical to render that water fit for human consumption; or
    - d. It is located over a Class III well mining area subject to subsidence or catastrophic collapse; or
  3. The total dissolved solids content of the ground water is more than 3,000 and less than 10,000 mg/l and it is not reasonably expected to supply a public water system.)
- *Exempted Public Water Systems* - a public water system that meets all of the following conditions is not required to meet the standards outlined in 40 CFR 141 (40 CFR 141.3) [**Reviewed March 2000**]:
    1. consists only of distribution and storage facilities and do not have any collection and treatment facilities
    2. obtains all of its water from, but is not owned by or operated by, a public water system to which 40 CFR 141 applies
    3. does not sell water to any person
    4. is not a carrier that conveys passengers in interstate commerce.
  - *Existing Injection Well* - an “injection well” other than a “new injection well” (40 CFR 144.3 and 146.3) [**Added July 2003**].
  - *Experimental Technology* – a technology which has not been proven feasible under the conditions in which it is being tested (40 CFR 146.3) [**Added July 2003**].
  - *Facility or Activity* - any UIC “injection well,” or another facility or activity that is subject to regulation under the UIC program (40 CFR 144.3) [**Added July 2003**].
  - *Fault* – a surface or zone of rock fracture along which there has been displacement (40 CFR 146.3) [**Added July 2003**].

- *Filter Profile* - a graphical representation of individual filter performance, based on continuous turbidity measurements or total particle counts versus time for an entire filter run, from startup to backwash inclusively, that includes an assessment of filter performance while another filter is being backwashed (40 CFR 141.2) **[Added January 1999; Reviewed March 2000]**.
- *Filtration* - a process for removing particulate matter from water by passage through porous media (40 CFR 141.2) **[Reviewed March 2000]**.
- *Finished Water* - water that is introduced into the distribution system of a public water system and is intended for distribution and consumption without further treatment, except as treatment necessary to maintain water quality in the distribution system (e.g., booster disinfection, addition of corrosion control chemicals) (40 CFR 141.2) **[Added April 2006]**.
- *First Draw Sample* - a one-liter sample of tap water, collected in accordance with 40 CFR 141.86(b)(2), that has been standing in plumbing pipes at least 6 h and is collected without flushing the tap (40 CFR 141.2) **[Added March 2000]**.
- *Flocculation* - a process to enhance agglomeration or collection of smaller floc particles into larger, more easily settleable particles through gentle stirring by hydraulic or mechanical means (40 CFR 141.2) **[Reviewed March 2000]**.
- *Flow Rate* - the volume per time unit given to the flow of gases or other fluid substance which emerges from an orifice, pump, turbine or passes along a conduit or channel (40 CFR 146.3) **[Added July 2003]**.
- *Flowing Stream* - a course of running water flowing in a definite channel (40 CFR 141.2) **[Added April 2006]**.
- *Fluid* - any material or substance which flows or moves whether in a semisolid, liquid, sludge, gas, or any other form or state (40 CFR 144.3 and 146.3) **[Added July 2003]**.
- *Formation* - a body of consolidated or unconsolidated rock characterized by a degree of lithologic homogeneity which is prevailing, but not necessarily, tabular and is mappable on the earth's surface or traceable in the subsurface (40 CFR 144.3 and 146.3) **[Added July 2003]**.
- *Formation Fluid* - “fluid” present in a “formation” under natural conditions as opposed to introduced fluids, such as “drilling mud” (40 CFR 144.3 and 146.3) **[Added July 2003]**.
- *GAC10* - granular activated carbon filter beds with an empty-bed contact time of 10 min based on average daily flow and a carbon reactivation frequency of every 180 days, except that the reactivation frequency for GAC10 used as a best available technology for compliance with Stage 2 disinfection byproduct MCLs under 40 CFR 141.64(b)(2) shall be 120 days (40 CFR 141.2) **[Reviewed March 2000; Revised April 2006]**.
- *GAC20* - granular activated carbon filter beds with an empty-bed contact time of 20 min based on average daily flow and a carbon reactivation frequency of every 240 days (40 CFR 141.2) **[Added April 2006]**.
- *Generator* - any person, by site location, whose act or process produces hazardous waste identified or listed in 40 CFR 261 (40 CFR 144.3 and 146.3) **[Added July 2003]**.
- *Gross Alpha Particle Activity* - the total radioactivity due to alpha particle emissions as inferred from measurements on a dry sample (40 CFR 141.2) **[Reviewed March 2000]**.
- *Gross Beta Particle Activity* - the total radioactivity due to beta particle emission as inferred from measurements on a dry sample (40 CFR 141.2) **[Added March 2000]**.

- *Ground Water* - water below the land surface in a zone of saturation (40 CFR 144.3 and 146.3) [**Added July 2003**].
- *Ground Water Protection Area* - a ground water protection area is a geographic area near and/or surrounding community and non-transient non-community water systems that use ground water as a source of drinking water. These areas receive priority for the protection of drinking water supplies and States are required to delineate and assess these areas under section 1453 of the *Safe Drinking Water Act*. The additional requirements in 40 CFR 144.88 apply if the Class V motor vehicle waste disposal well is in a ground water protection area for either a community water system or a non-transient non-community water system, in many States, these areas will be the same as Wellhead Protection Areas that have been or will be delineated as defined in section 1428 of the SDWA (40 CFR 144.86(c)) [**Added July 2003**].
- *Groundwater Under the Direct Influence of Surface Water (GWUDI)* - any water beneath the surface of the ground with significant occurrence of insects or other macroorganisms, algae, or large-diameter pathogens such as *Giardia lamblia* or *Cryptosporidium*, or significant and relatively rapid shifts in water characteristics such as turbidity, temperature, conductivity, or pH which closely correlate to climatological or surface water conditions. Direct influence must be determined for individual sources in accordance with criteria established by the state. The state determination of direct influence may be based on site-specific measurements of water quality and/or documentation of well construction characteristics and geology with field evaluation (40 CFR 141.2) [**Revised January 1999; Reviewed March 2000; Revised April 2002**].
- *Haloacetic Acids (Five) (HAA5)* - the sum of the concentrations in milligrams per liter of the haloacetic acid compounds (monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, monobromoacetic acid, and dibromoacetic acid), rounded to two significant figures after addition (40 CFR 141.2) [**Reviewed March 2000**].
- *Halogen* - one of the chemical elements chlorine, bromine, or iodine (40 CFR 141.2) [**Reviewed March 2000**].
- *Hazardous Waste* - a hazardous waste as defined in 40 CFR 261.3 (40 CFR 144.3) [**Added July 2003**].
- *Hazardous Waste Management Facility* (“HWM facility”) - all contiguous land, and structures, other appurtenances, and improvements on the land used for treating, storing, or disposing of hazardous waste. A facility may consist of several treatment, storage, or disposal operational units (for example, one or more landfills, surface impoundments, or combination of them) (40 CFR 144.3 and 146.3) [**Added July 2003**].
- *HWM Facility* – “Hazardous Waste Management facility” (40 CFR 144.3) [**Added July 2003**].
- *Improved Sinkhole* - a naturally occurring karst depression or other natural crevice found in volcanic terrain and other geologic settings which have been modified by man for the purpose of directing and emplacing fluids into the subsurface (40 CFR 144.3 and 146.3) [**Added July 2003**].
- *Indian Lands* – “Indian country” as defined in 18 U.S.C. 1151. That section defines Indian country as (40 CFR 144.3) [**Added July 2003**]:
  1. All land within the limits of any Indian reservation under the jurisdiction of the United States government, notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation;
  2. All dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or without the limits of a State; and
  3. All Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same.
- *Indian Tribe* - any Indian Tribe having a Federally recognized governing body carrying out substantial governmental duties and powers over a defined area (40 CFR 144.3) [**Added July 2003**].
- *Initial Compliance Period* - the first full 3-yr compliance period which begins at least 18 mo after promulgation, except for dichloromethane, 1,2,4-trichlorobenzene, 1,1,2-trichloroethane, benzo(a)pyrene, dalapon, Di(2-

ethyhexyl) adipate, Di(2-ethyhexyl) phthalate, dinoseb, diquat, endrin, endothall, glyphosate, hexachlorobenzene, Hexachlorocyclopentadiene, Oxamyl (vydate), picloram, simazine, 2,3,7,8,-TCDD (dioxin), antimony, beryllium, cyanide (as free cyanide), nickel, and thallium, the initial compliance period means the first full 3-yr compliance period after promulgation for systems with 150 or more service connections (January 1993 to December 1995), and first full 3 yr compliance period after the effective date of the regulation (January 1996 to December 1998) for systems having fewer than 150 service connections (40 CFR 141.2) **[Reviewed March 2000]**.

- *Injection Well* - a “well” into which “fluids” are being injected (40 CFR 144.3) **[Added July 2003]**.
- *Injection Zone* - a geological “formation” group of formations, or part of a formation receiving fluids through a “well” (40 CFR 144.3) **[Added July 2003]**.
- *Interstate Agency* - an agency of two or more States established by or under an agreement or compact approved by the Congress, or any other agency of two or more States or Indian Tribes having substantial powers or duties pertaining to the control of pollution as determined and approved by the Administrator under the “appropriate Act and regulations” (40 CFR 144.3) **[Added July 2003]**.
- *Lake/Reservoir* - a natural or man made basin or hollow on the Earth's surface in which water collects or is stored that may or may not have a current or single direction of flow (40 CFR 141.2) **[Added April 2006]**.
- *Large Water System* - in reference to lead and copper in systems, this refers to a water system that serves more than 50,000 persons (40 CFR 141.2) **[Reviewed March 2000]**.
- *Lead Service Line* - a service line made of lead which connects the water main to the building inlet and any lead pigtail, gooseneck, or other fitting which is connected to such a lead line (40 CFR 141.2) **[Reviewed March 2000]**.
- *Legionella* - a genus of bacteria, some species of which have caused a type of pneumonia called Legionnaires Disease (40 CFR 141.2) **[Reviewed March 2000]**.
- *Level 1 Assessment* - an evaluation to identify the possible presence of sanitary defects, defects in distribution system coliform monitoring practices, and (when possible) the likely reason that the system triggered the assessment. It is conducted by the system operator or owner. Minimum elements include review and identification of atypical events that could affect distributed water quality or indicate that distributed water quality was impaired; changes in distribution system maintenance and operation that could affect distributed water quality (including water storage); source and treatment considerations that bear on distributed water quality, where appropriate (e.g., whether a ground water system is disinfected); existing water quality monitoring data; and inadequacies in sample sites, sampling protocol, and sample processing. The system must conduct the assessment consistent with any State directives that tailor specific assessment elements with respect to the size and type of the system and the size, type, and characteristics of the distribution system (40 CFR 141.2) **[Added April 2013]**.
- *Level 2 Assessment* - an evaluation to identify the possible presence of sanitary defects, defects in distribution system coliform monitoring practices, and (when possible) the likely reason that the system triggered the assessment. A Level 2 assessment provides a more detailed examination of the system (including the system’s monitoring and operational practices) than does a Level 1 assessment through the use of more comprehensive investigation and review of available information, additional internal and external resources, and other relevant practices. It is conducted by an individual approved by the State, which may include the system operator. Minimum elements include review and identification of atypical events that could affect distributed water quality or indicate that distributed water quality was impaired; changes in distribution system maintenance and operation that could affect distributed water quality (including water storage); source and treatment considerations that bear on distributed water quality, where appropriate (e.g., whether a ground water system is disinfected); existing water quality monitoring data; and inadequacies in sample sites, sampling protocol, and sample processing. The system must conduct the assessment consistent with any State directives that tailor specific assessment elements with respect to the size and type of the system and the size, type, and characteristics of the distribution system. The

system must comply with any expedited actions or additional actions required by the State in the case of an *E. coli* MCL violation (40 CFR 141.2) [**Added April 2013**].

- *Lithology* – the description of rocks on the basis of their physical and chemical characteristics (40 CFR 146.3) [**Added July 2003**].
- *Locational Running Annual Average (LRAA)* - the average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters (40 CFR 141.2) [**Added April 2006**].
- *Man-made Beta Particle and Photon Emitters* - all radionuclides emitting beta particles and/or photons listed in Maximum Permissible Body Burdens and Maximum Permissible Concentration of Radionuclides in Air or Water for Occupational Exposure, NBS Handbook 69, except the daughter products of thorium-232, uranium-235 and uranium-238 (40 CFR 141.2) [**Added March 2000**].
- *Management Practice (MP)* - practices that, although not mandated by law, are encouraged to promote safe operating procedures.
- *Major Facility* - any UIC “facility or activity” classified as such by the Regional Administrator, or, in the case of approved State programs, the Regional Administrator in conjunction with the State Director (40 CFR 144.3) [**Added July 2003**].
- *Manifest* - the shipping document originated and signed by the “generator” which contains the information required by subpart B of 40 CFR 262 (40 CFR 144.3) [**Added July 2003**].
- *Maximum Contaminant Level (MCL)* - the maximum permissible level of a contaminant in water that is delivered to any user of a public water system (40 CFR 141.2) [**Reviewed March 2000**].
- *Maximum Contaminant Level Goal (MCLG)* - refers to the maximum level of a contaminant in drinking water at which no known or anticipated adverse effect on the health of persons would occur, and which allows an adequate margin of safety. MCLGs are nonenforceable health goals (40 CFR 141.2) [**Reviewed March 2000**].
- *Maximum Residual Disinfectant Level (MRDL)* - a level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap without an unacceptable possibility of adverse health effects. For chlorine and chloramines, a PWS is in compliance with the MRDL when the running annual average of monthly averages of samples taken in the distribution system, computed quarterly, is less than or equal to the MRDL. For chlorine dioxide, a PWS is in compliance with the MRDL when daily samples are taken at the entrance to the distribution system and no two consecutive daily samples exceed the MRDL. MRDLs are enforceable in the same manner as maximum contaminant levels (MCL) under Section 1412 of the *Safe Drinking Water Act*. There is convincing evidence that addition of a disinfectant is necessary for control of waterborne microbial contaminants. Notwithstanding the MRDLs listed in 40 CFR 141.65, operators may increase residual disinfectant levels of chlorine or chloramines (but not chlorine dioxide) in the distribution system to a level and for a time necessary to protect public health to address specific microbiological contamination problems caused by circumstances such as distribution line breaks, storm runoff events, source water contamination, or cross-connections (40 CFR 141.2) [**Reviewed March 2000**].
- *Maximum Residual Disinfectant Level Goal (MRDLG)* - the maximum level of a disinfectant added for water treatment at which no known or anticipated adverse effect on the health of persons would occur, and which allows an adequate margin of safety. MRDLGs are nonenforceable health goals and do not reflect the benefit of the addition of the chemical for control of waterborne microbial contaminants (40 CFR 141.2) [**Added January 1999; Reviewed March 2000**].
- *Maximum Total Trihalomethane Potential* - the maximum concentration of total trihalomethanes produced in a given water containing a disinfectant residual after 7 days at a temperature of 25 °C or above (40 CFR 141.2) [**Reviewed March 2000**].

- *Medium Size Water System* - in reference to lead and copper in systems (40 CFR, Subpart I), this refers to a water system that serves greater than 3300 and less than or equal to 50,000 persons (40 CFR 141.2) [**Reviewed March 2000**].
- *Membrane Filtration* - a pressure or vacuum driven separation process in which particulate matter larger than 1 micrometer is rejected by an engineered barrier, primarily through a size-exclusion mechanism, and which has a measurable removal efficiency of a target organism that can be verified through the application of a direct integrity test. This definition includes the common membrane technologies of microfiltration, ultrafiltration, nanofiltration, and reverse osmosis (40 CFR 141.2) [**Added April 2006**].
- *Near the First Service Connection* - at one of the 20 percent of all service connections in the entire system that are nearest the water supply treatment facility as measured by water transport time within the distribution system (40 CFR 141.2) [**Reviewed March 2000**].
- *New Injection Wells* - an “injection well” which began injection after a UIC program for the State applicable to the well is approved or prescribed (40 CFR 144.3) [**Added July 2003**].
- *Noncommunity Water System* - a public water system that is not a community water system. A noncommunity water system either a transient noncommunity water system (TWS) or a nontransient noncommunity (NTNC) water system (40 CFR 141.2) [**Reviewed March 2000**].
- *Nontransient, Noncommunity Water System* - a public water system that is not a community water system and that regularly serves at least 25 of the same persons over 6 mo per year (40 CFR 141.2) [**Reviewed March 2000**].
- *Non-transient Non-community Water System* - public water system that is not a community water system and that regularly serves at least 25 of the same people over six months a year. These may include systems that provide water to schools, day care centers, government/military installations, manufacturers, hospitals or nursing homes, office buildings, and other facilities (40 CFR 144.86(e)) [**Added July 2003**].
- *Optimal Corrosion Control Treatment* - for the purpose of Subpart I of 40 CFR 141, means the corrosion control treatment that minimizes the lead and copper concentrations at users' taps while insuring that the treatment does not cause the water system to violate any national primary drinking water regulations (40 CFR 141.2) [**Added March 2000**].
- *Other Sensitive Ground Water Areas* - states may also identify other areas in the State in addition to ground water protection areas that are critical to protecting underground sources of drinking water from contamination. These other sensitive ground water areas may include areas such as areas overlying sole-source aquifers; highly productive aquifers supplying private wells; continuous and highly productive aquifers at points distant from public water supply wells; areas where water supply aquifers are recharged; karst aquifers that discharge to surface reservoirs serving as public water supplies; vulnerable or sensitive hydrogeologic settings, such as glacial outwash deposits, eolian sands, and fractured volcanic rock; and areas of special concern selected based on a combination of factors, such as hydrogeologic sensitivity, depth to ground water, significance as a drinking water source, and prevailing land-use practices (40 CFR 144.86(g)) [**Added July 2003**].
- *Owner or Operator* - the owner or operator of any “facility or activity” subject to regulation under the UIC program (40 CFR 144.3 and 146.3) [**Added July 2003**].
- *Packer* – a device lowered into a well to produce a fluid-tight seal (40 CFR 146.3) [**Added July 2003**].
- *Performance Evaluation Sample* - a reference sample provided to a laboratory for the purpose of demonstrating that the laboratory can successfully analyze the sample within limits of performance specified by the USEPA. The true value of the concentration of the reference material is unknown to the laboratory at the time of the analysis (40 CFR 141.2) [**Added March 2000**].

- *Permit* - an authorization, license, or equivalent control document issued by USEPA or an approved State to implement the requirements of this 40 CFR 144, parts 145, 146 and 124. “Permit” includes an area permit (40 CFR 144.33) and an emergency permit (40 CFR 144.34). Permit does not include UIC authorization by rule (40 CFR 144.21), or any permit which has not yet been the subject of final agency action, such as a “draft permit” (40 CFR 144.3 and 146.3) **[Added July 2003]**.
- *Person* - an individual, association, partnership, corporation, municipality, State, Federal, or Tribal agency, or an agency or employee thereof (40 CFR 144.3) **[Added July 2003]**.
- *Person* - an individual, corporation, company, association, partnership, municipality, or state, federal, or tribal agency (40 CFR 141.2) **[Reviewed March 2000]**.
- *PicoCurie (pCi)* - quantity of radioactive material producing 2.22 nuclear transformations/min (40 CFR 141.2) **[Reviewed March 2000]**.
- *Plant Intake* - the works or structures at the head of a conduit through which water is diverted from a source (e.g., river or lake) into the treatment plant (40 CFR 141.2) **[Added April 2006]**.
- *Plugging* - the act or process of stopping the flow of water, oil or gas into or out of a formation through a borehole or well penetrating that formation (40 CFR 144.3 and 146.3) **[Added July 2003]**.
- *Plugging Record* – a systematic listing of permanent or temporary abandonment of water, oil, gas, test, exploration and waste injection wells, and may contain a well log, description of amounts and types of plugging material used, the method employed for plugging, a description of formations which are sealed and a graphic log of the well showing formation location, formation thickness, and location of plugging structures (40 CFR 146.3) **[Added July 2003]**.
- *Point of Disinfectant Application* - the point where the disinfectant is applied and water downstream of that point is not subject to recontamination by surface water runoff (40 CFR 141.2) **[Reviewed March 2000]**.
- *Point-of-Entry Treatment Device* - a treatment device applied to the drinking water entering a house or building for the purpose of reducing contaminants in the drinking water distributed throughout the house or building (40 CFR 141.2) **[Reviewed March 2000]**.
- *Point of Injection* - the last accessible sampling point prior to waste fluids being released into the subsurface environment through a Class V injection well. For example, the point of injection of a Class V septic system might be the distribution box--the last accessible sampling point before the waste fluids drain into the underlying soils. For a dry well, it is likely to be the well bore itself (40 CFR 144.3 and 146.3) **[Added July 2003]**.
- *Point-of-Use Treatment Device* - a treatment device applied to a single tap used for the purpose of reducing contaminants in drinking water at that one tap (40 CFR 141.2) **[Reviewed March 2000]**.
- *Presedimentation* - a preliminary treatment process used to remove gravel, sand and other particulate material from the source water through settling before the water enters the primary clarification and filtration processes in a treatment plant (40 CFR 141.2) **[Added April 2006]**.
- *Pressure* – the total load or force per unit area acting on a surface (40 CFR 146.3) **[Added July 2003]**.
- *Project* - a group of wells in a single operation (40 CFR 144.3 and 146.3) **[Added July 2003]**.
- *Public Water System* - a system for the provision to the public of water for human consumption through pipes or, after 5 August 1998, other constructed conveyances, if such system has at least 15 service connections or regularly serves an average of at least twenty-five individuals daily at least 60 days out of the year. Such term includes: any collection, treatment, storage, and distribution facilities under control of the operator of such system and used

primarily in connection with such system; and any collection or pretreatment storage facilities not under such control which are used primarily in connection with such system. Such term does not include any “special irrigation district.” A public water system is either a community water system or a noncommunity water system. (40 CFR 141.2) **[Reviewed March 2000]**.

- *Radioactive Waste* - any waste which contains radioactive material in concentrations which exceed those listed in 10 CFR 20, appendix B, table II, column 2 (40 CFR 144.3 and 146.3) **[Added July 2003]**.
- *RCRA* - the *Solid Waste Disposal Act* as amended by the *Resource Conservation and Recovery Act of 1976* (Pub. L. 94-580, as amended by Pub. L. 95-609, Pub. L. 96-510, 42 U.S.C. 6901 et seq.) (40 CFR 144.3) **[Added July 2003]**.
- *Regional Administrator* - the Regional Administrator of the appropriate Regional Office of the Environmental Protection Agency or the authorized representative of the Regional Administrator (40 CFR 144.3) **[Added July 2003]**.
- *Rem* - the unit of dose equivalent from ionizing radiation to the total body or any internal organ or organ system. A millirem (mrem) is 1/1000 of a rem (40 CFR 141.2) **[Reviewed March 2000]**.
- *Repeat Compliance Period* - any subsequent compliance period after the initial compliance period (40 CFR 141.2) **[Added March 2000]**.
- *Residual Disinfectant Concentration* - (“C” in CT calculations) is the concentration of disinfectant measured in mg/L in a representative sample of water (40 CFR 141.2) **[Reviewed March 2000]**.
- *SDWA* - the *Safe Drinking Water Act* (Pub. L. 93-523, as amended; 42 U.S.C. 300f et seq.) (40 CFR 144.3) **[Added July 2003]**.
- *Sanitary Defect* - a defect that could provide a pathway of entry for microbial contamination into the distribution system or that is indicative of a failure or imminent failure in a barrier that is already in place (40 CFR 141.2) **[Added April 2013]**.
- *Sanitary Survey* - an onsite review of the water source, facilities, equipment, operation and maintenance of a public water system for the purpose of evaluating the adequacy of such source, facilities, equipment, operation and maintenance for producing and distributing safe drinking water (40 CFR 141.2) **[Reviewed March 2000]**.
- *Sanitary Waste* - liquid or solid wastes originating solely from humans and human activities, such as wastes collected from toilets, showers, wash basins, sinks used for cleaning domestic areas, sinks used for food preparation, clothes washing operations, and sinks or washing machines where food and beverage serving dishes, glasses, and utensils are cleaned. Sources of these wastes may include single or multiple residences, hotels and motels, restaurants, bunkhouses, schools, ranger stations, crew quarters, guard stations, campgrounds, picnic grounds, day-use recreation areas, other commercial facilities, and industrial facilities provided the waste is not mixed with industrial waste (40 CFR 144.3 and 146.3) **[Added July 2003]**.
- *Schedule of Compliance* - a schedule of remedial measures included in a “permit,” including an enforceable sequence of interim requirements (for example, actions, operations, or milestone events) leading to compliance with the “appropriate Act and regulations” (40 CFR 144.3) **[Added July 2003]**.
- *Seasonal System* - a non-community water system that is not operated as a public water system on a year-round basis and starts up and shuts down at the beginning and end of each operating season (40 CFR 141.2) **[Added April 2013]**.
- *Sedimentation* - a process for removal of solids before filtration by gravity or separation (40 CFR 141.2) **[Reviewed March 2000]**.

- *Service Connection* - as used in the definition of public water system, does not include a connection to a system that delivers water by a constructed conveyance other than a pipe if (40 CFR 141.2) **[Added March 2000]**:
  1. the water is used exclusively for purposes other than residential uses (consisting of drinking, bathing, and cooking, or other similar uses);
  2. the state determines that alternative water to achieve the equivalent level of public health protection provided by the applicable national primary drinking water regulation is provided for residential or similar uses for drinking and cooking; or
  3. the state determines that the water provided for residential or similar uses for drinking, cooking, and bathing is centrally treated or treated at the point of entry by the provider, a pass-through entity, or the user to achieve the equivalent level of protection provided by the applicable national primary drinking water regulations.
- *Septic System* - a “well” that is used to emplace sanitary waste below the surface and is typically comprised of a septic tank and subsurface fluid distribution system or disposal system (40 CFR 144.3 and 146.3) **[Added July 2003]**.
- *Service Line Sample* - a one liter sample of water collected in accordance with 40 CFR 141.86(b)(3), that has been standing for at least 6 h in a service line (40 CFR 141.2) **[Added March 2000]**.
- *Single Family Structure* - for the purpose of Subpart I of 40 CFR 141, means a building constructed as a single-family residence that is currently used as either a residence or a place of business (40 CFR 141.2) **[Added March 2000]**.
- *Site* - the land or water area where any “facility or activity” is physically located or conducted, including adjacent land used in connection with the facility or activity (40 CFR 144.3 and 146.3) **[Added July 2003]**.
- *Slow Sand Filtration* - a process involving passage of raw water through a bed of sand at low velocity (generally less than 0.4 m/h) resulting in substantial particulate removal by physical and biological mechanisms (40 CFR 141.2) **[Reviewed March 2000]**.
- *Small Water System* - for the purpose of Subpart I of 40 CFR 141, means a water system that serves 3,300 persons or fewer (40 CFR 141.2) **[Added March 2000]**.
- *Sole or Principal Source Aquifer* – an aquifer which has been designated by the Administrator pursuant to section 1424 (a) or 1424(e) of the SDWA (40 CFR 146.3) **[Added July 2003]**.
- *Special Irrigation District* - an irrigation district in existence prior to May 18, 1994 that provides primarily agricultural service through a piped water system with only incidental residential or similar use where the system or the residential or similar users of the system comply with the exclusion provisions in section 1401(4)(B)(i)(II) or (III) (40 CFR 141.2) **[Added March 2000]**.
- *Standard Sample* - the aliquot of finished drinking water that is examined for the presence of coliform bacteria (40 CFR 141.2) **[Reviewed March 2000]**.
- *State* - the agency of the state or tribal government that has jurisdiction over public water systems. During any period when a state or tribal government does not have primary enforcement responsibility pursuant to Section 1413 of the SDWA (42 USC 300g-2), the term state means the regional administrator of the USEPA (40 CFR 141.2) **[Reviewed March 2000]**.
- *State* - any of the 50 States, the District of Columbia, Guam, the Commonwealth of Puerto Rico, the Virgin Islands, American Samoa, the Trust Territory of the Pacific Islands, the Commonwealth of the Northern Mariana Islands, or an Indian Tribe treated as a State (40 CFR 144.3) **[Added July 2003]**.

- *State Director* - the chief administrative officer of any State, interstate, or Tribal agency operating an "approved program," or the delegated representative of the State director. If the responsibility is divided among two or more States, interstate, or Tribal agencies, "State Director" means the chief administrative officer of the State, interstate, or Tribal agency authorized to perform the particular procedure or function to which reference is made (40 CFR 144.3 and 146.3) **[Added July 2003]**.
- *State Drinking Water Source Assessment and Protection Program* - this is a new approach to protecting drinking water sources, specified in the 1996 Amendments to the *Safe Drinking Water Act* at Section 1453. States must prepare and submit for USEPA approval a program that sets out how States will conduct local assessments, including: delineating the boundaries of areas providing source waters for public water systems; identifying significant potential sources of contaminants in such areas; and determining the susceptibility of public water systems in the delineated areas to the inventoried sources of contamination (40 CFR 144.86(a)) **[Added July 2003]**.
- *State/EPA Agreement* - an agreement between the Regional Administrator and the State which coordinates USEPA and State activities, responsibilities and programs (40 CFR 144.3) **[Added July 2003]**.
- *Stratum* (plural strata) - a single sedimentary bed or layer, regardless of thickness, that consists of generally the same kind of rock material (40 CFR 144.3 and 146.3) **[Added July 2003]**.
- *Subpart H Systems* - public water systems using surface water or groundwater under the direct influence of surface water as a source that are subject to the requirements of Subpart H of 40 CFR 141 (40 CFR 141.2) **[Added January 1999; Reviewed March 2000]**.
- *Subsidence* – the lowering of the natural land surface in response to: Earth movements; lowering of fluid pressure; removal of underlying supporting material by mining or solution of solids, either artificially or from natural causes; compaction due to wetting (Hydrocompaction); oxidation of organic matter in soils; or added load on the land surface (40 CFR 146.3) **[Added July 2003]**.
- *Subsurface Fluid Distribution System* - an assemblage of perforated pipes, drain tiles, or other similar mechanisms intended to distribute fluids below the surface of the ground (40 CFR 144.3 and 146.3) **[Added July 2003]**.
- *Supplier of Water* - any person who owns or operates a public water system (40 CFR 141.2) **[Reviewed March 2000]**.
- *Surface Casing* – the first string of well casing to be installed in the well (40 CFR 146.3) **[Added July 2003]**.
- *Surface Water* - all water that is open to the atmosphere and subject to surface runoff (40 CFR 141.2) **[Reviewed March 2000]**.
- *SUVA* - specific Ultraviolet Absorption at 254 nanometers (nm), an indicator of the humic content of water. It is a calculated parameter obtained by dividing a sample's ultraviolet absorption at a wavelength of 254 nm (UV254) (in m=1) by its concentration of dissolved organic carbon (DOC) (in mg/L) (40 CFR 141.2) **[Added January 1999; Reviewed March 2000]**.
- *System with a Single Service Connection* - a system which supplies drinking water to consumers via a single service line (40 CFR 141.2) **[Reviewed March 2000]**.
- *Tier 1 Public Notice* - required for NPDWR violations and situations with significant potential to have serious adverse effects on human health as a result of short-term exposure (40 CFR 141.201(b), Table 2) **[Added July 2000]**.
- *Tier 2 Public Notice* - required for all other NPDWR violations and situations with potential to have serious adverse effects on human health (40 CFR 141.201(b), Table 2) **[Added July 2000]**.

- *Tier 3 Public Notice* - required for all other NPDWR violations and situations not included in Tier 1 and Tier 2 (40 CFR 141.201(b), Table 2) **[Added July 2000]**.
- *Too Numerous to Count* - that the total number of bacterial colonies exceeds 200 on a 47-mm diameter membrane filter used for coliform detection (40 CFR 141.2) **[Added March 2000]**.
- *Total Dissolved Solids* - the total dissolved (filterable) solids as determined by use of the method specified in 40 CFR 136 (40 CFR 144.3 and 146.3) **[Added July 2003]**.
- *Total Organic Carbon (TOC)* - total organic carbon in mg/L measured using heat, oxygen, ultraviolet irradiation, chemical oxidants, or combinations of these oxidants that convert organic carbon to carbon dioxide, rounded to two significant figures (40 CFR 141.2) **[Reviewed March 2000]**.
- *Total Trihalomethanes (TTHM)* - the sum of the concentration in mg/L of the trihalomethane compounds rounded to two significant figures (40 CFR 141.2) **[Reviewed March 2000]**.
- *Transient Noncommunity Water System (TWS)* - a noncommunity water system that does not regularly serve at least 25 of the same persons over 6 mo per year (40 CFR 141.2) **[Reviewed March 2000]**.
- *Trihalomethane (THM)* - one of the family of organic compounds, named as derivatives of methane, wherein three of the four hydrogen atoms in methane are each substituted by a halogen atom in the molecular structure (40 CFR 141.2) **[Reviewed March 2000]**.
- *Two-stage Lime Softening* - a process in which chemical addition and hardness precipitation occur in each of two distinct unit clarification processes in series prior to filtration (40 CFR 141.2) **[Added April 2006]**.
- *Uncovered Finished Water Storage Facility* - a tank, reservoir, or other facility used to store water that will undergo no further treatment to reduce microbial pathogens except residual disinfection and is directly open to the atmosphere (40 CFR 141.2) **[Added January 1999; Reviewed March 2000; Revised April 2006]**.
- *Virus* - a virus of fecal origin which is infectious to humans by waterborne transmission (40 CFR 141.2) **[Reviewed March 2000]**.
- *Waterborne Disease Outbreak* - the significant occurrence of acute infectious illness, epidemiologically associated with the ingestion of water from a public water system which is deficient in treatment, as determined by the appropriate local or state agency (40 CFR 141.2) **[Reviewed March 2000]**.
- *Well* - a bored, drilled, or driven shaft whose depth is greater than the largest surface dimension; or, a dug hole whose depth is greater than the largest surface dimension; or, an improved sinkhole; or, a subsurface fluid distribution system (40 CFR 144.3 and 146.3) **[Added July 2003]**.
- *Well Injection* - the subsurface emplacement of fluids through a well (40 CFR 144.3 and 146.3) **[Added July 2003]**.
- *Well Plug* – a watertight and gastight seal installed in a borehole or well to prevent movement of fluids (40 CFR 146.3) **[Added July 2003]**.
- *Well Stimulation* – several processes used to clean the well bore, enlarge channels, and increase pore space in the interval to be injected thus making it possible for wastewater to move more readily into the formation, and includes (40 CFR 146.3) **[Added July 2003]**:
  1. surging,
  2. jetting,
  3. blasting,

- 4. acidizing,
- 5. hydraulic fracturing.
- *Well Monitoring* – the measurement, by on-site instruments or laboratory methods, of the quality of water in a well (40 CFR 146.3) [**Added July 2003**].
- *Wholesale System* - a public water system that treats source water as necessary to produce finished water and then delivers some or all of that finished water to another public water system. Delivery may be through a direct connection or through the distribution system of one or more consecutive systems (40 CFR 141.2) [**Added April 2006**].

#### **F. Records To Review**

- Bacterial and chemical analyses of drinking water, including sampling dates and locations, dates of analyses, analytical methods used, and results of analyses
- Monthly operating reports (flow, chlorine residual, etc.)
- State and public notification of noncompliance with primary drinking water regulations
- Action taken by the facility to correct violations of primary drinking water regulations
- Sanitary surveys of the water system conducted by the facility itself, a private consultant, or any local, state, or Federal agency
- Public notification of noncompliance with secondary MCL for fluoride
- Waivers from the state
- Potable water wells data
- Permits
- Design plans for potable water treatment plant
- Maps of the distribution system
- Inspection and maintenance records for backflow prevention

#### **G. Physical Features To Inspect**

- Laboratory analysis facilities
- Underground injection well
- Drinking water treatment facility
- Storage facilities (elevated and underground)
- Locations where additional treatment occurs such as rechlorination
- Potable wells

#### **H. Guidance for Water Quality Management Checklist Users**

The SDWA requirements for public water systems are outlined in the auditor checklist contained in this document. A public water system (PWS) is defined as a system that has at least 15 service connections or serves an average of at least 25 people for at least 60 days per year. There are three types of PWSs:

1. **Community systems** serve at least 25 people year-round in their primary residences.
2. **Nontransient Noncommunity systems** serve at least 25 of the same persons for more than six months in a year (e.g., schools or factories that have their own water source).
3. **Transient Noncommunity systems** do not serve at least 25 of the same persons for more than six months in a year (e.g., campgrounds, highway rest stops that have their own water source).

Each of these three types of public water systems is regulated differently. For example, in general, community water systems must comply with all regulations. Transient systems do not have to comply with the regulations for contaminants that cause chronic health effects to occur. However, all three types of public water systems must comply

with the Total Coliform Rule, and requirements for nitrate and nitrite. The following table provides a summary of which drinking water regulations apply to each category of PWS.

<b>Applicability of Current Federal Regulations</b>			
<b>Contaminant/Rule</b>	<b>Community Water Systems</b>	<b>Nontransient Non-community Water Systems</b>	<b>Transient Non-community Water Systems</b>
Organic Contaminants	All	All	Some (only epichlorohydrin and acrylamide)
Total Trihalomethanes (TTHM)	Some (Only systems serving more than 10,000)	None	None
Inorganic Contaminants	All	Some (All except arsenic and fluoride)	None
Nitrate and Nitrite	All	All	All
Radionuclides	All	None	None
Total Coliform	All	All	All
Surface Water Treatment	Some (Only PWSs using surface water sources or ground water sources under the direct influence of surface water)	Some (Only PWSs using surface water sources or ground water sources under the direct influence of surface water)	Some (Only PWSs using surface water sources or ground water sources under the direct influence of surface water)
Lead and Copper	All	All	None

	<b>REFER TO CHECKLIST ITEMS:</b>
All Facilities	WQ.1.1.US. and WQ.1.2.US.
Missing, Risk Management, and Positive Checklist Items	WQ.2.1.US. through WQ.2.3.US
Public Water Systems	
General	WQ.10.1.US. through WQ.10.8.US.
Monitoring/Sampling	WQ.15.1.US. through WQ.15.15.US.
Disinfection and Filtration	WQ.20.1.US. through WQ.20.26.US.
Lead and Copper	WQ.25.1.US.
Notification and Reporting Requirements	WQ.30.1.US. through WQ.30.15.US.
Community Water Systems	
Standards	WQ.35.1.US. through WQ.35.6.US.
Monitoring/Sampling	WQ.40.1.US. through WQ.40.28.US.
Notifications	WQ.45.1.US. through WQ.45.7.US.
Lead and Copper	WQ.50.1.US. through WQ.50.10.US.
Noncommunity Water Systems	
Standards	WQ.60.1.US.
Monitoring/Sampling	WQ.65.1.US. through WQ.65.8.US.
Notification and Reporting Requirements	WQ.75.1.US. and WQ.75.3.US.
Nontransient Noncommunity (NTNC) Water System	
Standards	WQ.76.1.US. through WQ.76.3.US.
Monitoring/Sampling	WQ.77.1.US. through WQ.77.19.US.
Lead and Copper	WQ.78.1.US. through WQ.78.10.US.
Notification and Reporting Requirements	WQ.79.1.US and WQ.79.2.US
Transient Noncommunity Water System	WQ.80.1.US. through WQ.80.3.US.
Sole Source Aquifer	WQ.95.1.US.
Underground Injection Control	
All Wells	WQ.109.1.US through WQ.109.4.US
Class I Wells	WQ.110.1.US through WQ.110.26.US
Class II Wells	WQ.111.1.US through WQ.111.15.US
Class III Wells	WQ.112.1.US through WQ.112.15.US
Class IV wells	WQ.113.1.US
Class V Wells	WQ.114.1.US through WQ.114.6.US

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Appendix 13-1, Primary Drinking Water Standards for Organic Contaminants.

Appendix 13-2, Primary Drinking Water Standards for Inorganic Contaminants.

Appendix 13-3, Detection Limitations for Inorganic Contaminants.

Appendix 13-4, Detection Limitations.

Appendix 13-5, Unregulated Contaminant Monitoring

Appendix 13-6, Coliform Bacteria Sampling Frequency.

Appendix 13-6a, Consumer Confidence Report Contents.

Appendix 13-6b, Coliform Treatment Technique Triggers and Assessment Requirements.

Appendix 13-7, Monitoring and Sampling Parameters for Lead and Copper in Drinking Water.

Appendix 13-7a, Public Education Materials For Lead and Copper Exceedances at Community Water Systems and NTNC Water Systems

Appendix 13-8, Monitoring Requirements for Water Quality Parameters.

Appendix 13-9, MCL and MRDL Requirements Related to Disinfection.

Appendix 13-9a, Excepted Radionuclides.

Appendix 13-9b, Monitoring for TTHM and HAA5 at Community Water Systems and Nontransient Noncommunity Water Systems.

Appendix 13-9c, Stage 2 Disinfection Byproducts Requirements.

Appendix 13-9d, Source Water Monitoring Start Dates

Appendix 13-10, Monitoring Frequency for TTHM and HAA5.

Appendix 13-11, Reporting Requirements.

Appendix 13-12, NPDPWR Violations and Other Situations Requiring Public Notice.

Appendix 13-13, Standard Health Effects Language for Public Notification.

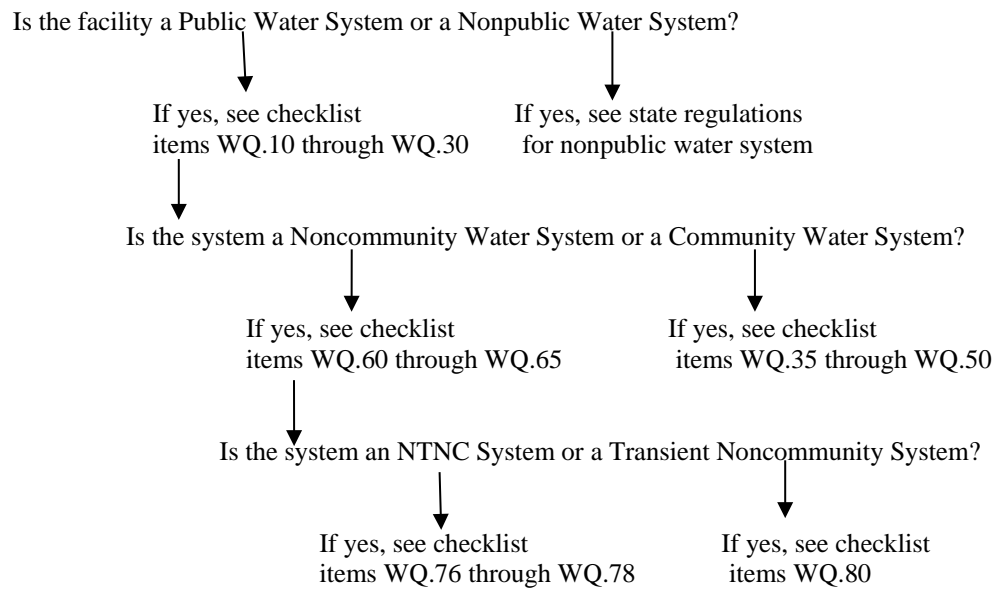
Appendix 13-14, *Enhanced Filtration and Disinfection Reporting Requirements for Systems Serving Fewer Than 10,000 People*

Appendix 13-15, Hazardous Waste Injection Restrictions

Appendix 13-16, Class V Wells Notification Requirements

Select portions of this section (i.e., Review of Federal Legislation, State and Local Regulations, Key Compliance Requirements, Key Terms and Definitions, Typical Records to Review, Typical Physical Features to Inspect, and the Checklist) have been reviewed by USEPA personnel from the Office of Enforcement and Compliance Assurance (OECA) and USEPA's Office of General Counsel. USEPA's comments and suggestions for changes have been incorporated in this version of the TEAM Guide. USEPA did not review all portions of this section. USEPA also did not review and comment on items pertaining to federal Executive Orders, DOT regulations, OSHA regulations or any other area outside of Title 40 of the Code of Federal Regulations. Portions that have been added or revised as a result of this review are identified as being reviewed, revised or added in March 2000, for example **[Added March 2000]**.

The following is a chart of the analysis process to use to identify which checklist items are applicable to the facility being audited. This chart refers to Federal requirements; there may be additional state regulations to consider.



NOTE: NTNC = Nontransient, noncommunity

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<p><b>WQ.1</b></p> <p><b>ALL FACILITIES</b></p> <p><b>WQ.1.1.US.</b> The current status of any ongoing or unresolved consent orders, compliance agreements, notices of violations (NOVs), inter-agency agreements, or equivalent state enforcement actions is required to be examined (a finding under this checklist item will have the enforcement action/identifying information as the citation).</p> <p><b>WQ.1.2.US.</b> Analysis of all samples, except turbidity, free chlorine residual, temperature, and pH, to determine compliance with MCLs must be performed in a state-certified laboratory or by a state-approved individual (40 CFR 141.23(k)(6), 141.24(f)(17), 141.24(h)(19), and 141.28) <b>[Reviewed March 2000; Revised October 2006]</b>.</p>	<p>Determine if noncompliance issues have been resolved by reviewing a copy of the previous report, consent orders, compliance agreements, NOVs, interagency agreements, or equivalent state enforcement actions.</p> <p>Verify that laboratory is certified by reviewing documentation of state certification for laboratory analysis.</p> <p>(NOTE: For the purpose of determining compliance with 40 CFR 141.21 through 141.27, 141.30, 141.40, 141.74, 141.89 and 141.402, samples may be considered only if they have been analyzed by a laboratory certified by the State except that measurements of alkalinity, calcium, conductivity, disinfectant residual, orthophosphate, pH, silica, temperature and turbidity may be performed by any person acceptable to the State.)</p>



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<p><b>WQ.2</b></p> <p><b>MISSING, RISK MANAGEMENT, AND POSITIVE CHECKLIST ITEMS</b></p> <p><b>WQ.2.1.US.</b> Facilities are required to comply with all applicable federal regulatory requirements not contained in this checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of finding).</p> <p><b>WQ.2.2.US.</b> Risk management techniques should be promoted in environmental efforts (MP) [Added April 2002].</p> <p><b>WQ.2.3.US.</b> Facilities should go above and beyond statutory and regulatory compliance (MP) [Added April 2002].</p>	<p>Determine if any new regulations have been issued since the finalization of TEAM.</p> <p>Determine if the facility has activities or facilities that are regulated, but not addressed in this checklist.</p> <p>Verify that the facility is in compliance with all applicable and newly issued regulations.</p> <p>Determine if risk management techniques are promoted in environmental efforts.</p> <p>Determine if the facility has gone above and beyond simply complying with environmental requirements.</p>



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<b>PUBLIC WATER SYSTEMS</b>  <b>WQ.10 General</b>  <b>WQ.10.1.US.</b> Records must be kept of actions taken to correct violations of primary drinking water regulations for at least 3 yr (40 CFR 141.33(b)) [Revised March 2000].  <b>WQ.10.2.US.</b> Public water systems which do not collect 5 or more routine total coliform samples per month are required to undergo an initial sanitary survey according to a specified schedule and maintain records of those reviews (40 CFR 141.21(d), 141.21(h), and 141.33(c)) [Revised March 2000; Revised October 2006; Revised April 2013].	<p>Verify that water system records are maintained for at least 3 yr.</p> <p>Determine if there are recurring work programs, spare parts and supplies list, equipment calibration and maintenance history records.</p> <p>(NOTE: This checklist item applies to public water systems (PWSs). A PWS is defined as a system that has at least 15 service connections or serves an average of at least 25 people for at least 60 days per year.) A PWS includes:</p> <ul style="list-style-type: none"> <li>– any collection, treatment, storage, and distribution facilities under control of the operator of such system and used primarily in connection with such system</li> <li>– any collection or pretreatment storage facilities not under such control that are used primarily in connection with such system.</li> </ul> <p>The term “Public Water System(s)” does not include any “special irrigation district.” A public water system is either a community water system or a noncommunity water system. See Checklist User Guidance to determine which checklist items are applicable to the facility being audited.)</p> <p>(NOTE: This checklist item is applicable until 31 March 2016. After that time, the applicable requirements will be found in 40 CFR 141, Subpart Y [141.851 through 141.861]. See checklist items WQ.10.8.US, WQ.15.14.US, WQ.15.15.US, and WQ.30.15.US for Public Water Systems. See WQ.40.28.US for Community Water Systems. See WQ.65.7.US and WQ.65.8.US for NTNC Water Systems.)</p> <p>Verify that public water systems that do not collect five or more routine samples per month have undergone an initial sanitary survey and then undergo a sanitary survey every 5 yr thereafter.</p> <p>(NOTE: Community water systems were required to have undergone an initial sanitary survey by 29 June 1994. Noncommunity water systems were required to have undergone an initial sanitary survey by 29 June 1999.)</p> <p>(NOTE: Noncommunity water systems using only protected and disinfected groundwater, as defined by the State, are only required to undergo a sanitary survey every 10 yr after the initial survey.)</p> <p>Verify that the public water system ensures that the sanitary surveys are performed by the State or an agent approved by the State.</p> <p>(NOTE: The State is supposed to review the results of each sanitary survey to determine whether the existing monitoring frequency is adequate and what</p>

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<p><b>WQ.10.3.US.</b> Public water systems that use ground water must meet sanitary survey requirements (40 CFR 141.400(a) through 141.400(c)(1), 141.400(d) and 141.401) [Added January 2007].</p>	<p>additional measures, if any, the system needs to undertake to improve drinking water quality.</p> <p>Verify that, if the state has requested additional measures to improve drinking water quality, those measures have been implemented.</p> <p>(NOTE: Sanitary surveys conducted by the State under the provisions of 40 CFR 142.16(o)(2) may be used to meet these sanitary survey requirements.)</p> <p>Verify that records of sanitary surveys are kept for at least 10 yr.</p> <p>(NOTE: This checklist item applies to public water systems [PWSs]. See the definition of Public Water System or the NOTE in WQ.10.1.US.)</p> <p>(NOTE: This checklist item applies to all public water systems that use ground water except that it does not apply to public water systems that combine all of their ground water with surface water or with ground water under the direct influence of surface water prior to treatment under 40 CFR 141, Subpart H. For the purposes of this checklist item, "ground water system" is defined as any public water system meeting this applicability statement, including consecutive systems receiving finished ground water.)</p> <p>(NOTE: Unless otherwise noted, ground water systems must comply with this checklist item beginning 1 December 2009.)</p> <p>Verify that ground water systems must provide the State, at the State's request, any existing information that will enable the State to conduct a sanitary survey.</p> <p>(NOTE: A "sanitary survey," as conducted by the State, includes but is not limited to, an onsite review of the water source(s) (identifying sources of contamination by using results of source water assessments or other relevant information where available), facilities, equipment, operation, maintenance, and monitoring compliance of a public water system to evaluate the adequacy of the system, its sources and operations and the distribution of safe drinking water.)</p> <p>Verify that the sanitary survey includes an evaluation of the following applicable components:</p> <ul style="list-style-type: none"> <li>– Source</li> <li>– Treatment</li> <li>– Distribution system</li> <li>– Finished water storage</li> <li>– Pumps, pump facilities, and controls</li> <li>– Monitoring, reporting, and data verification</li> <li>– System management and operation</li> <li>– Operator compliance with State requirements.</li> </ul>

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<p><b>WQ.10.4.US.</b> Public water systems that use point of use devices to comply with MCL are required to meet specific standards (40 CFR 141.100 and 141.101) [<b>Revised June 1998; Reviewed March 2000</b>].</p>	<p>Determine if the public water system uses a point of use device to comply with MCLs.</p> <p>Verify that the public water system has developed and obtained state approval for a monitoring plan prior to the point of use devices being installed.</p> <p>Verify that the parameters of the plan are being followed.</p> <p>(NOTE: The design and application of the point-of-entry devices must consider the tendency for increase in heterotrophic bacteria concentrations in water treated with activated carbon.)</p> <p>Verify that all consumers are protected and every building connected to the system has a point-of-entry device installed, maintained, and adequately monitored.</p> <p>(NOTE: Public water systems may not use bottled water or point of use devices to achieve compliance with an MCL. But, bottled water or point of use devices may be used on a temporary basis to avoid unreasonable risk to health.)</p> <p>(NOTE: This checklist item applies to public water systems [PWSs]. See the definition of Public Water System or the NOTE in WQ.10.1.US.)</p>
<p><b>WQ.10.5.US.</b> Subpart H public water systems starting construction of a finished water reservoir on or after 15 March 2002 are required to have covered reservoirs (40 CFR 141.501, 141.502, 141.510, and 141.511) [<b>Added April 2002</b>].</p>	<p>(NOTE: These requirements to public water systems that use surface water or GWUDI as a source and serves fewer than 10,000 persons. In this case, these requirements apply specifically to Subpart H systems)</p> <p>Verify that Subpart H public water systems starting construction of a finished water reservoir on or after 15 March 2002 ensure the reservoir is covered.</p> <p>(NOTE: Finished water reservoirs for which construction began prior to 15 March 2002 are not subject to this requirement.)</p> <p>(NOTE: This checklist item applies to public water systems [PWSs]. See the definition of Public Water System or the NOTE in WQ.10.1.US.)</p>
<p><b>WQ.10.6.US.</b> Public water systems should meet maximum contaminant level goals (MCLGs) for organic contaminants, inorganic contaminants, microbiological contaminants, and radionuclides (MP) [<b>Added</b></p>	<p>(NOTE: This checklist item is based on 40 CFR 141.50, 141.51, 141.52, 141.53, and 141.55. According to the definition of MCLG in 40 CFR 141.2, MCLGs are “nonenforceable health goals.”)</p> <p>Verify that the following MCLGs for inorganic contaminants are met:</p> <ul style="list-style-type: none"> <li>– antimony, MCLG of 0.006 mg/L</li> <li>– arsenic, as of 23 January 2006, a MCLG of 0 mg/L</li> </ul>

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<p><b>July 2005; Revised April 2006; Revised April 2013].</b></p>	<ul style="list-style-type: none"> <li>– asbestos, MCLG of 7 Million fibers/liter (longer than 10 microm)</li> <li>– barium, MCLG of 2 mg/L</li> <li>– beryllium, MCLG of .004 mg/L</li> <li>– cadmium, MCLG of 0.005 mg/L</li> <li>– chromium, MCLG of 0.1 mg/L</li> <li>– copper, MCLG of 1.3 mg/L</li> <li>– cyanide (as free Cyanide), MCLG of .2 mg/L</li> <li>– fluoride, MCLG of 4.0 mg/L</li> <li>– lead, MCLG of 0 mg/L</li> <li>– mercury,, MCLG of 0.002 mg/L</li> <li>– nitrate, MCLG of 10 mg/L (as nitrogen)</li> <li>– nitrite, MCLG of 1 mg/L (as nitrogen)</li> <li>– total nitrate + nitrite, MCLG of 10 mg/L (as nitrogen)</li> <li>– selenium, MCLG of 0.05 mg/L</li> <li>– thallium, MCLG of .0005 mg/L</li> </ul> <p>Verify that the following MCLGs for microbiological contaminants are met:</p> <ul style="list-style-type: none"> <li>– <i>Giardia lamblia</i>, MCLG of 0 mg/L</li> <li>– Viruses, MCLG of 0 mg/L</li> <li>– <i>Legionella</i>, MCLG of 0 mg/L</li> <li>– total coliforms (including fecal coliforms and <i>Escherichia coli</i>), MCLG of 0 mg/L</li> <li>– Cryptosporidium, MCLG of 0 mg/L</li> <li>– <i>Escherichia coli</i> (<i>E. coli</i>), MCLG of 0 mg/L.</li> </ul> <p>(NOTE: The MCLG for total coliforms is applicable until 31 March 2016. The MCLG for <i>Escherichia coli</i> (<i>E. coli</i>) is applicable beginning 1 April 2016.</p> <p>Verify that the following MCLGs for radionuclides are met:</p> <ul style="list-style-type: none"> <li>– combined radium-226 and radium-228, MCLG of 0 mg/L</li> <li>– gross alpha particle activity (excluding radon and uranium), MCLG of 0 mg/L</li> <li>– beta particle and photon radioactivity, MCLG of 0 mg/L</li> <li>– uranium, MCLG of 0 mg/L</li> </ul> <p>Verify that the MCLG of 0 mg/L is met for the following contaminants:</p> <ul style="list-style-type: none"> <li>– Benzene</li> <li>– Vinyl chloride</li> <li>– Carbon tetrachloride</li> <li>– 1,2-dichloroethane</li> <li>– Trichloroethylene</li> <li>– Acrylamide</li> <li>– Alachlor</li> </ul>

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	<ul style="list-style-type: none"> <li>– Chlordane</li> <li>– Dibromochloropropane</li> <li>– 1,2-Dichloropropane</li> <li>– Epichlorohydrin</li> <li>– Ethylene dibromide</li> <li>– Heptachlor</li> <li>– Heptachlor epoxide</li> <li>– Pentachlorophenol</li> <li>– Polychlorinated biphenyls (PCBs)</li> <li>– Tetrachloroethylene</li> <li>– Toxaphene</li> <li>– Benzo[a]pyrene</li> <li>– Dichloromethane (methylene chloride)</li> <li>– Di(2-ethylhexyl)phthalate</li> <li>– Hexachlorobenzene</li> <li>– 2,3,7,8-TCDD (Dioxin)</li> </ul> <p>Verify that the following MCLGs for organic contaminants are met:</p> <ul style="list-style-type: none"> <li>– 1,1-Dichloroethylene, MCLG of 0.007 mg/L</li> <li>– 1,1,1-Trichloroethane, MCLG of 0.20 mg/L</li> <li>– para-Dichlorobenzene, MCLG of 0.075 mg/L</li> <li>– Aldicarb, MCLG of 0.001 mg/L</li> <li>– Aldicarb sulfoxide, MCLG of 0.001 mg/L</li> <li>– Aldicarb sulfone, MCLG of 0.001 mg/L</li> <li>– Atrazine, MCLG of 0.003 mg/L</li> <li>– Carbofuran, MCLG of 0.04 mg/L</li> <li>– o-Dichlorobenzene, MCLG of 0.6 mg/L</li> <li>– cis-1,2-Dichloroethylene, MCLG of 0.07 mg/L</li> <li>– trans-1,2-Dichloroethylene, MCLG of 0.1 mg/L</li> <li>– 2,4-D, MCLG of 0.07 mg/L</li> <li>– Ethylbenzene, MCLG of 0.7 mg/L</li> <li>– Lindane, MCLG of 0.0002 mg/L</li> <li>– Methoxychlor, MCLG of 0.04 mg/L</li> <li>– Monochlorobenzene, MCLG of 0.1 mg/L</li> <li>– Styrene, MCLG of 0.1 mg/L</li> <li>– Toluene, MCLG of 1 mg/L</li> <li>– 2,4,5-TPMCLG of 0.05 mg/L</li> <li>– Xylenes (total), MCLG of 10 mg/L</li> <li>– Dalapon, MCLG of 0.2 mg/L</li> <li>– Di(2-ethylhexyl)adipate, MCLG of .4 mg/L</li> <li>– Dinoseb, MCLG of .007 mg/L</li> <li>– Diquat, MCLG of .02 mg/L</li> <li>– Endothall, MCLG of .1 mg/L</li> <li>– Endrin, MCLG of .002 mg/L</li> </ul>

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<p><b>WQ.10.7.US.</b> Public water systems must certify that the designated treatment techniques for specific substances are met (40 CFR 141.100 and 141.111) [<b>Added July 2009</b>].</p> <p><b>WQ.10.8.US.</b> Beginning 1 April 2016, public water systems must conduct total coliform monitoring according to the provisions of their sample siting plan (40 CFR 141.851(b) and 141.853) [<b>Added April 2013</b>].</p>	<ul style="list-style-type: none"> <li>– Glyphosate, MCLG of .7 mg/L</li> <li>– Hexachlorocyclopentadiene, MCLG of .05 mg/L</li> <li>– Oxamyl (Vydate), MCLG of .2 mg/L</li> <li>– Picloram, MCLG of .5 mg/L</li> <li>– Simazine, MCLG of .004 mg/L</li> <li>– 1,2,4-Trichlorobenzene, MCLG of .07 mg/L</li> <li>– 1,1,2-Trichloroethane, MCLG of .003 mg/L.</li> </ul> <p>Verify that the MCLGs for the following disinfection byproducts are met:</p> <ul style="list-style-type: none"> <li>– Bromodichloromethane, MCLG of 0</li> <li>– Bromoform, MCLG of 0</li> <li>– Bromate, MCLG of 0</li> <li>– Chlorite, MCLG of 0.8 mg/L</li> <li>– Chloroform, MCLG of 0.07 mg/L</li> <li>– Dibromochloromethane, MCLG of 0.06 mg/L</li> <li>– Dichloroacetic acid, MCLG of 0</li> <li>– Monochloroacetic acid, MCLG of 0.07 mg/L</li> <li>– Trichloroacetic acid, MCLG of 0.02 mg/L.</li> </ul> <p>(NOTE: This checklist item addresses treatment techniques which were established in lieu of MCLs for specified contaminants.)</p> <p>Verify that each public water system certifies annually in writing to the State (using third party or manufacturer’s certification) that when acrylamide and epichlorohydrin are used in drinking water systems, the combination (or product) of dose and monomer level does not exceed the following levels:</p> <ul style="list-style-type: none"> <li>– Acrylamide is 0.05% dosed at 1 ppm (or equivalent)</li> <li>– Epichlorohydrin is 0.01% dosed at 20 ppm (or equivalent).</li> </ul> <p>(NOTE: Certifications can rely on manufacturers or third parties, as approved by the State.)</p> <p>(NOTE: This checklist item is applicable beginning 1 April 2016 with systems required to begin regular monitoring at the same frequency as the system-specific frequency required on 31 March 2016.)</p> <p>Verify that public water systems have a written sample siting plan that identifies sampling sites and a sample collection schedule that are representative of water throughout the distribution system.</p> <p>(NOTE: These plans are subject to State review and revision.)</p> <p>Verify that public water systems collect total coliform samples according to the written sample siting plan.</p>

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	<p>(NOTE: Monitoring required by 40 CFR 141.854 through 141.858 may take place at a customer's premise, dedicated sampling station, or other designated compliance sampling location.)</p> <p>Verify that routine and repeat sample sites and any sampling points necessary to meet the requirements related to the ground water rule from 40 CFR 141, subpart S (40 CFR 141.400 – 141.405, see checklist items WQ.10.3.US, WQ.15.11.US through WQ.15.13.US, WQ.30.15.US, WQ.45.7.US, and WQ 75.3.US) are reflected in the sampling plan.</p> <p>Verify that public water systems collect samples at regular time intervals throughout the month.</p> <p>(NOTE: Public water systems that use only ground water and serve 4,900 or fewer people may collect all required samples on a single day if they are taken from different sites.)</p> <p>Verify that public water systems take at least the minimum number of required samples even if the system has had an E. coli MCL violation or has exceeded the coliform treatment technique triggers in 40 CFR 141.859(a) (see Appendix 13-6b).</p> <p>(NOTE: A public water system may conduct more compliance monitoring than is required to investigate potential problems in the distribution system and use monitoring as a tool to assist in uncovering problems. A system may take more than the minimum number of required routine samples and must include the results in calculating whether the coliform treatment technique trigger has been exceeded only if the samples are taken in accordance with the existing sample siting plan and are representative of water throughout the distribution system.)</p> <p>Verify that public water systems identify repeat monitoring locations in the sample siting plan.</p> <p>Verify that, except in the following situations, the public water system collects at least one repeat sample from the sampling tap where the original total coliform-positive sample was taken, and at least one repeat sample at a tap within five service connections upstream and at least one repeat sample at a tap within five service connections downstream of the original sampling site:</p> <ul style="list-style-type: none"> <li>– the public water system may propose, and received approval for, repeat monitoring locations to the State that they believe to be representative of a pathway for contamination of the distribution system</li> <li>– a ground water system serving 1,000 or fewer people may propose repeat sampling locations to the State that differentiate potential source water and distribution system contamination (e.g., by sampling at entry points to the distribution system)</li> </ul>

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	<p>– a ground water system with a single well required to conduct triggered source water monitoring may, with written State approval, take one of its repeat samples at the monitoring location required for triggered source water monitoring under 40 CFR 141.402(a) (see checklist item WQ.15.11.US) if the system demonstrates to the State’s satisfaction that the sample siting plan remains representative of water quality in the distribution system.</p> <p>(NOTE: If a total coliform-positive sample is at the end of the distribution system, or one service connection away from the end of the distribution system, the system must still take all required repeat samples. However, the State may allow an alternative sampling location instead of the requirement to collect at least one repeat sample upstream or downstream of the original sampling site.)</p> <p>Verify that, except for ground water systems serving 1,000 or fewer people, public water systems required to conduct triggered source water monitoring under 40 CFR 141.402(a) (see checklist item WQ.15.11.US) take ground water source sample(s) in addition to required repeat samples.</p> <p>Verify that, for ground water systems serving 1,000 or fewer people, if a repeat sample taken at the monitoring location required for triggered source water monitoring is <i>E. coli</i>-positive, the system also complies with 40 CFR 141.402(a)(3) (see checklist item WQ.15.11.US).</p> <p>(NOTE: For ground water systems serving 1,000 or fewer people, if a system takes more than one repeat sample at the monitoring location required for triggered source water monitoring, the system may reduce the number of additional source water samples required under 40 CFR 141.402(a)(3) by the number of repeat samples taken at that location that were not <i>E. coli</i>-positive.)</p> <p>Verify that, for ground water systems serving 1,000 or fewer people, if a system takes more than one repeat sample at the monitoring location required for triggered source water monitoring under 40 CFR 141.402(a) (see checklist item WQ.15.11.US), and more than one repeat sample is <i>E. coli</i>-positive, the system also complies with 40 CFR 141.403(a)(1) (see checklist item WQ.15.12.US).</p> <p>(NOTE: At ground water systems serving 1,000 or fewer people where all repeat samples taken at the monitoring location required for triggered source water monitoring are <i>E. coli</i>-negative and a repeat sample taken at a monitoring location other than the one required for triggered source water monitoring is <i>E. coli</i>-positive, the system is not required to comply with 40 CFR 141.402(a)(3) [see checklist item WQ.15.11.US]).</p> <p>(NOTE: States may review, revise, and approve, as appropriate, repeat sampling proposed by systems. The system must demonstrate that the sample siting plan remains representative of the water quality in the distribution system.)</p>

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	<p>Verify that special purpose samples, such as those taken to determine whether disinfection practices are sufficient following pipe placement, replacement, or repair, are not be used to determine whether the coliform treatment technique trigger has been exceeded.</p> <p>(NOTE: Repeat samples taken in response to 40 CFR 141.858 [see checklist item WQ.15.14.US and WQ.15.15.US for Public Water Systems and WQ.40.28.US for Community Water Systems] are not considered special purpose samples, and must be used to determine whether the coliform treatment technique trigger has been exceeded.)</p> <p>(NOTE: An invalidated total coliform-positive sample does not count toward meeting the minimum monitoring requirements. Invalidation of samples may be done by the State or a laboratory.)</p> <p>(NOTE: This checklist item applies to public water systems [PWSs]. See the definition of Public Water System or the NOTE in WQ.10.1.US.)</p>



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<p><b>PUBLIC WATER SYSTEMS</b></p> <p><b>WQ.15 Monitoring/Sampling</b></p> <p><b>WQ.15.1.US.</b> Public water systems are required to collect monthly total coliform sample based on population and at sites detailed in the sampling siting plan (40 CFR 141.21(a)(1), 141.21(a)(4), and 141.21(h)) <b>[Reviewed March 2000; Revised January 2006; Revised April 2009; Revised April 2013]</b>.</p> <p><b>WQ.15.2.US.</b> Public water systems that use surface water or groundwater under the direct influence of surface water that do not practice filtration are required to collect at least one total coliform sample near the first service connection each day the turbidity level of the source water exceeds 1 NTU (40 CFR 141.21(a)(5), 141.21(h), and 141.74(b)(1)) <b>[Reviewed March 2000; Revised April 2013]</b>.</p> <p><b>WQ.15.3.US.</b> When a routine sample is total coliform-</p>	<p>(NOTE: This checklist item is applicable until 31 March 2016. After that time, the applicable requirements will be found in 40 CFR 141, Subpart Y [141.851 through 141.861]. ]. See checklist items WQ.10.8.US, WQ.15.14.US, WQ.15.15.US, and WQ.30.15.US for Public Water Systems. See WQ.40.28.US for Community Water Systems. See WQ.65.7.US and WQ.65.8.US for NTNC Water Systems.)</p> <p>Verify that monthly total coliform samples are collected at regular intervals at the frequency required based on population.</p> <p>Verify that public water systems collect total coliform samples at sites which are representative of water throughout the distribution system according to a written sample siting plan.</p> <p>(NOTE These plans are subject to State review and revision.)</p> <p>(NOTE: Systems that use groundwater (except groundwater under the influence of surface water) and serve 4900 persons or fewer may collect all required samples on a single day if they are being taken from different sites.)</p> <p>(NOTE: This checklist item applies to public water systems [PWSs]. See the definition of Public Water System or the NOTE in WQ.10.1.US.)</p> <p>(NOTE: This checklist item is applicable until 31 March 2016. After that time, the applicable requirements will be found in 40 CFR 141, Subpart Y [141.851 through 141.861]. ]. See checklist items WQ.10.8.US, WQ.15.14.US, WQ.15.15.US, and WQ.30.15.US for Public Water Systems. See WQ.40.28.US for Community Water Systems. See WQ.65.7.US and WQ.65.8.US for NTNC Water Systems.)</p> <p>Verify that, if the turbidity exceeded 1 NTU, total coliform samples were taken within 24 h of the first exceedance by reviewing the records on turbidity levels and coliform sampling.</p> <p>(NOTE: This checklist item applies to public water systems [PWSs]. See the definition of Public Water System or the NOTE in WQ.10.1.US.)</p> <p>(NOTE: The requirements of this checklist item are applicable until all required repeat monitoring of this section and fecal coliform or E. coli testing as described in</p>

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<p>positive, the public water system must collect a set of repeat samples within 24 h of being notified of the positive result (40 CFR 141.21(b)(1) through 141.21(b)(5), 141.21(b)(7), 141.21(e)(1), and 141.21(h)) <b>[Revised May 1996; Revised March 2000; Revised April 2013]</b>.</p>	<p>40 CFR 141.63(e) was initiated by a total coliform-positive sample taken before 1 April 2016 is completed, as well as analytical method, reporting, recordkeeping, public notification, and consumer confident report requirements associated with that monitoring and testing.)</p> <p>Verify that a system which collects more than one routine sample/month collects no fewer than three repeat samples for each total coliform-positive sample found.</p> <p>Verify that if one or less routine sample per month is collected, no less than four repeat samples are collected for each total coliform-positive sample found.</p> <p>Verify that at least one of the repeat samples is collected from the sampling tap where the original total coliform positive sample was taken.</p> <p>Verify that at least one repeat sample was taken at a tap within five service connections upstream and at least one repeat sample at a tap within five service connections downstream of the original sampling site.</p> <p>Verify that the sampling process is repeated until either total coliform are not detected in one complete set of repeat samples or the system determines that the MCL for total coliforms is exceeded and the state is notified.</p> <p>Verify that all repeat samples are collected on the same day.</p> <p>Verify that if one or more of the repeat samples is total coliform-positive, an additional set of repeat samples is collected within 24 h of notification of the positive result.</p> <p>Verify that if a repeat sample is total coliform-positive it is also analyzed for fecal coliforms.</p> <p>(NOTE: The system may test for <i>E. coli</i> instead of fecal coliforms.)</p> <p>(NOTE: If a system collecting fewer than five routine samples per month has one or more total coliform-positive samples and the state does not invalidate the samples, it must collect at least five routine samples during the next month the system provides water to the public. The state may waive this requirement if certain conditions are met.)</p> <p>Verify that all routine and repeat samples that are not invalidated are included in determining compliance with the MCL for total coliform.</p> <p>(NOTE: This checklist item applies to public water systems [PWSs]. See the definition of Public Water System or the NOTE in WQ.10.1.US.)</p>

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<p><b>WQ.15.4.US.</b> Subpart H systems serving fewer than 10,000 people and utilizing conventional filtration or direct filtration, are required to conduct continuous monitoring of turbidity for each individual filter at the system (40 CFR 141.501, 141.502, and 141.560 through 141.564) [Added April 2002].</p>	<p>(NOTE: These requirements to public water systems that use surface water or GWUDI as a source and serves fewer than 10,000 persons. In this case, these requirements apply specifically to Subpart H systems)</p> <p>Verify that subpart H systems serving fewer than 10,000 people and utilizing conventional filtration or direct filtration, conduct continuous monitoring of turbidity for each individual filter at the system.</p> <p>Verify that the following requirements are met for continuous turbidity monitoring:</p> <ul style="list-style-type: none"> <li>– monitoring is conducted using an approved method in 40 CFR 141.74(a)</li> <li>– calibration of turbidimeters is conducted using procedures specified by the manufacturer</li> <li>– results of turbidity monitoring are recorded at least every 15 min</li> <li>– monthly reporting is completed according to 40 CFR 141.570 (see checklist item WQ.30.11.US)</li> <li>– records must be maintained according to 40 CFR 141.571 (see checklist item WQ.30.12.US).</li> </ul> <p>Verify that, if there is a failure in the continuous turbidity monitoring equipment, grab sampling is conducted every four hours in lieu of continuous monitoring until the turbidimeter is back on-line.</p> <p>(NOTE: The system has 14 days to resume continuous monitoring before a violation is incurred.)</p> <p>(NOTE: If the system only consists of two or fewer filters, continuous monitoring of combined filter effluent turbidity may be conducted in lieu of individual filter effluent turbidity monitoring.)</p> <p>Verify that, if the turbidity of an individual filter (or the turbidity of combined filter effluent (CFE) for systems with 2 filters that monitor CFE in lieu of individual filters) exceeds 1.0 NTU in two consecutive recordings 15 min apart, a report is submitted to the State by the 10th of the following month including:</p> <ul style="list-style-type: none"> <li>– the filter number(s)</li> <li>– corresponding date(s)</li> <li>– turbidity values which exceeded 1.0 NTU</li> <li>– the cause (if known) for the exceedance(s).</li> </ul> <p>Verify that, if the system was required to report to the state for 3 mo in a row and turbidity exceeded 1.0 NTU in two consecutive recordings 15 min apart at the same filter (or CFE for systems with 2 filters that monitor CFE in lieu of individual filters), a self-assessment of the filter(s) is done 14 days of the day the filter exceeded 1.0 NTU in two consecutive measurements for the third straight month unless a CFE was required.</p>

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<p><b>WQ.15.5.US.</b> Public water systems are required to conduct an initial and a second round of source water monitoring for each plant that treats a surface water or GWUDI source as a part of determining 40 CFR 141,</p>	<p>Verify that, if the system was required to report to the state for 3 mo in a row and turbidity exceeded 1.0 NTU in two consecutive recordings 15 min apart at the same filter (or CFE for systems with 2 filters that monitor CFE in lieu of individual filters), systems with 2 filters that monitor CFE in lieu of individual filters conduct a self assessment on both filters.</p> <p>Verify that the self-assessment consists of at least the following components:</p> <ul style="list-style-type: none"> <li>– assessment of filter performance</li> <li>– development of a filter profile</li> <li>– identification and prioritization of factors limiting filter performance</li> <li>– assessment of the applicability of corrections</li> <li>– and preparation of a filter self-assessment report</li> <li>– if a self-assessment is required, the date that it was triggered and the date that it was completed.</li> </ul> <p>Verify that, if the system was required to report to the state for two months in a row and turbidity exceeded 2.0 BTU in 2 consecutive recordings 15 min apart at the same filter (or CFE for systems with 2 filters that monitor CFE in lieu of individual filters), the system arranges to have a comprehensive performance evaluation (CPE) conducted by the State or a third party approved by the State not later than 60 days following the day the filter exceeded 2.0 NTU in two consecutive measurements for the second straight month.</p> <p>(NOTE: If a CPE has been completed by the State or a third party approved by the State within the 12 prior months or the system and State are jointly participating in an ongoing Comprehensive Technical Assistance (CTA) project at the system, a new CPE is not required. If conducted, a CPE must be completed and submitted to the State no later than 120 days following the day the filter exceeded 2.0 NTU in two consecutive measurements for the second straight month.)</p> <p>(NOTE: If the system utilizes lime softening, it may apply to the State for alternative turbidity exceedance levels if able to demonstrate to the State that higher turbidity levels are due to lime carryover only, and not due to degraded filter performance.)</p> <p>(NOTE: This checklist item applies to public water systems [PWSs]. See the definition of Public Water System or the NOTE in WQ.10.1.US.)</p> <p>(NOTE: The requirements in 40 CFR 141, Subpart W establish or extend treatment technique requirements in lieu of maximum contaminant levels for Cryptosporidium. These requirements are in addition to requirements for filtration and disinfection in 40 CFR 141, Subpart H, 40 CFR 141, Subpart P, and 40 CFR 141, Subpart T.)</p> <p>(NOTE: 40 CFR 141, Subpart H includes 40 CFR 141.70 through 141.76 [see checklist items WQ.15.2.US, WQ.20.1.US through WQ.20.8.US, WQ.20.12.US,</p>

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<p>Subpart W compliance (40 CFR 141.700) [Added April 2006].</p> <p><b>WQ.15.6.US.</b> Public water systems are required to conduct an initial and a second round of source water monitoring for each plant that treats a surface water or GWUDI source according to a specific schedule (40 CFR 141.701) [Added April 2006].</p>	<p>and WQ.20.15.US]. 40 CFR 141, Subpart P includes 40 CFR 141.170 through 141.175 [see checklist items WQ.20.9.US through WQ.20.11.US, and WQ.30.5.US], 40 CFR 141, Subpart T includes 40 CFR 141.500 through 141.571 [see checklist items WQ.10.5.US, WQ.15.4.US, WQ.20.13.US through WQ.20.15.US, WQ.30.11.US, WQ.30.12.US, WQ.35.5.US, WQ.76.3.US].)</p> <p>(NOTE: These requirements apply to:</p> <ul style="list-style-type: none"> <li>– all subpart H systems, which are public water systems supplied by a surface water source and public water systems supplied by a ground water source under the direct influence of surface water</li> <li>– wholesale systems, see definitions, comply with these requirements based on the population of the largest system in the combined distribution system.)</li> </ul> <p>(NOTE: The requirements for filtered systems apply to systems required by National Primary Drinking Water Regulations to provide filtration treatment, whether or not the system is currently operating a filtration system.)</p> <p>(NOTE: The requirements for unfiltered systems apply only to unfiltered systems that timely met and continue to meet the filtration avoidance criteria in 40 CFR 141, Subpart H, 40 CFR 141, Subpart P, and 40 CFR 141, Subpart T, as applicable.)</p> <p>Verify that systems required to meet 40 CFR 141, Subpart W requirements, conduct an initial and a second round of source water monitoring for each plant that treats a surface water or GWUDI source.</p> <p>(NOTE: This monitoring may include sampling for Cryptosporidium, E. coli, and turbidity as described in 40 CFR 141.701 through 141.706, to determine what level, if any, of additional Cryptosporidium treatment they must provide.)</p> <p>(NOTE: See checklist item WQ.15.5.US. for information on applicability and nonapplicability of these requirements.)</p> <p>Verify that systems conduct the following monitoring on the schedule unless they meet the monitoring exemption criteria:</p> <ul style="list-style-type: none"> <li>– filtered systems serving at least 10,000 people sample their source water for Cryptosporidium, E. coli, and turbidity at least monthly for 24 mo</li> <li>– unfiltered systems serving at least 10,000 people sample their source water for Cryptosporidium at least monthly for 24 mo</li> <li>– filtered systems serving fewer than 10,000 people sample their source water for E. coli at least once every two weeks for 12 mo (NOTE: A filtered system serving fewer than 10,000 people may avoid E. coli monitoring if the system notifies the State no longer than 3 mo prior to the date the system is otherwise required to start E. coli monitoring that it will monitor for Cryptosporidium)</li> <li>– filtered systems serving fewer than 10,000 people sample their source water for Cryptosporidium at least twice per month for 12 mo or at least monthly for 24 mo if they meet one of the following based on prior E. coli monitoring</li> </ul>

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	<ul style="list-style-type: none"> <li>– for systems using lake/reservoir sources, the annual mean E. coli concentration is greater than 10 E. coli/100 mL</li> <li>– for systems using flowing stream sources, the annual mean E. coli concentration is greater than 50 E. coli/100 mL</li> <li>– the system does not conduct E. coli monitoring as required.</li> </ul> <p>Verify that systems using ground water under the direct influence of surface water (GWUDI) comply with the above requirements sampling for Cryptosporidium based on the E. coli level that applies to the nearest surface water body.</p> <p>(NOTE: If no surface water body is nearby, the system must comply based on the requirements that apply to systems using lake/reservoir sources.)</p> <p>(NOTE: For filtered systems serving fewer than 10,000 people, the State may approve monitoring for an indicator other than E. coli. The State also may approve an alternative to the E. coli concentrations above to trigger Cryptosporidium monitoring. This approval by the State must be provided to the system in writing and must include the basis for the State's determination that the alternative indicator and/or trigger level will provide a more accurate identification of whether a system will exceed the Bin 1 Cryptosporidium level.)</p> <p>Verify that unfiltered systems serving fewer than 10,000 people sample their source water for Cryptosporidium at least twice per month for 12 mo or at least monthly for 24 mo.</p> <p>(NOTE: Systems may sample more frequently than required in this checklist item if the sampling frequency is evenly spaced throughout the monitoring period.)</p> <p>Verify that systems conduct a second round of source water monitoring that meets the requirements for monitoring parameters, frequency, and duration no later than the month beginning with the date listed in Appendix 13-9d, Table 1, unless they meet the monitoring exemption criteria</p> <p>(NOTE: Filtered systems are not required to conduct source water monitoring if the system will provide a total of at least 5.5-log of treatment for Cryptosporidium, equivalent to meeting the treatment requirements of Bin 4 in 40 CFR 141.711 [see checklist item WQ.20.18.US.]</p> <p>(NOTE: Unfiltered systems are not required to conduct source water monitoring if the system will provide a total of at least 3-log Cryptosporidium inactivation, equivalent to meeting the treatment requirements for unfiltered systems with a mean Cryptosporidium concentration of greater than 0.01 oocysts/L in 40 CFR 141.712 [see checklist item WQ.20.19.US.]</p> <p>Verify that, if a system chooses to provide the detailed level of treatment, as applicable, rather than start source water monitoring, the system notifies the State in</p>

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<p><b>WQ.15.7.US.</b> Public water systems required to conduct an initial and a second round of source water monitoring for each plant that treats a surface water or GWUDI source must have a sampling</p>	<p>writing no later than the date the system is otherwise required to submit a sampling schedule for monitoring (see Appendix 13-9d, Table 1).</p> <p>Verify that, if a system chooses to stop sampling at any point after it has initiated monitoring, it notifies the State in writing that it will provide this level of treatment and install and operate technologies to provide the required level of treatment by the applicable treatment compliance date.</p> <p>Verify that systems with subpart H plants that operate for only part of the year conduct source water monitoring with the following modifications:</p> <ul style="list-style-type: none"> <li>– systems sample their source water only during the months that the plant operates unless the State specifies another monitoring period based on plant operating practices</li> <li>– systems with plants that operate less than six months per year and that monitor for Cryptosporidium collect at least six Cryptosporidium samples per year during each of 2 yr of monitoring with the samples being evenly spaced throughout the period the plant operates.</li> </ul> <p>Verify that, if a system begins using a new source of surface water or GWUDI after the system is required to begin monitoring, the system monitors the new source on a schedule the State approves.</p> <p>(NOTE: The requirements pertaining to using a new source of water apply to subpart H systems that begin operation after the monitoring start date applicable to the system's size.)</p> <p>Verify that the system begins a second round of source water monitoring no later than 6 yr following initial bin classification or determination of the mean Cryptosporidium level, as applicable.</p> <p>(NOTE: Failure to collect any required source water sample in accordance with the sampling schedule, sampling location, analytical method, approved laboratory, and reporting requirements is a monitoring violation.</p> <p>(NOTE: Systems may use (grandfather) monitoring data collected prior to the applicable monitoring start date to meet the initial source water monitoring requirements. Grandfathered data may substitute for an equivalent number of months at the end of the monitoring period.)</p> <p>(NOTE: See checklist item WQ.15.5.US. for information on applicability and nonapplicability of these requirements.)</p> <p>Verify that systems required to conduct source water monitoring under 40 CFR 141.701 (see checklist item WQ.15.6.US.) submit a sampling schedule that specifies the calendar dates when the system will collect each required sample.</p>

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<p>schedule (40 CFR 141.702) [Added April 2006].</p>	<p>Verify that systems submit sampling schedules no later than 3 mo prior to the applicable date listed Table 1 in Appendix 13-9d for each round of required monitoring.</p> <p>Verify that systems serving at least 10,000 people submit their sampling schedule for the initial round of source water monitoring EPA electronically at <a href="https://intranet.epa.gov/lt2/">https://intranet.epa.gov/lt2/</a>.</p> <p>Verify that, if a system serving at least 10,000 people is unable to submit the sampling schedule electronically, the system uses an EPA-approved alternative approach for submitting the sampling schedule.</p> <p>Verify that systems serving fewer than 10,000 people submit their sampling schedules for the initial round of source water monitoring to the State.</p> <p>Verify that systems submit sampling schedules for the second round of source water monitoring to the State.</p> <p>(NOTE: If EPA or the State does not respond to a system regarding its sampling schedule, the system must sample at the reported schedule.)</p> <p>Verify that systems collect samples within two days before or two days after the dates indicated in their sampling schedule (i.e., within a five-day period around the schedule date) unless one of the following conditions apply:</p> <ul style="list-style-type: none"> <li>– if an extreme condition or situation exists that may pose danger to the sample collector, or that cannot be avoided and causes the system to be unable to sample in the scheduled five-day period: <ul style="list-style-type: none"> <li>– the system samples as close to the scheduled date as is feasible unless the State approves an alternative sampling date</li> <li>– the system submits an explanation for the delayed sampling date to the State concurrent with the shipment of the sample to the laboratory</li> </ul> </li> <li>– if a system is unable to report a valid analytical result for a scheduled sampling date due to equipment failure, loss of or damage to the sample, failure to comply with the analytical method requirements, including the quality control requirements, or the failure of an approved laboratory to analyze the sample, then the system collects a replacement sample: <ul style="list-style-type: none"> <li>– the system collects the replacement sample not later than 21 days after receiving information that an analytical result cannot be reported for the scheduled date unless the system demonstrates that collecting a replacement sample within this time frame is not feasible or the State approves an alternative resampling date.</li> <li>– the system submits an explanation for the delayed sampling date to the State concurrent with the shipment of the sample to the laboratory.</li> </ul> </li> </ul> <p>Verify that, systems that fail to collect samples within two days before or two days after the dates indicated in their sampling schedule for any required source water</p>

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<p><b>WQ.15.8.US.</b> Public water systems required to conduct an initial and a second round of source water monitoring for each plant that treats a surface water or GWUDI source must collect the samples at specific locations (40 CFR 141.703) [Added April 2006].</p>	<p>sample revise their sampling schedules to add dates for collecting all missed samples.</p> <p>Verify that systems submit the revised schedule to the State for approval prior to when the system begins collecting the missed samples.</p> <p>(NOTE: See checklist item WQ.15.5.US. for information on applicability and nonapplicability of these requirements.)</p> <p>Verify that systems required to conduct source water monitoring collect samples for each plant that treats a surface water or GWUDI source.</p> <p>(NOTE: Where multiple plants draw water from the same influent, such as the same pipe or intake, the State may approve one set of monitoring results to be used to satisfy the requirements for all plants.)</p> <p>Verify that systems collect source water samples prior to chemical treatment, such as coagulants, oxidants and disinfectants, unless the system has a State approved system to collect a source water sample after chemical treatment.</p> <p>(NOTE: For the state to grant approval, the State must determine that collecting a sample prior to chemical treatment is not feasible for the system and that the chemical treatment is unlikely to have a significant adverse effect on the analysis of the sample.)</p> <p>Verify that systems that recycle filter backwash water collect source water samples prior to the point of filter backwash water addition.</p> <p>Verify that systems that receive Cryptosporidium treatment credit for bank filtration under 40 CFR 141.173(b) or 40 CFR 141.552(a) (see checklist items WQ.20.9.US and WQ.20.15.US), as applicable, collect source water samples in the surface water prior to bank filtration.</p> <p>Verify that systems that use bank filtration as pretreatment to a filtration plant collect source water samples from the well (i.e., after bank filtration).</p> <p>Verify that the use of bank filtration during monitoring is consistent with routine operational practice.</p> <p>(NOTE: Systems collecting samples after a bank filtration process may not receive treatment credit for the bank filtration.)</p> <p>Verify that systems with plants that use multiple water sources, including multiple surface water sources and blended surface water and ground water sources, collect samples as follows:</p>

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<p><b>WQ.15.9.US.</b> Public water systems required to conduct an initial and a second round of source water monitoring for each plant that treats a surface water or GWUDI source must have samples analyzed at an approved lab (40 CFR 141.705) [Added April 2006].</p>	<ul style="list-style-type: none"> <li>– if a sampling tap is available where the sources are combined prior to treatment, collect samples from the tap</li> <li>– if a sampling tap where the sources are combined prior to treatment is not available, systems collect samples at each source near the intake on the same day and must implement one of the following for sample analysis: <ul style="list-style-type: none"> <li>– systems composite samples from each source into one sample prior to analysis and the volume of sample from each source is weighted according to the proportion of the source in the total plant flow at the time the sample is collected</li> <li>– systems analyze samples from each source separately and calculate a weighted average of the analysis results for each sampling date by multiplying the analysis result for each source by the fraction the source contributed to total plant flow at the time the sample was collected and then summing these values.</li> </ul> </li> </ul> <p>(NOTE: The use of multiple sources during monitoring must be consistent with routine operational practice.)</p> <p>Verify that systems submit a description of their sampling location(s) to the State at the same time as the sampling schedule.</p> <p>Verify that the description addresses the position of the sampling location in relation to the system's water source(s) and treatment processes, including pretreatment, points of chemical treatment, and filter backwash recycle.</p> <p>(NOTE: If the State does not respond to a system regarding sampling location(s), the system must sample at the reported location(s).)</p> <p>(NOTE: See checklist item WQ.15.5.US. for information on applicability and nonapplicability of these requirements.)</p> <p>Verify that systems have Cryptosporidium samples analyzed by a laboratory that is approved under EPA's Laboratory Quality Assurance Evaluation Program for Analysis of Cryptosporidium in Water or a laboratory that has been certified for Cryptosporidium analysis by an equivalent State laboratory certification program.</p> <p>(NOTE: Any laboratory certified by the EPA, the National Environmental Laboratory Accreditation Conference or the State for total coliform or fecal coliform analysis is approved for E. coli analysis under this subpart when the laboratory uses the same technique for E. coli that the laboratory uses for 40 CFR 141.74.</p> <p>Verify that measurements of turbidity are made by a party approved by the State.</p> <p>(NOTE: See the text of 40 CFR 141.704 for the approved analytical methods.)</p>

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<p><b>WQ.15.10.US.</b> In specific situations, public water systems which are required to conduct an initial and a second round of source water monitoring for each plant that treats a surface water or GWUDI source can grandfather sample results (40 CFR 141.707) [Added April 2006].</p>	<p>(NOTE: See checklist item WQ.15.5.US. for information on applicability and nonapplicability of these requirements.)</p> <p>(NOTE: Systems may comply with the initial source water monitoring requirements by grandfathering sample results collected before the system is required to begin monitoring (i.e., previously collected data). To be grandfathered, the sample results and analysis must meet the criteria in this checklist item and the State must approve.)</p> <p>(NOTE: A filtered system may grandfather Cryptosporidium samples when the system does not have corresponding E. coli and turbidity samples. A system that grandfathered Cryptosporidium samples without E. coli and turbidity samples is not required to collect E. coli and turbidity samples when the system completes the requirements for Cryptosporidium monitoring.)</p> <p>Verify that the analysis of E. coli samples meet the analytical method and approved laboratory requirements.</p> <p>Verify that the analysis of Cryptosporidium samples is done at an approved laboratory using approved analytical methods.</p> <p>Verify that, for each Cryptosporidium sample, the laboratory analyzed at least 10 L of sample or at least 2 mL of packed pellet or as much volume as could be filtered by 2 EPA-approved filters for the approved analytical methods.</p> <p>Verify that the sampling location meets the conditions in 40 CFR 141.703 (see checklist item WQ.15.8.US.).</p> <p>Verify that Cryptosporidium samples were collected no less frequently than each calendar month on a regular schedule, beginning no earlier than January 1999.</p> <p>(NOTE: Sample collection intervals may vary for the conditions specified in 40 CFR 141.702(b)(1) and (2) (see checklist item WQ.15.7.US.) if the system provides documentation of the condition when reporting monitoring results. The State may approve grandfathering of previously collected data where there are time gaps in the sampling frequency if the system conducts additional monitoring the State specifies to ensure that the data used to comply with the initial source water monitoring requirements are seasonally representative and unbiased. Systems may grandfather previously collected data where the sampling frequency within each month varied. If the Cryptosporidium sampling frequency varied, systems must follow the monthly averaging procedure, as applicable, when calculating the bin classification for filtered systems or the mean Cryptosporidium concentration for unfiltered systems.)</p> <p>Verify that systems serving at least 10,000 people that request to grandfather previously collected monitoring results report the following information by the listed applicable dates to EPA unless the State approves reporting to the State rather than EPA:</p>

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	<ul style="list-style-type: none"> <li>– the intent to submit previously collected monitoring results for grandfathering and specifying the number of previously collected results the system will submit, the dates of the first and last sample, and whether a system will conduct additional source water monitoring no later than the date the sampling schedule required</li> <li>– previously collected monitoring results for grandfathering, along with the following associated documentation no later than 2 mo after the applicable date: <ul style="list-style-type: none"> <li>– for each sample result, the applicable data elements in 40 CFR 141.706 (see checklist item WQ.30.13.US.) certification that the reported monitoring results include all results the system generated during the time period beginning with the first reported result and ending with the final reported result for samples that were collected from the sampling location specified for source water monitoring, not spiked, and analyzed using the laboratory's routine process for the required analytical methods</li> <li>– certification that the samples were representative of a plant's source water(s) and the source water(s) have not changed as well as a description of the sampling location(s), which must address the position of the sampling location in relation to the system's water source(s) and treatment processes, including points of chemical addition and filter backwash recycle</li> <li>– for Cryptosporidium samples, the laboratory or laboratories that analyzed the samples provide a letter certifying that the required quality control criteria were met for each sample batch associated with the reported results (NOTE: Alternatively, the laboratory may provide bench sheets and sample examination report forms for each field, matrix spike, IPR, OPR, and method blank sample associated with the reported results.</li> </ul> </li> </ul> <p>Verify that systems serving fewer than 10,000 people that request to grandfather previously collected monitoring results report the following information by the listed applicable dates to the State:</p> <ul style="list-style-type: none"> <li>– the intent to submit previously collected monitoring results for grandfathering and specifying the number of previously collected results the system will submit, the dates of the first and last sample, and whether a system will conduct additional source water monitoring no later than the date the sampling schedule required</li> <li>– previously collected monitoring results for grandfathering, along with the following associated documentation no later than 2 mo after the applicable date: <ul style="list-style-type: none"> <li>– for each sample result, the applicable data elements in 40 CFR 141.706 (see checklist item WQ.30.13.US.) certification that the reported monitoring results include all results the system generated during the time period beginning with the first reported result and ending with the final reported result for samples that were collected from the sampling location specified for source water monitoring, not spiked, and analyzed using the laboratory's routine process for the required analytical methods</li> </ul> </li> </ul>

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<p><b>WQ.15.11.US.</b> Public water systems that use ground water must meet microbial source water monitoring requirements for ground water systems that do not treat all of their ground water to at least 99.99 percent (4-log) treatment of viruses (40 CFR 141.400(a) through 141.400(c)(2), 141.400(d), 141.402(a), 141.402(b), and 141.402(d)) [Added January 2007; Revised April 2009; Citation Revised July 2009; Revised April 2013].</p>	<ul style="list-style-type: none"> <li>– certification that the samples were representative of a plant's source water(s) and the source water(s) have not changed as well as a description of the sampling location(s), which must address the position of the sampling location in relation to the system's water source(s) and treatment processes, including points of chemical addition and filter backwash recycle</li> <li>– for Cryptosporidium samples, the laboratory or laboratories that analyzed the samples provide a letter certifying that the required quality control criteria were met for each sample batch associated with the reported results (NOTE: Alternatively, the laboratory may provide bench sheets and sample examination report forms for each field, matrix spike, IPR, OPR, and method blank sample associated with the reported results.</li> </ul> <p>(NOTE: If the State determines that a previously collected data set submitted for grandfathering was generated during source water conditions that were not normal for the system, such as a drought, the State may disapprove the data. Alternatively, the State may approve the previously collected data if the system reports additional source water monitoring data, as determined by the State, to ensure that the data set used represents average source water conditions for the system.)</p> <p>Verify that, if a system submits previously collected data that fully meet the number of samples required for initial source water monitoring and some of the data are rejected due to not meeting the requirements, systems conduct additional monitoring to replace rejected data on a schedule the State approves.</p> <p>(NOTE: Systems are not required to begin this additional monitoring until two months after notification that data have been rejected and additional monitoring is necessary.)</p> <p>(NOTE: This checklist item applies to all public water systems that use ground water except that it does not apply to public water systems that combine all of their ground water with surface water or with ground water under the direct influence of surface water prior to treatment under 40 CFR 141, Subpart H.)</p> <p>(NOTE: Unless otherwise noted, ground water systems must comply with this checklist item beginning 1 December 2009.)</p> <p>Verify that a ground water system conducts triggered source water monitoring if any of the following conditions exist:</p> <ul style="list-style-type: none"> <li>– the system does not provide at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer for each ground water source</li> <li>– the system is notified that a sample collected under 40 CFR 141.21(a) is total coliform-positive and the sample is not invalidated under 40 CFR 141.21(c) until 31 March 2016</li> </ul>

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	<p>– the system is notified that a sample collected under 40 CFR 141.854 through 141.857 is total coliform-positive and the sample is not invalidated under 40 CFR 141.853(c) beginning 1 April 2016.</p> <p>Verify that, within 24 h of notification of the total coliform-positive sample, a ground water system collects at least one ground water source sample from each ground water source in use at the time the total coliform-positive sample was collected.</p> <p>(NOTE: The State may extend the 24-hour time limit on a case-by-case basis. If approved by the State, systems with more than one ground water source may meet the requirement to collect ground water samples within 24 h of notification by sampling a representative ground water source or sources.)</p> <p>(NOTE: The State may direct a system to submit a triggered source water monitoring plan.)</p> <p>(NOTE: Until 31 March 2016, a ground water system serving 1,000 or fewer people may use a repeat sample collected from a ground water source to meet both the requirements of 40 CFR 141.21(b) (see checklist item WQ.15.3.US) and to satisfy the triggered monitoring requirements only if the State approves the use of <i>E. coli</i> as a fecal indicator for triggered source water monitoring.)</p> <p>(NOTE: Beginning 1 April 2016, a ground water system serving 1,000 or fewer people may use a repeat sample collected from a ground water source to meet both the requirements of 40 CFR, subpart Y and to satisfy the triggered monitoring requirements described in this checklist item for that ground water source only if the State approves the use of <i>E.coli</i> as a fecal indicator for triggered source water monitoring and approves the use of a single sample for meeting both the triggered source water monitoring requirements and the repeat monitoring requirements in 40 CFR 141.858.)</p> <p>Verify that, if the repeat sample collected from the ground water source is <i>E.coli</i> positive, the system collects five additional source water samples from the same source within 24 h of being notified of the fecal indicator-positive sample.</p> <p>(NOTE: If the State does not require corrective action for a fecal indicator-positive source water sample that is not invalidated, the system must collect five additional source water samples from the same source within 24 h of being notified of the fecal indicator-positive sample. A ground water system may obtain State invalidation of a fecal indicator-positive ground water source sample under one of the following conditions:</p> <ul style="list-style-type: none"> <li>– the system provides the State with written notice from the laboratory that improper sample analysis occurred</li> <li>– the State determines and documents in writing that there is substantial evidence that a fecal indicator-positive ground water source sample is not related to source water quality.)</li> </ul>

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	<p>Verify that, if the State invalidates a fecal indicator-positive ground water source sample, the ground water system collects another source water sample within 24 h of being notified by the State of its invalidation decision and have it analyzed for the same fecal indicator using the required analytical methods.</p> <p>(NOTE: The State may extend the 24-h time limit on a case-by-case basis if the system cannot collect the source water sample within 24 h due to circumstances beyond its control. In the case of an extension, the State must specify how much time the system has to collect the sample.)</p> <p>Verify that, until 31 March 2016, a consecutive ground water system that has a total coliform-positive sample collected under 40 CFR 141.21(a) [see checklist item WQ.15.1.US] notifies the wholesale system(s) within 24 h of being notified of the total coliform-positive sample.</p> <p>Verify that, beginning 1 April 2016, a consecutive ground water system that has a total coliform-positive sample collected under 40 CFR 141.854 through 141.857 notifies the wholesale system(s) within 24 h of being notified of the total coliform-positive sample.</p> <p>Verify that when a wholesale ground water system receives notice from a consecutive system it serves that a collected sample is total coliform-positive; the wholesale ground water system collects a sample from its ground water source(s) within 24 h of notification and analyzes it for a fecal indicator within 24 h of being notified.</p> <p>Verify that, if the sample collected by the wholesale ground water system after receiving notice from a consecutive system it serves that a sample is total coliform-positive is fecal indicator-positive, the wholesale ground water system notifies all consecutive systems served by that ground water source of the fecal indicator source water positive within 24 h of being notified of the ground water source sample monitoring result.)</p> <p>(NOTE: A ground water system is not required to comply with the triggered source water monitoring requirements of this checklist item if either of the following conditions exists:</p> <ul style="list-style-type: none"> <li>– the State determines, and documents in writing, that the collected total coliform-positive sample is caused by a distribution system deficiency</li> <li>– the collected total coliform-positive sample is collected at a location that meets State criteria for distribution system conditions that will cause total coliform-positive samples.)</li> </ul> <p>Verify that, if directed by the State, ground water systems conduct assessment source water monitoring that meets State-determined requirements for such monitoring.</p>

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<p><b>WQ.15.12.US.</b> Public water systems that use ground water having fecally contaminated source waters or significant deficiencies identified by a regulator must meet treatment technique requirements (40 CFR 141.400(a) through 141.400(c)(3), 141.400(d), 141.403(a)(1) through 141.403(a)(6), and 141.403(c)) [Added January 2007].</p>	<p>(NOTE: A ground water system conducting assessment source water monitoring may use a triggered source water sample to meet the requirements. State-determined assessment source water monitoring requirements may include:</p> <ul style="list-style-type: none"> <li>– collection of a total of 12 ground water source samples that represent each month the system provides ground water to the public</li> <li>– collection of samples from each well unless the system obtains written State approval to conduct monitoring at one or more wells within the ground water system that are representative of multiple wells used by that system and that draw water from the same hydrogeologic setting</li> <li>– collection of a standard sample volume of at least 100 mL for fecal indicator analysis regardless of the fecal indicator or analytical method used</li> <li>– analysis of all ground water source samples using one of the required analytical methods for the presence of E. coli, enterococci, or coliphage</li> <li>– collection of ground water source samples at a location prior to any treatment of the ground water source unless the State approves a sampling location after treatment</li> <li>– collection of ground water source samples at the well itself unless the system's configuration does not allow for sampling at the well itself and the State approves an alternate sampling location that is representative of the water quality of that well.)</li> </ul> <p>(NOTE: This checklist item applies to all public water systems that use ground water except that it does not apply to public water systems that combine all of their ground water with surface water or with ground water under the direct influence of surface water prior to treatment under 40 CFR 141, Subpart H.)</p> <p>(NOTE: Unless otherwise noted, ground water systems must comply with this checklist item beginning 1 December 2009.)</p> <p>Verify that a ground water system with fecally contaminated source water or with significant deficiencies subject to the treatment technique requirements implement one or more of the following corrective action options:</p> <ul style="list-style-type: none"> <li>– correct all significant deficiencies</li> <li>– provide an alternate source of water</li> <li>– eliminate the source of contamination</li> <li>– provide treatment that reliably achieves at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer.</li> </ul> <p>Verify that, within 120 days (or earlier if directed by the State) of receiving written notification from the State of a significant deficiency, written notice from a laboratory that a ground water source sample was found to be fecal indicator-positive, or direction from the State that a fecal indicator-positive sample requires corrective action, the ground water system either:</p>

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<p><b>WQ.15.13.US.</b> Public water systems that use ground water must meet monitoring requirements in specific situations (40 CFR 141.400(a) through 141.400(c)(3), 141.400(d), 141.403(b), 141.403(c)(1), 141.403(c)(2), 141.403(c)(4)) [Added January 2007].</p>	<ul style="list-style-type: none"> <li>– has completed corrective action in accordance with applicable State plan review processes or other State guidance or direction, if any, including State-specified interim measures</li> <li>– is in compliance with a State-approved corrective action plan and schedule subject to the following conditions:</li> <li>– any subsequent modifications to a State-approved corrective action plan and schedule is also approved by the State</li> <li>– if the State specifies interim measures for protection of the public health pending State approval of the corrective action plan and schedule or pending completion of the corrective action plan, the system complies with these interim measures as well as with any schedule specified by the State.</li> </ul> <p>(NOTE: A ground water system may discontinue 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer for a ground water source if the State determines and documents in writing that 4-log treatment of viruses is no longer necessary for that ground water source. A system that discontinues 4-log treatment of viruses is subject to the source water monitoring and analytical methods requirements of 40 CFR 141.402 [see checklist item WQ.15.11.US].)</p> <p>(NOTE: This checklist item applies to all public water systems that use ground water except that it does not apply to public water systems that combine all of their ground water with surface water or with ground water under the direct influence of surface water prior to treatment under 40 CFR 141, Subpart H.)</p> <p>(NOTE: Unless otherwise noted, ground water systems must comply with this checklist item beginning 1 December 2009.)</p> <p>Verify that a ground water system that is not required to meet the source water monitoring requirements of this subpart for any ground water source because it provides at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer for any ground water source before 1 December 2009, notifies the State in writing that it provides at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer for the specified ground water source and will begin compliance monitoring by 1 December 2009.</p> <p>Verify that notification to the State includes engineering, operational, or other information that the State requests to evaluate the submission.</p> <p>Verify that, if the system subsequently discontinues 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer for a ground water source, the system</p>

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	<p>conducts ground water source monitoring as required under 40 CFR 141.402 [see checklist item WQ.15.11.US].)</p> <p>Verify that a ground water system that places a ground water source in service after 30 November 2009, that is not required to meet the source water monitoring requirements because the system provides at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer for the ground water source complies with the following requirements:</p> <ul style="list-style-type: none"> <li>– the system notifies the State in writing that it provides at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer for the ground water source</li> <li>– the system conducts compliance monitoring as required under 40 CFR 141.403(b)(3) (see checklist item WQ.15.13.US) within 30 days of placing the source in service</li> <li>– the system conducts ground water source monitoring under 40 CFR 141.402 (see checklist item WQ.15.11.US) if the system subsequently discontinues 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer for the ground water source.</li> </ul> <p>Verify that notification to the State includes engineering, operational, or other information that the State requests to evaluate the submission.</p> <p>Verify that a ground water system subject to the requirements of this checklist item and WQ.15.12.US monitor the effectiveness and reliability of treatment for that ground water source before or at the first customer as follows:</p> <ul style="list-style-type: none"> <li>– chemical disinfection: <ul style="list-style-type: none"> <li>– a ground water system that serves greater than 3,300 people continuously monitors the residual disinfectant concentration using required analytical methods at a location approved by the State and the system records the lowest residual disinfectant concentration each day that water from the ground water source is served to the public.</li> <li>– a ground water system serving 3,300 or fewer people monitors the residual disinfectant concentration using required analytical methods at a location approved by the State and the system records the residual disinfection concentration each day that water from the ground water source is served to the public</li> <li>– a ground water system that uses membrane filtration to meet requirements monitors the membrane filtration process in accordance with all State-specified monitoring requirements and operates the membrane filtration in accordance with all State-specified compliance requirements.</li> </ul> </li> </ul>

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	<p>(NOTE: A ground water system that uses a State-approved alternative treatment to meet the requirements by providing at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer must:</p> <ul style="list-style-type: none"> <li>– monitor the alternative treatment in accordance with all State-specified monitoring requirements</li> <li>– operate the alternative treatment in accordance with all compliance requirements that the State determines.</li> </ul> <p>Verify that a ground water system that serves greater than 3,300 people:</p> <ul style="list-style-type: none"> <li>– maintains the State-determined residual disinfectant concentration every day the ground water system serves water from the ground water source to the public</li> <li>– if there is a failure in the continuous monitoring equipment, the ground water system conducts grab sampling every 4 h until the continuous monitoring equipment is returned to service</li> <li>– the system resumes continuous residual disinfectant monitoring within 14 days.</li> </ul> <p>Verify that, for systems serving 3,300 or fewer:</p> <ul style="list-style-type: none"> <li>– the ground water system maintains the State-determined residual disinfectant concentration every day the ground water system serves water from the ground water source to the public</li> <li>– the ground water system takes a daily grab sample during the hour of peak flow or at another time specified by the State</li> <li>– if any daily grab sample measurement falls below the State-determined residual disinfectant concentration, the ground water system takes follow-up samples every 4 h until the residual disinfectant concentration is restored to the State-determined level.</li> </ul> <p>(NOTE: A ground water system that serves 3,300 or fewer people may monitor continuously and meet the requirements for ground water systems serving greater than 3,300 people.)</p> <p>(NOTE: Any ground water system that uses membrane filtration is in compliance with the requirement to achieve at least 4-log removal of viruses when:</p> <ul style="list-style-type: none"> <li>– the membrane has an absolute molecular weight cut-off (MWCO), or an alternate parameter that describes the exclusion characteristics of the membrane, that can reliably achieve at least 4-log removal of viruses</li> <li>– the membrane process is operated in accordance with State-specified compliance requirements</li> <li>– the integrity of the membrane is intact.)</li> </ul>

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<p><b>WQ.15.14.US.</b> Public water systems serving more than 1,000 people must meet routine total coliform monitoring requirements (40 CFR 141.851(b), 141.857, 141.858, and 141.859(c)) [Added April 2013; Citation Revised July 2014].</p>	<p>(NOTE: A ground water system may discontinue 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer for a ground water source if the State determines and documents in writing that 4-log treatment of viruses is no longer necessary for that ground water source. A system that discontinues 4-log treatment of viruses is subject to the source water monitoring and analytical methods requirements of 40 CFR 141.402 [see checklist item WQ.15.11.US].)</p> <p>(NOTE: This checklist item is applicable beginning 1 April 2016 with systems required to begin regular monitoring at the same frequency as the system-specific frequency required on 31 March 2016.)</p> <p>Verify that, if a sample is total coliform-positive, the system collects a set of repeat samples within 24 h of being notified of the positive result and the system collects no fewer than three repeat samples for each total coliform-positive sample found.</p> <p>Verify that the system collects all repeat samples on the same day, except that the State may allow a system with a single service connection to collect the required set of repeat samples over a 3-day period or to collect a larger volume repeat sample(s) in one or more sample containers of any size, as long as the total volume collected is at least 300 ml.</p> <p>Verify that the system collects an additional set of repeat samples if one or more repeat samples in the current set of repeat samples is total coliform-positive within 24-h of being notified of the positive result.</p> <p>Verify that the system continues to collect additional sets of repeat samples until either total coliforms are not detected in one complete set of repeat samples or the system determines that a coliform treatment technique trigger specified in 40 CFR 141.859(a) (see Appendix 13-6b) has been exceeded as a result of a repeat sample being total coliform-positive and notifies the State.</p> <p>(NOTE: If a trigger identified in 40 CFR 141.859 (see Appendix 13-6b) is exceeded as a result of a routine sample being total coliform-positive, systems are required to conduct only one round of repeat monitoring for each total coliform-positive routine sample.)</p> <p>(NOTE: After a system collects a routine sample and before it learns the results of the analysis of that sample, if it collects another routine sample(s) from within five adjacent service connections of the initial sample, and the initial sample, after analysis, is found to contain total coliforms, then the system may count the subsequent sample(s) as a repeat sample instead of as a routine sample.)</p> <p>Verify that results of all routine and repeat samples not invalidated by the State are used to determine whether a coliform treatment technique trigger in 40 CFR 141.859 (see Appendix 13-6b) has been triggered.</p>

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	<p>Verify that, if any routine or repeat sample is total coliform-positive, the system analyzes that total coliform-positive culture medium to determine if E. coli is present.</p> <p>Verify that, if E. coli are present, the system notifies the State by the end of the day when the system is notified of the test result, unless the system is notified of the result after the State office is closed and the State does not have either an after-hours phone line or an alternative notification procedure, in which case the system must notify the State before the end of the next business day.</p> <p>Verify that, once all required monitoring for a calendar month has been completed the system determines whether any coliform treatment techniques specified in 40 CFR 141.859 (see Appendix 13-6b) have been exceeded.</p> <p>Verify that if any treatment technique has been exceeded, the system completes the assessments required by 141.859 (see Appendix 13-6b).</p> <p>Verify that the system corrects sanitary defects found through either Level 1 or Level 2 assessments.</p> <p>(NOTE: For corrections not completed by the time of submission of the assessment form, the system must complete the corrective action(s) in compliance with a timetable approved by the State.)</p> <p>Verify that, all seasonal public water systems serving more than 1,000 people demonstrate compliance with a State-approved start-up procedure, which may include a requirement for start-up sampling prior to serving water to the public.</p> <p>(NOTE: The State may exempt any seasonal system from some or all of the requirements for seasonal systems if the entire distribution system remains pressurized during the entire period that the system is not operating.)</p> <p>Verify that the monitoring frequency required for total coliforms outlined in Table 2 of Appendix 13-6 is met.</p> <p>Verify that a subpart H public water system serving more than 1,000 people that does not practice filtration in compliance with 40 CFR, subparts H, P, T, and W collects at least one total coliform sample near the first service connection each day the turbidity level of the source water exceeds 1 NTU.</p> <p>(NOTE: 40 CFR 141, Subpart H includes 40 CFR 141.70 through 141.76 [see checklist items WQ.15.2.US, WQ.20.1.US through WQ.20.8.US, WQ.20.12.US, and WQ.20.15.US]. 40 CFR 141, Subpart P includes 40 CFR 141.170 through 141.175 [see checklist items WQ.20.9.US through WQ.20.11.US, and WQ.30.5.US]. 40 CFR 141, Subpart T includes 40 CFR 141.500 through 141.571 [see checklist items WQ.10.5.US, WQ.15.4.US, WQ.20.13.US through WQ.20.15.US, WQ.30.11.US, WQ.30.12.US, WQ.35.5.US, and WQ.76.3.US]. 40</p>

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<p><b>WQ.15.15.US.</b> Subpart H public water systems serving 1,000 or fewer people must meet routine total coliform monitoring requirements (40 CFR 141.851(b), 141.856, 141.858, and 141.859(c)) [Added April 2013].</p>	<p>CFR 141, Subpart W includes 40 CFR 141.700 through 141.723 [see checklist items WQ.15.5.US through WQ.15.10.US, WQ.20.17.US through WQ.20.26.US, WQ.30.13.US, and WQ.30.14.US].)</p> <p>Verify that, when one or more turbidity measurements in any day exceed 1 NTU, the subpart H public water system serving more than 1,000 people collects this coliform sample within 24 h of the first exceedance, unless the State determines that the system, for logistical reasons outside the system's control, cannot have the sample analyzed within 30 h of collection and identifies an alternative sample collection schedule.</p> <p>Verify that sample results from coliform monitoring are included in determining whether the coliform treatment technique trigger in 40 CFR 141.859 (see Appendix 13-6b) has been exceeded.</p> <p>(NOTE: Systems may not reduce monitoring, except for noncommunity water systems using only ground water (and not ground water under the direct influence of surface water) serving 1,000 or fewer people in some months and more than 1,000.)</p> <p>(NOTE: This checklist item is applicable beginning 1 April 2016 with systems required to begin regular monitoring at the same frequency as the system-specific frequency required on 31 March 2016.)</p> <p>Verify that, if a sample is total coliform-positive, the system collects a set of repeat samples within 24 h of being notified of the positive result and the system collects no fewer than three repeat samples for each total coliform-positive sample found.</p> <p>Verify that the system collects all repeat samples on the same day, except that the State may allow a system with a single service connection to collect the required set of repeat samples over a 3-day period or to collect a larger volume repeat sample(s) in one or more sample containers of any size, as long as the total volume collected is at least 300 ml.</p> <p>Verify that the system collects an additional set of repeat samples if one or more repeat samples in the current set of repeat samples is total coliform-positive within 24-h of being notified of the positive result.</p> <p>Verify that the system continues to collect additional sets of repeat samples until either total coliforms are not detected in one complete set of repeat samples or the system determines that a coliform treatment technique trigger specified in 40 CFR 141.859(a) (see Appendix 13-6b) has been exceeded as a result of a repeat sample being total coliform-positive and notifies the State.</p> <p>(NOTE: If a trigger identified in 40 CFR 141.859 (see Appendix 13-6b) is exceeded as a result of a routine sample being total coliform-positive, systems are required to conduct only one round of repeat monitoring for each total coliform-positive routine sample.)</p>

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	<p>(NOTE: After a system collects a routine sample and before it learns the results of the analysis of that sample, if it collects another routine sample(s) from within five adjacent service connections of the initial sample, and the initial sample, after analysis, is found to contain total coliforms, then the system may count the subsequent sample(s) as a repeat sample instead of as a routine sample.)</p> <p>Verify that results of all routine and repeat samples not invalidated by the State are used to determine whether a coliform treatment technique trigger in 40 CFR 141.859 (see Appendix 13-6b) has been triggered.</p> <p>Verify that, if any routine or repeat sample is total coliform-positive, the system analyzes that total coliform-positive culture medium to determine if E. coli is present.</p> <p>Verify that, if E. coli are present, the system notifies the State by the end of the day when the system is notified of the test result, unless the system is notified of the result after the State office is closed and the State does not have either an after-hours phone line or an alternative notification procedure, in which case the system must notify the State before the end of the next business day.</p> <p>Verify that, once all required monitoring for a calendar month has been completed the system determines whether any coliform treatment techniques specified in 40 CFR 141.859 (see Appendix 13-6b) have been exceeded.</p> <p>Verify that if any treatment technique has been exceeded, the system completes the assessments required by 141.859 (see Appendix 13-6b).</p> <p>Verify that the system corrects sanitary defects found through either Level 1 or Level 2 assessments.</p> <p>(NOTE: For corrections not completed by the time of submission of the assessment form, the system must complete the corrective action(s) in compliance with a timetable approved by the State.)</p> <p>Verify that all season Subpart H public water systems serving 1,000 or fewer people start-up procedure, which may include a requirement for start-up sampling prior to serving water to the public.</p> <p>(NOTE: The State may exempt any seasonal system from some or all of the requirements for seasonal systems if the entire distribution system remains pressurized during the entire period that the system is not operating.)</p> <p>Verify that Subpart H systems serving 1,000 or fewer people (including consecutive systems) monitor monthly and do not reduce monitoring.</p>

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	<p>Verify that Subpart H systems serving 1,000 or fewer people which do not practice filtration in compliance with subparts H, P, T, and W collect at least one total coliform sample near the first service connection each day the turbidity level of the source water exceeds 1 NTU.</p> <p>(NOTE: 40 CFR 141, Subpart H includes 40 CFR 141.70 through 141.76 [see checklist items WQ.15.2.US, WQ.20.1.US through WQ.20.8.US, WQ.20.12.US, and WQ.20.15.US]. 40 CFR 141, Subpart P includes 40 CFR 141.170 through 141.175 [see checklist items WQ.20.9.US through WQ.20.11.US, and WQ.30.5.US]. 40 CFR 141, Subpart T includes 40 CFR 141.500 through 141.571 [see checklist items WQ.10.5.US, WQ.15.4.US, WQ.20.13.US through WQ.20.15.US, WQ.30.11.US, WQ.30.12.US, WQ.35.5.US, and WQ.76.3.US]. 40 CFR 141, Subpart W includes 40 CFR 141.700 through 141.723 [see checklist items WQ.15.5.US through WQ.15.10.US, WQ.20.17.US through WQ.20.26.US, WQ.30.13.US, and WQ.30.14.US].)</p> <p>Verify that, when one or more turbidity measurements in any day exceeds 1 NTU, the system collects this coliform sample within 24 h of the first exceedance, unless the State determines that the system, for logistical reasons outside the system's control, cannot have the sample analyzed within 30 h of collection and identifies an alternative sample collection schedule.</p> <p>Verify that sample results from all coliform monitoring are included in determining whether the coliform treatment technique trigger in 40 CFR 141.859 (see Appendix 13-6b) has been exceeded.</p> <p>(NOTE: This checklist item applies to public water systems [PWSs]. See the definition of Public Water System or the NOTE in WQ.10.1.US.)</p>

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<p><b>PUBLIC WATER SYSTEMS</b></p> <p><b>WQ.20</b>  <b>Disinfection and Filtration</b></p> <p><b>WQ.20.1.US.</b> Public water systems that use surface water sources or groundwater sources under direct influence of a surface water source must provide filtration as a treatment technique for microbiological contaminants unless certain criteria are met (40 CFR 141.71(a) and 141.71(b)) <b>[Revised January 1999; Reviewed March 2000; Revised April 2001; Revised April 2013]</b>.</p>	<p>(NOTE: Public water systems that use a groundwater source under the direct influence of surface water are not required to meet these conditions to avoid filtration until 18 mo after the state has determined that the system is under the direct influence of surface water.)</p> <p>Verify that filtration of drinking water is performed unless all of the following conditions for surface water are met:</p> <ul style="list-style-type: none"> <li>– the fecal coliform concentration is less than or equal to 20/100 mL or total coliform concentration is equal to or less than 100/100 mL in representative samples of the source water immediately prior to the first or only point of disinfectant application in at least 90 percent of the measurements made in the last 6 mo that the system served water to the public on an ongoing basis</li> <li>– the turbidity level does not exceed 5 NTU in representative samples of the source water immediately prior to the first or only point of disinfectant application, unless state determines otherwise and there has not been more than two events in the past 12 mo that the system served water to the public or more than five events in the past 120 mo that the system served water to the public.</li> </ul> <p>Verify that filtration of drinking water is done unless all the following site-specific conditions are met:</p> <ul style="list-style-type: none"> <li>– meets the requirements of 40 CFR 141.72(a)(1) (see checklist item WQ.20.3.US.) for disinfection treatment of <i>Giardia lamblia</i> for at least 11 of the 12 previous mo</li> <li>– meets 40 CFR 141.72(a)(2) through 141.72(a)(4) (see checklist item WQ.20.3.US.) at all times</li> <li>– maintains a watershed control program for <i>Giardia lamblia</i> in the source water, including: <ul style="list-style-type: none"> <li>– identification of watershed characteristics</li> <li>– monitoring occurrence of activities that have adverse effects</li> <li>– demonstrates through ownership and/or written agreements that the control of adverse effects of human activities are regulated</li> <li>– submits annual reports to the state</li> <li>– subject to annual onsite inspection by the state or a party approved by the state, to assess watershed control program</li> </ul> </li> <li>– has not been identified as a source of waterborne disease or threat or has been modified sufficiently to prevent recurrence</li> <li>– complies with MCL for total coliforms as defined in 40 CFR 141.63(a) and 141.63(b) and the MCL for E. coli in 141.63(c) for at least 11 of the 12</li> </ul>

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<p><b>WQ.20.2.US.</b> Systems that do not meet the criteria necessary for exclusion from filtration for public water systems that use a surface water source or a groundwater source under the direct influence of surface water must provide filtration that meets specific standards by 29 June 1993, or within 18 mo after being required to provide filtration, whichever is later (40 CFR 141.73, 141.74(c)(1), through 141.74(c)(3)) <b>[Revised January 1999; Reviewed March 2000; Revised April 2001; Revised April 2013; Citation Revised July 2018].</b></p>	<p>previous months that the system served water to the public, on an ongoing basis, unless the State determines that failure to meet this requirement was not caused by a deficiency in treatment of the source water (see Appendix 13-1)</p> <ul style="list-style-type: none"> <li>– complies with requirements for trihalomethanes as listed on 40 CFR 141.12 and 141.30 until 31 December 2001 (see Appendix 13-1) and thereafter complies with the requirements for total trihalomethanes, haloacetic acids (five), bromate, chlorite, chlorine, chloramine, and chlorine dioxide (see Appendix 13-9).</li> </ul> <p>(NOTE: This checklist item applies to public water systems [PWSs]. See the definition of Public Water System or the NOTE in WQ.10.1.US.)</p> <p>Verify that, if conventional or direct filtration is used, the following are met:</p> <ul style="list-style-type: none"> <li>– a turbidity level of 0.5 NTU or less in 95 percent of measurements taken each month</li> <li>– the turbidity level of representative samples of filtered water at no time exceeds 5 NTU</li> <li>– systems serving at least 10,000 people meet the turbidity requirements in 40 CFR 141.173(a) starting 1 January 2002.</li> </ul> <p>Verify that, if slow sand filtration is used, the following are met:</p> <ul style="list-style-type: none"> <li>– the turbidity level of representative samples of a system’s filtered water is 1 NTU or less in 95 percent of the monthly measurements</li> <li>– the turbidity level of representative samples of a system’s filtered water at no time exceeds 5 NTU.</li> </ul> <p>Verify that, if diatomaceous earth filtration is used, the following are met:</p> <ul style="list-style-type: none"> <li>– the turbidity level of representative samples of a system’s filtered water is less than or equal to 1 NTU in at least 95 percent of the measurements taken each month</li> <li>– the turbidity level of representative samples of a system’s filtered water at no time exceeds 5 NTU.</li> </ul> <p>Verify that, if other filtration technologies are used, they have been approved by the state and beginning 1 January 2002, systems serving at least 10,000 people meet the requirements for other filtration technologies in 40 CFR 141.173(b).</p> <p>Verify that, starting 29 June 1993 or when filtration is installed, turbidity measurements are performed on representative samples of the system’s filtered water every 4 h that the system serves water to the public.</p> <p>Verify that, as of 29 June 1993, or whenever filtration is installed, the residual disinfectant concentration of water entering the distribution system is monitored continuously and the lowest value recorded each day.</p>

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<p><b>WQ.20.3.US.</b> Public water systems that use a surface water source or a groundwater source under direct influence of a surface water source that is not required to provide filtration are required to provide disinfection treatment by 30 December 1991 (40 CFR</p>	<p>Verify that, if there is a failure in the continuous monitoring equipment, grab sampling is done every 4 h.</p> <p>(NOTE: Grab sampling can be done for no more than 5 working days following the failure of the continuous monitoring system.)</p> <p>(NOTE: Systems serving 3300 or fewer person can use grab sampling instead of continuous monitoring if the following daily frequencies are met:</p> <table> <tr> <th>System size by population</th><th>Samples/day</th></tr> <tr> <td>1 - 500</td><td>1</td></tr> <tr> <td>501 - 1000</td><td>2</td></tr> <tr> <td>1001 - 2500</td><td>3</td></tr> <tr> <td>2501 - 3300</td><td>4.)</td></tr> </table> <p>Verify that, any time the residual disinfectant concentration falls below 0.2 mg/L in a system using grab sampling, the system takes a grab sample every 4 h until the residual disinfectant concentration is equal to or greater than 0.2 mg/L.</p> <p>Verify that, until 31 March 2016, the residual disinfectant concentration is measured at least at the same points in the distribution system and at the same time as total coliforms are sampled under 40 CFR 141.21 (see checklist items WQ.10.2.US, WQ.15.1.US through WQ.15.3.US for Public Water Systems; WQ.40.9.US for Community Water Systems; and WQ.65.1.US for Noncommunity Water Systems).</p> <p>Verify that, beginning 1 April 2016, the residual disinfectant concentration is measured at least at the same points in the distribution system and at the same time as total coliforms under 40 CFR 141.854 through 141.858.</p> <p>(NOTE: This checklist item applies to public water systems [PWSs]. See the definition of Public Water System or the NOTE in WQ.10.1.US.)</p> <p>Verify that the following requirements for disinfection are met:</p> <ul style="list-style-type: none"> <li>– it ensures 99.9 percent (3-log) inactivation of <i>Giardia lamblia</i> cysts every day except for once per month by meeting the required CT applicable to the system’s particular water quality parameters as outlined in 40 CFR 141.74</li> <li>– it ensures 99.99 percent (4-log) inactivation of virus every day except for once per month by meeting the required CT applicable to the systems particular water quality parameters as outlined in 40 CFR 141.74</li> <li>– the CT values are calculated daily as specified in 40 CFR 141.74(b)(3)</li> <li>– throughout the disinfection system there is either:</li> </ul>	System size by population	Samples/day	1 - 500	1	501 - 1000	2	1001 - 2500	3	2501 - 3300	4.)
System size by population	Samples/day										
1 - 500	1										
501 - 1000	2										
1001 - 2500	3										
2501 - 3300	4.)										

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<p>141.72(a)) [Reviewed March 2000].</p> <p><b>WQ.20.4.US.</b> Public water systems that use a surface water source or a groundwater source under direct influence of a surface water source that provide filtration or that are required by the state to install filtration must meet specific disinfection requirements by 29 June 1993 or within 18 mo of being required to install filtration (40 CFR 141.72(b) and 141.73) [Reviewed March 2000].</p> <p><b>WQ.20.5.US.</b> Public water systems that use a surface water source and do not provide filtration are required to report specific information monthly to the state beginning 31 December 1990 (unless the state has determined that filtration is not required) until filtration is in place (40 CFR 141.75(a))</p>	<ul style="list-style-type: none"> <li>– automatic startup and alarm for ensuring continuous disinfection application while water is delivered through the distribution system</li> <li>– automatic shutoff when there is less than 0.2 mg/L residual disinfectant</li> <li>– the residual disinfectant concentration in water entering distribution system is not less than 0.2 mg/L for more than 4 h</li> <li>– the residual disinfectant concentration, measured as total chlorine, combined chlorine, or chlorine dioxide is not undetectable in more than 5 percent of samples each month for more than 2 consecutive months.</li> </ul> <p>(NOTE: Water in a distribution system with a heterotrophic bacteria concentration less than or equal to 500 mL, measured as heterotrophic plate count (HPC) is deemed to have a detectable disinfectant residual.)</p> <p>(NOTE: This checklist item applies to public water systems [PWSs]. See the definition of Public Water System or the NOTE in WQ.10.1.US.)</p> <p>Determine if the filtration is provided for drinking water.</p> <p>Verify that the following requirements for disinfection are provided:</p> <ul style="list-style-type: none"> <li>– it ensures 99.9 percent (3-log) inactivation of <i>Giardia lamblia</i> cysts</li> <li>– it ensures 99.99 percent (4-log) inactivation of viruses</li> <li>– the residual disinfectant concentration in water entering distribution system is not less than 0.2 mg/L for more than 4 h.</li> <li>– the residual disinfectant concentration throughout the distribution system is not undetectable in more than 5 percent of samples each month for any 2 consecutive mo the system serves water to the public</li> <li>– analytical methods as specified in 40 CFR 141.74 are used to demonstrate compliance with the requirements for filtration and disinfection.</li> </ul> <p>(NOTE: Systems that filter are given an inactivation credit dependent on the type of filtration used.)</p> <p>(NOTE: This checklist item applies to public water systems [PWSs]. See the definition of Public Water System or the NOTE in WQ.10.1.US.)</p> <p>Verify that the following listed information is reported to the state at the indicated times:</p> <ul style="list-style-type: none"> <li>– source water quality information within 10 days after the end of each month the system serves water to the public</li> <li>– disinfection information within 10 days after the end of each month the system serves water to the public</li> <li>– a report summarizing compliance with all watershed control programs no later than 10 days after the end of each Federal FY</li> <li>– a report on the onsite inspection conducted during that year, unless it was conducted by the state, no later than 10 days after the end of the Federal FY</li> </ul>

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<p><b>[Reviewed March 2000; Revised July 2000].</b></p> <p><b>WQ.20.6.US.</b> Public water systems that use a groundwater source under the direct influence of surface water and do not provide filtration treatment must report specific information to the state monthly starting 31 December 1990, or 6 mo after the state determines that the groundwater source is under the direct influence of surface water, whichever is later (40 CFR 141.75(a)) <b>[Reviewed March 2000; Revised July 2000].</b></p> <p><b>WQ.20.7.US.</b> Public water systems that use a surface water source or a groundwater source under the direct influence of surface water that provide filtration</p>	<ul style="list-style-type: none"> <li>– the occurrence of a waterborne disease outbreak potentially attributable to that water system as soon as possible, but no later than by the end of the next business day</li> <li>– when turbidity exceeds 5 NTU, consult with the primary agency as soon as practical, but no later than 24 h after the exceedance is known</li> <li>– any time the residual falls below 0.2 mg/L in the water entering the distribution system as soon as possible, but no later than by the end of the next business day.</li> </ul> <p>(NOTE: See the complete text of 40 CFR 141.75(a) for more details on how this information is to be reported.)</p> <p>(NOTE: This checklist item applies to public water systems [PWSs]. See the definition of Public Water System or the NOTE in WQ.10.1.US.)</p> <p>Verify that the following listed information is reported to the state at the indicated times:</p> <ul style="list-style-type: none"> <li>– source water quality information within 10 days after the end of each month the system serves water to the public</li> <li>– disinfection information within 10 days after the end of each month the system serves water to the public</li> <li>– a report summarizing compliance with all watershed control programs no later than 10 days after the end of each Federal FY</li> <li>– a report on the onsite inspection conducted during that year, unless it was conducted by the state, no later than 10 days after the end of the Federal FY</li> <li>– the occurrence of a waterborne disease outbreak potentially attributable to that water system as soon as possible, but no later than by the end of the next business day</li> <li>– when turbidity exceeds 5 NTU, consult with the primary agency as soon as practical, but no later than 24 h after the exceedance is known</li> <li>– any time the residual falls below 0.2 mg/L in the water entering the distribution system as soon as possible, but no later than by the end of the next business day.</li> </ul> <p>(NOTE: See the complete text of 40 CFR 141.75(a) for more details on how this information is to be reported.)</p> <p>(NOTE: This checklist item applies to public water systems [PWSs]. See the definition of Public Water System or the NOTE in WQ.10.1.US.)</p> <p>Verify that by 29 June 1993, or whenever filtration is installed, the following information is provided to the state in the indicated time frame:</p> <ul style="list-style-type: none"> <li>– turbidity measurements within 10 days after the end of each month the system serves water to the public</li> </ul>

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<p>must report specific information monthly to the state starting 29 June 1993 or when filtration is installed, whichever is later (40 CFR 141.75(b)) <b>[Reviewed March 2000; Revised July 2000]</b>.</p> <p><b>WQ.20.8.US.</b> USEPA has set certain standards for analytic procedures that must be used and followed to demonstrate compliance with disinfection and filtration requirements (40 CFR 141.74) <b>[Reviewed March 2000]</b>.</p> <p><b>WQ.20.9.US.</b> As of 1 January 2002, Subpart H systems that provide filtration serving at least 10,000 people must provide treatment that complies with certain treatment technique requirements (40 CFR 141.170(a), 141.171, 141.173, and 141.174) <b>[Added January 1999; Revised March 2000; Revised April 2001]</b>.</p>	<ul style="list-style-type: none"> <li>– disinfection information within 10 days after the end of each month the system serves water to the public</li> <li>– notice of an occurrence of a waterborne disease outbreak, as soon as possible, but no later than by the end of the next business day</li> <li>– when the turbidity exceeds 5 NTU, consult with the primary agency as soon as practical, but no later than 24 h after the exceedance is known</li> <li>– any time the residual falls below 0.2 mg/L in the water entering the distribution system, as soon as possible, but no later than by the end of the next business day.</li> </ul> <p>(NOTE: See the complete text of 40 CFR 141.75(b) for more details on how this information is to be reported.)</p> <p>(NOTE: This checklist item applies to public water systems [PWSs]. See the definition of Public Water System or the NOTE in WQ.10.1.US.)</p> <p>Verify that analytic methods as specified in 40 CFR 141.74 are used to demonstrate compliance with the requirements for filtration and disinfection.</p> <p>(NOTE: This checklist item applies to public water systems [PWSs]. See the definition of Public Water System or the NOTE in WQ.10.1.US.)</p> <p>(NOTE: These requirements for filtration and disinfection are in addition to criteria under which filtration and disinfection are required under 40 CFR 141.70 through 141.75.)</p> <p>Verify that each Subpart H system serving at least 10,000 people provides treatment of its source water by installing and properly operating water treatment processes that reliably achieve:</p> <ul style="list-style-type: none"> <li>– at least 99 percent (2-log) removal of <i>Cryptosporidium</i> between a point where the raw water is not subject to recontamination by surface water runoff and a point downstream before or at the first customer for filtered systems, or <i>Cryptosporidium</i> control under the watershed control plan for unfiltered systems</li> <li>– compliance with the profiling and benchmark requirements under 40 CFR 141.172.</li> </ul> <p>Verify that filtration is provided that meets with one of the following by 31 December 2001:</p> <ul style="list-style-type: none"> <li>– conventional filtration or direct filtration that results in:</li> </ul>

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<p><b>WQ.20.10.US.</b> Public water system may not begin construction of uncovered finished water storage facilities beginning 16 February 1999 (40 CFR 141.170(a) and 141.170(c)) [Added January 1999; Reviewed March 2000].</p> <p><b>WQ.20.11.US.</b> As of 1 January 2002, Subpart H systems serving at least 10,000 people providing</p>	<ul style="list-style-type: none"> <li>– the turbidity level of representative samples of a system’s filtered water is less than or equal to 0.3 NTU in at least 95 percent of the measurement taken each month</li> <li>– the turbidity level of representative samples of the system’s filtered water at no time exceeds 1 NTU</li> <li>– alternate technologies approved by the state.</li> </ul> <p>Verify that the systems monitor individual filters continuously and record results every 15 min.</p> <p>(NOTE: When using conventional filtration or direct filtration, a system that uses lime softening may acidify representative samples prior to analysis using a protocol approved by a state.)</p> <p>(NOTE: In addition to the requirements of 40 CFR 141.71, a public water system that does not provide filtration must maintain a watershed control program under 40 CFR 141.71(b)(2), which does the following to minimize the potential for contamination by <i>Cryptosporidium</i> oocysts in the source water:</p> <ul style="list-style-type: none"> <li>– identify watershed characteristics and activities which may have an adverse effect on source water quality</li> <li>– monitor the occurrence of activities that may have an adverse effect on source water quality.)</li> </ul> <p>(NOTE: The state must determine whether the watershed control program is adequate to limit potential contamination by <i>Cryptosporidium</i> oocysts. The adequacy of the program must be based on the comprehensiveness of the watershed review; the effectiveness of the system's program to monitor and control detrimental activities occurring in the watershed; and the extent to which the water system has maximized land ownership and/or controlled land use within the watershed.)</p> <p>(NOTE: This checklist item applies to public water systems [PWSs]. See the definition of Public Water System or the NOTE in WQ.10.1.US.)</p> <p>Verify that each Subpart H system serving at least 10,000 people do not begin construction of uncovered finished water storage facilities beginning 16 February 1999.</p> <p>(NOTE: This checklist item applies to public water systems [PWSs]. See the definition of Public Water System or the NOTE in WQ.10.1.US.)</p> <p>(NOTE: These requirements for filtration and disinfection are in addition to criteria under which filtration and disinfection are required under 40 CFR 141.70 through 141.75.)</p>

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<p>disinfection must perform disinfection profiling and benchmarking (40 CFR 141.170(a) and 141.172) [Added January 1999; Revised March 2000].</p> <p><b>WQ.20.12.US.</b> As of 8 December 2003, all subpart H systems that employ conventional filtration or</p>	<p>Verify that the public water systems determines its TTHM annual average using the procedure in 40 CFR 141.172(a)(1) and its HAA5 annual average using the procedure in 40 CFR 141.172 (a)(2).</p> <p>(NOTE: The annual average is the arithmetic average of the quarterly averages of four consecutive quarters of monitoring.)</p> <p>(NOTE: The system may request that the state approve a more representative annual data set for the purpose of determining applicability of the requirements of this section. The state may require that a system use a more representative annual data set for the purpose of determining applicability of the requirements of this section.)</p> <p>Verify that the system submits data to the state in accordance with the determination procedures used.</p> <p>Verify that any system having either a TTHM annual average greater than or equal to 0.064 mg/L or an HAA5 annual average greater than or equal to 0.048 mg/L during the required period develops a disinfection profile of its disinfection practice for a period of up to 3 yr.</p> <p>(NOTE: The details of how a disinfection profile is developed can be found in 40 CFR 141.172(b).)</p> <p>Verify that any system required to develop a disinfection profile that decides to make a significant change to its disinfection practice consults with the state prior to making such a change.</p> <p>(NOTE: Significant changes to disinfection practice are:</p> <ul style="list-style-type: none"> <li>– changes to the point of disinfection</li> <li>– changes to the disinfectant(s) used in the treatment plant</li> <li>– changes to the disinfection process</li> <li>– any other modification identified by the state.</li> </ul> <p>Verify that any system modifying its disinfection practice calculates its disinfection benchmark using the procedure specified 40 CFR 141.172(c)(2)(i) through (ii).</p> <p>Verify that systems using either chloramines or ozone for primary disinfection calculate the disinfection benchmark for viruses using a method approved by the state.</p> <p>(NOTE: This checklist item applies to public water systems [PWSs]. See the definition of Public Water System or the NOTE in WQ.10.1.US.)</p> <p>Verify that subpart H systems notify the State in writing by 8 December 2003 if the system recycles spent filter backwash water, thickener supernatant, or liquids from dewatering processes.</p>

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<p>direct filtration treatment and that recycle spent filter backwash water, thickener supernatant, or liquids from dewatering processes must meet specific requirements (40 CFR 141.76) [Added July 2001].</p> <p><b>WQ.20.13.US.</b> Subpart H public water systems which do not provide filtration are required to meet specific requirements (40 CFR 141.501, 141.502, and</p>	<p>Verify that the notification includes, at a minimum:</p> <ul style="list-style-type: none"> <li>– a plant schematic showing the origin of all flows which are recycled (including, but not limited to, spent filter backwash water, thickener supernatant, and liquids from dewatering processes), the hydraulic conveyance used to transport them, and the location where they are re-introduced back into the treatment plant.</li> <li>– typical recycle flow in gallons per minute (gpm), the highest observed plant flow experienced in the previous year (gpm), design flow for the treatment plant (gpm), and State-approved operating capacity for the plant where the State has made such determinations.</li> </ul> <p>Verify that any system that recycles spent filter backwash water, thickener supernatant, or liquids from dewatering processes must return these flows through the processes of a system's existing conventional or direct filtration system or at an alternate location approved by the State by 8 June 2004.</p> <p>(NOTE: If capital improvements are required to modify the recycle location to meet this requirement, all capital improvements must be completed no later than 8 June 2006.)</p> <p>Verify that the system collects and retains on file the following recycle flow information for review and evaluation by the State beginning 8 June 2004:</p> <ul style="list-style-type: none"> <li>– copy of the recycle notification and information submitted to the State</li> <li>– list of all recycle flows and the frequency with which they are returned</li> <li>– average and maximum backwash flow rate through the filters and the average and maximum duration of the filter backwash process in minutes</li> <li>– typical filter run length and a written summary of how filter run length is determined</li> <li>– the type of treatment provided for the recycle flow</li> <li>– data on the physical dimensions of the equalization and/or treatment units, typical and maximum hydraulic loading rates, type of treatment chemicals used and average dose and frequency of use, and frequency at which solids are removed, if applicable.</li> </ul> <p>(NOTE: This checklist item applies to public water systems [PWSs]. See the definition of Public Water System or the NOTE in WQ.10.1.US.)</p> <p>(NOTE: These requirements to public water systems that use surface water or GWUDI as a source and serve fewer than 10,000 persons. In this case, these requirements apply specifically to Subpart H systems)</p> <p>Verify that subpart H systems which do not provide filtration continue to comply with all of the filtration avoidance criteria in 40 CFR 141.71, as well as the additional watershed control requirements outlined in this requirement.</p>

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<p>141.520 through 141.522) [Added April 2002].</p> <p><b>WQ.20.14.US.</b> Subpart H water systems serving fewer than 10,000 persons which are required to develop a disinfection profile are required to develop a disinfection benchmark if deciding to make a significant change (40 CFR 141.501, 141.502, and 141.540 through 141.546) [Added April 2002].</p>	<p>Verify that subpart H systems which do not provide filtration take any additional steps necessary to minimize the potential for contamination by <i>Cryptosporidium</i> oocysts in the source water.</p> <p>Verify that the system's watershed control program does the following for <i>Cryptosporidium</i>:</p> <ul style="list-style-type: none"> <li>– identifies watershed characteristics and activities which may have an adverse effect on source water quality</li> <li>– monitors the occurrence of activities which may have an adverse effect on source water quality.</li> </ul> <p>(NOTE: During an onsite inspection, the State must determine whether the watershed control program is adequate to limit potential contamination by <i>Cryptosporidium</i> oocysts. The adequacy of the program must be based on the comprehensiveness of the watershed review; the effectiveness of the program to monitor and control detrimental activities occurring in the watershed; and the extent to which the system has maximized land ownership and/or controlled land use within the watershed.)</p> <p>(NOTE: This checklist item applies to public water systems [PWSs]. See the definition of Public Water System or the NOTE in WQ.10.1.US.)</p> <p>(NOTE: These requirements to public water systems that use surface water or GWUDI as a source and serves fewer than 10,000 persons. In this case, these requirements apply specifically to Subpart H systems)</p> <p>Verify that subpart H systems required to develop a disinfection profile also develop a disinfection benchmark if significant changes are made to the disinfection practice.</p> <p>(NOTE: The system must consult with the State for approval prior to implementing a significant disinfection practice change. Significant changes to disinfection practice include:</p> <ul style="list-style-type: none"> <li>– changes to the point of disinfection</li> <li>– changes to the disinfectant(s) used in the treatment plant</li> <li>– changes to the disinfection process</li> <li>– any other modification identified by the State.)</li> </ul> <p>Verify that the following information is submitted to the State as part of the consultation and approval process:</p> <ul style="list-style-type: none"> <li>– a description of the proposed change</li> <li>– the disinfection profile for <i>Giardia lamblia</i> (and, if necessary, viruses) and disinfection benchmark</li> <li>– an analysis of how the proposed change will affect the current levels of disinfection</li> <li>– any additional information requested by the State.</li> </ul>

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<p><b>WQ.20.15.US.</b> As of 1 January 2005, all subpart H systems which serve populations fewer than 10,000 that are required to filter, and utilize filtration other than slow sand filtration or diatomaceous earth filtration are required to meet specific combined filter effluent turbidity requirements (40 CFR 141.73(a)(4), 141.501, 141.502, and 141.550 through 141.553) [Added April 2002; Revised October 2004].</p>	<p>Verify that if the system is making a significant change to its disinfection practice, it calculates a disinfection benchmark using the following procedure:</p> <ul style="list-style-type: none"> <li>– Step 1: Using the data the system collected to develop the Disinfection Profile, determine the average Giardia lamblia inactivation for each calendar month by dividing the sum of all Giardia lamblia inactivations for that month by the number of values calculated for that month.</li> <li>– Step 2: Determine the lowest monthly average value out of the twelve values. This value becomes the disinfection benchmark.</li> </ul> <p>Verify that if the system uses chloramines, ozone or chlorine dioxide for primary disinfection, the system calculates the disinfection benchmark from the data collected for viruses to develop the disinfection profile in addition to the Giardia lamblia disinfection benchmark.</p> <p>(NOTE: This viral benchmark must be calculated in the same manner used to calculate the Giardia lamblia disinfection benchmark.).</p> <p>(NOTE: This checklist item applies to public water systems [PWSs]. See the definition of Public Water System or the NOTE in WQ.10.1.US.)</p> <p>(NOTE: These requirements to public water systems that use surface water or GWUDI as a source and serves fewer than 10,000 persons. In this case, these requirements apply specifically to Subpart H systems)</p> <p>Verify that all subpart H systems which serve populations fewer than 10,000, filter, and utilize filtration other than slow sand filtration or diatomaceous earth filtration and meet the combined filter effluent turbidity requirements outlined in this checklist item.</p> <p>(NOTE: If the system uses slow sand or diatomaceous earth filtration, it is not required to meet the combined filter effluent turbidity limits, but the system must continue to meet the combined filter effluent turbidity limits in 40 CFR 141.73 (see checklist item WQ.20.2.US).).</p> <p>Verify that the system meets the following two strengthened combined filter effluent turbidity limits:</p> <ul style="list-style-type: none"> <li>– the first combined filter effluent turbidity limit is a “95th percentile” turbidity limit that the system must meet in at least 95 percent of the turbidity measurements taken each month: <ul style="list-style-type: none"> <li>– if the system consists of Conventional Filtration or Direct Filtration, the 95th percentile turbidity value is 0.3 NTU</li> <li>– for all other alternative filtration, the 95th percentile turbidity value is a value determined by the State (not to exceed 1 NTU) based on the demonstration outlined in 40 CFR 141.552 (see checklist item WQ.20.15.US).</li> </ul> </li> </ul>

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<p><b>WQ.20.16.US.</b> Public water systems should meet maximum residual disinfectant level goals (MRDLG) and MCLGs for disinfectants (MP) [Added July 2005; Revised April 2006; Revised April 2009].</p>	<ul style="list-style-type: none"> <li>– the second combined filter effluent turbidity limit is a “maximum” turbidity limit which the system may at no time exceed during the month: <ul style="list-style-type: none"> <li>– if the system consists of Conventional Filtration or Direct Filtration, the maximum turbidity value is 1 NTU</li> <li>– for all other alternative filtration, the maximum turbidity value is a value determined by the State (not to exceed 5 NTU) based on the demonstration outlined in 40 CFR 141.552 (see checklist item WQ.20.15.US).</li> </ul> </li> </ul> <p>(NOTE: Measurements must continue to be taken as described in 40 CFR 141.74(a) and 141.74(c). Monthly reporting must be completed according to 40 CFR 141.570.)</p> <p>Verify that if the system consists of alternative filtration (filtration other than slow sand filtration, diatomaceous earth filtration, conventional filtration, or direct filtration) a demonstration is conducted for the State using pilot plant studies or other means, that the system's filtration, in combination with disinfection treatment, consistently achieves:</p> <ul style="list-style-type: none"> <li>– 99 percent removal of <i>Cryptosporidium</i> oocysts;</li> <li>– 99.9 percent removal and/or inactivation of <i>Giardia lamblia</i> cysts; and</li> <li>– 99.99 percent removal and/or inactivation of viruses.</li> </ul> <p>(NOTE: if the system practices lime softening, the system may acidify representative combined filter effluent turbidity samples prior to analysis using a protocol approved by the State.)</p> <p>(NOTE: This checklist item applies to public water systems [PWSs]. See the definition of Public Water System or the NOTE in WQ.10.1.US.)</p> <p>Verify that public water systems meet the following MRDLGs for disinfectants:</p> <ul style="list-style-type: none"> <li>– Chlorine, 4 (as Cl<sub>2</sub>) mg/L</li> <li>– Chloramines, 4 (as Cl<sub>2</sub>) mg/L</li> <li>– Chlorine dioxide, 0.8 (as ClO<sub>2</sub>) mg/L.</li> </ul> <p>Verify that the following MCLGs are met for the listed disinfection byproducts:</p> <ul style="list-style-type: none"> <li>– Bromodichloromethane, MCLG of 0 mg/L</li> <li>– Bromoform, MCLG of 0 mg/L</li> <li>– Bromate, MCLG of 0 mg/L</li> <li>– Chlorite MCLG of 0.8 mg/L</li> <li>– Chloroform MCLG of 0.07 mg/L</li> <li>– Dibromochloromethane, MCLG of 0.06 mg/L</li> <li>– Dichloroacetic acid, MCLG of 0 mg/L</li> <li>– Monochloroacetic acid, MCLG 0.07 mg/L</li> <li>– Trichloroacetic acid, MCLG of 0.2 mg/L.</li> </ul>

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<p><b>WQ.20.17.US.</b> Public water systems which are required to conduct an initial and a second round of source water monitoring for each plant that treats a surface water or GWUDI source must develop disinfection profiles and calculate disinfection benchmarks (40 CFR 141.708 and 141.709) [Added April 2006].</p>	<p>(NOTE: This checklist item is based on 40 CFR 141.53 and 141.54. According to the definitions of MRDLG and MCLG in 40 CFR 141.2, MRDLGs or MCLGs are “nonenforceable health goals.”)</p> <p>(NOTE: See checklist item WQ.15.5.US. for information on applicability and nonapplicability of these requirements.)</p> <p>Verify that, following the completion of initial source water monitoring, a system that plans to make a significant change to its disinfection practice, develops disinfection profiles and calculates disinfection benchmarks for <i>Giardia lamblia</i> and viruses.</p> <p>Verify that prior to changing the disinfection practice, the system notifies the State and includes in this notice the following information:</p> <ul style="list-style-type: none"> <li>– a completed disinfection profile and disinfection benchmark for <i>Giardia lamblia</i> and viruses</li> <li>– a description of the proposed change in disinfection practice.</li> <li>– an analysis of how the proposed change will affect the current level of disinfection.</li> </ul> <p>(NOTE: Significant changes to disinfection practice are defined as follows:</p> <ul style="list-style-type: none"> <li>– changes to the point of disinfection</li> <li>– changes to the disinfectant(s) used in the treatment plant</li> <li>– changes to the disinfection process</li> <li>– any other modification identified by the State as a significant change to disinfection practice.)</li> </ul> <p>Verify that systems monitor at least weekly for a period of 12 consecutive months to determine the total log inactivation for <i>Giardia lamblia</i> and viruses.</p> <p>Verify that, if systems monitor more frequently, the monitoring frequency is evenly spaced.</p> <p>Verify that systems that operate for fewer than 12 mo per year monitor weekly during the period of operation.</p> <p>Verify that systems determine log inactivation for <i>Giardia lamblia</i> through the entire plant, based on CT99.9 values in Tables 1.1 through 1.6, 2.1 and 3.1 of 40 CFR 141.74(b) as applicable.</p> <p>Verify that systems determine log inactivation for viruses through the entire treatment plant based on a protocol approved by the State.</p> <p>Verify that systems with a single point of disinfectant application prior to the entrance to the distribution system conduct the following monitoring:</p>

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	<ul style="list-style-type: none"> <li>– for systems using a disinfectant other than UV, the temperature of the disinfected water must be measured at each residual disinfectant concentration sampling point during peak hourly flow or at an alternative location approved by the State</li> <li>– for systems using chlorine, the pH of the disinfected water must be measured at each chlorine residual disinfectant concentration sampling point during peak hourly flow or at an alternative location approved by the State</li> <li>– the disinfectant contact time(s)(t) must be determined during peak hourly flow</li> <li>– the residual disinfectant concentration(s) (C) of the water before or at the first customer and prior to each additional point of disinfectant application must be measured during peak hourly flow.</li> </ul> <p>Verify that systems with more than one point of disinfectant application conduct the following monitoring for each disinfection segment:</p> <ul style="list-style-type: none"> <li>– for systems using a disinfectant other than UV, the temperature of the disinfected water must be measured at each residual disinfectant concentration sampling point during peak hourly flow or at an alternative location approved by the State</li> <li>– for systems using chlorine, the pH of the disinfected water must be measured at each chlorine residual disinfectant concentration sampling point during peak hourly flow or at an alternative location approved by the State</li> <li>– the disinfectant contact time(s) (t) must be determined during peak hourly flow</li> <li>– the residual disinfectant concentration(s) of the water before or at the first customer and prior to each additional point of disinfectant application must be measured during peak hourly flow.</li> </ul> <p>Verify that systems monitor the parameters necessary to determine the total inactivation ratio, using analytical methods in 40 CFR 141.74(a).</p> <p>(NOTE: Instead of conducting new monitoring, systems may elect to meet the following requirements:</p> <ul style="list-style-type: none"> <li>– systems that have at least one year of existing data substantially equivalent to data collected in the requirements above use these data to develop disinfection profiles if the system has neither made a significant change to its treatment practice nor changed sources since the data were collected (NOTE: Systems may develop disinfection profiles using up to 3 yr of existing data)</li> <li>– systems use disinfection profile(s) instead of developing a new profile if the system has neither made a significant change to its treatment practice nor changed sources since the profile was developed [NOTE: Systems that have not developed a virus profile must develop a virus profile using the same monitoring data on which the Giardia lamblia profile is based].)</li> </ul> <p>Verify that systems calculate the total inactivation ratio for Giardia lamblia as follows:</p>

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<p><b>WQ.20.18.US.</b> After the first round of source water monitoring, filtered public water systems which are</p>	<ul style="list-style-type: none"> <li>– systems using only one point of disinfectant application determine the total inactivation ratio for the disinfection segment based on either of the following methods:               <ul style="list-style-type: none"> <li>– determine one inactivation ratio (CTcalc/CT99.9) before or at the first customer during peak hourly flow</li> <li>– determine successive CTcalc/CT99.9 values, representing sequential inactivation ratios, between the point of disinfectant application and a point before or at the first customer during peak hourly flow. The system must calculate the total inactivation ratio by determining (CTcalc/CT99.9) for each sequence and then adding the (CTcalc/CT99.9) values together to determine ([Sigma] (CTcalc/CT99.9)).</li> </ul> </li> </ul> <p>Verify that systems using more than one point of disinfectant application before the first customer determine the CT value of each disinfection segment immediately prior to the next point of disinfectant application, or for the final segment, before or at the first customer, during peak hourly flow:</p> <ul style="list-style-type: none"> <li>– determine successive CTcalc/CT99.9 values, representing sequential inactivation ratios, between the point of disinfectant application and a point before or at the first customer during peak hourly flow. The system must calculate the total inactivation ratio by determining (CTcalc/CT99.9) for each sequence and then adding the (CTcalc/CT99.9) values together to determine ([Sigma] (CTcalc/CT99.9))</li> <li>– the system determines the total logs of inactivation by multiplying the value calculated above by 3.0</li> <li>– calculate the log of inactivation for viruses using a protocol approved by the State</li> <li>– use the following procedures to calculate a disinfection benchmark:               <ul style="list-style-type: none"> <li>– for each year of profiling data collected and calculated, systems determine the lowest mean monthly level of both Giardia lamblia and virus inactivation</li> <li>– systems determine the mean Giardia lamblia and virus inactivation for each calendar month for each year of profiling data by dividing the sum of daily or weekly Giardia lamblia and virus log inactivation by the number of values calculated for that month</li> <li>– the disinfection benchmark is the lowest monthly mean value (for systems with one year of profiling data) or the mean of the lowest monthly mean values (for systems with more than one year of profiling data) of Giardia lamblia and virus log inactivation in each year of profiling data.</li> </ul> </li> </ul> <p>(NOTE: See checklist item WQ.15.5.US. for information on applicability and nonapplicability of these requirements.)</p>

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<p>required to conduct an initial and a second round of source water monitoring for each plant that treats a surface water or GWUDI source must calculate an initial Cryptosporidium bin concentration for each plant for which monitoring was required (40 CFR 141.710) <b>[Added April 2006].</b></p>	<p>Verify that, following completion of the initial round of required source water monitoring, filtered systems calculate an initial Cryptosporidium bin concentration for each plant for which monitoring was required.</p> <p>(NOTE: Calculation of the bin concentration must use the Cryptosporidium results reported under 40 CFR 141.701(a) (see checklist item WQ.15.6.US.) and follow the following procedures:</p> <ul style="list-style-type: none"> <li>– for systems that collect a total of at least 48 samples, the bin concentration is equal to the arithmetic mean of all sample concentrations</li> <li>– for systems that collect a total of at least 24 samples, but not more than 47 samples, the bin concentration is equal to the highest arithmetic mean of all sample concentrations in any 12 consecutive months during which Cryptosporidium samples were collected</li> <li>– for systems that serve fewer than 10,000 people and monitor for Cryptosporidium for only one year (i.e., collect 24 samples in 12 months), the bin concentration is equal to the arithmetic mean of all sample concentrations</li> <li>– for systems with plants operating only part of the year that monitor fewer than 12 mo per year, the bin concentration is equal to the highest arithmetic mean of all sample concentrations during any year of Cryptosporidium monitoring.</li> </ul> <p>(NOTE: If the monthly Cryptosporidium sampling frequency varies, systems must first calculate a monthly average for each month of monitoring and then use these monthly average concentrations, rather than individual sample concentrations, in the applicable calculation for bin classification.)</p> <p>Verify that filtered systems determine their initial bin classification from the following table and using the calculated Cryptosporidium bin concentration:</p> <ul style="list-style-type: none"> <li>– for systems required to monitor for Cryptosporidium under 40 CFR 141.701 (see checklist item WQ.15.6.US.): <ul style="list-style-type: none"> <li>– for Cryptosporidium bin classification of &lt; 0.075 oocyst/L, the Bin classification is Bin 1</li> <li>– 0.075 oocysts/L, less than or equal to Cryptosporidium, &lt; 1.0 oocysts/L; the Bin classification is Bin 2</li> <li>– 1.0 oocysts/L, less than or equal to Cryptosporidium, &lt; 3.0 oocysts/L; the Bin classification is Bin 3</li> <li>– Cryptosporidium greater than or equal to 3.0; the Bin classification is Bin 4</li> </ul> </li> <li>– for systems serving fewer than 10,000 people and NOT required to monitor for Cryptosporidium under 40 CFR 141.701(a)(4); the classification is Bin 1.</li> </ul> <p>Verify that, following completion of the second round of required source water monitoring, filtered systems recalculate their Cryptosporidium bin concentration using the Cryptosporidium results reported under 40 CFR 141.701(b) (see checklist item WQ.15.6.US.) and following the above procedures in this checklist item.</p>

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<p><b>WQ.20.19.US.</b> Filtered public water systems which are required to conduct an initial and a second round of source water monitoring for each plant that treats a surface water or GWUDI source must meet additional Cryptosporidium treatment requirements (40 CFR 141.711) <b>[Added April 2006]</b>.</p>	<p>Verify that systems then redetermine their bin classification using this bin concentration and the bin determination procedures in this checklist item.</p> <p>Verify that filtered systems report their initial bin classification to the State for approval no later than 6 mo after the system is required to complete initial source water monitoring based on the schedule in 40 CFR 141.701(c) (see checklist item WQ.15.6.US.).</p> <p>Verify that systems report their bin classification to the State for approval no later than 6 mo after the system is required to complete the second round of source water monitoring based on the schedule in 40 CFR 141.701(c) (see checklist item WQ.15.6.US.).</p> <p>Verify that the bin classification report to the State includes a summary of source water monitoring data and the calculation procedure used to determine bin classification.</p> <p>NOTE: Failure to include a summary of source water monitoring data and the calculation procedure used to determine bin classification is a violation of the treatment technique requirement.)</p> <p>(NOTE: See checklist item WQ.15.5.US. for information on applicability and nonapplicability of these requirements.)</p> <p>Verify that filtered systems provide the level of additional treatment for Cryptosporidium outlined in this checklist item based on their bin classification as determined under 40 CFR 141.710 (see checklist item WQ.20.17.US.) and according to the schedule in 40 CFR 141.713 (see checklist item WQ.20.20.US).</p> <p>(NOTE: See Appendix 13-9d, Table 2.)</p> <p>Verify that filtered systems use one or more of the treatment and management options listed in 40 CFR 141.715 (see text), termed the microbial toolbox, to comply with the additional required Cryptosporidium treatment.</p> <p>Verify that systems classified in Bin 3 and Bin 4 achieve at least 1-log of the additional required Cryptosporidium treatment using either one or a combination of the following: bag filters, bank filtration, cartridge filters, chlorine dioxide, membranes, ozone, or UV, as described in 40 CFR 141.716 through 141.720 (see checklist item WQ.20.22.US, WQ.20.23.US., WQ.20.24.US).</p> <p>(NOTE: Failure by a system in any month to achieve treatment credit by meeting criteria in 40 CFR 141.716 through 141.720 (see checklist item WQ.20.22.US, WQ.20.23.US., and WQ.20.24.US) for microbial toolbox options that is at least</p>

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<p><b>WQ.20.20.US.</b> Unfiltered public water systems which are required to conduct an initial and a second round of source water monitoring for each plant that treats a surface water or GWUDI source must meet certain Cryptosporidium treatment requirements (40 CFR 141.712) [Added April 2006].</p>	<p>equal to the level of required treatment is a violation of the treatment technique requirement.)</p> <p>(NOTE: If the State determines during a sanitary survey or an equivalent source water assessment that after a system completed the monitoring conducted under 40 CFR 141.701 (see checklist item WQ.15.6.US.) significant changes occurred in the system's watershed that could lead to increased contamination of the source water by Cryptosporidium, the system must take actions specified by the State to address the contamination. These actions may include additional source water monitoring and/or implementing microbial toolbox options listed in 40 CFR 141.715.</p> <p>(NOTE: See checklist item WQ.15.5.US. for information on applicability and nonapplicability of these requirements.)</p> <p>Verify that, following completion of the required initial source water monitoring under 40 CFR 141.701(a) (see checklist item WQ.15.6.US.), unfiltered systems must calculate the arithmetic mean of all Cryptosporidium sample concentrations reported.</p> <p>Verify that systems report this value to the State for approval no later than 6 mo after the month the system is required to complete initial source water monitoring based on the schedule in checklist item 141.701(c) (see checklist item WQ.15.6.US.).</p> <p>Verify that, following completion of the second round of required source water monitoring, unfiltered systems calculate the arithmetic mean of all Cryptosporidium sample concentrations reported under 40 CFR 141.701(b) (see checklist item WQ.15.6.US.).</p> <p>Verify that systems report this value to the State for approval no later than 6 mo after the month the system is required to complete the second round of source water monitoring based on the schedule in 40 CFR 141.701(c) (see checklist item WQ.15.6.US.).</p> <p>(NOTE: If the monthly Cryptosporidium sampling frequency varies, systems must first calculate a monthly average for each month of monitoring. Systems must then use these monthly average concentrations, rather than individual sample concentrations, in the calculation of the mean Cryptosporidium level.)</p> <p>Verify that the report to the State of the mean Cryptosporidium levels include a summary of the source water monitoring data used for the calculation.</p> <p>(NOTE: Failure to comply with the above conditions in this checklist item is a violation of the treatment technique requirement.)</p>

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<p><b>WQ.20.21.US.</b> Public water systems which are required to conduct an initial and a second round of source water monitoring for each plant that treats a surface water or GWUDI source must meet a certain schedule Cryptosporidium treatment requirements (40 CFR 141.713) [Added April 2006].</p>	<p>Verify that unfiltered systems provide the level of inactivation for Cryptosporidium based on their mean Cryptosporidium levels as determined above and according to the schedule in 40 CFR 141.713 (see checklist item WQ.20.20.US).</p> <p>Verify that unfiltered systems with a mean Cryptosporidium level of 0.01 oocysts/L or less provide at least 2-log Cryptosporidium inactivation.</p> <p>Verify that unfiltered systems with a mean Cryptosporidium level of greater than 0.01 oocysts/L provide at least 3-log Cryptosporidium inactivation.</p> <p>Verify that unfiltered systems use chlorine dioxide, ozone, or UV as described in 40 CFR 141.720 to meet the Cryptosporidium inactivation requirements.</p> <p>(NOTE: Systems that use chlorine dioxide or ozone and fail to achieve the required Cryptosporidium inactivation on more than one day in the calendar month are in violation of the treatment technique requirement.)</p> <p>(NOTE: Systems that use UV light and fail to achieve the required Cryptosporidium inactivation are in violation of the treatment technique requirement.)</p> <p>Verify that unfiltered systems meet the combined Cryptosporidium inactivation requirements and Giardia lamblia and virus inactivation requirements of 40 CFR 141.72(a) (see checklist item WQ.20.3.US) using a minimum of two disinfectants, and each of two disinfectants separately achieves the total inactivation required for either Cryptosporidium, Giardia lamblia, or viruses.</p> <p>(NOTE: See checklist item WQ.15.5.US. for information on applicability and nonapplicability of these requirements.)</p> <p>Verify that, following initial bin classification, filtered systems provide the level of treatment for Cryptosporidium required under 40 CFR 141.711 (see checklist item WQ.20.18.US.) according to the schedule below.</p> <p>Verify that, following initial determination of the mean Cryptosporidium level, unfiltered systems provide the required level of treatment for Cryptosporidium according to the schedule below.</p> <p>Verify that Cryptosporidium treatment is done according to the following dates:</p> <ul style="list-style-type: none"> <li>– systems that serve at least 100,000 people, 1 April 2012</li> <li>– systems that serve from 50,000 to 99,999 people; 1 October 2012</li> <li>– systems that serve from 10,000 to 49,999 people, 1 October 2013</li> <li>– systems that serve fewer than 10,000 people, 1 October 2014.</li> </ul> <p>(NOTE: A States may allow up to an additional 2 yr for complying with the treatment requirement for systems making capital improvements.)</p>

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<p><b>WQ.20.22.US.</b> Public water systems which are required to conduct an initial and a second round of source water monitoring for each plant that treats a surface water or GWUDI source which are using uncovered finished water storage facilities must meet certain conditions (40 CFR 141.714) [Added April 2006].</p>	<p>Verify that, if the bin classification for a filtered system changes following the second round of source water monitoring, the system provides the level of treatment for Cryptosporidium required under 40 CFR 141.711 (see checklist item WQ.20.18.US.) on a schedule the State approves.</p> <p>Verify that, if the mean Cryptosporidium level for an unfiltered system changes following the second round of monitoring, and if the system must provide a different level of Cryptosporidium treatment under 40 CFR 141.712 (see checklist item WQ.20.19.US.) due to this change, the system must meet this treatment requirement on a schedule the State approves.</p> <p>(NOTE: See checklist item WQ.15.5.US. for information on applicability and nonapplicability of these requirements.)</p> <p>Verify that systems notify the State of the use of each uncovered finished water storage facility no later than 1 April 2008.</p> <p>Verify that systems must meet one of the following conditions for each uncovered finished water storage facility or be in compliance with a State-approved schedule to meet these conditions no later than 1 April 2009:</p> <ul style="list-style-type: none"> <li>– systems cover any uncovered finished water storage facility</li> <li>– systems treat the discharge from the uncovered finished water storage facility to the distribution system to achieve inactivation and/or removal of at least 4-log virus, 3-log Giardia lamblia, and 2-log Cryptosporidium using a protocol approved by the State.</li> </ul> <p>(NOTE: Failure to comply with the requirements of this checklist item is a violation of the treatment technique requirement.)</p>
<p><b>WQ.20.23.US.</b> Public water systems which are required to conduct an initial and a second round of source water monitoring for each plant that treats a surface water or GWUDI source which are using uncovered finished water storage facilities must meet certain requirements for source toolbox components (40 CFR 141.716) [Added April 2006].</p>	<p>(NOTE: See checklist item WQ.15.5.US. for information on applicability and nonapplicability of these requirements.)</p> <p>(NOTE: Systems receive 0.5-log Cryptosporidium treatment credit for implementing a watershed control program that meets the requirements of this section.)</p> <p>Verify that systems intending to apply for the watershed control program credit notify the State of this intent no later than 2 yr prior to the treatment compliance date applicable to the system in 40 CFR 141.713 (see checklist item WQ.20.20.US).</p> <p>Verify that systems submit to the State a proposed watershed control plan no later than 1 yr before the applicable treatment compliance date in 40 CFR 141.713 (see checklist item WQ.20.20.US).</p>

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	<p>(NOTE: The State must approve the watershed control plan for the system to receive watershed control program treatment credit.)</p> <p>Verify that the watershed control plan includes the following elements:</p> <ul style="list-style-type: none"> <li>– identification of an “area of influence” outside of which the likelihood of Cryptosporidium or fecal contamination affecting the treatment plant intake is not significant (NOTE: this is the area to be evaluated in future watershed surveys)</li> <li>– identification of both potential and actual sources of Cryptosporidium contamination and an assessment of the relative impact of these sources on the system's source water quality</li> <li>– an analysis of the effectiveness and feasibility of control measures that could reduce Cryptosporidium loading from sources of contamination to the system's source water</li> <li>– a statement of goals and specific actions the system will undertake to reduce source water Cryptosporidium levels</li> <li>– an explanation of how the actions are expected to contribute to specific goals, identify watershed partners and their roles, identify resource requirements and commitments</li> <li>– a schedule for plan implementation with deadlines for completing specific actions identified in the plan.</li> </ul> <p>(NOTE: Systems with existing watershed control programs (i.e., programs in place on 5 January 2006) are eligible to seek this credit. Their watershed control plans must meet the above criteria and must specify ongoing and future actions that will reduce source water Cryptosporidium levels.)</p> <p>(NOTE: If the State does not respond to a system regarding approval of a watershed control plan submitted under this section and the system meets the other requirements of this section, the watershed control program will be considered approved and 0.5 log Cryptosporidium treatment credit will be awarded unless and until the State subsequently withdraws such approval.)</p> <p>Verify that systems complete the following actions to maintain the 0.5-log credit:</p> <ul style="list-style-type: none"> <li>– submit an annual watershed control program status report to the State</li> <li>– undergo a watershed sanitary survey every three years for community water systems and every 5 yr for noncommunity water systems and submit the survey report to the State</li> <li>– make the watershed control plan, annual status reports, and watershed sanitary survey reports available to the public upon request.</li> </ul> <p>Verify that the annual watershed control program status report:</p>

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	<ul style="list-style-type: none"> <li>– describes the system's implementation of the approved plan and assess the adequacy of the plan to meet its goals</li> <li>– explains how the system is addressing any shortcomings in plan implementation, including those previously identified by the State or as the result of the watershed survey</li> <li>– describes any significant changes that have occurred in the watershed since the last watershed sanitary survey.</li> </ul> <p>(NOTE: If a system determines during implementation that making a significant change to its approved watershed control program is necessary, the system notify the State prior to making any such changes. If any change is likely to reduce the level of source water protection, the system must also list in its notification the actions the system will take to mitigate this effect.)</p> <p>Verify that the watershed sanitary survey was done according to State guidelines and by persons the State approves while meeting the following criteria:</p> <ul style="list-style-type: none"> <li>– it encompasses the region identified in the State-approved watershed control plan as the area of influence</li> <li>– it assess the implementation of actions to reduce source water <i>Cryptosporidium</i> levels</li> <li>– it identifies any significant new sources of <i>Cryptosporidium</i>.</li> </ul> <p>(NOTE: If the State determines that significant changes may have occurred in the watershed since the previous watershed sanitary survey, systems must undergo another watershed sanitary survey by a date the State requires, which may be earlier than the regular date.)</p> <p>Verify that the watershed control plan, annual status reports, and watershed sanitary survey reports are in a plain language style and include criteria by which to evaluate the success of the program in achieving plan goals.</p> <p>(NOTE: The State may approve systems to withhold from the public portions of the annual status report, watershed control plan, and watershed sanitary survey based on water supply security considerations.)</p> <p>(NOTE: If the State determines that a system is not carrying out the approved watershed control plan, the State may withdraw the watershed control program treatment credit.)</p> <p>(NOTE: A system may conduct source water monitoring that reflects a different intake location (either in the same source or for an alternate source) or a different procedure for the timing or level of withdrawal from the source (alternative source monitoring). If the State approves, a system may determine its bin classification based on the alternative source monitoring results.)</p>

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<p><b>WQ.20.24.US.</b> Public water systems which are required to conduct an initial and a second round of source water monitoring for each plant that treats a surface water or GWUDI source which are using uncovered finished water storage facilities must meet certain requirements for pre-filtration treatment toolbox components (40 CFR 141.717) [Added April 2006].</p>	<p>Verify that, if a system conducts alternative source monitoring, they also monitor their current plant intake concurrently as described in 40 CFR 141.701 (see checklist item WQ.15.6.US.).</p> <p>(NOTE: Alternative source monitoring must meet the requirements for source monitoring to determine bin classification. Systems must report the alternative source monitoring results to the State, along with supporting information documenting the operating conditions under which the samples were collected. If a system determines its bin classification using alternative source monitoring results that reflect a different intake location or a different procedure for managing the timing or level of withdrawal from the source, the system must relocate the intake or permanently adopt the withdrawal procedure, as applicable, no later than the applicable treatment compliance date.)</p> <p>(NOTE: See checklist item WQ.15.5.US. for information on applicability and nonapplicability of these requirements.)</p> <p>Verify that for systems receiving 0.5-log Cryptosporidium treatment credit for a presedimentation basin during any month, the process meets the following criteria:</p> <ul style="list-style-type: none"> <li>– the presedimentation basin is in continuous operation and treats the entire plant flow taken from a surface water or GWUDI source</li> <li>– the system continuously add a coagulant to the presedimentation basin</li> <li>– the presedimentation basin achieves one of the following performance criteria: <ul style="list-style-type: none"> <li>– demonstrates at least 0.5-log mean reduction of influent turbidity which is determined using daily turbidity measurements in the presedimentation process influent and effluent and calculated as follows: <math>\log_{10}(\text{monthly mean of daily influent turbidity}) - \log_{10}(\text{monthly mean of daily effluent turbidity})</math></li> <li>– complies with State-approved performance criteria that demonstrate at least 0.5-log mean removal of micron-sized particulate material through the presedimentation process.</li> </ul> </li> </ul> <p>(NOTE: Systems receive an additional 0.5-log Cryptosporidium treatment credit for a two-stage lime softening plant if chemical addition and hardness precipitation occur in two separate and sequential softening stages prior to filtration. Both softening stages must treat the entire plant flow taken from a surface water or GWUDI source.)</p> <p>Verify that, in order for a system to receive Cryptosporidium treatment credit for bank filtration that serves as pretreatment to a filtration plant, the following criteria are met:</p> <ul style="list-style-type: none"> <li>– the well has a ground water flow path of at least 25 ft and receives 0.5-log treatment credit</li> </ul>

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<p><b>WQ.20.25.US.</b> Public water systems which are required to conduct an initial and a</p>	<ul style="list-style-type: none"> <li>– the well has a ground water flow path of at least 50 ft and receives 1.0-log treatment credit</li> <li>– the well is in a granular aquifer; granular aquifers are those comprised of sand, clay, silt, rock fragments, pebbles or larger particles, and minor cement (NOTE: A system must characterize the aquifer at the well site to determine aquifer properties. Systems must extract a core from the aquifer and demonstrate that in at least 90 percent of the core length, grains less than 1.0 mm in diameter constitute at least 10 percent of the core material)</li> <li>– the well is a horizontal or vertical well</li> <li>– each wellhead is monitored for turbidity at least once every 4 h while the bank filtration process is in operation. If monthly average turbidity levels, based on daily maximum values in the well, exceed 1 NTU, the system must report this result to the State and conduct an assessment within 30 days to determine the cause of the high turbidity levels in the well. If the State determines that microbial removal has been compromised, the State may revoke treatment credit until the system implements corrective actions approved by the State to remediate the problem.</li> </ul> <p>(NOTE: Springs and infiltration galleries are not eligible for treatment credit under the prefiltration treatment toolbox, but are eligible for credit under 40 CFR 141.718(c) [see checklist item WQ.20.24.US.] )</p> <p>(NOTE: The State may approve Cryptosporidium treatment credit for bank filtration based on a demonstration of performance study that meets the following criteria:</p> <ul style="list-style-type: none"> <li>– the study follows a State-approved protocol and involves the collection of data on the removal of Cryptosporidium or a surrogate for Cryptosporidium and related hydrogeologic and water quality parameters during the full range of operating conditions</li> <li>– the study includes sampling both from the production well(s) and from monitoring wells that are screened and located along the shortest flow path between the surface water source and the production well(s).</li> </ul> <p>(NOTE: Systems using bank filtration when they begin source water monitoring must collect samples as described in 40 CFR 141.703(d) (see checklist item WQ.15.8.US.) and are not eligible for this credit.)</p> <p>(NOTE: For vertical wells, the ground water flow path is the measured distance from the edge of the surface water body under high flow conditions (determined by the 100 yr floodplain elevation boundary or by the floodway, as defined in Federal Emergency Management Agency [FEMA] flood hazard maps) to the well screen. For horizontal wells, the ground water flow path is the measured distance from the bed of the river under normal flow conditions to the closest horizontal well lateral screen.)</p> <p>(NOTE: See checklist item WQ.15.5.US. for information on applicability and nonapplicability of these requirements.)</p>

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<p>second round of source water monitoring for each plant that treats a surface water or GWUDI source which are using uncovered finished water storage facilities must meet certain requirements for treatment performance toolbox components (40 CFR 141.718) <b>[Added April 2006]</b>.</p>	<p>(NOTE: Systems using conventional filtration treatment or direct filtration treatment receive an additional 0.5-log Cryptosporidium treatment credit during any month the system meets the criteria in this checklist item.)</p> <p>Verify that combined filter effluent (CFE) turbidity is less than or equal to 0.15 NTU in at least 95 percent of the measurements with turbidity being measured as described in 40 CFR 141.74(a) and 141.74(c) (see checklist item WQ.20.8.US).</p> <p>Verify that, in order to receive an additional 0.5-log Cryptosporidium treatment credit, systems using conventional filtration treatment or direct filtration treatment during any month meet the following criteria:</p> <ul style="list-style-type: none"> <li>– the filtered water turbidity for each individual filter is less than or equal to 0.15 NTU in at least 95 percent of the measurements recorded each month</li> <li>– no individual filter has a measured turbidity greater than 0.3 NTU in two consecutive measurements taken 15 min apart.</li> </ul> <p>(NOTE: Any system that has received treatment credit for individual filter performance and fails to meet the above requirements during any month does not receive a treatment technique violation under 40 CFR 141.711(c) [see checklist item WQ.20.18.US.] if the State determines the following:</p> <ul style="list-style-type: none"> <li>– the failure was due to unusual and short-term circumstances that could not reasonably be prevented through optimizing treatment plant design, operation, and maintenance</li> <li>– the system has experienced no more than two such failures in any calendar year.)</li> </ul> <p>Verify that compliance with these criteria is based on individual filter turbidity monitoring as described in 40 CFR 141.174 or 40 CFR 141.560 (see checklist items WQ.20.9.US and WQ.15.4.US), as applicable.</p> <p>(NOTE: The State may approve Cryptosporidium treatment credit for drinking water treatment processes based on a demonstration of performance study that meets the following criteria:</p> <ul style="list-style-type: none"> <li>– systems do not receive the prescribed treatment credit for any toolbox box option in 40 CFR 141.717 through 141.720 (see checklist items WQ.20.23.US and WQ.20.24.US) if that toolbox option is included in a demonstration of performance study for which treatment credit is awarded under this checklist item</li> <li>– the demonstration of performance study follows a State- approved protocol and demonstrates the level of Cryptosporidium reduction the treatment process will achieve under the full range of expected operating conditions for the system</li> <li>– approval by the State is in writing and may include monitoring and treatment performance criteria that the system must demonstrate and report on an ongoing basis to remain eligible for the treatment credit.</li> </ul>

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<p><b>WQ.20.26.US.</b> Public water systems which are required to conduct an initial and a second round of source water monitoring for each plant that treats a surface water or GWUDI source which are using uncovered finished water storage facilities must respond to significant deficiencies identified in sanitary surveys performed by EPA (40 CFR 141.723) [Added April 2006].</p>	<p>The State may designate criteria where necessary to verify that the conditions under which the demonstration of performance credit was approved are maintained during routine operation.)</p> <p>(NOTE: See checklist item WQ.15.5.US. for information on applicability and nonapplicability of these requirements.)</p> <p>(NOTE: A sanitary survey is an onsite review of the water source (identifying sources of contamination by using results of source water assessments where available), facilities, equipment, operation, maintenance, and monitoring compliance of a PWS to evaluate the adequacy of the PWS, its sources and operations, and the distribution of safe drinking water.)</p> <p>(NOTE: For the purposes of this checklist item, a significant deficiency includes a defect in design, operation, or maintenance, or a failure or malfunction of the sources, treatment, storage, or distribution system that EPA determines to be causing, or has the potential for causing the introduction of contamination into the water delivered to consumers.)</p> <p>Verify that, for sanitary surveys performed by EPA, systems respond in writing to significant deficiencies identified in sanitary survey reports no later than 45 days after receipt of the report, indicating how and on what schedule the system will address significant deficiencies noted in the survey.</p> <p>Verify that systems correct significant deficiencies identified in sanitary survey reports according to the schedule approved by EPA, or if there is no approved schedule, according to the schedule reported if such deficiencies are within the control of the system.</p>

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<b>PUBLIC WATER SYSTEMS</b>  <b>WQ.25</b> <b>Lead and Copper</b>  <b>WQ.25.1.US.</b> The use of pipe, solder, or flux that contains lead is not allowed in specific situations (40 CFR 141.43(a)(1) and 141.43(d)) [Revised April 2000].	<p>Verify that lead pipe, solder, or flux is not used in the installation or repair of either of the following:</p> <ul style="list-style-type: none"> <li>– any public water system</li> <li>– any plumbing in a residential facility that provides water for human consumption and is connected to a public water system.</li> </ul> <p>(NOTE: This does not apply to leaded joints necessary for the repair of cast iron pipes.)</p> <p>(NOTE: Lead-free is defined as follows:</p> <ul style="list-style-type: none"> <li>– when used with respect to solders and flux refers to solders and flux containing not more than 0.2 percent lead</li> <li>– when used with respect to pipes and pipe fittings refers to pipes and pipe fittings containing not more than 8.0 percent lead</li> <li>– when used with respect to plumbing fittings and fixtures intended by the manufacturer to dispense water for human ingestion refers to fittings and fixtures that are in compliance with standards established in accordance with 42 U.S.C. 300g-6(e).)</li> </ul> <p>(NOTE: This checklist item applies to public water systems [PWSs]. See the definition of Public Water System or the NOTE in WQ.10.1.US.)</p>



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<b>PUBLIC WATER SYSTEMS</b>  <b>WQ.30</b> <b>Notification and Reporting Requirements</b>  <b>WQ.30.1.US.</b> Public water systems are required to maintain on the premises, or at a convenient location, specific records (40 CFR 141.33(a), 141.33(b), 141.33(d) through 141.33(f)) [ <b>Revised March 2000; Revised July 2000; Revised April 2006</b> ].  <b>WQ.30.2.US.</b> Checklist item deleted [ <b>Revised January 1999; Revised March 2000; Revised July 2000; Deleted April 2006</b> ].  <b>WQ.30.3.US.</b> Public water systems must send reports to the state on any failure to comply with applicable biological, turbidity, radioactivity, and chemical standards, and on any failure to comply with monitoring	<p>Verify that records of microbiological analyses and turbidity analyses are kept for not less than 5 yr.</p> <p>Verify that records of chemical analyses are kept for a minimum of 10 yr.</p> <p>Verify that records concerning a variance or exemption granted to the system are kept for a period ending not less than 5 yr following the expiration of the variance or exemption.</p> <p>Verify that records relating to sanitary surveys are kept for a minimum of 10 yr.</p> <p>Verify that records of action taken by the system to correct violations or primary drinking water regulations are kept for at least 3 yr after the last action taken with respect to the particular violation involved.</p> <p>Verify that copies of public notices issued under 40 CFR 141.201 through 141.210 (see checklist items WQ.30.6.US. through WQ.30.10.US.) and certifications made to the primacy agency are kept for 3 yr after issuance.</p> <p>Verify that copies of monitoring plans are kept for the same period of time as the records of analyses taken under the plan are required to be kept unless specified otherwise.</p> <p>(NOTE: This checklist item applies to public water systems [PWSs]. See the definition of Public Water System or the NOTE in WQ.10.1.US.)</p> <p>NOTE: This checklist item about notifying the public if a public water system violates the primary drinking water standards based on 40 CFR 141.32 is deleted as of 6 March 2006.</p> <p>Verify that, in general, reports are sent within the first 10 days following the month in which the result is received or the first 10 days following the end of the requirement monitoring period, whichever is shorter, whenever standards are not met.</p> <p>Verify that the facility reported failure to comply with any national primary drinking water regulations to the state within 48 h.</p>

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requirements that apply (40 CFR 141.31) [ <b>Reviewed March 2000; Revised July 2000</b> ].	<p>Verify that, the public water system, within 10 days of completing the public notification requirements under 40 CFR 141.201 through 141.210 (see checklist items WQ.30.6.US. through WQ.30.10.US.) for the initial public notice and any repeat notices, submits to the primacy agency a certification that it has fully complied with the public notification regulations.</p> <p>Verify that the public water system includes with this certification a representative copy of each type of notice distributed, published, posted, and made available to the persons served by the system and to the media.</p> <p>(NOTE: This checklist item applies to public water systems [PWSs]. See the definition of Public Water System or the NOTE in WQ.10.1.US.)</p>
<b>WQ.30.4.US.</b> Public water systems which are required to sample quarterly for disinfection byproducts, disinfectants, and disinfection byproducts precursors (DBPs) must meet specific reporting requirements (40 CFR 141.134) [ <b>Added January 1999; Revised March 2000</b> ].	<p>Verify that systems required to sample quarterly or more frequently for disinfection byproducts, disinfectants, and DBPs report to the state within 10 days after the end of each quarter in which samples were collected.</p> <p>Verify that systems required to sample less frequently than quarterly report to the state within 10 days after the end of each monitoring period in which samples were collected.</p> <p>Verify that the information in Appendix 13-11 is reported, as applicable.</p> <p>(NOTE: This checklist item applies to public water systems [PWSs]. See the definition of Public Water System or the NOTE in WQ.10.1.US.)</p>
<b>WQ.30.5.US.</b> As of 1 January 2002, Subpart H systems serving at least 10,000 people that provide filtration are required to report specific information to the state (40 CFR 141.175) [ <b>Added January 1999; Revised March 2000; Revised July 2000; Revised April 2001</b> ].	<p>Verify that systems that provide conventional filtration treatment or direct filtration report the following monthly:</p> <ul style="list-style-type: none"> <li>– turbidity measurements are reported within 10 days after the end of each month the system serves water to the public and includes: <ul style="list-style-type: none"> <li>– the total number of filtered water turbidity measurements taken during the month</li> <li>– the number and percentage of filtered water turbidity measurements taken during the month that are less than or equal to the turbidity limits</li> <li>– the date and value of any turbidity measurements taken during the month which exceed 1 NTU, or which exceed the maximum level set by the state</li> </ul> </li> <li>– that they have conducted individual filter turbidity monitoring, within 10 days after the end of each month that the system serves water to the public</li> <li>– individual filter turbidity measurement results, within 10 days after the end of each month that the system serves water to the public, only if measurements demonstrate one or more of the following conditions: <ul style="list-style-type: none"> <li>– for any individual filter that has a measured turbidity level of &gt; 1.0 NTU in two consecutive measurements taken 15 min apart, the system reports</li> </ul> </li> </ul>

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	<p>the filter number, the turbidity measurement, and the date on which the exceedance occurred. In addition, the system must either produce a filter profile for the filter within 7 days of the exceedance (if the system is not able to identify an obvious reason for the abnormal filter performance) and report that the profile has been produced or report the obvious reason for the exceedance</p> <ul style="list-style-type: none"> <li>– for any individual filter that has a measured turbidity level of &gt; 0.5 NTU in two consecutive measurements taken 15 min apart at the end of the first 4 h of continuous filter operation after the filter has been backwashed or otherwise taken offline, the system reports the filter number, the turbidity, and the date(s) on which the exceedance occurred. In addition, the system must either produce a filter profile for the filter within 7 days of the exceedance (if the system is not able to identify an obvious reason for the abnormal filter performance) and report that the profile has been produced or report the obvious reason for the exceedance</li> <li>– for any individual filter that has a measured turbidity level of &gt; 1.0 NTU in two consecutive measurements taken 15 min apart at any time in each of 3 consecutive months, the system reports the filter number, the turbidity measurement, and the date on which the exceedance occurred. In addition, the system conducts a self-assessment of the filter within 14 days of the exceedance and reports that the self-assessment was conducted</li> <li>– for any individual filter that has a measured turbidity level of &gt; 2.0 NTU in two consecutive measurements taken 15 min apart at any time in each of 2 consecutive months, the system reports the filter number, the turbidity measurement, and the date on which the exceedance occurred. In addition, the system arranges for the conduct of a comprehensive performance evaluation by the state or a third party approved by the state no later than 30 days following the exceedance and have the evaluation completed and submitted to the state no later than 90 days following the exceedance.</li> </ul> <p>Verify that systems maintain the results of individual filter monitoring for at least 3 yr.</p> <p>Verify that, if at any time the turbidity exceeds 1 NTU in representative samples of filtered water in a system using conventional filtration treatment or direct filtration, the system informs the state as soon as possible, but no later than the end of the next business day.</p> <p>Verify that, if at any time the turbidity in representative samples of filtered water exceeds the maximum level set by the state for filtration technologies other than conventional filtration treatment, direct filtration, slow sand filtration, or diatomaceous earth filtration, the system informs the state as soon as possible, but no later than the end of the next business day.</p>

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<p><b>WQ.30.6.US.</b> Public water systems are required to give notice in certain situations (40 CFR 141.201 and 141.210) [Added July 2000; Revised April 2006; Revised April 2013].</p>	<p>(NOTE: This checklist item applies to public water systems [PWSs]. See the definition of Public Water System or the NOTE in WQ.10.1.US.)</p> <p>Verify that each owner or operator of a public water system (community water systems, nontransient noncommunity water systems, and transient noncommunity water systems) gives notice for all violations of national primary drinking water regulations (NPDWR) and for other situations as follows:</p> <ul style="list-style-type: none"> <li>– NPDWR violations: <ul style="list-style-type: none"> <li>– failure to comply with an applicable MCL or MRDL</li> <li>– failure to comply with a prescribed treatment technique (TT)</li> <li>– failure to perform water quality monitoring, as required by the drinking water regulations</li> <li>– failure to comply with testing procedures as prescribed by a drinking water regulation</li> </ul> </li> <li>– variance and exemptions under sections 1415 and 1416 of SDWA: <ul style="list-style-type: none"> <li>– operation under a variance or an exemption</li> <li>– failure to comply with the requirements of any schedule that has been set under a variance or exemption</li> </ul> </li> <li>– special public notices: <ul style="list-style-type: none"> <li>– occurrence of a waterborne disease outbreak or other waterborne emergency</li> <li>– exceedance of the nitrate MCL by noncommunity water systems (NCWS), where granted permission by the primacy agency under 40 CFR 141.11(d)</li> <li>– exceedance of the secondary maximum contaminant level (SMCL) for fluoride</li> <li>– availability of unregulated contaminant monitoring data</li> <li>– other violations and situations determined by the primacy agency to require a public notice, not already listed in Appendix 13-12).</li> </ul> </li> </ul> <p>(NOTE: The term “NPDWR violations” is used to include violations of the MCL, MRDL, TT, monitoring requirements, and testing procedures in 40 CFR 141. See Appendix 13-12 for the tier assignment for each specific violation or situation requiring a public notice.)</p> <p>Verify that each public water system provides public notice to persons served by the water system.</p> <p>Verify that public water systems that sell or otherwise provide drinking water to other public water systems (i.e., to consecutive systems) give public notice to the owner or operator of the consecutive system; the consecutive system is responsible for providing public notice to the persons it serves.</p> <p>(NOTE: If a public water system has a violation in a portion of the distribution system that is physically or hydraulically isolated from other parts of the</p>

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<p><b>WQ.30.7.US.</b> For certain types of violations, Tier 1 notifications are required from public water systems (40 CFR 141.202 and 141.210) [Added July 2000; Revised April 2002; Revised April 2006; Revised January 2007; Revised April 2013].</p>	<p>distribution system, the primacy agency may allow the system to limit distribution of the public notice to only persons served by that portion of the system which is out of compliance. Permission by the primacy agency for limiting distribution of the notice must be granted in writing.)</p> <p>Verify that a copy of the notice is also being sent to the primacy agency.</p> <p>(NOTE: This checklist item applies to public water systems [PWSs]. See the definition of Public Water System or the NOTE in WQ.10.1.US.)</p> <p>(NOTE: The primacy agency may give the required notice on behalf of the owner and operator of the public water system if the primacy agency complies with the requirements of this checklist item. The owner or operator of the public water system remains responsible for ensuring that the requirements of this checklist item are met.)</p> <p>Verify that a Tier 1 public notice is issued for the following violations or situations:</p> <ul style="list-style-type: none"> <li>– violation of the MCL for total coliforms when fecal coliform or E. coli are present in the water distribution system (as specified in 40 CFR 141.63(b), see checklist item WQ.35.2.US.), or when the water system fails to test for fecal coliforms or E. coli when any repeat sample tests positive for coliform</li> <li>– violation of the MCL for E. coli (as specified in 40 CFR 141.63(c))</li> <li>– violation of the MCL for nitrate, nitrite, or total nitrate and nitrite, or when the water system fails to take a confirmation sample within 24 h of the system's receipt of the first sample showing an exceedance of the nitrate or nitrite MCL</li> <li>– exceedance of the nitrate MCL by noncommunity water systems, where permitted to exceed the MCL by the primacy agency</li> <li>– violation of the MRDL for chlorine dioxide when one or more samples taken in the distribution system the day following an exceedance of the MRDL at the entrance of the distribution system exceed the MRDL, or when the water system does not take the required samples in the distribution system</li> <li>– violation of the turbidity MCL, where the primacy agency determines after consultation that a Tier 1 notice is required or where consultation does not take place within 24 h after the system learns of the violation</li> <li>– violation of the Surface Water Treatment Rule (SWTR), Interim Enhanced Surface Water Treatment Rule (IESWTR) or Long Term 1 Enhance Surface Water Treatment Rule (LT1ESWTR) treatment technique requirement resulting from a single exceedance of the maximum allowable turbidity limit, where the primacy agency determines after consultation that a Tier 1 notice is required or where consultation does not take place within 24 h after the system learns of the violation</li> <li>– occurrence of a waterborne disease outbreak or other waterborne emergency (such as a failure or significant interruption in key water treatment processes, a natural disaster that disrupts the water supply or distribution system, or a chemical spill or unexpected loading of possible</li> </ul>

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<p><b>WQ.30.8.US.</b> For certain types of violations, Tier 2</p>	<p>pathogens into the source water that significantly increases the potential for drinking water contamination)</p> <ul style="list-style-type: none"> <li>– detection of E. coli, enterococci, or coliphage in source water samples as specified in 40 CFR 141.402(a) and 40 CFR 141.402(b)</li> <li>– other violations or situations with significant potential to have serious adverse effects on human health as a result of short-term exposure, as determined by the primacy agency either in its regulations or on a case-by-case basis.</li> </ul> <p>Verify that public water systems:</p> <ul style="list-style-type: none"> <li>– provide a public notice as soon as practical but no later than 24 h after the system learns of the violation</li> <li>– initiate consultation with the primacy agency as soon as practical, but no later than 24 h after the public water system learns of the violation or situation, to determine additional public notice requirements</li> <li>– comply with any additional public notification requirements (including any repeat notices or direction on the duration of the posted notices) that are established as a result of the consultation with the primacy agency.</li> </ul> <p>Verify that the notice is provided within 24 h in a form and manner reasonably calculated to reach all persons served.</p> <p>(NOTE: The form and manner used by the public water system are to fit the specific situation, but must be designed to reach residential, transient, and non-transient users of the water system.)</p> <p>Verify that, in order to reach all persons served, water systems use, at a minimum, one or more of the following forms of delivery:</p> <ul style="list-style-type: none"> <li>– appropriate broadcast media (such as radio and television)</li> <li>– posting of the notice in conspicuous locations throughout the area served by the water system</li> <li>– hand delivery of the notice to persons served by the water system</li> <li>– another delivery method approved in writing by the primacy agency.</li> </ul> <p>(NOTE: This checklist item applies to public water systems [PWSs]. See the definition of Public Water System or the NOTE in WQ.10.1.US.)</p> <p>(NOTE: The primacy agency may give the required notice on behalf of the owner and operator of the public water system if the primacy agency complies with the requirements of this checklist item. The owner or operator of the public water system remains responsible for ensuring that the requirements of this checklist item are met.)</p> <p>Verify that a Tier 2 public notice is issued for the following violations or situations:</p>

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<p>notifications are required (40 CFR 141.203(a) through 141.203(c), and 141.210) [Added July 2000; Revised April 2006; Revised January 2007; Revised April 2013].</p>	<ul style="list-style-type: none"> <li>– all violations of the MCL, MRDL, and treatment technique requirements, except where a Tier 1 notice is required or where the primacy agency determines that a Tier 1 notice is required</li> <li>– violations of the monitoring and testing procedure requirements, where the primacy agency determines that a Tier 2 rather than a Tier 3 public notice is required, taking into account potential health impacts and persistence of the violation</li> <li>– failure to comply with the terms and conditions of any variance or exemption in place</li> <li>– failure to take corrective action or failure to maintain at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer under 40 CFR 141.403(a) (see checklist item WQ.15.12.US).</li> </ul> <p>Verify that the public water system repeats the notice every 3 mo as long as the violation or situation persists, unless the primacy agency determines that appropriate circumstances warrant a different repeat notice frequency.</p> <p>Verify that, in no circumstance is the repeat notice given less frequently than once per year.</p> <p>(NOTE: It is not appropriate for the primacy agency to allow less frequent repeat notice for an MCL or treatment technique violation under the Total Coliform Rule or 40 CFR 141, subpart Y or a treatment technique violation under the Surface Water Treatment Rule or Interim Enhanced Surface Water Treatment Rule. It is also not appropriate for the primacy agency to allow through its rules or policies across-the-board reductions in the repeat notice frequency for other ongoing violations requiring a Tier 2 repeat notice. Primacy agency determinations allowing repeat notices to be given less frequently than once every three months must be in writing.)</p> <p>Verify that the public water system repeats the notice every 3 mo as long as the violation or situation persists, unless the primacy agency determines that appropriate circumstances warrant a different repeat notice frequency.</p> <p>Verify that in no circumstance is the repeat notice given less frequently than once per year.</p> <p>(NOTE: Primacy agency determinations allowing repeat notices to be given less frequently than once every 3 mo must be in writing.)</p> <p>Verify that, for either of the following turbidity violations, public water systems consult with the primacy agency as soon as practical but no later than 24 h after the public water system learns of the violation, to determine whether a Tier 1 public notice is required to protect public health:</p> <ul style="list-style-type: none"> <li>– violation of the turbidity MCL</li> </ul>

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<p><b>WQ.30.9.US.</b> For certain types of violations, Tier 3 notifications are required (40 CFR 141.204(a) through 141.204(c) and 141.210) [Added July 2000; Revised April 2006; Revised April 2013].</p>	<ul style="list-style-type: none"> <li>– violation of the SWTR or IESWTR treatment technique requirement resulting from a single exceedance of the maximum allowable turbidity limit.</li> </ul> <p>Verify that, when consultation does not take place within the 24-h period, the water system distributes a Tier 1 notice of the violation within the next 24 h (i.e., no later than 48 h after the system learns of the violation).</p> <p>Verify that public water systems provide the initial public notice and any repeat notices in a form and manner that is reasonably calculated to reach persons served in the required time period.</p> <p>(NOTE: This checklist item applies to public water systems [PWSs]. See the definition of Public Water System or the NOTE in WQ.10.1.US.)</p> <p>(NOTE: The primacy agency may give the required notice on behalf of the owner and operator of the public water system if the primacy agency complies with the requirements of this checklist item. The owner or operator of the public water system remains responsible for ensuring that the requirements of this checklist item are met.)</p> <p>Verify that a Tier 3 public notice is issued for the following violations or situations:</p> <ul style="list-style-type: none"> <li>– monitoring violations under 40 CFR 141, except where a Tier 1 notice is required or where the primacy agency determines that a Tier 2 notice is required</li> <li>– failure to comply with a testing procedure established in 40 CFR 141, except where a Tier 1 notice is required or where the primacy agency determines that a Tier 2 notice is required</li> <li>– operation under a variance granted under 40 CFR 1415 or an exemption granted under Section 1416 of the <i>Safe Drinking Water Act</i></li> <li>– availability of unregulated contaminant monitoring results, as required under 40 CFR 141.207</li> <li>– exceedance of the fluoride secondary maximum contaminant level (SMCL), as required under 40 CFR 141.208</li> <li>– reporting and recordkeeping violations under 40 CFR 141, subpart Y.</li> </ul> <p>Verify that public water systems provide the public notice not later than 1 yr after the public water system learns of the violation or situation or begins operating under a variance or exemption.</p> <p>Verify that, following the initial notice, the public water system repeats the notice annually for as long as the violation, variance, exemption, or other situation persists.</p> <p>Verify that, if the public notice is posted, the notice remains in place for as long as the violation, variance, exemption, or other situation persists, but in no case less than 7 days (even if the violation or situation is resolved).</p>

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<p><b>WQ.30.10.US.</b> Public notices are required to contain specific information (40 CFR 141.205 and 141.210) [Added July 2000; Revised April 2006].</p>	<p>(NOTE: Instead of individual Tier 3 public notices, a public water system may use an annual report detailing all violations and situations that occurred during the previous 12 mo, as long as the timing requirements are met.)</p> <p>Verify that public water systems provide the initial notice and any repeat notices in a form and manner that is reasonably calculated to reach persons served in the required time period.</p> <p>Verify that the form and manner of the public notice meets the following requirements at a minimum:</p> <ul style="list-style-type: none"> <li>– unless directed otherwise by the primacy agency in writing, community water systems provide notice by: <ul style="list-style-type: none"> <li>– mail or other direct delivery to each customer receiving a bill and to other service connections to which water is delivered by the public water system</li> <li>– any other method reasonably calculated to reach other persons regularly served by the system, if they would not normally be reached by the required notice</li> </ul> </li> <li>– unless directed otherwise by the primacy agency in writing, noncommunity water systems provide notice by: <ul style="list-style-type: none"> <li>– posting the notice in conspicuous locations throughout the distribution system frequented by persons served by the system, or by mail or direct delivery to each customer and service connection (where known)</li> <li>– any other method reasonably calculated to reach other persons served by the system, if they would not normally be reached by the required notice.</li> </ul> </li> </ul> <p>(NOTE: This checklist item applies to public water systems [PWSs]. See the definition of Public Water System or the NOTE in WQ.10.1.US.)</p> <p>(NOTE: The primacy agency may give the required notice on behalf of the owner and operator of the public water system if the primacy agency complies with the requirements of this checklist item. The owner or operator of the public water system remains responsible for ensuring that the requirements of this checklist item are met.)</p> <p>Verify that when a public water system violates a NPDWR or has a situation requiring public notification, each public notice includes the following elements:</p> <ul style="list-style-type: none"> <li>– a description of the violation or situation, including the contaminant(s) of concern, and (as applicable) the contaminant level(s)</li> <li>– when the violation or situation occurred</li> <li>– any potential adverse health effects from the violation or situation</li> <li>– the population at risk, including subpopulations particularly vulnerable if exposed to the contaminant in their drinking water</li> <li>– whether alternative water supplies should be used</li> </ul>

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	<ul style="list-style-type: none"> <li>– what actions consumers should take, including when they should seek medical help, if known</li> <li>– what the system is doing to correct the violation or situation</li> <li>– when the water system expects to return to compliance or resolve the situation</li> <li>– the name, business address, and phone number of the water system owner, operator, or designee of the public water system as a source of additional information concerning the notice</li> <li>– a statement to encourage the notice recipient to distribute the public notice to other persons served.</li> </ul> <p>Verify that, if a public water system has been granted a variance or an exemption, the public notice contains:</p> <ul style="list-style-type: none"> <li>– an explanation of the reasons for the variance or exemption</li> <li>– the date on which the variance or exemption was issued</li> <li>– a brief status report on the steps the system is taking to install treatment, find alternative sources of water, or otherwise comply with the terms and schedules of the variance or exemption</li> <li>– a notice of any opportunity for public input in the review of the variance or exemption.</li> </ul> <p>Verify that, if a public water system violates the conditions of a variance or exemption, the public notice must contain the ten elements listed at the start of this checklist item.</p> <p>Verify that each public notice:</p> <ul style="list-style-type: none"> <li>– is displayed in a conspicuous way when printed or posted</li> <li>– does not contain overly technical language or very small print</li> <li>– is not formatted in a way that defeats the purpose of the notice</li> <li>– does not contain language that nullifies the purpose of the notice.</li> </ul> <p>Verify that, for public water systems serving a large proportion of non-English speaking consumers, as determined by the primacy agency, the public notice contains information in the appropriate language(s) regarding the importance of the notice or contains a telephone number or address where persons served may contact the water system to obtain a translated copy of the notice or to request assistance in the appropriate language.</p> <p>(NOTE: In cases where the primacy agency has not determined what constitutes a large proportion of non-English speaking consumers, the public water system must include in the public notice the information in the appropriate language(s) regarding the importance of the notice or a telephone number or address where persons served may contact the water system to obtain a translated copy of the notice or to request assistance in the appropriate language, where appropriate to reach a large proportion of non-English speaking persons served by the water system.)</p>

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<p><b>WQ.30.11.US.</b> All subpart H systems which serve populations fewer than 10,000 meeting filtration and disinfection requirements are required to meet specific reporting requirements (40 CFR 141.501, 141.502, and 141.570) [Added April 2002].</p> <p><b>WQ.30.12.US.</b> All subpart H systems which serve populations fewer than 10,000 meeting filtration and disinfection requirements are required to meet specific</p>	<p>Verify that public water systems include the following standard language in their public notice:</p> <ul style="list-style-type: none"> <li>– the health effects language specified in Appendix 13-13 corresponding to each MCL, MRDL, and treatment technique violation, and for each violation of a condition of a variance or exemption.</li> <li>– the following language in their notice, including the language necessary to fill in the blanks, for all monitoring and testing procedure violations:  We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not your drinking water meets health standards. During [compliance period], we “did not monitor or test” or “did not complete all monitoring or testing” for [contaminant(s)], and therefore cannot be sure of the quality of your drinking water during that time.</li> <li>– the following language (where applicable):  Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.</li> </ul> <p>(NOTE: This checklist item applies to public water systems [PWSs]. See the definition of Public Water System or the NOTE in WQ.10.1.US.)</p> <p>(NOTE: The primacy agency may give the required notice on behalf of the owner and operator of the public water system if the primacy agency complies with the requirements of this checklist item. The owner or operator of the public water system remains responsible for ensuring that the requirements of this checklist item are met.)</p> <p>(NOTE: These requirements to public water systems that use surface water or GWUDI as a source and serves fewer than 10,000 persons. In this case, these requirements apply specifically to Subpart H systems)</p> <p>Verify that the reporting requirements outlined in Appendix 13-14 are met.</p> <p>(NOTE: This checklist item applies to public water systems [PWSs]. See the definition of Public Water System or the NOTE in WQ.10.1.US.)</p> <p>(NOTE: These requirements to public water systems that use surface water or GWUDI as a source and serves fewer than 10,000 persons. In this case, these requirements apply specifically to Subpart H systems)</p> <p>(NOTE: These records are in addition to those required by 40 CFR 141.75 (see checklist item WQ.20.5.US through WQ.20.7.US).)</p>

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<p>recordkeeping requirements (40 CFR 141.501, 141.502, and 141.571) [Added April 2002].</p> <p><b>WQ.30.13.US.</b> Public water systems required to conduct an initial and a second round of source water monitoring for each plant that treats a surface water or GWUDI source must meet reporting requirements (40 CFR 141.706) [Added April 2006].</p>	<p>Verify that, if the system is subject to the Individual filter Turbidity requirements (40 CFR 141.560 through 141.564 (see checklist item WQ.15.4.US), the results of individual filter monitoring are kept for at least 3 yr.</p> <p>Verify that, if the system is subject to Disinfection Profiling requirements (40 CFR 141.530 through 141.536 (see checklist item WQ.35.4.US and WQ.76.3.US), the results of the profile, including raw data and analysis, are kept indefinitely.</p> <p>Verify that, if the system is subject to Disinfection Benchmarking requirements (40 CFR 141.540 through 141.544 (see checklist item WQ.20.14.US), the results of the benchmark, including raw data and analysis, are kept indefinitely.</p> <p>(NOTE: This checklist item applies to public water systems [PWSs]. See the definition of Public Water System or the NOTE in WQ.10.1.US.)</p> <p>Verify that systems report results from the source water monitoring required under 40 CFR 141.701 (see checklist item WQ.15.6.US.) no later than 10 days after the end of the first month following the month when the sample is collected.</p> <p>Verify that all systems serving at least 10,000 people report the results from the initial source water monitoring to EPA electronically at <a href="https://intranet.epa.gov/lt2/">https://intranet.epa.gov/lt2/</a>.</p> <p>Verify that, if a system is unable to report monitoring results electronically, the system uses an EPA approved alternative approach for reporting monitoring results.</p> <p>Verify that systems serving fewer than 10,000 people report results from the initial source water monitoring required to the State.</p> <p>Verify that all systems report results from the second round of required source water monitoring to the State.</p> <p>Verify that systems report the following information, as applicable, for the required source water monitoring:</p> <ul style="list-style-type: none"> <li>– for each Cryptosporidium analysis: <ul style="list-style-type: none"> <li>– PWS ID</li> <li>– Facility ID</li> <li>– Sample collection date</li> <li>– Sample type (field or matrix spike)</li> <li>– Sample volume filtered (L), to nearest 1/4 L</li> <li>– Was 100% of filtered volume examined</li> <li>– Number of oocysts counted</li> </ul> </li> <li>– for matrix spike samples, report the sample volume spiked and estimated number of oocysts spiked (NOTE: These data are not required for field samples)</li> </ul>

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<p><b>WQ.30.14.US.</b> Public water systems which are required to conduct an initial and a second round of source water monitoring for each plant that treats a surface water or GWUDI source which are using uncovered finished water storage facilities must meet certain reporting/recordkeeping requirements (40 CFR 141.721 and 141.722) [Added April 2006].</p>	<ul style="list-style-type: none"> <li>– for samples in which less than 10 L is filtered or less than 100% of the sample volume is examined, report the number of filters used and the packed pellet volume</li> <li>– for samples in which less than 100% of sample volume is examined, report the volume of resuspended concentrate and volume of this resuspension processed through immunomagnetic separation</li> <li>– for each E. coli analysis: <ul style="list-style-type: none"> <li>– PWS ID</li> <li>– Facility ID</li> <li>– Sample collection date</li> <li>– Analytical method number</li> <li>– Method type</li> <li>– Source type (flowing stream, lake/reservoir, GWUDI)</li> <li>– E. coli/100 mL</li> </ul> </li> <li>– Turbidity, except that systems serving fewer than 10,000 people that are not required to monitor for turbidity and therefore not required to report turbidity with their E. coli results.</li> </ul> <p>Verify that the system reports sampling schedules under 40 CFR 141.702 (see checklist item WQ.15.7.US.) and source water monitoring results under 40 CFR 141.706 (see checklist item WQ.30.13.US.) unless they notify the State that they will not conduct source water monitoring due to meeting the criteria of 40 CFR 141.701(d) ((see checklist item WQ.15.6.US.).</p> <p>Verify that systems report the use of uncovered finished water storage facilities to the State as described in 40 CFR 141.714 (see checklist item WQ.20.21.US).</p> <p>Verify that filtered systems report their Cryptosporidium bin classification as described in 40 CFR 141.710 (see checklist item WQ.20.17.US.).</p> <p>Verify that unfiltered systems report their mean source water Cryptosporidium level as described in 40 CFR 141.712 (see checklist item WQ.20.19.US.).</p> <p>Verify that systems report disinfection profiles and benchmarks to the State as described in 40 CFR 141.708 through 141.709 (see checklist items WQ.20.16.US.) prior to making a significant change in disinfection practice.</p> <p>Verify that systems report to the State in accordance with the following table for any microbial toolbox options used to comply with treatment requirements under 40 CFR 141.711 (see checklist item WQ.20.18.US.) or 40 CFR 141.712 (see checklist item WQ.20.19.US.).</p> <p>(NOTE: Alternatively, the State may approve a system to certify operation within required parameters for treatment credit rather than reporting monthly operational data for toolbox options.</p>

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<p><b>WQ.30.15.US.</b> Public water systems that use ground water must meet reporting and recordkeeping requirements (40 CFR 141.400(a) through 141.400(c)(3), 141.400(d), 141.405, and 141.861) [Added January 2007; Revised April 2013].</p>	<p>Verify that systems keep results from the initial round of source water monitoring and the second round of source water monitoring until 3 yr after bin classification under 40 CFR 141.710 (see checklist item WQ.20.17.US.) for filtered systems or determination of the mean <i>Cryptosporidium</i> level under for unfiltered systems for the particular round of monitoring.</p> <p>Verify that systems keep any notification to the State that they will not conduct source water monitoring due to meeting the criteria of 40 CFR 141.701(d) (see checklist item WQ.15.6.US.) for 3 yr.</p> <p>Verify that systems keep the results of treatment monitoring associated with microbial toolbox options under 40 CFR 141.716 through 141.720 (see checklist item WQ.20.22.US, WQ.20.23.US., and WQ.20.24.US) and with uncovered finished water reservoirs under 40 CFR 141.714 (see checklist item WQ.20.21.US), as applicable, for 3 yr.</p> <p>Verify that, in addition to the requirements of 40 CFR 141.31, a ground water system conducting compliance monitoring under 40 CFR 141.403(b) (see checklist item WQ.15.13.US) notifies the State any time the system fails to meet any State-specified requirements including, but not limited to, minimum residual disinfectant concentration, membrane operating criteria or membrane integrity, and alternative treatment operating criteria, if operation in accordance with the criteria or requirements is not restored within 4 h.</p> <p>(NOTE: Unless otherwise noted, ground water systems must comply with this checklist item beginning 1 December 2009.)</p> <p>(NOTE: The ground water system must notify the State as soon as possible, but in no case later than the end of the next business day.)</p> <p>Verify that, after completing any corrective action under 40 CFR 141.403(a) (see checklist item WQ.15.12.US), a ground water system notifies the State within 30 days of completion of the corrective action.</p> <p>Verify that, if a ground water system subject to the requirements of 40 CFR 141.402(a) (see checklist item WQ.15.11.US) does not conduct source water monitoring required by 40 CFR 141.402(a)(5)(ii), the system provides documentation to the State within 30 days of the total coliform positive sample that it met the State criteria.</p> <p>Verify that, in addition to the requirements of 40 CFR 141.33 (see checklist items WQ.10.1.US, WQ.10.2.US, and WQ.30.1.US), a ground water system maintains the following information in its records:</p> <ul style="list-style-type: none"> <li>– documentation of corrective actions for a period of not less than 10 yr</li> </ul>

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	<ul style="list-style-type: none"> <li>– documentation of notice to the public for a period of not less than 3 yr</li> <li>– records of decisions under 40 CFR 141.402(a)(5)(ii) (see checklist item WQ.15.11.US) and records of invalidation of fecal indicator-positive ground water source samples for not less than 5 yr</li> <li>– for consecutive systems, documentation of notification to the wholesale system(s) of total-coliform positive samples that are not invalidated under 40 CFR 141.21(c) until 31 March 2016, or under 40 CFR 141.853 beginning 1 April 2016 for a period of not less than 5 yr</li> <li>– for systems, including wholesale systems, that are required to perform compliance monitoring under 40 CFR 141.403(b) (see checklist item WQ.15.13.US): <ul style="list-style-type: none"> <li>– records of the State-specified minimum disinfectant residual for a period of not less than 10 yr</li> <li>– records of the lowest daily residual disinfectant concentration and records of the date and duration of any failure to maintain the State-prescribed minimum residual disinfectant concentration for a period of more than four hours for a period of not less than 5 yr</li> <li>– records of State-specified compliance requirements for membrane filtration and of parameters specified by the State for State-approved alternative treatment and records of the date and duration of any failure to meet the membrane operating, membrane integrity, or alternative treatment operating requirements for more than 4 h for a period of not less than 5 yr.</li> </ul> </li> </ul> <p>Verify that, as of 1 April 2016, the public water system notifies the State by the end of the day when the system learns of an E. coli MCL violation, unless the system learns of the violation after the State office is closed and the State does not have either an after-hours phone line or an alternative notification procedure, in which case the system must notify the State before the end of the next business day, and notify the public in accordance with 40 CFR, subpart Q (40 CFR 141.201 through 141.210; (see checklist items WQ.30.6.US. through WQ.30.10.US.).</p> <p>Verify that, as of 1 April 2016, the public water system notifies the State by the end of the day when the system is notified of an E. coli-positive routine sample, unless the system is notified of the result after the State office is closed and the State does not have either an after-hours phone line or an alternative notification procedure, in which case the system notifies the State before the end of the next business day.</p> <p>Verify that, as of 1 April 2016, a public water system that has violated the treatment techniques for coliforms in 40 CFR 141.859 (see Appendix 13-6b) reports the violation to the State no later than the end of the next business day after it learns of the violation, and notifies the public in accordance with 40 CFR, subpart Q (40 CFR 141.201 through 141.210; (see checklist items WQ.30.6.US. through WQ.30.10.US.).</p>

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	<p>Verify that, as of 1 April 2016, a public water system required to conduct an assessment under the provisions of 40 CFR 141.859 (see Appendix 13-6b) submits the assessment report within 30 days.</p> <p>Verify that, as of 1 April 2016, a public water system required to conduct an assessment notifies the State when each scheduled corrective action is completed for corrections not completed by the time of submission of the assessment form.</p> <p>Verify that, as of 1 April 2016, a public water system that has failed to comply with a coliform monitoring requirement reports the monitoring violation to the State within 10 days after the system discovers the violation, and notify the public in accordance with 40 CFR, subpart Q (40 CFR 141.201 through 141.210; (see checklist items WQ.30.6.US. through WQ.30.10.US.).</p> <p>Verify that, as of 1 April 2016, a public water system which is a seasonal system certifies, prior to serving water to the public, that it has complied with the State-approved start-up procedure.</p> <p>Verify that, as of 1 April 2016, the public water system maintains any assessment form, regardless of who conducts the assessment, and documentation of corrective actions completed as a result of those assessments, or other available summary documentation of the sanitary defects and corrective actions taken for State review.</p> <p>Verify that, as of 1 April 2016, the public water system maintains the required documentation for a period not less than 5 yr after completion of the assessment or corrective action.</p> <p>Verify that, as of 1 April 2016, the public water system maintains a record of any repeat sample taken that meets State criteria for an extension of the 24- hour period for collecting repeat samples.</p>

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<b>COMMUNITY WATER SYSTEMS</b>  <b>WQ.35 Standards</b>  <b>WQ.35.1.US.</b> Community water systems, except as defined under exempted water systems in the definitions, are required to meet specific MCLs for inorganic chemicals, organic chemicals, and fluorides (40 CFR 141.11(a), 141.11(b), and 141.62) [Revised May 1996; Reviewed March 2000; Revised January 2001; Revised April 2006].  <b>WQ.35.2.US.</b> Community water systems are required to meet specific MCLs for microbiological contaminants (40 CFR 141.4(b) and 141.63) [Revised March 2000; Revised April 2013].	<p>Verify that the MCL of 4.0 mg/L for fluoride is not exceeded.</p> <p>Verify that the MCLs outlined in Appendix 13-1 and 13-2 are met.</p> <p>(NOTE: A community water systems is a public water system that serves at least 15 service connections used by year round residents or regularly serves at least 25 year-round residents. Community water systems must also comply with the standards for public water systems.)</p> <p>(NOTE: Until 31 March 2016, the total coliform MCL is based on the presence or absence of total coliforms in a sample, rather than coliform density.)</p> <p>Verify that at community water systems that collects at least 40 samples per month, no more than 5.0 percent of the samples collected during a month are total coliform positive,</p> <p>Verify that at a community water system that collects fewer than 40 samples per month, no more than one sample collected during a month is total coliform-positive,</p> <p>(NOTE: EPA has stayed the effective date for the above total coliform MCL standards for systems that demonstrate to the State that the violation of the total coliform MCL is due to a persistent growth of total coliforms in the distribution system rather than fecal or pathogenic contamination, a treatment lapse or deficiency, or a problem in the operation or maintenance of the distribution system. This is stayed until 31 March 2016, at which time the total coliform MCL is no longer effective.)</p> <p>Verify that, until 31 March 2016, there are no fecal coliform-positive repeat samples or <i>E. coli</i>-positive repeat samples, or any total coliform-positive repeat samples following a fecal coliform-positive or <i>E. coli</i>-positive routine sample.</p> <p>(NOTE: For purposes of the public notification requirements, this is a violation that may pose an acute risk to health.)</p>

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	<p>(NOTE: Until 31 March 2016, a public water system must determine compliance with the MCL for total coliforms for each month in which it is required to monitor for total coliforms.)</p> <p>Verify that, starting 1 April 2016, community water systems do not have any of the following conditions:</p> <ul style="list-style-type: none"> <li>– the system has an <i>E. coli</i>-positive repeat sample following a total coliform positive routine sample</li> <li>– the system has a total coliform positive repeat sample following an <i>E. coli</i>-positive routine sample</li> <li>– the system fails to take all required repeat samples following an <i>E. coli</i>-positive routine sample</li> <li>– the system fails to test for <i>E. coli</i> when any repeat sample tests positive for total coliform.</li> </ul> <p>(NOTE: Beginning 1 April 2016, a public water system must determine compliance with the MCL for <i>E. coli</i> for each month in which it is required to monitor for total coliforms.)</p> <p>(NOTE: The EPA Administrator has identified the following as the best technology, treatment techniques, or other means available for achieving compliance with the MCL for total coliforms and for achieving compliance with the MCL for <i>E. coli</i>:</p> <ul style="list-style-type: none"> <li>– protection of wells from fecal contamination by appropriate placement and construction</li> <li>– maintenance of a disinfectant residual throughout the distribution system</li> <li>– proper maintenance of the distribution system including appropriate pipe replacement and repair procedures, main flushing programs, proper operation and maintenance of storage tanks and reservoirs, cross connection control, and continual maintenance of positive water pressure in all parts of the distribution system</li> <li>– filtration and/or disinfection of surface water, as described in 40 CFR 141, Subparts H, P, T, and W, or disinfection of ground water, as described in 40 CFR 141, Subpart S, using strong oxidants such as chlorine, chlorine dioxide, or ozone</li> <li>– for systems using ground water, compliance with the requirements of an EPA-approved State Wellhead Protection Program developed and implemented under section 1428 of the SDWA.</li> </ul> <p>The EPA Administrator has also identified that the technology, treatment, techniques or other means available as affordable technology, treatment techniques, or other means available to systems serving 10,000 or fewer people for achieving compliance with the MCL for total coliforms and for achieving compliance with the MCL for <i>E. coli</i>.)</p> <p>(NOTE: See checklist item WQ.35.1.US for the definition of a community water systems.)</p>

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<p><b>WQ.35.3.US.</b> Community water systems are required to meet specific MCLs and MRDLs related to disinfection (40 CFR 141.64 and 141.65(a), 141.65(b)(1)) [Added January 1999; Revised March 2000; Revised January 2001; Revised April 2001; Revised April 2006].</p>	<p>Verify that community water systems meet the MCL for disinfection by-products and the MRDLs outlined in Appendix 13-9.</p> <p>(NOTE: These requirements apply to Subpart H systems serving 10,000 or more persons beginning 1 January 2002. Subpart H systems serving fewer than 10,000 persons and systems using only groundwater not under the direct influence of surface water must comply with this section beginning 1 January 2004. All systems must comply with these MCLs until the date specified in 40 CFR 141.620(c) [see checklist item WQ.40.22.US.].)</p> <p>(NOTE: For the disinfection byproduct of Bromate, the Administrator has identified as the best technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels to be the control of ozone treatment process to reduce production of bromate.)</p> <p>(NOTE: For the disinfection byproduct of Chlorite, the Administrator has identified as the best technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels to be controlling treatment processes to reduce disinfectant demand and control of disinfection treatment processes to reduce disinfectant levels)</p> <p>(NOTE: For the disinfection byproduct of Total trihalomethanes (TTHM) and Haloacetic acids (five) (HAA5), the Administrator has identified as the best technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels to be enhanced coagulation or enhanced softening or GAC10, with chlorine as the primary and residual disinfectant.)</p> <p>(NOTE: See checklist item WQ.35.1.US for the definition of a community water systems.)</p>
<p><b>WQ.35.4.US.</b> Community water systems are required to meet specific MCLs for radionuclides (40 CFR 141.66(b) through 141.66(f)) [Added January 2001].</p>	<p>Verify that the system does not exceed the MCL for combined radium-226 and –228 of 5 pCi/L.</p> <p>(NOTE: The combined radium-226 and radium-228 value is determined by the addition of the results of the analysis for radium 226 and the analysis for radium-228.)</p> <p>Verify that the system does not exceed the MCL for gross alpha particle activity (excluding radon and uranium) of 15 pCi/L.</p> <p>Verify that the average annual concentration of beta particle and photon radioactivity from man-made radionuclides in drinking water does not produce an annual dose equivalent to the total body or any internal organ greater than 4 mrem/yr.</p>

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<p><b>WQ.35.5.US.</b> Subpart H community water systems serving fewer than 10,000 persons are required to develop a disinfection profile (40 CFR 141.501, 141.502, and 141.530 through 141.536) [Added April 2002].</p>	<p>Verify that, except for the radionuclides listed in Appendix 13-9a, the concentration of man-made radionuclides causing 4 mrem total body or organ dose equivalents are calculated on the basis of 2 L/day drinking water intake using the 168 h data list in “Maximum Permissible Body Burdens and Maximum Permissible Concentrations of Radionuclides in Air and in Water for Occupational Exposure,” NBS Handbook 69 as amended August 1963, U.S. Department of Commerce.</p> <p>(NOTE: Copies of this document are available from the National Technical Information Service, NTIS ADA 280 282, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Virginia 22161. The toll-free number is 800-553-6847.)</p> <p>Verify that, if two or more radionuclides are present, the sum of their annual dose equivalent to the total body or to any organ does not exceed 4 mrem/year.</p> <p>Verify that the system does not exceed the MCL for uranium of 30 micrograms/L.</p> <p>(NOTE: Community water systems must comply with the MCLs listed in this checklist item beginning 8 December 2003 and compliance shall be determined in accordance with the requirements of 40 CFR 141.25 and 141.26 (see checklist item WQ.40.11.US). Compliance with reporting requirements for the radionuclides under appendix A to subpart O (see checklist item WQ.45.2.US) and appendices A and B to subpart Q is required on 8 December 2003.</p> <p>(NOTE: See checklist item WQ.35.1.US for the definition of a community water systems.)</p> <p>(NOTE: These requirements to public water systems that use surface water or GWUDI as a source and serves fewer than 10,000 persons. In this case, these requirements apply specifically to Subpart H systems)</p> <p>(NOTE: A disinfection profile is a graphical representation of the system's level of <i>Giardia lamblia</i> or virus inactivation measured during the course of a year. The system is not required to develop a profile if the state determines it is unnecessary. States may only determine that a system's profile is unnecessary if a system's TTHM and HAA5 levels are below 0.064 mg/L and 0.048 mg/L, respectively. To determine these levels, TTHM and HAA5 samples must be collected after 1 January 1998, during the month with the warmest water temperature, and at the point of maximum residence time in the distribution system. The state may also approve the use of more representative data set for disinfection profiling that that required by these regulations.)</p> <p>Verify that the disinfection profile consists of three steps:</p> <ul style="list-style-type: none"> <li>– the system collects data for the following parameters from the plant once a week on the same day over the course of 12 consecutive months:</li> </ul>

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<p><b>WQ.35.6.US.</b> Each community water system serving a population of greater than 3,300 persons will conduct an assessment of the vulnerability of its system to a terrorist attack or other intentional acts intended to substantially disrupt the</p>	<ul style="list-style-type: none"> <li>– temperature of the disinfected water at each residual disinfectant concentration sampling point during peak hourly flow</li> <li>– if the system uses chlorine, the pH of the disinfected water at each residual disinfectant concentration sampling point during peak hourly flow</li> <li>– the disinfectant contact time(s) ("T") during peak hourly flow</li> <li>– the residual disinfectant concentration(s) ("C") of the water before or at the first customer and prior to each additional point of disinfection during peak hourly flow</li> <li>– the system uses the data to calculate weekly log inactivation as detailed in 40 CFR 141.534</li> <li>– the system uses the weekly log inactivations to develop a disinfection profile as specified in 40 CFR 141.536.</li> </ul> <p>Verify that if the system serves between 500 and 9,999 persons, data collection data begins no later than 1 July 2003.</p> <p>Verify that if the system serves fewer than 500 persons data collection begins no later than 1 January 2004.</p> <p>(NOTE: The total log inactivation is calculated using the analytical methods in 40 CFR 141.74(a).)</p> <p>Verify that if the system uses chloramines, ozone, or chlorine dioxide for primary disinfection, the system also calculate the logs of inactivation for viruses and develop an additional disinfection profile for viruses using methods approved by the State.</p> <p>Verify the system retains the Disinfection Profile data in graphic form, such as a spreadsheet, which is available for review by the State as part of a sanitary survey.</p> <p>Verify that the system uses this data to calculate a benchmark if the system is considering changes to disinfection practices.</p> <p>(NOTE: See checklist item WQ.35.1.US for the definition of a community water systems.)</p> <p>Verify that each community water system serving a population of greater than 3,300 persons conducts an assessment of the vulnerability of its system to a terrorist attack or other intentional acts intended to substantially disrupt the ability of the system to provide a safe and reliable supply of drinking water.</p> <p>Verify that the vulnerability assessment includes, but is not be limited to, a review of pipes and constructed conveyances, physical barriers, water collection, pretreatment, treatment, storage and distribution facilities, electronic, computer or other automated systems which are utilized by the public water system, the use,</p>

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<p>ability of the system to provide a safe and reliable supply of drinking water (Public Law 107–188, Section 401) [Added April 2003].</p>	<p>storage, or handling of various chemicals, and the operation and maintenance of such system.</p> <p>Verify that each community water system serving a population of greater than 3,300 persons that has conducted a vulnerability assessment certifies to the USEPA Administrator that the system has conducted a compliant vulnerability assessment and submits to the USEPA Administrator a written copy of the assessment.</p> <p>(NOTE: Certification and submission shall be made prior to:</p> <ul style="list-style-type: none"> <li>– 31 March 2003, in the case of systems serving a population of 100,000 or more</li> <li>– 31 December 2003, in the case of systems serving a population of 50,000 or more but less than 100,000.</li> <li>– 30 June 2004, in the case of systems serving a population greater than 3,300 but less than 50,000.)</li> </ul> <p>(NOTE: Except for information contained in a certification identifying the system submitting the certification and the date of the certification, all information provided to the Administrator and all information derived there from is exempt from disclosure under section 552 of Title 5 of the United States Code.)</p> <p>Verify that each community water system serving a population greater than 3,300 prepares or revises, where necessary, an emergency response plan that incorporates the results of vulnerability assessments that have been completed.</p> <p>Verify that the subject community water system certifies to the Administrator, as soon as reasonably possible, but not later than 6 mo after the completion of the vulnerability assessment, that the system has completed an emergency response plan.</p> <p>Verify that the emergency response plan includes, but is not limited to, the following:</p> <ul style="list-style-type: none"> <li>– plans, procedures, and identification of equipment that can be implemented or utilized in the event of a terrorist or other intentional attack on the public water system</li> <li>– actions, procedures, and identification of equipment which can obviate or significantly lessen the impact of terrorist attacks or other intentional actions on the public health and the safety and supply of drinking water</li> <li>– provided to communities and individuals.</li> </ul> <p>(NOTE: Community water systems shall, to the extent possible, coordinate with existing Local Emergency Planning Committees established under the Emergency Planning and Community Right-to-Know Act (EPCRA) when preparing or revising an emergency response plan.)</p> <p>Verify that each community water system maintains a copy of the emergency response plan for 5 years after the plan has been certified to the Administrator.</p>

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	<p>(NOTE: Detailed assistance, including <i>Instructions to Assist Community Water Systems in Complying with The Public Health Security and Bioterrorism Preparedness and Response Act, Title IV</i> is available at <a href="http://www.epa.gov/safewater/security/">http://www.epa.gov/safewater/security/</a>.)</p> <p>(NOTE: See checklist item WQ.35.1.US for the definition of a community water systems.)</p>



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<b>COMMUNITY WATER SYSTEMS</b>  <b>WQ.40</b> <b>Monitoring/Sampling</b>  <b>WQ.40.1.US.</b> Community water systems are required to meet specific monitoring requirements for inorganic contaminants (40 CFR 141.23(a)) [Revised January 2000; Reviewed March 2000].	<p>Verify that groundwater systems:</p> <ul style="list-style-type: none"> <li>– take a minimum of one sample at every entry point to the distribution system which is representative of each well after treatment (a sampling point) beginning in the compliance period starting 1 January 1993</li> <li>– take each sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.</li> </ul> <p>Verify that surface water systems:</p> <ul style="list-style-type: none"> <li>– take a minimum of one sample at every entry point to the distribution system after any application of treatment or in the distribution system at a point that is representative of each source after treatment (a sampling point) beginning in the compliance period starting 1 January 1993</li> <li>– takes each sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.</li> </ul> <p>(NOTE: In relation to these requirements, surface water systems include systems with a combination of surface and ground sources.)</p> <p>Verify that if the system draws water from more than one source and the sources are combined before distribution, the system samples at an entry point to the distribution system during periods of normal operating conditions.</p> <p>(NOTE: The state may reduce the total number of samples that must be analyzed by allowing the use of compositing. Composite samples from a maximum of five sampling points are allowed if the detection limit of the method used for analysis is less than one fifth the MCL and compositing is done in a laboratory.)</p> <p>Verify that if the concentration in a composite sample is greater than or equal to one- fifth of the MCL of any inorganic chemical, a follow-up sample is analyzed within 14 days from each sampling point included in the composite and analyzed for the contaminants which exceeded one fifth of the MCL in the composite sample.</p> <p>(NOTE: Detection limits for each analytical methods and MCLs for each inorganic contaminant are listed in Appendix 13-3.)</p>

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<p><b>WQ.40.2.US.</b> Community water systems are required to meet specific monitoring requirements for asbestos (40 CFR 141.23(b)) <b>[Reviewed March 2000]</b>.</p>	<p>Verify that for groundwater systems, inorganic monitoring is repeated at least once every compliance period (every 3 yr), and samples are taken quarterly for at least two quarters if a MCL is violated.</p> <p>Verify that for surface water systems, inorganic sampling is repeated annually and samples are taken quarterly for at least four quarters if a MCL is violated.</p> <p>(NOTE: The state may issue a waiver reducing the required monitoring.)</p> <p>(NOTE: See checklist item WQ.35.1.US for the definition of a community water systems.)</p> <p>Verify that asbestos is monitored during the first 3-yr compliance period of each 9-yr compliance cycle starting 1 January 1993.</p> <p>(NOTE: The community water system may apply to the state for a waiver of monitoring if they believe that asbestos is not an issue.)</p> <p>Verify that if the system is vulnerable to asbestos contamination only because of corrosion of asbestos-cement pipe, one sample is taken at a tap served by asbestos-cement pipe and under conditions where asbestos contamination is most likely to occur.</p> <p>Verify that if the system is vulnerable to asbestos contamination due to both its source water supply and corrosion of asbestos-cement pipe, one sample is taken at a tap served by asbestos-cement pipe and under conditions where contamination is most likely to occur.</p> <p>Verify that, when the MCL is exceeded, monitoring is done quarterly.</p> <p>(NOTE: See checklist item WQ.35.1.US for the definition of a community water systems.)</p>
<p><b>WQ.40.3.US.</b> Community water systems are required to meet specific monitoring requirements for antimony, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium, and thallium (40 CFR 141.23(c)) <b>[Revised May 1996; Reviewed March 2000]</b>.</p>	<p>Verify that monitoring is done as follows:</p> <ul style="list-style-type: none"> <li>– groundwater systems: take one sample at each sampling point during each compliance period</li> <li>– surface water systems (or combined surface/ground): take one sample annually at each sampling point</li> <li>– when MCLs are exceeded, monitoring is done quarterly.</li> </ul> <p>(NOTE: States may grant a public water system a waiver for the monitoring of cyanide.)</p> <p>(NOTE: See checklist item WQ.35.1.US for the definition of a community water systems.)</p>

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<p><b>WQ.40.4.US.</b> All community water systems are required to conduct monitoring to determine compliance for nitrate and nitrite levels according to specific parameters (40 CFR 141.23(d) and 141.23(e)) <b>[Reviewed March 2000]</b>.</p>	<p>Verify that the following schedules are met for monitoring of nitrate:</p> <ul style="list-style-type: none"> <li>– community water systems served by groundwater monitor annually starting 1 January 1993</li> <li>– community water systems served by surface water monitor quarterly starting 1 January 1993.</li> </ul> <p>Verify that when the MCL for nitrate is exceeded community water systems do repeat monitoring quarterly for at least 1 yr following any one sample in which the concentration exceeds more than 50 percent of the MCL.</p> <p>(NOTE: After the initial round of quarterly sampling is completed, each community system that is monitoring annually shall take the subsequent samples during the quarters which previously resulted in the highest analytical result.)</p> <p>Verify that public water systems take one sample at each sampling point in the compliance period beginning 1 January 1993 and ending 31 December 1995 for nitrite.</p> <p>(NOTE: After the initial sample, systems where an analytical result for nitrite is less than 50 percent of the MCL will monitor at the frequency specified by the state.)</p> <p>Verify that community systems repeat monitoring for nitrites quarterly for at least 1 yr after any one sample is greater than 50 percent of the MCL.</p> <p>Verify that systems that are monitoring annually for nitrites take each subsequent sample during the quarters which previously resulted in the highest analytical result.</p> <p>Verify that, when nitrate or nitrite samples indicate an exceedance of the MCL, a confirmation sample is taken within 24 h of receipt of the results.</p> <p>(NOTE: If the system is unable to take a confirmation sample within 24 h, it must notify consumers of the exceedance and must take and analyze a confirmation sample within 2 weeks.)</p> <p>(NOTE: See checklist item WQ.35.1.US for the definition of a community water systems.)</p>
<p><b>WQ.40.5.US.</b> Beginning with the initial compliance period, monitoring of the contaminants listed in Table 2 of Appendix 13-1 at community water systems is required to be done according to specific parameters (40 CFR</p>	<p>Verify that groundwater systems take a minimum of one sample at every entry point of the distribution system that is representative of each well after treatment.</p> <p>Verify that surface water systems (or combined surface/ground) take a minimum of one sample at points in the distribution system that are representative of each source or at each entry point to the distribution system after treatment.</p>

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141.24(f) [Reviewed March 2000].	<p>(NOTE: For both groundwater and surface water systems, each sample must be taken at the same sampling point unless conditions make another sampling point more representative of each source, treatment plant, or within the distribution system.)</p> <p>Verify that if the system draws water from more than one source and the sources are combined before distribution, the system samples at an entry point to the distribution system during periods of normal operating conditions.</p> <p>Verify that each community water system takes four consecutive quarterly samples for each contaminant, except vinyl chlorides.</p> <p>(NOTE: If the initial monitoring for contaminants is completed by December 1992 and none of the contaminants listed are found, then each system shall take one sample annually starting with the initial compliance period.)</p> <p>(NOTE: After a minimum of 3 yr of sampling, the state may reduce the number of samples to one each compliance period.)</p> <p>Verify that if a contaminant, except vinyl chloride, is detected at a level exceeding 0.0005 mg/L in any sample, the system monitors quarterly at each sampling point which resulted in detection.</p> <p>Verify that groundwater systems which have detected one or more of the following two-carbon organic compounds; trichloroethylene, tetrachloroethylene, 1,2-dichloroethane, 1,1,1-trichloroethane, cis-1, 2-dichloroethylene, trans-1, 2-dichloroethylene, or 1,1-dichloroethylene monitor quarterly for vinyl chlorides at each sampling point at which one or more of the two-carbon organic compounds was detected.</p> <p>Verify that when the MCLs are exceeded, monitoring is conducted quarterly until the state determines that the system is reliably and consistently below the MCL.</p> <p>(NOTE: See checklist item WQ.35.1.US for the definition of a community water systems.)</p>

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<p><b>WQ.40.6.US.</b> Monitoring for organic contaminants listed in Table 3 of Appendix 13-1 at community water systems is required to be done according to specific parameters (40 CFR 141.24(h)) <b>[Reviewed March 2000; Revised April 2007]</b>.</p>	<p>(NOTE: No monitoring is required for aldicarb, aldicarb sulfoxide, or aldicarb sulfone.)</p> <p>Verify that groundwater systems take a minimum of one sample at every entry point to the distribution system that is representative of each well after treatment.</p> <p>Verify that surface water systems (or surface/ground) take a minimum of one sample at points in the distribution system that are representative of each source or at each entry point to the distribution system after treatment.</p> <p>(NOTE: For both groundwater and surface water systems, each sample must be taken at the same sampling point unless conditions make another sampling point more representative of each source, treatment plant, or within the distribution system.)</p> <p>Verify that, if the system draws water from more than one source and the sources are combined before distribution, the system samples at an entry point to the distribution system during periods of normal operating conditions.</p> <p>Verify that each community water system takes four consecutive quarterly samples for each contaminant during each compliance period starting with the initial compliance period.</p> <p>(NOTE: Systems serving more than 3300 persons that do not detect a contaminant in the initial compliance period may reduce sampling to two quarterly samples in 1 yr during each repeat compliance period.)</p> <p>(NOTE: Systems serving less than or equal to 3300 person that do not detect a contaminant in the initial compliance period may reduce sampling to one sample during each repeat compliance period.)</p> <p>Verify that, when an organic contaminant is detected (see Appendix 13-4), the system monitors quarterly at each sampling point that resulted in detection.</p> <p>Verify that, if the monitoring results in detection of one or more of certain related contaminants (heptachlor and heptachlor epoxide), then subsequent monitoring shall analyze for all related contaminants.</p> <p>(NOTE: The state may reduce the number of samples required and/or the frequency of sampling.)</p> <p>(NOTE: See checklist item WQ.35.1.US for the definition of a community water systems.)</p>
<p><b>WQ.40.7.US.</b> Community water systems are required to monitor for specific</p>	<p>(NOTE: The determination of whether a PWS is required to monitor under the Unregulated Contaminant Monitoring Rule [UCMR] is based on the type of system [e.g., community water system, non-transient non-community water (NTNC)</p>

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unregulated contaminants (40 CFR 141.40(a)(2), 141.40(a)(4), and 141.40(a)(5)) <b>[Revised October 1999; Reviewed March 2000; Citation Revised April 2001; Revised April 2007; Revised July 2012; Revised January 2017].</b>	<p>system, etc.] and its retail population, as indicated by SDWIS/Fed on 31 December 2015.)</p> <p>Verify that, if the retail community water system serves more than 10,000 people, the system monitors for the unregulated contaminants on List 1 per Table 1, UCMR Contaminant List in Appendix 13-5.</p> <p>(NOTE: If the community water systems believes that their applicability status is different than EPA has specified in the notification letter they received, or if the community water system is subject to UCMR requirements and they have not been notified by either EPA or the State, they report to EPA, as specified in 40 CFR 141.35(b)(2) or 141.35(c)(4) [see checklist item WQ.40.8.US].)</p> <p>(NOTE: The community water system must monitor for unregulated contaminants regardless of whether or not they have been notified by EPA or the State if they serve a population of more than 10,000 people.)</p> <p>Verify that community water systems monitor for the unregulated contaminants on List 2 (Screening Survey) of Table 1 (see appendix 13-5) if the system serves 10,001 to 100,000 people and the system is notified by EPA or the State that they are part of the State Monitoring Plan for Screening Survey testing.</p> <p>Verify that community water systems that serve more than 100,000 people monitor for the unregulated contaminants on List 2 (Screening Survey) of Table 1 (see Appendix 13-5).</p> <p>Verify that retail community water systems that serve more than 10,000 people monitor for the unregulated contaminants on List 3 of Table 1 of Appendix 13-5 if they are notified by their State or EPA that they are part of the Pre-Screen Testing.</p> <p>Verify that community water systems serving more than 10,000 people which also meet the UCMR applicability criteria perform sampling and monitoring as outlined in the text of 40 CFR 141.40(a)(4)(i).</p> <p>(NOTE: Small PWSs [serves 10,000 people or fewer] will not be selected to monitor for any more than one of the three monitoring lists provided in Table 1, UCMR Contaminant List [see Appendix 13-5]. EPA will provide sample containers, provide pre-paid air bills for shipping the sampling materials, conduct the laboratory analysis, and report and review monitoring results for all small systems selected to conduct required monitoring.)</p> <p>Verify that community water systems that serve 10,000 or fewer people monitor for the unregulated contaminants on List 1 per Table 1 of Appendix 13-5 if they are notified by the State or EPA that they are part of the State Monitoring Plan for Assessment Monitoring.</p>

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<p><b>WQ.40.8.US.</b> The reporting of unregulated contaminant monitoring results must be done according to certain parameters by community water systems (40 CFR 141.35) [Revised October 1999; Reviewed March 2000; Revised October 2001; Revised April 2007; Revised July 2012; Revised January 2017].</p>	<p>Verify that community water systems that serve 10,000 or fewer people monitor for the unregulated contaminants on List 2 of Table 1 of Appendix 13-5 if they are notified by the State or EPA that they are part of the State Monitoring Plan for the Screening Survey.</p> <p>Verify that community water systems that serve 10,000 or fewer people which are notified they are part of the State Monitoring Plan for Pre-Screen Testing monitor for the contaminants on List 3 of Table 1 of Appendix 13-5.</p> <p>Verify that community water systems serving more than 10,000 people which is sampling for UCMRs does so according to the processes defined in 40 CFR 141.40(a)(4)(i) [see text].</p> <p>Verify that community water systems serving 10,000 or fewer people and are notified that they are part of the State Monitoring Plan for Assessment Monitoring, Screening Survey or Pre-Screen monitoring comply with the sampling and monitoring as outlined in the text of 40 CFR 141.40(a)(4)(ii).</p> <p>(NOTE: UCMR4 samples must be collected according to the schedule agreed upon with EPA or the State by 13 December 2018.)</p> <p>Verify that, if the EPA or State informs the community water system serving 10,000 or fewer people that they will be collecting the UCMR samples, the community water system assists them in identifying the appropriate sampling locations and in collecting the samples.</p> <p>(NOTE: Quality control procedures are outlined in 40 CFR 141.40(a)(5).)</p> <p>(NOTE: This checklist item applies to any community water system required to monitor for unregulated contaminants under 40 CFR 141.40(a) [see checklist item WQ.40.8.US].)</p> <p>(NOTE: For this checklist item, “population served” is the retail population served directly by the community water system as reported to the Federal Safe Drinking Water Information System [SDWIS/Fed]; wholesale or consecutive populations are not included.)</p> <p>(NOTE: For this checklist item, “finished” means water that is introduced into the distribution system of a PWS and is intended for distribution and consumption without further treatment, except the treatment necessary to maintain water quality in the distribution system (e.g., booster disinfection, addition of corrosion control chemicals).)</p> <p>(NOTE: For this checklist item, the term “State” refers to the State or Tribal government entity that has jurisdiction over the community water system even if that government does not have primary enforcement responsibility under the <i>Safe Drinking Water Act</i>.)</p>

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	<p>(NOTE: For this checklist item, the term “PWS Official” refers to the person at the water system who is able to function as the official spokesperson for the system's Unregulated Contaminant Monitoring Regulation (UCMR) activities.)</p> <p>(NOTE: For this checklist item, the term “PWS Technical Contact” refers to the person at the water system who is responsible for the technical aspects of the UCMR activities, such as details concerning sampling and reporting.)</p> <p>(NOTE: Some of the reporting requirements associated with UCMR are to be fulfilled electronically and others by mail. Information that must be submitted using EPA's electronic data reporting system must be submitted through: <a href="https://www.epa.gov/dwucmr">https://www.epa.gov/dwucmr</a>. Documentation that is required to be mailed can be submitted either: To UCMR Sampling Coordinator, USEPA, Technical Support Center, 26 West Martin Luther King Drive (MS 140), Cincinnati, OH 45268; or by email at <a href="mailto:UCMR_Sampling_Coordinator@epa.gov">UCMR_Sampling_Coordinator@epa.gov</a>.)</p> <p>(NOTE: If the community water system has received a letter from EPA or the state concerning the required monitoring and the system does not meet the applicability criteria for UCMR, or if a change occurs at the system that may affect the requirements under UCMR, the facility must mail or email a letter to EPA. The letter must be from the PWS Official and must include the PWS Identification (PWSID) Code along with an explanation as to why the UCMR requirements are not applicable to the PWS, or have changed for the PWS, along with the appropriate contact information. EPA will make an applicability determination based on the letter and in consultation with the State when necessary. The system is subject to UCMR requirements unless and until it receives a letter from EPA agreeing that they do not meet the applicability criteria.)</p> <p>Verify that, if the community water system serves a population of more than 10,000 people, and does not purchase the entire water supply as finished water from another PWS, the following reporting requirements are met:</p> <ul style="list-style-type: none"> <li>– provide contact information by 31 December 2017 and updates within 30 days if this information changes using EPA's electronic data reporting system, including the following for the PWS Technical Contact and PWS Official: <ul style="list-style-type: none"> <li>– name</li> <li>– affiliation</li> <li>– mailing address</li> <li>– phone number</li> <li>– email address</li> </ul> </li> <li>– provide, as a one-time reporting requirement, the U.S. Postal Service Zip Code(s) for all areas being served water by the facility</li> <li>– provide sampling location and inventory information 31 December 2017 using EPA's electronic data reporting system</li> <li>– submit, verify or update the following information for each sampling location, or for each approved representative sampling location:</li> </ul>

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	<ul style="list-style-type: none"> <li>– PWSID code</li> <li>– PWS name</li> <li>– PWS facility identification code</li> <li>– PWS facility name</li> <li>– PWS facility type</li> <li>– water source type</li> <li>– sampling point identification code</li> <li>– sampling point name</li> <li>– sampling point type code.</li> </ul> <p>(NOTE: If information changes, report updates, including new sources and sampling locations that are put in use before or during the UCMR sampling period, to EPA's electronic data reporting system within 30 days of the change.)</p> <p>(NOTE: Some systems that use ground water as a source and have multiple entry points to the distribution system (EPTDSs) may propose monitoring at representative entry point(s), rather than monitor at every EPTDS, see the text of 40 CFR 141.35(c)(3) for further information.)</p> <p>(NOTE: If the community water system operators believe they are subject to UCMR requirements, and the system has not been notified by either EPA or your State by 19 April 2017, the system must send a letter to EPA including an explanation as to why the UCMR requirements are applicable to the system along with the appropriate contact information. A copy of the letter must also be submitted to the State, as directed by the State. EPA will make an applicability determination based on the letter, and in consultation with the State when necessary, and will notify the system regarding applicability status and required sampling schedule.)</p> <p>(NOTE: If a PWS meets the applicability criteria, they are subject to the UCMR monitoring and reporting requirements, regardless of whether they have been notified by the State or EPA.)</p> <p>(NOTE: Large systems may change their Assessment Monitoring [List 1] or Screening Survey [List 2] schedules up to 31 December 2017, using EPA's electronic data reporting system.)</p> <p>Verify that, after 31 December 2017, if the community water system cannot sample according to the assigned sampling schedule (e.g., because of budget constraints, or if a sampling location will be closed during the scheduled month of monitoring), the community water system mails or emails a letter to EPA prior to the scheduled sampling date including an explanation of why the samples cannot be taken according to the assigned schedule, and the alternative schedule the system is requesting.</p>

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	<p>(NOTE: The community water system is subject to their assigned UCMR sampling schedule or the schedule that the system revised on or before 31 December 2017, unless and until the community water system receives a letter from EPA specifying a new schedule.)</p> <p>(NOTE: The following are exceptions to the rescheduling notification requirements:</p> <ul style="list-style-type: none"> <li>– for ground water sampling, if the second round of sampling will be completed five to seven months after the first sampling event, no notification to EPA is required</li> <li>– if any ground water sampling location will be non- operational for more than one month before and one month after the month in which the second sampling event is scheduled (i.e., it is not possible to sample within the five to seven month window), the PWS must notify EPA explaining why the schedule cannot be met.)</li> </ul> <p>Verify that, for each sample, the community water system reports the required information using EPA's electronic data reporting system.</p> <p>Verify that the community water system reports any changes, relative to what is currently posted, made to data elements 1 through 9 to EPA, in writing, explaining the nature and purpose of the proposed change.</p> <p>(NOTE: The community water system is responsible for ensuring that the laboratory conducting the analysis of their UCMR samples posts the analytical results to EPA's electronic reporting system. The facility is also responsible for reviewing, approving, and submitting those results to EPA.)</p> <p>Verify that the laboratory posts the data to EPA's electronic data reporting system within 120 days from the sample collection date.</p> <p>(NOTE: The community water system has 60 days from when the laboratory posts the data in EPA's electronic data reporting system to review, approve, and submit the data to the State and EPA. If the community water system does not electronically approve and submit the laboratory data to EPA within 60 days of the laboratory's posting data to EPA's electronic reporting system, the data will be considered approved by the community water system and available for State and EPA review.)</p> <p>(NOTE: If the community water system reports more than one set of valid results for the same sampling location and the same sampling event, EPA will use the highest of the reported values as the official result.)</p> <p>(NOTE: The community water system cannot report previously collected data to meet the testing and reporting requirements for the contaminants. All analyses must be performed by laboratories approved by EPA to perform UCMR analyses and using correctly collected samples collected.)</p>

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<p><b>WQ.40.9.US.</b> Community water systems, except as defined as exempted water systems, are required to monitor for total coliforms at a frequency based on the population served by the system (40 CFR 141.21(a)(2), 141.21(a)(4), and 141.21(h)) <b>[Reviewed March 2000; Revised April 2013].</b></p> <p><b>WQ.40.10.US.</b> Checklist item deleted <b>[Deleted March 2000].</b></p> <p><b>WQ.40.11.US.</b> Community water systems are required to monitor for radioactivity at specific frequencies (40 CFR 141.25(c)(1) Table B and</p>	<p>(NOTE: If the community water system serves a population of 10,000 or fewer people, and they are notified that they have been selected for UCMR monitoring, their reporting requirements will be specified within the materials that EPA sends the system, including a request for contact information and a request for information associated with the sampling kit.)</p> <p>Verify that community water systems serving a population of 10,000 or fewer people record all data elements on each sample form and sample bottle provided to the facility by the UCMR Sampling Coordinator.</p> <p>(NOTE: Community water systems serving 10,000 or fewer people must send this sample information as specified in the instructions of the sampling kit, which will include the due date and return address.)</p> <p>Verify that community water systems serving 10,000 or fewer people report any changes made in data elements 1 through 9 by mailing or emailing an explanation of the nature and purpose of the proposed change to EPA.</p> <p>(NOTE: This checklist item is applicable until 31 March 2016. After that time, the applicable requirements will be found in 40 CFR 141, subpart Y [141.851 through 141.861]. ]. See checklist items WQ.10.8.US, WQ.15.14.US, WQ.15.15.US, and WQ.30.15.US for Public Water Systems. See WQ.40.28.US for Community Water Systems. See WQ.65.7.US and WQ.65.8.US for NTNC Water Systems.)</p> <p>Verify that the community water system is sampling according to the schedule in Appendix 13-6.</p> <p>Verify that samples are collected at regular time intervals throughout the month.</p> <p>(NOTE: A system which uses only groundwater (except groundwater under the direct influence of surface water) and serves 4900 persons or fewer may collect all required samples in a single day if they are taken from different sites.)</p> <p>(NOTE: See checklist item WQ.35.1.US for the definition of a community water systems.)</p> <p>Deleted as a result of USEPA review of this section.</p> <p>Verify that community water systems conduct initial monitoring to determine compliance with standards for gross alpha particle activity, radium-226, radium-228, and uranium outlined in 40 CFR 141.66(b), 141.66(c), and 141.66(e) (see checklist item WQ.35.4.US) by 31 December 2007.</p>

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141.26) [Revised March 2000. Revised January 2001; Revised October 2004].	<p>(NOTE: For the purposes of monitoring for gross alpha particle activity, radium-226, radium-228, uranium, and beta particle and photon radioactivity in drinking water, the “detection limit” is defined as follows:</p> <ul style="list-style-type: none"> <li>– Gross alpha particle activity : 3 pCi/L</li> <li>– Radium 226 : 1 pCi/L</li> <li>– Radium 228: 1 pCi/L</li> <li>– Uranium: 1 microgram/L.</li> </ul> <p>Verify that all existing community water systems using groundwater, surface water or systems using both ground and surface water:</p> <ul style="list-style-type: none"> <li>– samples at every entry point to the distribution system that is representative of all sources being used under normal operating conditions</li> <li>– takes each sample at the same sampling point unless conditions make another sampling point more representative of each source or the State has designated a distribution system location.</li> </ul> <p>Verify that all new community water systems or community water systems that use a new source of water:</p> <ul style="list-style-type: none"> <li>– begin to conduct initial monitoring for the new source within the first quarter after initiating use of the source</li> <li>– conduct more frequent monitoring when ordered by the State in the event of possible contamination or when changes in the distribution system or treatment processes occur which may increase the concentration of radioactivity in finished water.</li> </ul> <p>Verify that community water systems conduct initial monitoring for gross alpha particle activity, radium-226, radium-228, and uranium as follows:</p> <ul style="list-style-type: none"> <li>– systems without acceptable historical data collect four consecutive quarterly samples at all sampling points before 31 December 2007</li> <li>– if the average of the initial monitoring results for a sampling point is above the MCL, the system collects and analyzes quarterly samples at that sampling point until the system has results from four consecutive quarters that are at or below the MCL, unless the system enters into another schedule as part of a formal compliance agreement with the State.</li> </ul> <p>(NOTE: States may allow historical monitoring data collected at a sampling point to satisfy the initial monitoring requirements for that sampling point. For gross alpha particle activity, uranium, radium-226, and radium-228 monitoring, the State may waive the final two quarters of initial monitoring for a sampling point if the results of the samples from the previous two quarters are below the detection limit. States may allow community water systems to reduce the future frequency of</p>

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	<p>monitoring from once every three years to once every six or nine years at each sampling point.)</p> <p>(NOTE: To fulfill quarterly monitoring requirements for gross alpha particle activity, radium-226, radium-228, or uranium, a system may composite up to four consecutive quarterly samples from a single entry point if analysis is done within a year of the first sample. States will treat analytical results from the composited as the average analytical result to determine compliance with the MCLs and the future monitoring frequency. )</p> <p>(NOTE: A gross alpha particle activity measurement may be substituted for the required radium-226 measurement provided that the measured gross alpha particle activity does not exceed 5 pCi/l. A gross alpha particle activity measurement may be substituted for the required uranium measurement provided that the measured gross alpha particle activity does not exceed 15 pCi/l. The gross alpha measurement shall have a confidence interval of 95% (1.65, where is the standard deviation of the net counting rate of the sample) for radium-226 and uranium.)</p> <p>Verify that, when a system uses a gross alpha particle activity measurement in lieu of a radium-226 and/or uranium measurement, the gross alpha particle activity analytical result is used to determine the future monitoring frequency for radium-226 and/or uranium.</p> <p>Verify that, if the gross alpha particle activity result is less than detection, <math>\frac{1}{2}</math> the detection limit is used to determine compliance and the future monitoring frequency.</p> <p>Verify that community water systems (both surface and ground water) designated by the State as vulnerable sample for beta particle and photon radioactivity by collecting quarterly samples for beta emitters and annual samples for tritium and strontium-90 at each entry point to the distribution system, beginning within one quarter after being notified by the State.</p> <p>(NOTE: Systems already designated by the State must continue to sample until the State reviews and either reaffirms or removes the designation. If the gross beta particle activity minus the naturally occurring potassium-40 beta particle activity at a sampling point has a running annual average (computed quarterly) less than or equal to 50 pCi/L (screening level), the State may reduce the frequency of monitoring at that sampling point to once every 3 yr.)</p> <p>Verify that community water systems (both surface and ground water) designated by the State as utilizing waters contaminated by effluents from nuclear facilities sample for beta particle and photon radioactivity by:</p> <ul style="list-style-type: none"> <li>– collecting quarterly samples for beta emitters and iodine-131 beginning within one quarter after being notified by the State</li> </ul>

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	<p>– collecting annual samples for tritium and strontium-90 at each entry point to the distribution system beginning within one quarter after being notified by the State.</p> <p>(NOTE: Systems already designated by the State as systems using waters contaminated by effluents from nuclear facilities must continue to sample until the State reviews and either reaffirms or removes the designation.)</p> <p>(NOTE: Community water systems may analyze for naturally occurring potassium-40 beta particle activity from the same or equivalent sample used for the gross beta particle activity analysis. Systems are allowed to subtract the potassium-40 beta particle activity value from the total gross beta particle activity value to determine if the screening level is exceeded. The potassium-40 beta particle activity must be calculated by multiplying elemental potassium concentrations (in mg/L) by a factor of 0.82.)</p> <p>Verify that, if the gross beta particle activity minus the naturally occurring potassium-40 beta particle activity exceeds the appropriate screening level, an analysis of the sample is performed to identify the major radioactive constituents present in the sample and the appropriate doses are calculated and summed to determine compliance.</p> <p>Verify that doses are also be calculated and combined for measured levels of tritium and strontium to determine compliance.</p> <p>Verify that community water systems monitor monthly at the sampling point(s) which exceed the MCL in 40 CFR 141.66(d) (see checklist item WQ.35.4.US) beginning the month after the exceedance occurs and continue monthly monitoring until the system has established, by a rolling average of 3 monthly samples, that the MCL is being met.</p> <p>(NOTE: The State may require more frequent monitoring for radionuclides than specified in this checklist item, or may require confirmation samples at its discretion. The results of the initial and confirmation samples will be averaged for use in compliance determinations. Each public water system shall monitor at the time designated by the State during each compliance period.)</p> <p>(NOTE: Compliance with 40 CFR 141.66(b) through 141.66(e) will be determined based on the analytical result(s) obtained at each sampling point. If one sampling point is in violation of an MCL, the system is in violation of the MCL. For systems monitoring more than once per year:</p> <ul style="list-style-type: none"> <li>– compliance with the MCL is determined by a running annual average at each sampling point. If the average of any sampling point is greater than the MCL, then the system is out of compliance with the MCL.</li> <li>– if any sample result will cause the running average to exceed the MCL at any sample point, the system is out of compliance with the MCL immediately.)</li> </ul>

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<p><b>WQ.40.12.US.</b> Checklist item deleted [Revised January 1999; Revised March 2000; Revised April 2001; Deleted April 2006].</p> <p><b>WQ.40.13.US.</b> Suppliers of water for community public water systems are required to analyze for sodium (40 CFR 141.41) [Revised March 2000].</p> <p><b>WQ.40.14.US.</b> Community water systems are required to identify whether certain construction materials are present in their distribution system and report to the state (40 CFR 141.42(d)) [Revised March 2000].</p> <p><b>WQ.40.15.US.</b> Community water systems that add a chemical disinfectant to the water in any part of the drinking water process or supply water containing a chemical disinfectant are</p>	<p>Verify that if the MCL for radioactivity set forth in 40 CFR 141.66(b) through 141.66(e) is exceeded, the operator of a community water system gives notice to the State and to the public.</p> <p>(NOTE: See checklist item WQ.35.1.US for the definition of a community water systems.)</p> <p>NOTE: This checklist item about analyzing for TTHM after adding disinfectant to water is deleted due to the deletion of 40 CFR 141.30 as of 6 March 2006.</p> <p>Verify that one sample is taken per plant at the entry point of the distribution system annually for systems using surface water in whole or in part and every 3 yr for systems using solely groundwater sources.</p> <p>Verify that the results of the sampling were reported to the USEPA and/or state within 10 days following the end of the required monitoring period or within the first 10 days of the month following the month in which the sample was taken.</p> <p>(NOTE: See checklist item WQ.35.1.US for the definition of a community water systems.)</p> <p>Verify that the community water supply system identifies whether the following construction materials are present in their distribution system and reports to the state:</p> <ul style="list-style-type: none"> <li>– lead from piping, solder, caulking, interior lining of distribution mains, alloys, and home plumbing</li> <li>– copper from piping and alloys, service lines, and home plumbing</li> <li>– galvanized piping, service lines, and home plumbing</li> <li>– ferrous piping materials such as cast iron and steel</li> <li>– asbestos cement pipe.</li> </ul> <p>(NOTE: States may require identification and reporting of other materials.)</p> <p>(NOTE: See checklist item WQ.35.1.US for the definition of a community water systems.)</p> <p>(NOTE: These requirements apply to Subpart H systems serving 10,000 or more persons beginning 1 January 2002. Subpart H systems serving fewer than 10,000 persons and systems using only groundwater not under the direct influence of surface water must comply with this section beginning 1 January 2004.)</p>

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<p>required to meet specific monitoring requirements for disinfection byproducts and disinfection byproduct precursors (DBPP) (40 CFR 141.130(a)(1), 141.130(b)(1), 141.131, 141.132(a), 141.132(b), and 141.132(d)) [Added January 1999; Revised March 2000; Revised April 2001; Revised April 2006].</p>	<p>Verify that all samples are taken during normal operating conditions and according to the required monitoring plan.</p> <p>(NOTE: Systems may consider multiple wells drawing water from a single aquifer as one treatment plant for determining the minimum number of TTHM and HAA5 samples required, if the state approves.)</p> <p>Verify that monitoring for TTHM and HAA5 is done at the frequency, either routine or reduced as appropriate, outlined in Appendix 13-10.</p> <p>Verify that sample analysis is done using appropriate methodology and is conducted by laboratories that are certified by the USEPA or the State.</p> <p>Verify that, in order to qualify for reduced monitoring for TTHM and HAA5, subpart H systems not monitoring under the requirements for disinfection byproduct precursors (DBPP) take monthly TOC samples every 30 days at a location prior to any treatment, beginning April 1, 2008 or earlier, if specified by the State.</p> <p>Verify that, in addition to meeting other criteria for reduced monitoring, the source water TOC running annual average is <math>\leq 4.0</math> mg/L (based on the most recent four quarters of monitoring) on a continuing basis at each treatment plant to reduce or remain on reduced monitoring for TTHM and HAA5.</p> <p>(NOTE: Once qualified for reduced monitoring for TTHM and HAA5, a system may reduce source water TOC monitoring to quarterly TOC samples taken every 90 days at a location prior to any treatment.)</p> <p>(NOTE: Systems on a reduced monitoring schedule may remain on that reduced schedule as long as the average of all samples taken in the year (for systems which must monitor quarterly) or the result of the sample (for systems which must monitor no more frequently than annually) is no more than 0.060 mg/L and 0.045 mg/L for TTHMs and HAA5, respectively.)</p> <p>Verify that systems which exceed the results of 0.060 mg/L and 0.045 mg/L for TTHMs and HAA5, respectively resume monitoring according to the minimum monitoring frequency in Appendix 13-10 in the quarter immediately following the monitoring period in which the system exceeded the TTHM and HAA5.</p> <p>Verify that, for systems using only ground water not under the direct influence of surface water and serving fewer than 10,000 persons, if either the TTHM annual average is <math>&gt;0.080</math> mg/L or the HAA5 annual average is <math>&gt;0.060</math> mg/L, the system goes to the increased monitoring identified in the sample location column of Appendix 13-10 in the quarter immediately following the monitoring period in which the system exceeds the TTHMs or HAA5 standards.</p>

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	<p>(NOTE: Systems on increased monitoring may return to routine monitoring if, after at least one year of monitoring their TTHM annual average is less than or equal to 0.060 mg/L and their HAA5 annual average is less than or equal to 0.045 mg/L.)</p> <p>Verify that community water systems using chlorine dioxide, for disinfection or oxidation, perform the following monitoring:</p> <ul style="list-style-type: none"> <li>– daily samples at the entrance to the distribution system plus, when the daily sample exceeds the chlorite MCL, three additional samples in the distribution system the following day at the entrance to the distribution system, as close to the first customer as possible, in a location representative of average residence time, and as close to the end of the distribution system as possible</li> <li>– a monthly three-sample set in the distribution system near the first customer, at a location representative of average residence time, and at a location reflecting maximum residence time in the distribution system.</li> </ul> <p>Verify that daily chlorite monitoring at the entrance to the distribution system is not reduced.</p> <p>(NOTE: Monthly chlorite monitoring in the distribution system may be reduced to one three-sample set per quarter after 1 yr of monitoring where no individual chlorite sample taken in the distribution system exceeds the chlorite MCL and the system has not been required to conduct additional monitoring in response to a exceedance in the daily samples. The system may remain on the reduced monitoring schedule until either any of the three individual chlorite samples taken quarterly in the distribution system exceeds the chlorite MCL or the system is required to conduct additional monitoring in response to a exceedance in the daily samples.)</p> <p>Verify that systems using ozone, for disinfection or oxidation, take one sample per month for each treatment plant in the system using ozone at the entrance to the distribution system, while the ozonation system is operating under normal conditions.</p> <p>(NOTE: Until 31 March 2009, systems required to analyze for bromate may reduce monitoring from monthly to quarterly, if the system's average source water bromide concentration is less than 0.05 mg/L based on representative monthly bromide measurements for one year. The system may remain on reduced bromate monitoring until the running annual average source water bromide concentration, computed quarterly, is equal to or greater than 0.05 mg/L based on representative monthly measurements. If the running annual average source water bromide concentration is greater than or equal to 0.05 mg/L, the system must resume routine monitoring for ozone in the following month. Beginning April 1, 2009, systems may no longer use these provisions to qualify for reduced monitoring. A system required to analyze for bromate may reduce monitoring from monthly to quarterly, if the system's running annual average bromate concentration is less than or equal to 0.0025 mg/L based on monthly bromate measurements for the most recent four quarters, with samples analyzed using Method 317.0 Revision 2.0, 326.0 or 321.8.</p>

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<p><b>WQ.40.16.US.</b> Community water systems that add a chemical disinfectant to the water in any part of the drinking water process or distribute supply water containing a chemical disinfectant are required to meet specific monitoring requirements for disinfection residuals (40 CFR 141.130(a)(1), 141.130(b), 141.131, 141.132(a)(1), and 141.132(c)) <b>[Added January</b></p>	<p>If a system has qualified for reduced bromate monitoring, that system may remain on reduced monitoring as long as the running annual average of quarterly bromate samples less than or equal to 0.0025 mg/L based on samples analyzed using Method 317.0 Revision 2.0, 326.0, or 321.8. If the running annual average bromate concentration is greater than 0.0025 mg/L, the system must resume routine ozone monitoring.)</p> <p>Verify that Subpart H systems that use conventional filtration treatment monitor for TOC no later than the point of combined filter effluent turbidity monitoring and representative of the treated water.</p> <p>Verify that all systems using conventional filtration also monitor for TOC in the source water prior to any treatment at the same time as monitoring for TOC in the treated water.</p> <p>(NOTE: These samples (source water and treated water) are referred to as paired samples. At the same time as the source water sample is taken, all systems must monitor for alkalinity in the source water prior to any treatment. Systems must take one paired sample and one source water alkalinity sample per month per plant at a time representative of normal operating conditions and influent water quality.)</p> <p>(NOTE: Subpart H systems with an average treated water TOC of less than 2.0 mg/L for 2 consecutive years, or less than 1.0 mg/L for one year, may reduce monitoring for both TOC and alkalinity to one paired sample and one source water alkalinity sample per plant per quarter. The system must revert to routine monitoring in the month following the quarter when the annual average treated water TOC greater than or equal to 2.0 mg/L.)</p> <p>(NOTE: See checklist item WQ.35.1.US for the definition of a community water systems.)</p> <p>(NOTE: These requirements apply to Subpart H systems serving 10,000 or more persons beginning 1 January 2002. Subpart H systems serving fewer than 10,000 persons and systems using only groundwater not under the direct influence of surface water must comply with this section beginning 1 January 2004.)</p> <p>Verify that all samples are taken during normal operating conditions and according to the required monitoring plan.</p> <p>Verify that sample analysis is done using appropriate methodology.</p> <p>Verify that, until 31 March 2016, community water systems that use chlorine or chloramines measure the residual disinfectant level in the distribution system at the same point in the distribution system and at the same time as total coliforms are sampled as specified in 40 CFR 141.21 [see checklist items WQ.10.2.US, WQ.15.1.US through WQ.15.3.US for Public Water Systems and WQ.40.9.US for Community Water Systems).</p>

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<p><b>1999; Revised March 2000; Revised April 2013].</b></p> <p><b>WQ.40.17.US.</b> Community water systems that add a chemical disinfectant to the water in any part of the drinking water process are required to have a monitoring plan (40 CFR 141.130(a)(1), 141.130(b)(1), 141.131, 141.132(a), and 141.132(f)) [Added January 1999; Revised March 2000].</p>	<p>Verify that, beginning 1 April 2016, community water systems that use chlorine or chloramines measure the residual disinfectant level in the distribution system at the same point in the distribution system and at the same time as total coliforms are sampled, as specified in 40 CFR 141.854 through 141.858.</p> <p>(NOTE: Subpart H systems may use the results of residual disinfectant concentration sampling conducted under 40 CFR 141.74(b)(6)(i) for unfiltered systems or 40 CFR 141.74(c)(3)(i) for systems that filter, in lieu of taking separate samples.)</p> <p>Verify that monitoring is not reduced when using chlorine and/or chloramine.</p> <p>Verify that systems using chlorine dioxide for disinfection or oxidation take daily samples at the entrance to the distribution system.</p> <p>(NOTE: When a daily chlorine dioxide sample exceeds the MRDL, samples are required to be taken in the distribution system the following day at the entrance to the distribution system plus three additional chlorine dioxide distribution samples. If chlorine dioxide or chloramines are used to maintain a disinfectant residual in the distribution system, or if chlorine is used to maintain a disinfectant residual in the distribution system and there are no disinfection addition points after the entrance to the distribution system (i.e., no booster chlorination), the system must take three samples as close to the first customer as possible, at intervals of at least 6 h. If chlorine is used to maintain a disinfectant residual in the distribution system and there are one or more disinfection addition points after the entrance to the distribution system (i.e., booster chlorination), the system must take one sample as close to the first customer as possible, in a location representative of average residence time, and as close to the end of the distribution system as possible,)</p> <p>Verify that monitoring is not reduced when using chlorine dioxide.</p> <p>(NOTE: See checklist item WQ.35.1.US for the definition of a community water systems.)</p> <p>(NOTE: This requirement applies to Subpart H systems serving 10,000 or more persons beginning 1 January 2002. Subpart H systems serving fewer than 10,000 persons and systems using only groundwater not under the direct influence of surface water must comply with this section beginning 1 January 2004.)</p> <p>Verify that the system has developed and maintains a monitoring plan.</p> <p>(NOTE: The plan must be made available for inspection by the state and the general public no later than 30 days following applicable compliance dates.)</p> <p>Verify that all Subpart H systems serving more than 3300 people submit a copy of the plan to the state.</p>

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<p><b>WQ.40.18.US.</b> Community water systems using a primary or residual disinfectant other than ultraviolet light or delivering water that has been treated with a primary or residual disinfectant other than ultraviolet light must conduct monitoring according to specific parameters (40 CFR 141.600, 141.601, and 141.604) [Added April 2006].</p>	<p>Verify that the plan includes, at a minimum:</p> <ul style="list-style-type: none"> <li>– specific locations and schedules for collecting samples for any required parameters</li> <li>– how the system will calculate compliance with MCLs, MRDLs, and treatment techniques</li> <li>– if approved for monitoring as a consecutive system, or as providing water to a consecutive system, the plan reflects the entire distribution system.</li> </ul> <p>(NOTE: See checklist item WQ.35.1.US for the definition of a community water systems.)</p> <p>(NOTE: Compliance with these requirements is not mandatory if the facility serves fewer than 500 people and the facility has taken TTHM and HAA5 samples under 40 CFR 141, Subpart L unless the State notifies the facility that they must conduct standard monitoring or a system specific study. If the facility has not taken TTHM and HAA5 samples under 40 CFR 141, Subpart L or if the State notifies the facility that they must comply, the facility must conduct standard monitoring or a system specific study.)</p> <p>Verify that the sampling schedule in Table 1 of Appendix 13-9b is met.</p> <p>Verify that an Initial Distribution System Evaluation (IDSE) is used to determine locations with representative high TTHM and HAA5 concentrations throughout the distribution system.</p> <p>(NOTE: IDSEs are used in conjunction with, but separate from, compliance monitoring defined in 40 CFR 141.130 through 141.135 (see checklist items WQ.30.4.US, and WQ.40.15.US through WQ.40.17.US), to identify and select Stage 2 disinfection byproduct compliance monitoring locations.)</p> <p>(NOTE: In relation to the schedule, the State may determine that the combined distribution system does not include certain consecutive systems based on factors such as receiving water from a wholesale system only on an emergency basis or receiving only a small percentage and small volume of water from a wholesale system. The State may also determine that the combined distribution system does not include certain wholesale systems based on factors such as delivering water to a consecutive system only on an emergency basis or delivering only a small percentage and small volume of water to a consecutive system.)</p> <p>Verify that the community water system conducts standard monitoring or a system specific study that meets the requirements in 40 CFR 141.602, or certify to the State that the facility meets 40/30 certification criteria under 40 CFR 141.603 (see checklist item WQ.40.20.US), or qualifies for a very small system waiver.</p> <p>Verify that the full complement of routine TTHM and HAA5 compliance samples required of a system with the appropriate population and source water under 40</p>

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	<p>CFR 141.130 through 141.135 (see checklist item number WQ.30.4.US, and WQ.40.15.US through WQ.40.17.US) have been taken, or the facility has taken the full complement of reduced TTHM and HAA5 compliance samples required of a system with the appropriate population and source water under 40 CFR 141.130 through 141.135 (see checklist item number WQ.30.4.US, and WQ.40.15.US through WQ.40.17.US) if the facility meets reduced monitoring criteria under 40 CFR 141.130 through 141.135 (see checklist item number WQ.30.4.US, and WQ.40.15.US through WQ.40.17.US) during the period specified in 40 CFR 141.603(a) (see checklist item WQ.40.20.US) to meet the 40/30 certification criteria in 40 CFR 141.603.</p> <p>Verify that, in order to be eligible for the very small system waiver, the TTHM and HAA5 samples required under 40 CFR 141.131 and 141.132 (see checklist items WQ.40.15.US through WQ.40.17.US) have been taken.</p> <p>Verify that, if the community water system has not taken the required samples, standard monitoring is conducted, or a system specific study that meets the requirements in 40 CFR 141.602 is conducted.</p> <p>(NOTE: Use only the analytical methods specified in 40 CFR 141.131 [see text], or otherwise approved by EPA for monitoring under this subpart, to demonstrate compliance with the requirements of this subpart.)</p> <p>(NOTE: IDSE results will not be used for the purpose of determining compliance with MCLs in 40 CFR 141.64 [see checklist item WQ.35.3.US].)</p> <p>Verify that the community water systems monitoring plan includes:</p> <ul style="list-style-type: none"> <li>– a schematic of the distribution system (including distribution system entry points and their sources, and storage facilities), with notes indicating locations and dates of all projected standard monitoring, and all projected compliance monitoring detailed in 40 CFR 141.130 through 141.135 (see checklist item WQ.30.4.US, and WQ.40.15.US through WQ.40.17.US)</li> <li>– justification of standard monitoring location selection and a summary of data you relied on to justify standard monitoring location selection</li> <li>– specifications about the population served and system type (subpart H or ground water).</li> </ul> <p>Verify that the facility maintains a complete copy of the submitted standard monitoring plan, including any State modification of the standard monitoring plan, for as long as the facility are required to retain the IDSE report.</p> <p>Verify that the standard monitoring plan is prepared and submitted to the State according to the schedule in Appendix 13-9b, Table 2.</p> <p>Verify that the facility monitors as indicated in Table 2 of Appendix 13-9b.</p>

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	<p>Verify that dual sample sets are collected at each monitoring location and one sample in the dual sample set is analyzed for TTHM while the other sample in the dual sample set is analyzed for HAA5.</p> <p>Verify that one monitoring period is conducted during the peak historical month for TTHM levels or HAA5 levels or the month of warmest water temperature.</p> <p>(NOTE: Review available compliance, study, or operational data to determine the peak historical month for TTHM or HAA5 levels or warmest water temperature.)</p> <p>Verify that samples are taken at locations other than the existing monitoring locations identified in 40 CFR 141.130 through 141.135 (see checklist items WQ.30.4.US, and WQ.40.15.US through WQ.40.17.US).</p> <p>Verify that monitoring locations are distributed throughout the distribution system.</p> <p>(NOTE: If the number of entry points to the distribution system is fewer than the specified number of entry point monitoring locations, excess entry point samples must be replaced equally at high TTHM and HAA5 locations. If there is an odd extra location number, take a sample at a high TTHM location. If the number of entry points to the distribution system is more than the specified number of entry point monitoring locations, take samples at entry points to the distribution system having the highest annual water flows.)</p> <p>(NOTE: The monitoring outlined in Appendix 13-9b, Table 2 may not be reduced and the State may not reduce the monitoring.)</p> <p>Verify that the IDSE report contains the following:</p> <ul style="list-style-type: none"> <li>– all TTHM and HAA5 analytical results from compliance monitoring done according to 40 CFR 141.130 through 141.135 (see checklist item numbers WQ.30.4.US, and WQ.40.15.US through WQ.40.17.US) and all standard monitoring conducted during the period of the IDSE as individual analytical results and LRAAs presented in a tabular or spreadsheet format acceptable to the State</li> <li>– a schematic of the distribution system, the population served, and system type (Subpart H or groundwater) if this information has changed from the approved monitoring plan</li> <li>– an explanation of any deviations from the approved standard monitoring plan.</li> <li>– recommendations and justifications of Stage 2 disinfection byproducts compliance monitoring locations and timing based on the protocol in 40 CFR 141.605 (see checklist item WQ.40.21.US).</li> </ul> <p>Verify that the IDSE report is submitted according to the schedule in Appendix 13-9b, Table 1.</p>

<p style="text-align: center;"><b>COMPLIANCE CATEGORY</b>  <b>WATER QUALITY MANAGEMENT</b>  <b>U.S. TEAM Guide</b></p>	
<p style="text-align: center;"><b>REGULATORY REQUIREMENTS</b></p>	<p style="text-align: center;"><b>REVIEWER CHECKS</b>  <b>December 2018</b></p>
<p><b>WQ.40.19.US.</b> System specific studies done for community water systems using a primary or residual disinfectant other than ultraviolet light or delivering water that has been treated with a primary or residual disinfectant other than ultraviolet light must meet certain requirements (40 CFR 141.602 and 141.604) [<b>Added April 2006</b>].</p>	<p>Verify that the facility retains a copy of the IDSE report submitted under this section for 10 years after the date the report was submitted.</p> <p>(NOTE: If the State modifies the Stage 2 disinfection byproducts monitoring requirements the facility recommended in their IDSE report or if the State approves alternative monitoring locations, the facility must keep a copy of the State's notification on file for 10 yr after the date of the State's notification.)</p> <p>Verify that the IDSE report and any State notification are available for review by the State or the public.</p> <p>(NOTE: Compliance with these requirements is not mandatory if the facility serves fewer than 500 people and the facility has taken TTHM and HAA5 samples under 40 CFR 141, Subpart L unless the State notifies the facility that they must conduct standard monitoring or a system specific study. If the facility has not taken TTHM and HAA5 samples under 40 CFR 141, Subpart L or if the State notifies the facility that they must comply, the facility must conduct standard monitoring or a system specific study.)</p> <p>Verify that the system specific study plan is based on either existing monitoring results or modeling.</p> <p>Verify that the system specific study plan is prepared and submitted to the State according to the schedule in Appendix 13-9b, Table 2.</p> <p>(NOTE: The facility may comply by submitting monitoring results collected before the facility is required to begin monitoring (see Appendix 13-9b) and the monitoring results and analysis meet the following criteria:</p> <ul style="list-style-type: none"> <li>– TTHM and HAA5 results are based on samples collected and analyzed in accordance with 40 CFR 141.131 (see checklist items WQ.40.15.US. through WQ.40.17.US) no earlier than 5 yr prior to the study plan submission date</li> <li>– the monitoring locations and frequency must meet the conditions identified in Table 3 of Appendix 13-9b</li> <li>– each location must be sampled once during the peak historical month for TTHM levels or HAA5 levels or the month of warmest water temperature for every 12 mo of data submitted for that location</li> <li>– monitoring results include all 40 CFR 141, Subpart L (see checklist items WQ.30.4.US and WQ.40.15.US. through WQ.40.17.US) compliance monitoring results plus additional monitoring results as necessary to meet minimum sample requirements.)</li> </ul> <p>Verify that the facility reports the following information:</p> <ul style="list-style-type: none"> <li>– previously collected monitoring results certifying that the reported monitoring results include all compliance and non-compliance results generated during the time period beginning with the first reported result and ending with the</li> </ul>

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	<p>most recent 40 CFR 141, Subpart L results (see checklist items WQ.30.4.US and WQ.40.15.US. through WQ.40.17.US)</p> <ul style="list-style-type: none"> <li>– certification that the samples were representative of the entire distribution system and that treatment, and distribution system have not changed significantly since the samples were collected</li> <li>– the facility study monitoring plan, including a schematic of the distribution system (including distribution system entry points and their sources, and storage facilities), with notes indicating the locations and dates of all completed or planned system specific study monitoring</li> <li>– the facility system specific study plan which specifies the population served and system type (subpart H or ground water),</li> </ul> <p>Verify that the facility retains a complete copy of the submitted system specific study plan, including any State modification of the system specific study plan, for as long as the facility is required to retain the IDSE report.</p> <p>Verify that, if the facility submitted previously collected data that fully meets the required number of samples and the State rejects some of the data, the facility either conducts additional monitoring to replace rejected data on a schedule the State approves or conducts standard monitoring under 40 CFR 141.601 (see checklist item WQ.40.18.US).</p> <p>(NOTE: Compliance may be achieved through analysis of an extended period simulation hydraulic model. The extended period simulation hydraulic model and analysis must meet the following criteria:</p> <ul style="list-style-type: none"> <li>– the model must simulate 24 h variation in demand and show a consistently repeating 24 h pattern of residence time</li> <li>– the model must represent the following criteria: <ul style="list-style-type: none"> <li>– 75% of pipe volume</li> <li>– 50% of pipe length</li> <li>– all pressure zones</li> <li>– all 12-in diameter and larger pipes</li> <li>– all 8-in and larger pipes that connect pressure zones, influence zones from different sources, storage facilities, major demand areas, pumps, and control valves, or are known or expected to be significant conveyors of water</li> <li>– all 6-in and larger pipes that connect remote areas of a distribution system to the main portion of the system</li> <li>– all storage facilities with standard operations represented in the model</li> <li>– all active pump stations with controls represented in the model</li> <li>– all active control valves</li> </ul> </li> <li>– the model is calibrated, or has calibration plans, for the current configuration of the distribution system during the period of high TTHM formation potential</li> <li>– all storage facilities are evaluated as part of the calibration process</li> <li>– all required calibration is completed no later than 12 mo after plan submission.</li> </ul>

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	<p>Verify that the system specific study plan includes the following information:</p> <ul style="list-style-type: none"> <li>– tabular or spreadsheet data demonstrating that the model meets the following requirements: <ul style="list-style-type: none"> <li>– 75% of pipe volume</li> <li>– 50% of pipe length</li> <li>– all pressure zones</li> <li>– all 12-in diameter and larger pipes</li> <li>– all 8-in and larger pipes that connect pressure zones, influence zones from different sources, storage facilities, major demand areas, pumps, and control valves, or are known or expected to be significant conveyors of water</li> <li>– all 6-in and larger pipes that connect remote areas of a distribution system to the main portion of the system</li> <li>– all storage facilities with standard operations represented in the model</li> <li>– all active pump stations with controls represented in the model</li> <li>– all active control valves</li> </ul> </li> <li>– a description of all calibration activities undertaken, and if calibration is complete, a graph of predicted tank levels versus measured tank levels for the storage facility with the highest residence time in each pressure zone, and a time series graph of the residence time at the longest residence time storage facility in the distribution system showing the predictions for the entire simulation period (i.e., from time zero until the time it takes to for the model to reach a consistently repeating pattern of residence time)</li> <li>– model output showing preliminary 24 h average residence time predictions throughout the distribution system</li> <li>– timing and number of samples representative of the distribution system planned for at least one monitoring period of TTHM and HAA5 dual sample monitoring at a number of locations no less than would be required for the system under standard monitoring during the historical month of high TTHM (NOTE: These samples must be taken at locations other than existing 40 CFR 141, Subpart L (see checklist items WQ.30.4.US and WQ.40.15.US. through WQ.40.17.US) compliance monitoring locations</li> <li>– description of how all requirements will be completed no later than 12 mo after the facility submits their system specific study plan</li> <li>– schematic of the facility distribution system (including distribution system entry points and their sources, and storage facilities), with notes indicating the locations and dates of all completed system specific study monitoring (if calibration is complete) and all 40 CFR 141, Subpart L compliance monitoring (see checklist items WQ.30.4.US and WQ.40.15.US. through WQ.40.17.US)</li> <li>– population served and system type (subpart H or ground water).</li> </ul> <p>Verify that the facility retains a complete copy of the submitted system specific study plan, including any State modification of the system specific study plan, for as long as the facility is required to retain their IDSE report.</p>

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	<p>(NOTE: If the facility submits a model that does not fully meet the requirements, the facility must correct the deficiencies and respond to State inquiries concerning the model. If the facility fails to correct deficiencies or respond to inquiries to the State's satisfaction, the facility must conduct standard monitoring.)</p> <p>Verify that the IDSE report includes the following elements:</p> <ul style="list-style-type: none"> <li>– all TTHM and HAA5 analytical results from 40 CFR 141, Subpart L compliance monitoring and all system specific study monitoring conducted during the period of the system specific study presented in a tabular or spreadsheet format acceptable to the State</li> <li>– a schematic of the facility’s distribution system, the population served, and system type (subpart H or ground water) if the information has changed from that in the submitted system specific study plan</li> <li>– final information for the following elements and a 24-h time series graph of residence time for each 40 CFR 141, Subpart V (see checklist items WQ.40.22.US through WQ.40.26.US and WQ.45.5.US) compliance monitoring location selected if using the modeling provision: <ul style="list-style-type: none"> <li>– 75% of pipe volume</li> <li>– 50% of pipe length</li> <li>– all pressure zones</li> <li>– all 12-in diameter and larger pipes</li> <li>– all 8-in and larger pipes that connect pressure zones, influence zones from different sources, storage facilities, major demand areas, pumps, and control valves, or are known or expected to be significant conveyors of water</li> <li>– all 6-in and larger pipes that connect remote areas of a distribution system to the main portion of the system</li> <li>– all storage facilities with standard operations represented in the model</li> <li>– all active pump stations with controls represented in the model</li> <li>– all active control valves</li> </ul> </li> <li>– recommendations and justification of 40 CFR 141, Subpart V (see checklist items WQ.40.22.US through WQ.40.26.US and WQ.45.5.US) compliance monitoring locations and timing based on the protocol in 40 CFR 141.605 (see checklist item WQ.40.21.US)</li> <li>– an explanation of any deviations from the approved system specific study plan</li> <li>– the basis (analytical and modeling results) and justification used to select the recommended 40 CFR 141, Subpart V monitoring locations.</li> </ul> <p>(NOTE: The IDSE report may be submitted in lieu of the system specific study plan on the schedule identified in Appendix 13-9b for submission of the system specific study plan if the necessary information is available by the time that the system specific study plan is due. If the facility elects this approach, the IDSE report must also include all information required for the system specific study plan.)</p>

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<p><b>WQ.40.20.US.</b> Eligibility for 40/30 certification at a community water systems using a primary or residual disinfectant other than ultraviolet light or delivering water that has been treated with a primary or residual disinfectant other than ultraviolet light requires consistent TTHM and HAA5 compliance (40 CFR 141.603) [Added April 2006].</p>	<p>Verify that a complete copy of the submitted IDSE report is retained for 10 yr after the date that the IDSE report was submitted.</p> <p>Verify that, if the State modifies the 40 CFR 141, Subpart V monitoring requirements (see checklist items WQ.40.22.US through WQ.40.26.US and WQ.45.5.US) recommended in the IDSE report or if the State approves alternative monitoring locations, the facility keeps a copy of the State's notification on file for 10 yr after the date of the State's notification.</p> <p>Verify that the IDSE report and any State notification are available for review by the State or the public.</p> <p>(NOTE: The facility is eligible for 40/30 certification if the facility had no TTHM or HAA5 monitoring violations under 40 CFR 141, Subpart L and no individual sample exceeded 0.040 mg/L for TTHM or 0.030 mg/L for HAA5 during an eight consecutive calendar quarter period beginning no earlier than the following specified date:</p> <ul style="list-style-type: none"> <li>– if the 40/30 certification is due 1 October 2006; January 2004</li> <li>– if the 40/30 certification is due 1 April 2007; January 2004</li> <li>– if the 40/30 certification is due, 1 October 2007; January 2005</li> <li>– if the 40/30 certification is due 1 April 2008; January 2005.</li> </ul> <p>Eight consecutive calendar quarters are not required if the facility is on reduced monitoring under 40 CFR 141, Subpart L and were not required to monitor during the specified period. If the facility did not monitor during the specified period, they must base eligibility on compliance samples taken during the 12 mo preceding the specified period.)</p> <p>Verify that, in order to obtain 40/30 certification, the facility certifies to the State that every individual compliance sample taken under 40 CFR 141, Subpart L during the periods specified above were less than or equal to 0.040 mg/L for TTHM less than or equal to 0.030 mg/L for HAA5, and there has not been any TTHM or HAA5 monitoring violations during the specified period.</p> <p>(NOTE: The State may require the facility to submit compliance monitoring results, distribution system schematics, and/or recommended 40 CFR 141, Subpart V (see checklist items WQ.40.22.US through WQ.40.26.US and WQ.45.5.US) compliance monitoring locations in addition to the certification. If the facility fails to submit the requested information, the State may require standard monitoring or a system specific study.)</p> <p>Verify that the facility retains a complete copy of the submitted certification for 10 yr after the date the facility submitted their certification.</p> <p>Verify that the certification, all data upon which the certification is based, and any State notification are available for review by the State or the public.</p>

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<p><b>WQ.40.21.US.</b> Community water systems using a primary or residual disinfectant other than ultraviolet light or delivering water that has been treated with a primary or residual disinfectant other than ultraviolet light must follow certain monitoring location recommendations (40 CFR 141.605) [Added April 2006].</p>	<p>Verify that the IDSE report includes the facility's recommendations and justification for where and during what month(s) TTHM and HAA5 monitoring should be conducted.</p> <p>Verify that the facility bases the recommendations on the following:</p> <ul style="list-style-type: none"> <li>– select the number of monitoring locations specified in Table 4 of Appendix 13-9b unless the State requires different or additional locations</li> <li>– distribute locations throughout the distribution system to the extent possible</li> <li>– standard monitoring results, system specific study results, and 40 CFR 141, Subpart L compliance monitoring results</li> <li>– the following protocols: <ul style="list-style-type: none"> <li>– location with the highest TTHM LRAA not previously selected as a 40 CFR 141, Subpart V monitoring location (see checklist items WQ.40.22.US through WQ.40.26.US and WQ.45.5.US)</li> <li>– location with the highest HAA5 LRAA not previously selected as a 40 CFR 141, Subpart V monitoring location</li> <li>– existing 40 CFR 141, Subpart L average residence time compliance monitoring location (maximum residence time compliance monitoring location for ground water systems) with the highest HAA5 LRAA not previously selected as a 40 CFR 141, Subpart V monitoring location</li> <li>– location with the highest TTHM LRAA not previously selected as a 40 CFR 141, Subpart V monitoring location</li> <li>– location with the highest TTHM LRAA not previously selected as a 40 CFR 141, Subpart V monitoring location</li> <li>– location with the highest HAA5 LRAA not previously selected as a 40 CFR 141, Subpart V monitoring location</li> <li>– existing 40 CFR 141, Subpart L average residence time compliance monitoring location (maximum residence time compliance monitoring location for ground water systems) with the highest TTHM LRAA not previously selected as a 40 CFR 141, Subpart V monitoring location</li> <li>– location with the highest HAA5 LRAA not previously selected as a 40 CFR 141, Subpart V monitoring location.</li> </ul> </li> </ul> <p>Verify that, if the facility is required to monitor at more than eight locations, the protocol is repeated as necessary.</p> <p>Verify that, if the facility does not have existing 40 CFR 141, Subpart L compliance monitoring results or if the facility does not have enough existing 40 CFR 141, Subpart L compliance monitoring results, the facility repeats the protocol, skipping the provisions for existing 40 CFR 141, Subpart L average residence time compliance monitoring as necessary, until the facility has identified the required total number of monitoring locations.</p>

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<p><b>WQ.40.22.US.</b> Community water systems using a primary or residual disinfectant other than ultraviolet light or delivering water that has been treated with a primary or residual disinfectant other than ultraviolet light must meet the Stage 2 disinfection byproducts requirements according to a specific schedule (40 CFR 141.620) [Added April 2006].</p>	<p>(NOTE: Other locations may be recommended if the facility includes a rationale for selecting other locations. If the State approves the alternate locations, the facility must monitor at these locations to determine compliance under 40 CFR 141 Subpart V [see checklist items WQ.40.22.US through WQ.40.26.US and WQ.45.5.US].)</p> <p>Verify that the recommended schedule includes 40 CFR 141, Subpart V monitoring during the peak historical month for TTHM and HAA5 concentration, unless the State approves another month.</p> <p>(NOTE: Once the facility has identified the peak historical month, and if the facility is required to conduct routine monitoring at least quarterly, 40 CFR 141, Subpart V compliance monitoring (see checklist items WQ.40.22.US through WQ.40.26.US and WQ.45.5.US) must be scheduled at a regular frequency of every 90 days or fewer.)</p> <p>(NOTE: The regulations in 40 CFR 141, Subpart V [40 CFR 141.620 through 141.629, see checklist items WQ.40.22.US through WQ.40.26.US and WQ.45.5.US] establish monitoring and other requirements for achieving compliance with MCLs based on locational running annual averages (LRAA) for total trihalomethanes (TTHM) and haloacetic acids (five) (HAA5), and for achieving compliance with maximum residual disinfectant residuals for chlorine and chloramine for certain consecutive systems. These are also known as the Stage 2 Disinfection Byproducts Requirements.)</p> <p>Verify that the facility complies with the Stage 2 disinfection byproducts requirements according to the following schedule:</p> <ul style="list-style-type: none"> <li>– for systems that are not part of a combined distribution system and systems that serve the largest population in the combined distribution system: <ul style="list-style-type: none"> <li>– if the system serves greater than or equal to 100,000 people, comply with 40 CFR 141, Subpart V monitoring by 1 April 2012 (see checklist items WQ.40.22.US through WQ.40.26.US and WQ.45.5.US)</li> <li>– if the system serves between 50,000 and 99,999 people, comply with 40 CFR 141, Subpart V monitoring by 1 October 2012</li> <li>– if the system serves between 10,000 and 49,999 people, comply with 40 CFR 141, Subpart V monitoring by 1 October 2013</li> <li>– if the system serves less than 10,000 people, comply with 40 CFR 141, Subpart V monitoring by 1 October 2013 if no <i>Cryptosporidium</i> monitoring is required under 40 CFR 141.701(a)(4), or 1 October 2014 if <i>Cryptosporidium</i> monitoring is required under 40 CFR 141.701(a)(4) or (a)(6)</li> </ul> </li> <li>– for other systems that are part of a combined distribution system: <ul style="list-style-type: none"> <li>– if the systems are a consecutive or wholesale system, comply with 40 CFR 141, Subpart V monitoring at the same time as the system with the earliest compliance date in the combined distribution system.</li> </ul> </li> </ul>

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	<p>(NOTE: The State may grant up to an additional 24 mo for compliance with MCLs and operational evaluation levels if you require capital improvements to comply with an MCL.)</p> <p>Verify that, if the facility is required to conduct quarterly monitoring, it begins monitoring in the first full calendar quarter that includes the compliance date listed above.</p> <p>Verify that, if the facility is required to conduct monitoring at a frequency that is less than quarterly, the facility begins monitoring in the calendar month recommended in the IDSE report prepared under 40 CFR 141.601 (see checklist item WQ.40.18.US.) or 40 CFR 141.602 (see checklist item WQ.40.19.US) or the calendar month identified in the 40 CFR 141, Subpart V monitoring plan developed under 40 CFR 141.622 (see checklist item WQ.40.24.US) no later than 12 mo after the compliance date in this table.</p> <p>Verify that, if the facility is required to conduct quarterly monitoring, the facility makes compliance calculations at the end of the fourth calendar quarter that follows the compliance date and at the end of each subsequent quarter (or earlier if the LRAA calculated based on fewer than four quarters of data would cause the MCL to be exceeded regardless of the monitoring results of subsequent quarters).</p> <p>Verify that, if the facility is required to conduct monitoring at a frequency that is less than quarterly, the facility makes compliance calculations beginning with the first compliance sample taken after the compliance date.</p> <p>(NOTE: The State may determine that the combined distribution system does not include certain consecutive systems based on factors such as receiving water from a wholesale system only on an emergency basis or receiving only a small percentage and small volume of water from a wholesale system. The State may also determine that the combined distribution system does not include certain wholesale systems based on factors such as delivering water to a consecutive system only on an emergency basis or delivering only a small percentage and small volume of water to a consecutive system.)</p> <p>Verify that systems which are required to monitor quarterly and comply with the MCLs in 40 CFR 141.64(b)(2) (see checklist item WQ.35.3.US) calculate LRAAs for TTHM and HAA5 using collected monitoring results and determine that each LRAA does not exceed the MCL.</p> <p>(NOTE: If the facility fails to complete four consecutive quarters of monitoring, the facility must calculate compliance with the MCL based on the average of the available data from the most recent four quarters. If the facility takes more than one sample per quarter at a monitoring location, the facility averages all samples taken in the quarter at that location to determine a quarterly average to be used in the LRAA calculation.)</p>

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<p><b>WQ.40.23.US.</b> Community water systems using a primary or residual disinfectant other than ultraviolet light or delivering water that has been treated with a primary or residual disinfectant other than ultraviolet light must meet the Stage 2 disinfection byproducts monitoring requirements (40 CFR 141.621, 141.623, and 141.627) [Added April 2006].</p>	<p>Verify that systems which are required to monitor quarterly and comply with the MCLs in 40 CFR 141.64(b)(2) (see checklist item WQ.35.3.US) determine that each sample taken is less than the MCL.</p> <p>(NOTE: If any sample exceeds the MCL, the facility must comply with the requirements of 40 CFR 141.625 (see checklist item WQ.40.25.US). If no sample exceeds the MCL, the sample result for each monitoring location is considered the LRAA for that monitoring location.)</p> <p>(NOTE: The facility is in violation of the monitoring requirements for each quarter that a monitoring result would be used in calculating in LRAA if they fail to monitor.)</p> <p>Verify that if the facility submitted an IDSE report, the facility began monitoring at the locations and months recommended in the submitted IDSE report following the schedule in 40 CFR 141.620(c) (see checklist item WQ.40.22.US), unless the State requires other locations or additional locations after its review.</p> <p>Verify that if the facility submitted a 40/30 certification or the facility qualified for a very small system waiver under 40 CFR 141.604 (see checklist item WQ.40.18.US and WQ.40.19.US) the facility monitors at the location(s) and dates identified in the facility monitoring plan.</p> <p>Verify that the facility monitors at no fewer than the number of locations identified in Table 1 of Appendix 13-9c.</p> <p>(NOTE: If the facility is an undisinfected system that begins using a disinfectant other than UV light after the dates for complying with the IDSE requirements (see checklist item WQ.40.18.US), the facility must consult with the State to identify compliance monitoring locations and develop a monitoring plan under 40 CFR 141.622 (see checklist item WQ.40.24.US) that includes those monitoring locations.)</p> <p>Verify that the facility uses an approved method listed in 40 CFR 141.131 (see checklist item WQ.40.15.US through WQ.40.18.US) for TTHM and HAA5 analyses for the Stage 2 disinfection byproducts monitoring.</p> <p>Verify that the facility does not reduce monitoring to the level specified in Appendix 13-9c Table 2 unless the LRAA is less than or equal to 0.040 mg/L for TTHM and less than or equal to 0.030 mg/L for HAA5 at all monitoring locations.</p> <p>(NOTE: Only data collected under 40 CFR 141, Subpart V or 40 CFR 141, Subpart L qualifies for reduced monitoring. In addition, the source water annual average TOC level, before any treatment, must be less than or equal to 4.0 mg/L at each treatment plant treating surface water or ground water under the direct influence of surface water, based on monitoring conducted under either 40 CFR</p>

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<p><b>WQ.40.24.US.</b> Community water systems using a primary or residual disinfectant other than ultraviolet light or delivering water that has been</p>	<p>141.132(b)(1)(iii) or 141.132(d) [see checklist items WQ.40.15.US through WQ.40.17.US.]</p> <p>(NOTE: The facility may remain on reduced monitoring as long as the TTHM LRAA is less than or equal to 0.040 mg/L and the HAA5 LRAA is less than or equal to 0.030 mg/L at each monitoring location (for systems with quarterly reduced monitoring) or each TTHM sample is less than or equal to 0.060 mg/L and each HAA5 sample is less than or equal to 0.045 mg/L (for systems with annual or less frequent monitoring).)</p> <p>(NOTE: The facility may remain on reduced monitoring after the dates identified in WQ.40.22.US for compliance only if the facility qualifies for a 40/30 certification under 40 CFR 141.603 (see checklist item WQ.40.20.US) or have received a very small system waiver under 40 CFR 141.604 (see checklist items WQ.40.18.US and WQ.40.19.US), plus the facility meets the reduced monitoring criteria outlined in this checklist item, and the facility does not change or add monitoring locations from those used for compliance monitoring under 40 CFR 141, Subpart L (see checklist items WQ.30.4.US and WQ.40.15.US through WQ.40.17.US). If the monitoring locations under 40 CFR 141, Subpart V differ from the monitoring locations under 40 CFR 141, Subpart L, the facility may not remain on reduced monitoring after the dates identified in WQ.40.22.US.</p> <p>Verify that the source water annual average TOC level, before any treatment, is less than or equal to 4.0 mg/L at each treatment plant treating surface water or ground water under the direct influence of surface water, based on monitoring conducted under either 40 CFR 141.132(b)(1)(iii) or 40 CFR 141.132(d) (see checklist items WQ.40.15.US through WQ.40.17.US.).</p> <p>Verify that the facility resumes routine monitoring as outlined in this checklist item if:</p> <ul style="list-style-type: none"> <li>– the LRAA based on quarterly monitoring at any monitoring location exceeds either 0.040 mg/L for TTHM or 0.030 mg/L for HAA5</li> <li>– the annual (or less frequent) sample at any location exceeds either 0.060 mg/L for TTHM or 0.045 mg/L for HAA5</li> <li>– if the source water annual average TOC level, before any treatment, is greater than 4.0 mg/L at any treatment plant treating surface water or ground water under the direct influence of surface water.</li> </ul> <p>(NOTE: The State may return the system to routine monitoring at the State's discretion.)</p> <p>Verify that the facility develops and implements a monitoring plan to be kept on file for State and public review.</p> <p>Verify that the monitoring plan contains the following elements and is completed no later than the date the facility conducts the initial monitoring under 40 CFR 141,</p>

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<p>treated with a primary or residual disinfectant other than ultraviolet light must develop a Subpart V monitoring plan (40 CFR 141.622) [Added April 2006].</p>	<p>Subpart V (see checklist items WQ.40.22.US through WQ.40.26.US and WQ.45.5.US):</p> <ul style="list-style-type: none"> <li>– monitoring locations</li> <li>– monitoring dates</li> <li>– compliance calculation procedures</li> <li>– monitoring plans for any other systems in the combined distribution system if the State has reduced monitoring requirements.</li> </ul> <p>(NOTE: If the facility was not required to submit an IDSE report under either 40 CFR 141.601 or 141.602 (see checklist items WQ.40.18.US and WQ.40.19.US), and the facility does not have sufficient 40 CFR 141, Subpart L monitoring locations (see checklist items WQ.30.4.US and WQ.40.15.US through WQ.40.17.US) to identify the required number of 40 CFR, Subpart V compliance monitoring locations indicated in 40 CFR 141.605(b) (see checklist item WQ.40.21.US), the facility must identify additional locations by alternating selection of locations representing high TTHM levels and high HAA5 levels until the required number of compliance monitoring locations have been identified. The facility must also provide the rationale for identifying the locations as having high levels of TTHM or HAA5.)</p> <p>(NOTE: If the facility has more 40 CFR 141, Subpart L monitoring locations (see checklist items WQ.30.4.US and WQ.40.15.US through WQ.40.17.US) than required for 40 CFR 141, Subpart V compliance monitoring in 40 CFR 141.605(b) (see checklist item WQ.40.21.US), the facility must identify which locations they will use for 40 CFR 141, Subpart V compliance monitoring by alternating selection of locations representing high TTHM levels and high HAA5 levels until the required number of 40 CFR 141, Subpart V compliance monitoring locations have been identified.)</p> <p>Verify that, if the facility is a subpart H system serving &gt; 3,300 people, the facility submits a copy of their monitoring plan to the State prior to the date they conduct the initial monitoring under 40 CFR 141, Subpart V (see checklist items WQ.40.22.US through WQ.40.26.US and WQ.45.5.US), unless the facility's submitted IDSE report contains all the required information.</p> <p>(NOTE: The facility may revise their monitoring plan to reflect changes in treatment, distribution system operations and layout (including new service areas), or other factors that may affect TTHM or HAA5 formation, or for State-approved reasons, after consultation with the State regarding the need for changes and the appropriateness of changes.)</p> <p>Verify that, if in the process of revising the monitoring plan, the facility changes monitoring locations, the facility replaces existing compliance monitoring locations with the lowest LRAA with new locations that reflect the current distribution system locations with expected high TTHM or HAA5 levels.</p>

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<p><b>WQ.40.25.US.</b> Community water systems using a primary or residual disinfectant other than ultraviolet light or delivering water that has been treated with a primary or residual disinfectant other than ultraviolet light must increase monitoring under certain conditions (40 CFR 141.625 and 141.628) [Added April 2006].</p>	<p>(NOTE: The State may also require modifications in the monitoring plan.)</p> <p>Verify that, if the facility is a subpart H system serving &gt; 3,300 people, the facility submitted a copy of the modified monitoring plan to the State prior to the date the facility is required to comply with the revised monitoring plan.</p> <p>Verify that, if the facility is required to monitor at a particular location annually or less frequently than annually under 40 CFR 141.621 or 40 CFR 141.623 (see checklist item WQ.40.23.US), the facility increases monitoring to dual sample sets once per quarter (taken every 90 days) at all locations if a TTHM sample is greater than 0.080 mg/L or a HAA5 sample is greater than 0.060 mg/L at any location.</p> <p>(NOTE: The facility is in violation of the MCL when the LRAA exceeds the 40 CFR 141, Subpart V MCLs in 40 CFR 141.64(b)(2) (see checklist item WQ.35.3.US), calculated based on four consecutive quarters of monitoring (or the LRAA calculated based on fewer than four quarters of data if the MCL would be exceeded regardless of the monitoring results of subsequent quarters). The facility is in violation of the monitoring requirements for each quarter that a monitoring result would be used in calculating an LRAA if the facility fails to monitor.)</p> <p>(NOTE: The facility may return to routine monitoring once it has conducted increased monitoring for at least four consecutive quarters and the LRAA for every monitoring location is less than or equal to 0.060 mg/L for TTHM and less than or equal to 0.045 mg/L for HAA5.)</p> <p>(NOTE: If the facility was on increased monitoring under 40 CFR 141.132(b)(1), the facility must remain on increased monitoring until it qualifies for a return to routine monitoring as described in this checklist item. The facility must conduct the increased monitoring in this checklist item at the monitoring locations in the monitoring plan developed under 40 CFR 141.622 (see checklist item WQ.40.24.US) beginning at the date identified for compliance with 40 CFR 141, Subpart V and remain on increased monitoring until the facility qualifies for a return to routine monitoring as described in this checklist item.)</p>
<p><b>WQ.40.26.US.</b> Community water systems using a primary or residual disinfectant other than ultraviolet light or delivering water that has been treated with a primary or residual disinfectant other than ultraviolet light must conduct an operational evaluation under certain conditions (40 CFR 141.626) [Added April 2006].</p>	<p>(NOTE: The facility has exceeded the operational evaluation level at any monitoring location where the sum of the two previous quarters' TTHM results plus twice the current quarter's TTHM result, divided by 4 to determine an average, exceeds 0.080 mg/L, or where the sum of the two previous quarters' HAA5 results plus twice the current quarter's HAA5 result, divided by 4 to determine an average, exceeds 0.060 mg/L.)</p> <p>Verify that, if the facility exceeds the operational evaluation level, the facility conducts an operational evaluation and submits a written report of the evaluation to the State no later than 90 days after being notified of the analytical result that causes the facility to exceed the operational evaluation level.</p>

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<p><b>WQ.40.27.US.</b> A community water system that is a consecutive system that does not add a disinfectant but delivers water treated with a primary or residual disinfectant other than ultraviolet light must meet specific monitoring requirements (40 CFR 141.624) [Added April 2006].</p> <p><b>WQ.40.28.US.</b> Community water systems using only ground water (except ground water under the direct influence of surface water) and serving 1,000 or fewer people must meet routine total coliform monitoring requirements (40 CFR 141.851(b), 141.855, 141.858, and 141.859(c)) [Added April 2013].</p>	<p>Verify that the written report is made available to the public upon request.</p> <p>Verify that the operational evaluation includes an examination of system treatment and distribution operational practices, including storage tank operations, excess storage capacity, distribution system flushing, changes in sources or source water quality, and treatment changes or problems that may contribute to TTHM and HAA5 formation and what steps could be considered to minimize future exceedances.</p> <p>(NOTE: The facility may request and the State may allow the facility to limit the scope of the evaluation if the facility is able to identify the cause of the operational evaluation level exceedance.)</p> <p>(NOTE: The request to limit the scope of the evaluation does not extend the schedule submitting the written report. The State must approve this limited scope of evaluation in writing and the facility must keep that approval with the completed report.)</p> <p>Verify that, if the facility is a consecutive system that does not add a disinfectant but delivers water that has been treated with a primary or residual disinfectant other than ultraviolet light, the facility meets the following requirements:</p> <ul style="list-style-type: none"> <li>– analytical and monitoring requirements for chlorine and chloramines in 40 CFR 141.131(c) and 141.132(c)(1) (see checklist item WQ.40.15.US through WQ.40.17.US)</li> <li>– the compliance requirements in 40 CFR 141.133(c)(1) beginning 1 April 2009, unless required earlier by the State</li> <li>– report monitoring results under 40 CFR 141.134(c) (see checklist item WQ.30.4.US).</li> </ul> <p>(NOTE: This checklist item is applicable beginning 1 April 2016 with systems required to begin regular monitoring at the same frequency as the system-specific frequency required on 31 March 2016.)</p> <p>Verify that, if a sample is total coliform-positive, the system collects a set of repeat samples within 24 h of being notified of the positive result and the system collects no fewer than three repeat samples for each total coliform-positive sample found.</p> <p>Verify that the system collects all repeat samples on the same day, except that the State may allow a system with a single service connection to collect the required set of repeat samples over a 3-day period or to collect a larger volume repeat sample(s) in one or more sample containers of any size, as long as the total volume collected is at least 300 ml.</p>

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	<p>Verify that the system collects an additional set of repeat samples if one or more repeat samples in the current set of repeat samples is total coliform-positive within 24-h of being notified of the positive result.</p> <p>Verify that the system continues to collect additional sets of repeat samples until either total coliforms are not detected in one complete set of repeat samples or the system determines that a coliform treatment technique trigger specified in 40 CFR 141.859(a) (see Appendix 13-6b) has been exceeded as a result of a repeat sample being total coliform-positive and notifies the State.</p> <p>(NOTE: If a trigger identified in 40 CFR 141.859 (see Appendix 13-6b) is exceeded as a result of a routine sample being total coliform-positive, systems are required to conduct only one round of repeat monitoring for each total coliform-positive routine sample.)</p> <p>(NOTE: After a system collects a routine sample and before it learns the results of the analysis of that sample, if it collects another routine sample(s) from within five adjacent service connections of the initial sample, and the initial sample, after analysis, is found to contain total coliforms, then the system may count the subsequent sample(s) as a repeat sample instead of as a routine sample.)</p> <p>Verify that results of all routine and repeat samples not invalidated by the State are used to determine whether a coliform treatment technique trigger in 40 CFR 141.859 (see Appendix 13-6b) has been triggered.</p> <p>Verify that, if any routine or repeat sample is total coliform-positive, the system analyzes that total coliform-positive culture medium to determine if <i>E. coli</i> is present.</p> <p>Verify that, if <i>E. coli</i> are present, the system notifies the State by the end of the day when the system is notified of the test result, unless the system is notified of the result after the State office is closed and the State does not have either an after-hours phone line or an alternative notification procedure, in which case the system must notify the State before the end of the next business day.</p> <p>Verify that, once all of the required monitoring for a calendar month is completed, the system determines whether any coliform treatment techniques specified in 141.859 (see Appendix 13-6b) have been exceeded.</p> <p>Verify that, if a coliform treatment technique has been exceeded, the system completed the required assessment (see Appendix 13-6b).</p> <p>Verify that the system corrects sanitary defects found through either Level 1 or Level 2 assessments.</p>

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	<p>(NOTE: For corrections not completed by the time of submission of the assessment form, the system must complete the corrective action(s) in compliance with a timetable approved by the State.)</p> <p>Verify that total coliform monitoring is done one sample/month.</p> <p>(NOTE: All systems are required continue to monitor according to the total coliform monitoring schedules under 40 CFR 141.21 [see checklist items WQ.10.2.US, WQ.15.1.US through WQ.15.3.US for Public Water Systems; WQ.40.9.US for Community Water Systems; and WQ.65.1.US for Noncommunity Water Systems] that were in effect on 31 March 2016, unless any of the following conditions are triggered on or after 1 April 2016, or unless otherwise directed by the State:</p> <ul style="list-style-type: none"> <li>– the system triggers a Level 2 assessment or two Level 1 assessments in a rolling 12-month period</li> <li>– the system has an <i>E. coli</i> MCL violation</li> <li>– the system has a coliform treatment technique violation</li> <li>– the system has two subpart Y monitoring violations in a rolling 12- month period.)</li> </ul> <p>(NOTE: Beginning 1 April 2016, the State must perform a special monitoring evaluation during each sanitary survey to review the status of the system, including the distribution system, to determine whether the system is on an appropriate monitoring schedule. After the State has performed the special monitoring evaluation during each sanitary survey, the State may modify the system’s monitoring schedule.)</p> <p>(NOTE: The State may reduce the monitoring frequency from monthly to quarterly if the system is in compliance with State-certified operator provisions and meets the following:</p> <ul style="list-style-type: none"> <li>– the system has a clean compliance history for a minimum of 12 mo</li> <li>– the most recent sanitary survey shows the system is free of sanitary defects (or has an approved plan and schedule to correct them and is in compliance with the plan and the schedule), has a protected water source and meets approved construction standards</li> <li>– the system meets at least one of the following criteria: <ul style="list-style-type: none"> <li>– an annual site visit by the State that is equivalent to a Level 2 assessment or an annual Level 2 assessment by a party approved by the State and correction of all identified sanitary defects (or an approved plan and schedule to correct them and is in compliance with the plan and schedule)</li> <li>– cross connection control, as approved by the State</li> <li>– continuous disinfection entering the distribution system and a residual in the distribution system in accordance with criteria specified by the State</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– demonstration of maintenance of at least a 4-log removal or inactivation of viruses as provided for under 40 CFR 141.403(b)(3) (see checklist item WQ.15.13.US)</li> <li>– other equivalent enhancements to water system barriers as approved by the State.</li> </ul> <p>Verify that a system that loses its certified operator returns to monthly monitoring the month following that loss.</p> <p>Verify that, systems on quarterly monitoring which experience any of the following begin monthly monitoring following the event:</p> <ul style="list-style-type: none"> <li>– the system triggers a Level 2 assessment or two Level 1 assessments in a rolling 12-month period</li> <li>– the system has an <i>E. coli</i> MCL violation</li> <li>– the system has a coliform treatment technique violation</li> <li>– the system has two subpart Y monitoring violations in a rolling 12- mo period.</li> </ul> <p>Verify that systems collecting samples on a quarterly frequency conduct additional routine monitoring the month following one or more total coliform-positive samples (with or without a Level 1 treatment technique trigger).</p> <p>Verify that systems collect at least 3 routine samples during the next month, except that the State may waive this requirement.</p> <p>(NOTE: Systems may either collect samples at regular time intervals throughout the month or may collect all required routine samples on a single day if samples are taken from different sites.)</p> <p>Verify that systems use the results of additional routine samples in coliform treatment technique trigger calculations.</p>

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<p><b>COMMUNITY WATER SYSTEMS</b></p> <p><b>WQ.45</b> <b>Notifications</b></p> <p><b>WQ.45.1.US.</b> Checklist item deleted [Reviewed March 2000; Deleted July 2003].</p> <p><b>WQ.45.2.US.</b> Community water systems are required to deliver to their customers an annual consumer confidence reports (40 CFR 141.151 through 141.155) [Added October 1998; Reviewed March 2000; Revised July 2000; Revised April 2006].</p>	<p>(NOTE: This checklist item was about notification of excess fluoride.)</p> <p>Verify that the community water system delivers annual consumer confidence reports to their customers by 1 July of each year.</p> <p>(NOTE: For the purpose of this report, the term 'customers' is defined as billing units or service connection to which water is delivered by a community water system.)</p> <p>Verify that the reports must contain information on the quality of the water delivered by the systems and characterize the risks (if any) from exposure to contaminants detected in the drinking water in an accurate and understandable manner.</p> <p>Verify that one copy is delivered to each customer and the reports are made available to the public upon request.</p> <p>Verify that, no later than the date the system is required to distribute the report to its customers, each community water system mails a copy of the report to the primacy agency, followed within 3 mo by a certification that the report has been distributed to customers, and that the information is correct and consistent with the compliance monitoring data previously submitted to the primacy agency.</p> <p>Verify that, no later than the date the system is required to distribute the report to its customers, each community water system delivers the report to any other agency or clearinghouse identified by the primacy agency.</p> <p>Verify that each community water system serving 100,000 or more persons posts its current year's report to a publicly accessible site on the Internet.</p> <p>Verify that the community water system keeps copies of the report for no less than 3 yr.</p> <p>(NOTE: See Appendix 13-6a for information on the contents of the report.)</p> <p>(NOTE: Each existing community water system must deliver its first report by 19 October 1999, its second report by 1 July 2000, and subsequent reports by 1 July annually thereafter. The first report must contain data collected during, or prior to, calendar year 1998. Each report thereafter must contain data collected during, or prior to, the previous calendar year. A new community water system must deliver its first report by 1 July of the year after its first full calendar year in operation and</p>

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<p><b>WQ.45.3.US.</b> When a community water system is required to submit a notice, the notice is required to be provided according to specific parameters (40 CFR 141.203(c)(1), 141.204(c)(1), 141.204(d), 141.206(a), and 141.210) [Added July 2000; Revised April 2006; Revised April 2013].</p>	<p>annually thereafter. A community water system that sells water to another community water system must deliver the applicable required information to the buyer system: no later than 19 April 1999, by 1 April 2000, and by 1 April annually thereafter; or on a date mutually agreed upon by the seller and the purchaser, and specifically included in a contract between the parties.)</p> <p>(NOTE: See checklist item WQ.35.1.US for the definition of a community water systems.)</p> <p>Verify that, unless directed otherwise by the primacy agency in writing, community water systems provide Tier 2 notice by:</p> <ul style="list-style-type: none"> <li>– mail or other direct delivery to each customer receiving a bill and to other service connections to which water is delivered by the public water system</li> <li>– any other method reasonably calculated to reach other persons regularly served by the system, if they would not normally be reached by the notice</li> </ul> <p>(NOTE: Persons who might not normally be reached by the Tier 2 notice may include those who do not pay water bills or do not have service connection addresses (e.g., house renters, apartment dwellers, university students, nursing home patients, prison inmates, etc.). Other methods may include: publication in a local newspaper; delivery of multiple copies for distribution by customers that provide their drinking water to others (e.g., apartment building owners or large private employers); posting in public places served by the system or on the Internet; or delivery to community organizations.)</p> <p>(NOTE: See checklist item WQ.30.8.US. for additional information on Tier 2 notices and WQ.30.9 for additional information on Tier 3 notices.)</p> <p>(NOTE: For community water systems, the Consumer Confidence Report (CCR) may be used as a vehicle for the initial Tier 3 public notice and all required repeat notices, as long as:</p> <ul style="list-style-type: none"> <li>– the CCR is provided to persons served no later than 12 mo after the system learns of the violation or situation</li> <li>– the Tier 3 notice contained in the CCR follows the content requirements under 40 CFR 141.205 (see checklist item WQ.30.10.US.)</li> <li>– the CCR is distributed following the delivery requirements in this checklist item.)</li> </ul> <p>Verify that community water systems give a copy of the most recent public notice for any continuing violation, the existence of a variance or exemption, or other ongoing situations requiring a public notice to all new billing units or new customers prior to or at the time service begins.</p> <p>(NOTE: See checklist item WQ.35.1.US for the definition of a community water systems.)</p>

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<p><b>WQ.45.4.US.</b> When a community water system is required to provide special notices on the availability of unregulated contaminant monitoring results or exceedances of the SMCL for fluoride, specific parameters must be met (40 CFR 141.207, 141.208, and 141.210) [Added July 2000; Revised April 2006].</p>	<p>(NOTE: The primacy agency may give the required notice on behalf of the owner and operator of the public water system if the primacy agency complies with the requirements of this checklist item. The owner or operator of the public water system remains responsible for ensuring that the requirements of this checklist item are met.)</p> <p>Verify that the owner or operator of a community water system required to monitor under 40 CFR 141.40 (see checklist item WQ.40.7.US.) notifies persons served by the system of the availability of the results of unregulated contaminant sampling no later than 12 mo after the monitoring results are known.</p> <p>Verify that the form and manner of the public notice follows the requirements for a Tier 3 public notice prescribed in 40 CFR 141.204(c), (d)(1), and (d)(3) (see checklist item WQ.45.3.US.) and identifies a person and provide the telephone number to contact for information on the monitoring results.</p> <p>Verify that community water systems that exceed the fluoride secondary maximum contaminant level (SMCL) of 2 mg/l as determined by the last single sample taken, but do not exceed the MCL of 4 mg/l for fluoride, provide the public notice to persons served as soon as practical but no later than 12 mo from the day the water system learns of the exceedance.</p> <p>Verify that a copy of the notice is also sent to all new billing units and new customers at the time service begins and to the State public health officer.</p> <p>Verify that the public water system repeats the notice at least annually for as long as the SMCL is exceeded.</p> <p>(NOTE: If the public notice is posted, the notice must remain in place for as long as the SMCL is exceeded, but in no case less than seven days (even if the exceedance is eliminated). On a case-by-case basis, the primacy agency may require an initial notice sooner than 12 mo and repeat notices more frequently than annually.)</p> <p>Verify that the form and manner of the public notice (including repeat notices) follows the requirements for a Tier 3 public notice in 40 CFR 141.204(c) and 40 CFR 141.204(d)(1) and 40 CFR 141.204(d)(3) (see checklist item WQ.45.3.US.).</p> <p>Verify that the notice contains the following language, including the language necessary to fill in the blanks:</p> <p><i>This is an alert about your drinking water and a cosmetic dental problem that might affect children under nine years of age. At low levels, fluoride can help prevent cavities, but children drinking water containing more than 2 milligrams per liter (mg/l) of fluoride may develop cosmetic discoloration of their permanent teeth (dental fluorosis). The drinking water provided by your community water system [name] has a fluoride concentration of [insert value] mg/l.</i></p>

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<p><b>WQ.45.5.US.</b> The owner or operator of a community water system that is required to monitor source water Cryptosporidium, E. coli, and turbidity must perform certain notifications (40 CFR 141.211) [Added April 2006].</p>	<p><i>Dental fluorosis, in its moderate or severe forms, may result in a brown staining and/or pitting of the permanent teeth. This problem occurs only in developing teeth, before they erupt from the gums. Children under nine should be provided with alternative sources of drinking water or water that has been treated to remove the fluoride to avoid the possibility of staining and pitting of their permanent teeth. You may also want to contact your dentist about proper use by young children of fluoride-containing products. Older children and adults may safely drink the water.</i></p> <p><i>Drinking water containing more than 4 mg/L of fluoride (the U.S. Environmental Protection Agency's drinking water standard) can increase your risk of developing bone disease. Your drinking water does not contain more than 4 mg/l of fluoride, but we're required to notify you when we discover that the fluoride levels in your drinking water exceed 2 mg/l because of this cosmetic dental problem.</i></p> <p><i>For more information, please call [name of water system contact] of [name of community water system] at [phone number]. Some home water treatment units are also available to remove fluoride from drinking water. To learn more about available home water treatment units, you may call NSF International at 1-877-8-NSF-HELP."</i></p> <p>(NOTE: See checklist item WQ.35.1.US for the definition of a community water systems.)</p> <p>(NOTE: The primacy agency may give the required notice on behalf of the owner and operator of the public water system if the primacy agency complies with the requirements of this checklist item. The owner or operator of the public water system remains responsible for ensuring that the requirements of this checklist item are met.)</p> <p>Verify that the owner or operator of a community water system that is required to monitor source water under 40 CFR 141.701 (see checklist items WQ.15.6.US) notifies persons served by the water system that monitoring has not been completed as specified no later than 30 days after the system has failed to collect any 3 mo of monitoring as specified in 40 CFR 141.701(c).</p> <p>Verify that the notices are repeated as specified in 40 CFR 141.203(b) (see checklist item WQ.45.3.US).</p> <p>Verify that the owner or operator of a community water system that is required to determine a bin classification under 40 CFR 141.710 (see checklist item WQ.20.17.US), or to determine mean Cryptosporidium level under 40 CFR 141.712 (see checklist item WQ.20.19.US), notifies persons served by the water system that the determination has not been made as required no later than 30 days after the system has failed report the determination as specified in 40 CFR 141.710(e) or 40 CFR 141.712(a), respectively (see checklist item WQ.20.17.US and WQ.20.19.US).</p> <p>(NOTE: The notice of bin classification is not required if the system is complying with a State-approved schedule to address the violation.)</p>

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	<p>Verify that the notices are repeated as specified in 40 CFR 141.203(b) (see checklist item WQ.45.3.US).</p> <p>Verify that the form and manner of the public notice follows the requirements for a Tier 2 public notice prescribed in 40 CFR 141.203(c) (see checklist item WQ.45.3.US).</p> <p>Verify that the public notice is presented as required in 40 CFR 141.205(c) (see checklist item WQ.30.10.US).</p> <p>Verify that the special notice for repeated failure to conduct monitoring contains the following language:</p> <p style="padding-left: 40px;">We are required to monitor the source of your drinking water for Cryptosporidium. Results of the monitoring are to be used to determine whether water treatment at the (treatment plant name) is sufficient to adequately remove Cryptosporidium from your drinking water. We are required to complete this monitoring and make this determination by (required bin determination date). We “did not monitor or test” or “did not complete all monitoring or testing” on schedule and, therefore, we may not be able to determine by the required date what treatment modifications, if any, must be made to ensure adequate Cryptosporidium removal. Missing this deadline may, in turn, jeopardize our ability to have the required treatment modifications, if any, completed by the deadline required, (date).</p> <p style="padding-left: 40px;">For more information, please call (name of water system contact) of (name of water system) at (phone number).</p> <p>Verify that the special notice for failure to determine bin classification or mean Cryptosporidium level contains the following language:</p> <p style="padding-left: 40px;">We are required to monitor the source of your drinking water for Cryptosporidium in order to determine by (date) whether water treatment at the (treatment plant name) is sufficient to adequately remove Cryptosporidium from your drinking water. We have not made this determination by the required date. Our failure to do this may jeopardize our ability to have the required treatment modifications, if any, completed by the required deadline of (date). For more information, please call (name of water system contact) of (name of water system) at (phone number).</p> <p>Verify that each special notice also includes a description of what the system is doing to correct the violation and when the system expects to return to compliance or resolve the situation.</p>

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<p><b>WQ.45.6.US.</b> Community water systems using a primary or residual disinfectant other than ultraviolet light or delivering water that has been treated with a primary or residual disinfectant other than ultraviolet light must meet reporting and recordkeeping requirement (40 CFR 141.629) [Added April 2006].</p>	<p>Verify that the facility reports the following information for each monitoring location to the State within 10 days of the end of any quarter in which monitoring is required:</p> <ul style="list-style-type: none"> <li>– number of samples taken during the last quarter</li> <li>– date and results of each sample taken during the last quarter</li> <li>– arithmetic average of quarterly results for the last four quarters for each monitoring location (LRAA), beginning at the end of the fourth calendar quarter that follows the compliance date and at the end of each subsequent quarter</li> <li>– whether, based on 40 CFR 141.64(b)(2) and 40 CFR 141, Subpart V, the MCL was violated at any monitoring location</li> <li>– any operational evaluation levels that were exceeded during the quarter and, if so, the location and date, and the calculated TTHM and HAA5 levels.</li> </ul> <p>(NOTE: If the LRAA calculated based on fewer than four quarters of data would cause the MCL to be exceeded regardless of the monitoring results of subsequent quarters, the facility must report this information to the State as part of the first report due following the compliance date or anytime thereafter that this determination is made. If the facility is required to conduct monitoring at a frequency that is less than quarterly, the facility must make compliance calculations beginning with the first compliance sample taken after the compliance date, unless you are required to conduct increased monitoring under 40 CFR 141.625 [see checklist item WQ.40.25.US].)</p> <p>Verify that, if the facility is a subpart H system seeking to qualify for or remain on reduced TTHM/HAA5 monitoring, the facility reports the following source water TOC information for each treatment plant that treats surface water or ground water under the direct influence of surface water to the State within 10 days of the end of any quarter in which monitoring is required:</p> <ul style="list-style-type: none"> <li>– the number of source water TOC samples taken each month during last quarter</li> <li>– the date and result of each sample taken during last quarter</li> <li>– the quarterly average of monthly samples taken during last quarter or the result of the quarterly sample</li> <li>– the running annual average (RAA) of quarterly averages from the past four quarters</li> <li>– whether the RAA exceeded 4.0 mg/L.</li> </ul> <p>(NOTE: The State may choose to perform calculations and determine whether the MCL was exceeded or the system is eligible for reduced monitoring in lieu of having the system report that information.)</p> <p>Verify that the facility retains any 40 CFR 141, Subpart V monitoring plans and monitoring results (see checklist items WQ.40.22.US through WQ.40.26.US and</p>

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<p><b>WQ.45.7.US.</b> Community water systems that use ground water having fecally contaminated source waters or significant deficiencies identified by a regulator must meet notification requirements (40 CFR 141.400(a), 141.400(d), and 141.403(a)(7)(i)) [Added January 2007].</p>	<p>WQ.45.5.US) as required by 40 CFR 141.33 (see checklist items WQ.10.1.US, WQ.10.2.US, and WQ.30.1.US).</p> <p>(NOTE: This checklist item applies to all public water systems that use ground water except that it does not apply to public water systems that combine all of their ground water with surface water or with ground water under the direct influence of surface water prior to treatment under 40 CFR 141, Subpart H.)</p> <p>(NOTE: Unless otherwise noted, ground water systems must comply with this checklist item beginning 1 December 2009.)</p> <p>Verify that, in addition to the applicable public notification requirements of 40 CFR 141.202, a community ground water system that receives notice from the State of a significant deficiency or notification of a fecal indicator-positive ground water source sample that is not invalidated by the State informs the public served by the water system under 40 CFR 141.153(h)(6) of the fecal indicator-positive source sample or of any significant deficiency that has not been corrected.</p> <p>Verify that the system continues to inform the public annually until the significant deficiency is corrected or the fecal contamination in the ground water source is determined by the State to be corrected.</p>



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<p><b>COMMUNITY WATER SYSTEMS</b></p> <p><b>WQ.50</b>  <b>Lead and Copper</b></p> <p><b>WQ.50.1.US.</b> Community water systems must educate their users about lead in drinking water systems (40 CFR 141.85(a), 141.85(b)(1) through 141.85(b)(3), 141.85(b)(6) through 141.85(b)(8) and 141.90(f)) [Revised April 2000; Revised October 2007; Revised January 2008].</p>	<p>Verify that all community water systems deliver a consumer notice of lead tap water monitoring results to persons served by the water system at sites that are tested.</p> <p>Verify that a community water system that exceeds the lead action level based on tap water samples collected in accordance with 40 CFR 141.86 delivers the public education materials outlined in Appendix 13-7a.</p> <p>Verify that, for public water systems serving a large proportion of non-English speaking consumers, as determined by the State, the public education materials contain information in the appropriate language(s) regarding the importance of the notice or contain a telephone number or address where persons served may contact the water system to obtain a translated copy of the public education materials or to request assistance in the appropriate language.</p> <p>Verify that a community water system that exceeds the lead action level on the basis of tap water samples collected in accordance with 40 CFR 141.86, and that is not already conducting public education tasks, conducts the following public education tasks within 60 days after the end of the monitoring period in which the exceedance occurred:</p> <ul style="list-style-type: none"> <li>– deliver printed materials meeting the content requirements of Appendix 13-7a to all bill paying customers</li> <li>– contact customers who are most at risk by delivering education materials that meet the content requirements of Appendix 13-7a to local public health agencies even if they are not located within the water system's service area, along with an informational notice that encourages distribution to all the organization's potentially affected customers or community water system's users</li> <li>– contact the local public health agencies directly by phone or in person and obtain any list they may have of additional community based organizations serving target populations, which may include organizations outside the service area of the water system, and deliver education materials to all organizations on the provided lists</li> <li>– contact customers who are most at risk by delivering materials that meet the content requirements Appendix 13-7a to the following organizations that are located within the water system's service area, along with an informational notice that encourages distribution to all the organization's potentially affected customers or community water system's users: <ul style="list-style-type: none"> <li>– public and private schools or school boards</li> <li>– Women, Infants and Children (WIC) and Head Start programs</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– public and private hospitals and medical clinics</li> <li>– pediatricians</li> <li>– family planning clinics</li> <li>– local welfare agencies</li> </ul> <p>– make a good faith effort to locate the following organizations within the service area and deliver materials that meet the content requirements Appendix 13-7a to them, along with an informational notice that encourages distribution to all potentially affected customers or users:</p> <ul style="list-style-type: none"> <li>– licensed childcare centers</li> <li>– public and private preschools.</li> <li>– obstetricians-gynecologists and midwives.</li> </ul> <p>(NOTE: The good faith effort to contact at-risk customers may include requesting a specific contact list of these organizations from the local public health agencies, even if the agencies are not located within the water system's service area.)</p> <p>(NOTE: A system serving 3,300 or fewer people may limit the distribution of the public education materials to facilities and organizations served by the system that are most likely to be visited regularly by pregnant women and children.)</p> <p>Verify that, no less often than quarterly, the water system provides information on or in each water bill as long as the system exceeds the action level for lead.</p> <p>(NOTE: The message on the water bill must include the following statement exactly as written except for the text in brackets for which the water system must include system-specific information: [INSERT NAME OF WATER SYSTEM] found high levels of lead in drinking water in some homes. Lead can cause serious health problems. For more information please call [INSERT NAME OF WATER SYSTEM] [or visit (INSERT YOUR WEB SITE HERE)]. The message or delivery mechanism can be modified in consultation with the State; specifically, the State may allow a separate mailing of public education materials to customers if the water system cannot place the information on water bills.)</p> <p>Verify that material meeting the content requirements Appendix 13-7a is posted on the water system's Web site if the system serves a population greater than 100,000.</p> <p>Verify that a press release is submitted to newspaper, television and radio stations.</p> <p>(NOTE: The State may waive the press release requirement for systems serving 3,300 or fewer persons as long as system distributes notices to every household served by the system.)</p> <p>Verify that systems implement at least three activities from one or more categories listed below:</p> <ul style="list-style-type: none"> <li>– Public Service Announcements</li> </ul>

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	<ul style="list-style-type: none"> <li>– paid advertisements</li> <li>– public area information displays</li> <li>– e-mails to customers</li> <li>– public meetings</li> <li>– household deliveries</li> <li>– targeted individual customer contact</li> <li>– direct material distribution to all multi-family homes and institutions</li> <li>– other methods approved by the State.</li> </ul> <p>(NOTE: A system serving 3,300 or fewer must implement at least one of the above activities.)</p> <p>(NOTE: The educational content and selection of the selected activities must be determined in consultation with the State.)</p> <p>(NOTE: For systems that are required to conduct monitoring annually or less frequently, the end of the monitoring period is September 30 of the calendar year in which the sampling occurs, or, if the State has established an alternate monitoring period, the last day of that period.)</p> <p>Verify that, as long as a community water system exceeds the action level, it repeats the above notification activities as described below:</p> <ul style="list-style-type: none"> <li>– every 12 mo: <ul style="list-style-type: none"> <li>– deliver printed materials to paying customers</li> <li>– deliver materials to most at risk customers</li> <li>– implement three activities from the nine categories listed above in the checklist item</li> </ul> </li> <li>– every billing cycle include the following message “[INSERT NAME OF WATER SYSTEM] found high levels of lead in drinking water in some homes. Lead can cause serious health problems. For more information please call [INSERT NAME OF WATER SYSTEM] [or visit (INSERT YOUR WEB SITE HERE)].”</li> <li>– a community water system serving a population greater than 100,000 posts and retains required material on a publicly accessible Web site</li> </ul> <p>Verify that the community water system repeats the submission of a press release to newspaper, television and radio stations every 12 mo on a schedule agreed upon with the State.</p> <p>(NOTE: A water system may discontinue delivery of public education materials if the system has met the lead action level during the most recent six-month monitoring period. Public education will be recommenced if the water system subsequently exceeds the lead action level during any monitoring period.)</p>

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<p><b>WQ.50.2.US.</b> Community water systems are required to meet specific standards for lead and copper action levels and reporting requirements when these levels are exceeded (40 CFR 141.80(a)(1), 141.80(c), 141.80(g), 141.85(c), and 141.85(d)) [Reviewed March 2000; Revised October 2007; Revised January 2008].</p>	<p>(NOTE: A community water system may apply to the State, in writing (unless the State has waived the requirement for prior State approval), for waivers concerning the public education process if:</p> <ul style="list-style-type: none"> <li>– the system is a facility, such as a prison or a hospital, where the population served is not capable of or is prevented from making improvements to plumbing or installing point of use treatment devices</li> <li>– the system provides water as part of the cost of services provided and does not separately charge for water consumption.)</li> </ul> <p>Verify that any community water system subject to the public education requirements outlined in this checklist item, within ten days after the end of each period in which the system is required to perform public education, sends written documentation to the State that contains the following:</p> <ul style="list-style-type: none"> <li>– a demonstration that the system has delivered the public education materials that meet the required content requirements and the delivery requirements</li> <li>– a list of all the newspapers, radio stations, television stations, and facilities and organizations to which the system delivered public education materials during the period in which the system was required to perform public education tasks.</li> </ul> <p>(NOTE: Unless required by the State, a system that previously has submitted the information about newspapers, radio stations etc., need not resubmit the information as long as there have been no changes in the distribution list and the system certifies that the public education materials were distributed to the same list submitted previously.)</p> <p>Verify that, no later than 3 mo following the end of the monitoring period, each water system mails a sample copy of the consumer notification of tap results to the State along with a certification that the notification has been distributed in a manner consistent with the requirements of 40 CFR 141.85(d).</p> <p>(NOTE: See checklist item WQ.35.1.US for the definition of a community water systems.)</p> <p>Verify that the concentration of lead does not exceed 0.015 mg/L in more than 10 percent of tap water samples collected during any monitoring period.</p> <p>Verify that the concentration of copper does not exceed 1.3 mg/L in more than 10 percent of tap water samples collected during any monitoring period.</p> <p>(NOTE: See the text of 40 CFR 141.80(c)(3) for details on calculating the 90th percentile lead and copper levels.)</p> <p>(NOTE: For a public water system that has been allowed by the State to collect fewer than five samples, the sample result with the highest concentration is considered the 90th percentile value.)</p>

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<p><b>WQ.50.3.US.</b> Community water systems are required to install and operate optimal corrosion control (40 CFR 141.80(d) and 141.82) [Reviewed March 2000].</p> <p><b>WQ.50.4.US.</b> Community water systems that exceed the</p>	<p>Verify that a water system that fails to meet the lead action level on the basis of tap samples collected in accordance with 40 CFR 141.86 offers to sample the tap water of any customer who requests it.</p> <p>(NOTE: The system is not required to pay for collecting or analyzing the sample, nor is the system required to collect and analyze the sample itself.)</p> <p>(NOTE: See checklist item WQ.35.1.US for the definition of a community water systems.)</p> <p>Verify that the water system provides a consumer notice of lead tap water monitoring results to persons served at the sites (taps) that are tested.</p> <p>Verify that any system exceeding the lead action level implement the public education requirements.</p> <p>Verify that the water system provides a notice of the individual tap results from lead tap water monitoring carried out under the requirements of 40 CFR 141.86 to the persons served by the water system at the specific sampling site from which the sample was taken (e.g., the occupants of the residence where the tap was tested).</p> <p>Verify that a water system provides the consumer notice as soon as practical, but no later than 30 days after the system learns of the tap monitoring results.</p> <p>Verify that the consumer notice includes the results of lead tap water monitoring for the tap that was tested, an explanation of the health effects of lead, list steps consumers can take to reduce exposure to lead in drinking water and contact information for the water utility.</p> <p>Verify that the notice provides the maximum contaminant level goal and the action level for lead and the definitions for these two terms.</p> <p>Verify that the consumer notice is provided to persons served at the tap that was tested, either by mail or by another method approved by the State.</p> <p>Verify that the water system has corrosion control that minimizes the lead and copper concentrations at users' taps while insuring that the treatment does not cause the water system to violate any of the national primary drinking water standards.</p> <p>(NOTE: Please see 40 CFR 141.81 for design details for corrosion control systems in relationship to the size of the water system.)</p> <p>(NOTE: See checklist item WQ.35.1.US for the definition of a community water systems.)</p> <p>Verify that systems exceeding the lead or copper action level complete lead and copper source water monitoring and make a treatment recommendation to the State</p>

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<p>lead or copper action level are required to implement applicable source water treatment standards (40 CFR 141.80(e) and 141.83) [Reviewed March 2000; Revised October 2007].</p> <p><b>WQ.50.5.US.</b> Community water systems exceeding the lead action level after implementation of corrosion control and source water treatment requirements are required to replace lead service lines (40 CFR 141.80(f) and 141.84) [Reviewed March 2000].</p> <p><b>WQ.50.6.US.</b> Monitoring for lead and copper at community water systems is required to start on a specified date and be done at a specified number of sites according to the chart in Appendix 13-7 (40 CFR 141.80(h), 141.86(a)(1) through 141.86(a)(5), 141.86(a)(8), 141.86(c), 141.86(d) through 141.86(g)) [Revised May 1996; Reviewed March 2000; Revised April 2000; Revised October 2007].</p>	<p>no later than 180 days after the end of the monitoring period during which the lead or copper action level was exceeded.</p> <p>Verify that if the state requires the installation of source water treatment, the installation is done within 24 mo after the states initial response.</p> <p>Verify that follow-up tap water monitoring and source water monitoring is completed within 36 mo after the state's initial response.</p> <p>(NOTE: See checklist item WQ.35.1.US for the definition of a community water systems.)</p> <p>Verify that lead service line replacement, if needed, is done according to the schedules and parameters outlined in 40 CFR 141.84.</p> <p>(NOTE: A system is not required to replace an individual lead service line if the lead concentration in all service line samples from that line is less than or equal to 0.015 mg/L.)</p> <p>(NOTE: Replacement of lead service lines can stop when the first draw samples that are collected meet the lead action levels during two consecutive monitoring periods and the system submits the results to the state.)</p> <p>(NOTE: See checklist item WQ.35.1.US for the definition of a community water systems.)</p> <p>Verify that water systems have completed a materials evaluation of its distribution system to identify a pool of targeted sampling sites and which is sufficiently large to ensure that the water system can collect the number of samples required.</p> <p>(NOTE: Sampling sites may not include point-of-use or point-of-entry treatment devices designed to remove inorganic contaminants.)</p> <p>(NOTE: See Appendix 13-7 for details on the required number of samples and when the sampling program is required to start.)</p> <p>Verify that selected sampling sites (tier 1 sampling sites) for community water systems consist of single family structures that have one or both of the following:</p> <ul style="list-style-type: none"> <li>– contain copper pipes with lead solder installed after 1982 or contain lead pipes</li> <li>– are served by a lead service line.</li> </ul> <p>(NOTE: When multiple family residences comprise at least 20 percent of the structure served by a water system, the system may include these types of structures in its sampling pool.)</p>

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	<p>Verify that, if the community water system has insufficient tier 1 sampling sites, the sampling pool is completed with tier 2 sites that consist of buildings, including multiple family residences, that:</p> <ul style="list-style-type: none"> <li>– contain copper pipes with lead solder installed after 1982 or contain lead pipes</li> <li>– are served by a lead service line.</li> </ul> <p>Verify that if the community water system has insufficient tier 1 and tier 2 sites, the sample is completed with tier 3 sites consisting of single family structures that contain copper pipes with lead solder installed before 1983.</p> <p>Verify that, if the community water system has insufficient tier 1, tier 2, and tier 3 sampling sites, the community water system completes its sampling pool with representative sites throughout the distribution system.</p> <p>(NOTE: A representative site is a site in which the plumbing materials used at that site would be commonly found at other sites served by the water system.)</p> <p>Verify that any water system with a distribution system that contains lead service lines draws 50 percent of the samples from sites that contain lead pipes or copper pipes with lead solder, and 50 percent of the samples from sites served by a lead service line.</p> <p>Verify that a water system that cannot identify a sufficient number of sampling sites served by a lead service line collects first-draw samples from all of the sites identified as being served by such lines.</p> <p>(NOTE: See the text of 40 CFR 141.86(b) for details of sample collection methods.)</p> <p>Verify that a public water system that has fewer than five drinking water taps that can be used for human consumption collect at least one sample from each tap and then collects additional samples from those taps on different days during the monitoring period to meet the required number of sites.</p> <p>(NOTE: Alternatively the State may allow these public water systems to collect a number of samples less than the number of sites specified, provided that 100 percent of all taps that can be used for human consumption are sampled. The State must approve this reduction of the minimum number of samples in writing based on a request from the system or onsite verification by the State.)</p> <p>Verify that a small or medium water system collecting fewer than five samples, that meets the lead and copper action levels during each of two consecutive 6-mo monitoring periods may reduce the frequency of sampling to once per year.</p>

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	<p>Verify that in no case does small or medium water system collecting fewer than five samples reduce the number of samples required below the minimum of one sample per available tap and the sampling begins during the calendar year immediately following the end of the second consecutive 6 mo monitoring period.</p> <p>Verify that, for the initial tap sample, all large water systems monitor during two consecutive 6-mo periods.</p> <p>Verify that all small and medium-sized water systems monitor during each 6-mo period until:</p> <ul style="list-style-type: none"> <li>– the system exceeds the lead or copper action levels and is then required to implement corrosion control treatment</li> <li>– the system meets the lead and copper action levels during two consecutive 6- mo monitoring periods.</li> </ul> <p>(NOTE: A small or medium-sized water system that meets the lead and copper action levels during each of two consecutive 6-mo monitoring periods can reduce the frequency of sampling to once a year. If action levels are met during 3 consecutive years of monitoring, the frequency may be reduced to once every 3 yr.)</p> <p>Verify that, for monitoring after the installation of corrosion control and source water treatment, large systems with optimal corrosion control by 1 January 1997 monitor during two consecutive 6-mo periods by 1 January 1998.</p> <p>Verify that, for monitoring after the installation of corrosion control and source water treatment, small or medium-sized systems that install optimal corrosion control within 24 mo after being required to do so by the state, monitor during two consecutive 6- mo periods within 36 mo after being required to install optimal corrosion control treatment.</p> <p>Verify that, for monitoring after the installation of corrosion control and source water treatment required by the state, all systems that install state required systems monitor during two consecutive months within 36 mo after the initial state requirement.</p> <p>Verify that, after the state has specified water quality parameter values for optimal corrosion control, monitoring is done during each subsequent 6-mo monitoring period beginning when the state specified the optimal values.</p> <p>(NOTE: See the text of 40 CFR 141.86(d)(4) for information on when a water system can implement reduced monitoring.)</p> <p>(NOTE: Small water systems may be able to obtain a waiver from the state.)</p>

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<p><b>WQ.50.7.US.</b> All large water systems and all small and medium size systems that exceed the lead or copper action level are required to monitor for water quality parameters in addition to lead and copper (40 CFR 141.80(h) and 141.87) <b>[Reviewed March 2000]</b>.</p> <p><b>WQ.50.8.US.</b> Community water systems that fail to meet the lead or copper action levels are required to meet specific monitoring requirements (40 CFR 141.80(h) and 141.88) <b>[Reviewed March 2000; Revised April 2000; Revised October 2007; Revised January 2008]</b>.</p>	<p>(NOTE: See checklist item WQ.35.1.US for the definition of a community water systems.)</p> <p>Verify that monitoring for water quality parameters is done according to Appendix 13-8.</p> <p>(NOTE: See checklist item WQ.35.1.US for the definition of a community water systems.)</p> <p>Verify that groundwater systems that fail to meet the lead or copper action level on the basis of tap samples take a minimum of one sample at every entry point to the distribution system which is representative of each well after treatment (hereafter called a sampling point).</p> <p>Verify that the groundwater system takes one sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.</p> <p>Verify that surface water systems that fail to meet the lead or copper action level on the basis of tap samples take a minimum of one sample at every entry point to the distribution system after any application of treatment or in the distribution system at a point that is representative of each source after treatment (a sampling point).</p> <p>Verify that the surface water system takes each sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.</p> <p>(NOTE: For the purposes of this checklist item, surface water systems include systems with a combination of surface and ground sources.)</p> <p>Verify that, if a system draws water from more than one source and the sources are combined before distribution, the system samples at an entry point to the distribution system during periods of normal operating conditions (i.e., when water is representative of all sources being used).</p> <p>(NOTE: The state may reduce the total number of samples that must be analyzed by allowing the use of compositing.)</p> <p>Verify that, if compositing of samples is allowed, it is done by certified laboratory personnel.</p>

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	<p>(NOTE: Composite samples from a maximum of five samples are allowed, provided that, if the lead concentration in the composite sample is greater than or equal to 0.001 mg/L or the copper concentration is greater than or equal to 0.160 mg/L, then either:</p> <ul style="list-style-type: none"> <li>– a follow-up sample shall be taken and analyzed within 14 days at each sampling point included in the composite; or</li> <li>– if duplicates of or sufficient quantities from the original samples from each sampling point used in the composite are available, the system may use these instead of resampling.)</li> </ul> <p>(NOTE: Where the results of sampling indicate an exceedance of maximum permissible source water levels, the state may require that one additional sample be taken as soon as possible after the initial sample was taken (but not to exceed 2 weeks) at the same sampling point.)</p> <p>Verify that any system which exceeds the lead or copper action level at the tap collects one source water sample from each entry point to the distribution system no later than 6 mo after the end of the monitoring period during which the lead or copper action level was exceeded.</p> <p>(NOTE: For monitoring periods that are annual or less frequent, the end of the monitoring period is September 30 of the calendar year in which the sampling occurs, or if the State has established an alternate monitoring period, the last day of that period.)</p> <p>Verify that systems that install source water treatment as required by the state collects an additional source water sample from each entry point to the distribution system during two consecutive 6-mo monitoring periods.</p> <p>Verify that the system monitors as follows when the state specifies maximum permissible source water levels:</p> <ul style="list-style-type: none"> <li>– once during the 3-yr compliance period for water systems using only groundwater</li> <li>– annually for water systems using surface water or a combination of surface and groundwater.</li> </ul> <p>(NOTE: Triennial samples shall be collected every third calendar year.)</p> <p>(NOTE: A water system using only ground water may reduce the monitoring frequency for lead and copper in source water to once during each 9-yr compliance cycle provided that the samples are collected no later than every ninth calendar year and the system meets one of the following criteria:</p> <ul style="list-style-type: none"> <li>– the system demonstrates that finished drinking water entering the distribution system has been maintained below the maximum permissible lead and copper concentrations specified by the state during at least three consecutive compliance periods</li> </ul>

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<p><b>WQ.50.9.US.</b> In reference to lead and copper in water systems, community water systems are required to report specific information to the state (40 CFR 141.90(a) through 141.90(e), 141.90(g), and 141.90(h)) <b>[Reviewed March 2000; Revised April 2000; Revised October 2007; Revised January 2008].</b></p>	<ul style="list-style-type: none"> <li>– the State has determined that source water treatment is not needed and the system demonstrates that, during at least three consecutive compliance periods in which sampling was conducted, the concentration of lead in source water was less than or equal to 0.005 mg/L and the concentration of copper in source water was less than or equal to 0.65 mg/L.)</li> </ul> <p>(NOTE: A water system using surface water (or a combination of surface water and ground water) may reduce the monitoring frequency to once during each 9-yr compliance cycle provided that the samples are collected no later than every ninth calendar year and the system meets one of the following criteria:</p> <ul style="list-style-type: none"> <li>– the system demonstrates that finished drinking water entering the distribution system has been maintained below the maximum permissible lead and copper concentrations specified by the state for at least three consecutive years</li> <li>– the state has determined that source water treatment is not needed and the system demonstrates that, during at least three consecutive years, the concentration of lead in source water was less than or equal to 0.005 mg/L and the concentration of copper in source water was less than or equal to 0.65 mg/L.)</li> </ul> <p>(NOTE: See checklist item WQ.35.1.US for the definition of a community water systems.)</p> <p>Verify that a water system reports the following information for all tap water samples specified in 40 CFR 141.86 (see checklist item WQ.50.6.US.) and for all water quality parameter samples specified in 40 CFR 141.87 (see checklist item WQ.50.7.US.) within the first 10 days following the end of each applicable monitoring period (i.e., every 6 mo, annually, every 3 yr, or every 9 yr):</p> <ul style="list-style-type: none"> <li>– the results of all tap samples for lead and copper, including the location of each site and the criteria under which the site was selected for the system’s sampling pool</li> <li>– documentation for each tap water lead or copper sample for which the water system requests invalidation</li> <li>– the 90th percentile lead and copper concentrations measured from among all lead and copper tap water samples collected during each monitoring period, unless the state calculates the system's 90th percentile lead and copper levels</li> <li>– any site that was not sampled during previous monitoring periods and why the sampling sites have changed</li> <li>– the results of all tap samples for pH, and where applicable, alkalinity, calcium, conductivity, temperature, and orthophosphate or silica</li> <li>– the results of all water samples collected at the entry points to the distribution system for applicable water quality parameters under 40 CFR 141.87(b) through 40 CFR 141.87(e)</li> <li>– the results of all water quality parameter samples collected during each 6-mo monitoring period within the first 10 days following the end of the monitoring period unless the state has specified a more frequent reporting requirement.</li> </ul>

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	<p>(NOTE: For monitoring periods with a duration less than 6 mo, the end of the monitoring period is the last date samples can be collected during that period as specified in 40 CFR 141.86 and 141.87.)</p> <p>Verify that, if the system is a facility, such as a prison or hospital, where the population served is not capable of or is prevented from making improvements to plumbing or installing point-of-use devices, or the system provides water as part of the cost of services provided and does not separately charge for water consumption, one of the following is required when the system does not have enough taps that can provide first-draw samples:</p> <ul style="list-style-type: none"> <li>– provide written documentation to the state identifying standing times and locations for enough non-first-draw samples to make up its sampling pool by the start of the first applicable monitoring period that commences after 11 April 2000, unless the state has waived prior state approval of non-first-draw sample sites selected by the system</li> <li>– if the state has waived prior approval of non-first-draw sample sites selected by the system, identify, in writing, each site that did not meet the 6-h minimum standing time and the length of standing time for that particular substitute sample collected and include this information with the lead and copper tap sample results required to be submitted.</li> </ul> <p>Verify that, at a time specified by the State, or if no specific time is designated by the State, then as early as possible prior to the addition of a new source or any long-term change in water treatment, a water system deemed to have optimized corrosion control, a water system subject to reduced monitoring, or a water system subject to a monitoring waiver, submits written documentation to the State describing the change or addition.</p> <p>(NOTE: The State must review and approve the addition of a new source or long-term change in treatment before it is implemented by the water system. Examples of long-term treatment changes include the addition of a new treatment process or modification of an existing treatment process. Examples of modifications include switching secondary disinfectants, switching coagulants (e.g., alum to ferric chloride), and switching corrosion inhibitor products (e.g., orthophosphate to blended phosphate). Long-term changes can include dose changes to existing chemicals if the system is planning long-term changes to its finished water pH or residual inhibitor concentration. Long-term treatment changes would not include chemical dose fluctuations associated with daily raw water quality changes.)</p> <p>Verify that any small system applying for a monitoring waiver, or subject to a waiver, provides the following information to the state in writing by the specified deadline:</p>

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<p><b>WQ.50.10.US.</b> Community systems subject to the lead and copper requirements are</p>	<ul style="list-style-type: none"> <li>– by the start of the first applicable monitoring period, any small water system applying for a monitoring waiver provides the documentation required to demonstrate that it meets the waiver criteria</li> <li>– no later than 9 yr after the monitoring previously conducted, each small system desiring to maintain its monitoring waiver provides a demonstration that the 90th percentile lead level does not exceed 0.005 mg/L and the 90th percentile copper level does not exceed 0.65 mg/L</li> <li>– no later than 60 days after it becomes aware that it is no longer free of lead-containing and/or copper-containing material, as appropriate, each small system with a monitoring waiver provides written notification to the state, setting forth the circumstances resulting in the lead-containing and/or copper-containing materials being introduced into the system and what corrective action, if any, the system plans to remove these materials</li> <li>– by 10 October 2000, any small system with a waiver granted prior to 11 April 2000 and that has not previously met the monitoring criteria for a waiver issuance provides a demonstration that the 90th percentile lead level does not exceed 0.005 mg/L and the 90th percentile copper level does not exceed 0.65 mg/L.</li> </ul> <p>Verify that each groundwater system that limits water quality parameter monitoring to a subset of entry points provides, by the commencement of such monitoring, written correspondence to the state that identifies the selected entry points and includes information sufficient to demonstrate that the sites are representative of water quality and treatment conditions throughout the system.</p> <p>Verify that water systems report the sampling results for all source water samples collected according to 40 CFR 141.88 (see checklist item WQ.50.8.US.) within the first 10 days following the end of each source water monitoring period.</p> <p>Verify that, with the exception of the first round of source water sampling, the system specifies any site that was not sampled during previous monitoring periods, and includes an explanation of why the sampling point has changed.</p> <p>Verify that the following reports are submitted as applicable:</p> <ul style="list-style-type: none"> <li>– corrosion control treatment</li> <li>– source water treatment</li> <li>– lead service line replacement</li> <li>– demonstration of public education program.</li> </ul> <p>(NOTE: See checklist item WQ.35.1.US for the definition of a community water systems.)</p> <p>Verify that records are kept onsite for 12 yr.</p>

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<p>required to retain onsite all the original records of sampling data, analysis, reports, surveys, letters, evaluations, state determinations, and any other pertinent documents for at least 12 yr (40 CFR 141.80(j) and 141.91) <b>[Reviewed March 2000]</b>.</p>	<p>(NOTE: See checklist item WQ.35.1.US for the definition of a community water systems.)</p>

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<b>NONCOMMUNITY WATER SYSTEMS</b>  <b>WQ.60 Standards</b>  <b>WQ.60.1.US.</b> Noncommunity water systems, except as defined under exempted water systems, will not exceed a MCL for nitrate of 10 mg/L (40 CFR 141.11(d) and 141.62(b)) <b>[Revised May 1996; Reviewed March 2000; Revised July 2000].</b>	<p>Verify that the nitrate level at noncommunity water systems does not exceed 10 mg/ L.</p> <p>Verify that the nitrite level at noncommunity water systems does not exceed 1 mg/L.</p> <p>Verify that the total nitrate and nitrite levels at noncommunity water systems do not exceed 10 mg/L.</p> <p>(NOTE: At the discretion of the state, nitrate levels not to exceed 20 mg/L may be allowed in a noncommunity system if the supplier of the water demonstrates to the satisfaction of the state that:</p> <ul style="list-style-type: none"> <li>– such water will not be available to children under 6 mo of age</li> <li>– public notification requirements under 40 CFR 141.209 are met and there is continuous posting of the fact that nitrate levels exceed 10 mg/L and the potential health effects of exposure</li> <li>– local and state public health officials are notified annually of nitrate levels that exceed 10 mg/L</li> <li>– no adverse health effects result.)</li> </ul> <p>(NOTE: A noncommunity water system can be either a nontransient, noncommunity (NTNC) water system or a transient noncommunity water system. See Definitions)</p>



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<p><b>NONCOMMUNITY WATER SYSTEMS</b></p> <p><b>WQ.65</b>  <b>Monitoring/Sampling</b></p> <p><b>WQ.65.1.US.</b> Noncommunity water systems, except as defined under exempted water systems, are required to monitor for total coliforms according to a specific schedule (40 CFR 141.21(a)(3) and 141.21(h)) <b>[Revised March 1995; Reviewed March 2000; Revised April 2013]</b>.</p> <p><b>WQ.65.2.US.</b> Checklist item deleted <b>[Deleted March 2000]</b>.</p> <p><b>WQ.65.3.US.</b> Noncommunity water systems that add a chemical disinfectant to the water in any part of the drinking water process or supply water containing chemical disinfectant, are required to meet specific monitoring requirements for disinfection byproducts and disinfection byproduct precursors (DBPP) (40 CFR 141.130(a)(1), 141.130(b),</p>	<p>(NOTE: This checklist item is applicable until 31 March 2016. After that time, the applicable requirements will be found in 40 CFR 141, Subpart Y [141.851 through 141.861]. ]. See checklist items WQ.10.8.US, WQ.15.14.US, WQ.15.15.US, and WQ.30.15.US for Public Water Systems. See WQ.40.28.US for Community Water Systems. See WQ.65.7.US and WQ.65.8.US for NTNC Water Systems.)</p> <p>Verify that the noncommunity water systems using only groundwater (except groundwater under the direct influence of surface water) and serving 1000 persons or less, monitors each calendar quarter the system provides water to the public.</p> <p>Verify that the following noncommunity water systems are monitoring for total coliforms according to the schedule outlined in Appendix 13-6:</p> <ul style="list-style-type: none"> <li>– systems using only groundwater (except groundwater under the direct influence of surface water) and serving more than 1000 persons during any month</li> <li>– systems using surface water, in total or in part</li> <li>– systems using groundwater under the direct influence of surface water.</li> </ul> <p>(NOTE: A noncommunity water system can be either a nontransient, noncommunity (NTNC) water system or a transient noncommunity water system. See Definitions.)</p> <p>Deleted as a result of review by USEPA.</p> <p>(NOTE: This requirement applies to Subpart H systems serving 10,000 or more persons beginning 1 January 2002. Subpart H systems serving fewer than 10,000 persons and systems using only groundwater not under the direct influence of surface water must comply with this section beginning 1 January 2004.)</p> <p>Verify that all samples are taken during normal operating conditions and based on the required monitoring plan.</p> <p>Verify that sample analysis is done using appropriate methodology and is conducted by laboratories that are certified by the USEPA or the State.</p>

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141.131, 141.132(a), 141.132(b)(1), and 141.132(d)) [Added January <b>1999; Reviewed March</b> <b>2000].</b>	<p>(NOTE: Systems may consider multiple wells drawing water from a single aquifer as one treatment plant for determining the minimum number of TTHM and HAA5 samples required if the state approves.)</p> <p>Verify that monitoring for TTHM and HAA5 is done at the frequency, either routine or reduced as appropriate, outlined in Appendix 13-10.</p> <p>Verify that for systems on a reduced monitoring schedule, the average of all samples taken in the year (for systems that must monitor quarterly) or the result of the sample (for systems that must monitor no more frequently than annually) is no more than 0.060 mg/L for TTHMs and 0.045 mg/L HAA5.</p> <p>Verify that, if the required averages for systems on a reduced monitoring schedule are not met, the system returns to routine monitoring in the quarter immediately following the quarter in which the system exceeded the required averages.</p> <p>(NOTE: The state may return a system to routine monitoring at the state's discretion.)</p> <p>Verify that, for systems using only groundwater not under the direct influence of surface water and serving fewer than 10,000 persons, if either the TTHM annual average is &gt;0.080 mg/L or the HAA5 annual average is &gt;0.060 mg/L, the system starts increased monitoring in the quarter immediately following the monitoring period in which the system exceeds the required averages.</p> <p>(NOTE: Systems on increased monitoring may return to routine monitoring if, after at least one year of monitoring their TTHM annual average is 0.060 mg/L and their HAA5 annual average is 0.045 mg/L.)</p> <p>Verify that Subpart H systems that use conventional filtration treatment monitor for TOC no later than the point of combined filter effluent turbidity monitoring and representative of the treated water.</p> <p>Verify that all systems using conventional filtration also monitor for TOC in the source water prior to any treatment at the same time as monitoring for TOC in the treated water.</p> <p>(NOTE: These samples (source water and treated water) are referred to as paired samples. At the same time as the source water sample is taken, all systems must monitor for alkalinity in the source water prior to any treatment. Systems must take one paired sample and one source water alkalinity sample per month per plant at a time representative of normal operating conditions and influent water quality.)</p> <p>(NOTE: Subpart H systems with an average treated water TOC of less than 2.0 mg/L for 2 consecutive years, or less than 1.0 mg/L for 1 yr, may reduce monitoring for both TOC and alkalinity to one paired sample and one source water alkalinity sample per plant per quarter. The system must revert to routine monitoring in the</p>

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<p><b>WQ.65.4.US.</b> Noncommunity water systems that add a chemical disinfectant to the water in any part of the drinking water process or supply water containing a chemical disinfectant are required to meet specific monitoring requirements for disinfection residuals (40 CFR 141.130(a)(1), 141.130(b), 141.131, 141.132(a), and 141.132(c)) [Added January 1999; Reviewed March 2000; Revised April 2001; Revised April 2013].</p>	<p>month following the quarter when the annual average treated water TOC greater than or equal to 2.0 mg/L.)</p> <p>(NOTE: A noncommunity water system can be either a nontransient, noncommunity (NTNC) water system or a transient noncommunity water system. See Definitions.)</p> <p>(NOTE: This requirement applies to Subpart H systems serving 10,000 or more persons beginning 1 January 2002. Subpart H systems serving fewer than 10,000 persons and systems using only groundwater not under the direct influence of surface water must comply with this section beginning 1 January 2004.)</p> <p>Verify that all samples are taken during normal operating conditions.</p> <p>(NOTE: Systems may consider multiple wells drawing water from a single aquifer as one treatment plant for determining the minimum number of TTHM and HAA5 samples required if the state approves.)</p> <p>Verify that sample analysis is done using appropriate methodology and is conducted by laboratories that are certified by the USEPA or the State.</p> <p>Verify that, until 31 March 2016, NTNC water systems that use chlorine or chloramines measure the residual disinfectant level in the distribution system at the same point in the distribution system and at the same time as total coliforms are sampled as specified in 40 CFR 141.21.</p> <p>Verify that, beginning 1 April 2016, NTNC water systems that use chlorine or chloramines measure the residual disinfectant level in the distribution system at the same point in the distribution system and at the same time as total coliforms are sampled, as specified in 40 CFR 141.854 through 141.858.</p> <p>(NOTE: Subpart H systems may use the results of residual disinfectant concentration sampling conducted under 40 CFR 141.74(b)(6)(i) for unfiltered systems or 40 CFR 141.74(c)(3)(i) for systems which filter, in lieu of taking separate samples.)</p> <p>Verify that monitoring is not reduced when using chlorine and/or chloramine.</p> <p>Verify that systems using chlorine dioxide for disinfection or oxidation take daily samples at the entrance to the distribution system.</p> <p>(NOTE: When a daily sample exceeds the MRDL, samples are required to be taken in the distribution system the following day at the entrance to the distribution system plus three additional chlorine dioxide distribution samples. If chlorine dioxide or chloramines are used to maintain a disinfectant residual in the distribution system, or if chlorine is used to maintain a disinfectant residual in the distribution system and there are no disinfection addition points after the entrance to the distribution system (i.e., no booster chlorination), the system must take three</p>

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<p><b>WQ.65.5.US.</b> Noncommunity water systems that add a chemical disinfectant to the water in any part of the drinking water process are required to have a monitoring plan (40 CFR 141.130(a)(1), 141.130(b), 141.131, 141.132(a), and 141.132(f))[<b>Added January 1999; Reviewed March 2000</b>].</p>	<p>samples as close to the first customer as possible, at intervals of at least 6 h. If chlorine is used to maintain a disinfectant residual in the distribution system and there are one or more disinfection addition points after the entrance to the distribution system (i.e., booster chlorination), the system must take one sample as close to the first customer as possible, in a location representative of average residence time, and as close to the end of the distribution system as possible.)</p> <p>Verify that monitoring is not reduced when using chlorine dioxide.</p> <p>(NOTE: A noncommunity water system can be either a nontransient, noncommunity (NTNC) water system or a transient noncommunity water system. See Definitions.)</p> <p>(NOTE: This requirement applies to Subpart H systems serving 10,000 or more persons beginning 1 January 2002. Subpart H systems serving fewer than 10,000 persons and systems using only groundwater not under the direct influence of surface water must comply with this section beginning 1 January 2004.)</p> <p>Verify that the system has developed and maintains a monitoring plan.</p> <p>(NOTE: The plan must be made available for inspection by the state and the general public no later than 30 days following applicable compliance dates.)</p> <p>Verify that all Subpart H systems serving more than 3,300 people submit a copy of the plan to the state.</p> <p>Verify that the plan includes, at a minimum:</p> <ul style="list-style-type: none"> <li>– specific locations and schedules for collecting samples for any required parameters</li> <li>– how the system will calculate compliance with MCLs, MRDLs, and treatment techniques</li> <li>– if approved for monitoring as a consecutive system, or as providing water to a consecutive system, the plan reflects the entire distribution system.</li> </ul> <p>(NOTE: A noncommunity water system can be either a nontransient, noncommunity (NTNC) water system or a transient noncommunity water system. See Definitions.)</p>
<p><b>WQ.65.6.US.</b> The owner or operator of a noncommunity water system that is required to monitor source water Cryptosporidium, E. coli, and turbidity must perform certain</p>	<p>Verify that the owner or operator of a community water system that is required to monitor source water under 40 CFR 141.701 (see checklist items WQ.15.6.US) notifies persons served by the water system that monitoring has not been completed as specified no later than 30 days after the system has failed to collect any 3 mo of monitoring as specified in 40 CFR 141.701(c).</p> <p>Verify that the notices are repeated as specified in 40 CFR 141.203(b) (see checklist item WQ.75.1.US).</p>

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<p>notifications (40 CFR 141.211) [Added April 2006].</p>	<p>Verify that the owner or operator of a community water system that is required to determine a bin classification under 40 CFR 141.710 (see checklist item WQ.20.17.US), or to determine mean Cryptosporidium level under 40 CFR 141.712 (see checklist item WQ.20.19.US), notifies persons served by the water system that the determination has not been made as required no later than 30 days after the system has failed report the determination as specified in 40 CFR 141.710(e) or 40 CFR 141.712(a), respectively (see checklist item WQ.20.17.US and WQ.20.19.US).</p> <p>(NOTE: The notice of bin classification is not required if the system is complying with a State-approved schedule to address the violation.)</p> <p>Verify that the notices are repeated as specified in 40 CFR 141.203(b) (see checklist item WQ.75.1.US).</p> <p>Verify that the form and manner of the public notice follows the requirements for a Tier 2 public notice prescribed in 40 CFR 141.203(c) (see checklist item WQ.75.1.US).</p> <p>Verify that the public notice is presented as required in 40 CFR 141.205(c) (see checklist item WQ.30.10.US).</p> <p>Verify that the special notice for repeated failure to conduct monitoring contains the following language:</p> <p style="padding-left: 40px;">We are required to monitor the source of your drinking water for Cryptosporidium. Results of the monitoring are to be used to determine whether water treatment at the (treatment plant name) is sufficient to adequately remove Cryptosporidium from your drinking water. We are required to complete this monitoring and make this determination by (required bin determination date). We “did not monitor or test” or “did not complete all monitoring or testing” on schedule and, therefore, we may not be able to determine by the required date what treatment modifications, if any, must be made to ensure adequate Cryptosporidium removal. Missing this deadline may, in turn, jeopardize our ability to have the required treatment modifications, if any, completed by the deadline required, (date).</p> <p style="padding-left: 40px;">For more information, please call (name of water system contact) of (name of water system) at (phone number).</p> <p>Verify that the special notice for failure to determine bin classification or mean Cryptosporidium level contains the following language:</p> <p style="padding-left: 40px;">We are required to monitor the source of your drinking water for Cryptosporidium in order to determine by (date) whether water treatment</p>

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<p><b>WQ.65.7.US.</b> Noncommunity water systems serving 1,000 or fewer people and using only ground water (except ground water under direct influence of surface water) must meet routine total coliform monitoring requirements (40 CFR 141.851(b), 141.854(a) through 141.854(h), 141.854(j), and 141.859(c)) [Added April 2013].</p>	<p>at the (treatment plant name) is sufficient to adequately remove <i>Cryptosporidium</i> from your drinking water. We have not made this determination by the required date. Our failure to do this may jeopardize our ability to have the required treatment modifications, if any, completed by the required deadline of (date). For more information, please call (name of water system contact) of (name of water system) at (phone number).</p> <p>Verify that each special notice also includes a description of what the system is doing to correct the violation and when the system expects to return to compliance or resolve the situation.</p> <p>(NOTE: This checklist item is applicable beginning 1 April 2016 with systems required to begin regular monitoring at the same frequency as the system-specific frequency required on 31 March 2016. Noncommunity water systems must continue to monitor according to the total coliform monitoring schedules under 40 CFR 141.21[see checklist items WQ.10.2.US, WQ.15.1.US through WQ.15.3.US for Public Water Systems and WQ.65.1.US for Noncommunity Water Systems] that were in effect on 31 March 2016, unless any of the conditions for increased monitoring are triggered on or after 1 April 2016, or unless otherwise directed by the State.)</p> <p>Verify that, if a sample is total coliform-positive, the system collects a set of repeat samples within 24 h of being notified of the positive result and the system collects no fewer than three repeat samples for each total coliform-positive sample found.</p> <p>Verify that the system collects all repeat samples on the same day, except that the State may allow a system with a single service connection to collect the required set of repeat samples over a 3-day period or to collect a larger volume repeat sample(s) in one or more sample containers of any size, as long as the total volume collected is at least 300 ml.</p> <p>Verify that the system collects an additional set of repeat samples if one or more repeat samples in the current set of repeat samples is total coliform-positive within 24-h of being notified of the positive result.</p> <p>Verify that the system continues to collect additional sets of repeat samples until either total coliforms are not detected in one complete set of repeat samples or the system determines that a coliform treatment technique trigger specified in 40 CFR 141.859(a) (see Appendix 13-6b) has been exceeded as a result of a repeat sample being total coliform-positive and notifies the State.</p> <p>(NOTE: If a trigger identified in 40 CFR 141.859 (see Appendix 13-6b) is exceeded as a result of a routine sample being total coliform-positive, systems are required to conduct only one round of repeat monitoring for each total coliform-positive routine sample.)</p>

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	<p>(NOTE: After a system collects a routine sample and before it learns the results of the analysis of that sample, if it collects another routine sample(s) from within five adjacent service connections of the initial sample, and the initial sample, after analysis, is found to contain total coliforms, then the system may count the subsequent sample(s) as a repeat sample instead of as a routine sample.)</p> <p>Verify that results of all routine and repeat samples not invalidated by the State are used to determine whether a coliform treatment technique trigger in 40 CFR 141.859 (see Appendix 13-6b) has been triggered.</p> <p>Verify that, if any routine or repeat sample is total coliform-positive, the system analyzes that total coliform-positive culture medium to determine if E. coli is present.</p> <p>Verify that, if E. coli are present, the system notifies the State by the end of the day when the system is notified of the test result, unless the system is notified of the result after the State office is closed and the State does not have either an after-hours phone line or an alternative notification procedure, in which case the system must notify the State before the end of the next business day.</p> <p>Verify that, once all required monitoring for a calendar month has been completed, systems determine whether any coliform treatment technique triggers specified in 40 CFR 141.859 (see Appendix 13-6b) have been exceeded and if any trigger has been exceeded, the system completes assessments as required by 40 CFR 141.859 (see Appendix 13-6b).</p> <p>Verify that the system corrects sanitary defects found through either Level 1 or Level 2 assessments.</p> <p>(NOTE: For corrections not completed by the time of submission of the assessment form, the system must complete the corrective action(s) in compliance with a timetable approved by the State.)</p> <p>Verify that systems monitor each calendar quarter that the system provides water to the public, except for seasonal systems (see checklist item WQ.65.8.US) or in the case of an event or State-approved change.</p> <p>(NOTE: Beginning 1 April 2016 the State must perform a special monitoring evaluation during each sanitary survey to review the status of the system, including the distribution system, to determine whether the system is on an appropriate monitoring schedule. The State may modify the system's monitoring schedule.)</p> <p>(NOTE: Beginning no later than calendar year 2017, systems on annual monitoring must have an initial and recurring annual site visit by the State that is equivalent to a Level 2 assessment or an annual voluntary Level 2 assessment that meets the criteria in 40 CFR 141.859(b) (see Appendix 13-6b) to remain on annual monitoring. The periodic required sanitary survey may be used to meet the</p>

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<p><b>WQ.65.8.US.</b> Seasonal noncommunity water systems serving 1,000 or fewer people and using only ground water</p>	<p>requirement for an annual site visit for the year in which the sanitary survey was completed.)</p> <p>(NOTE: States may reduce the monitoring frequency for a well-operated ground water system from quarterly to no less than annual monitoring if the system demonstrates it meets the following requirements:</p> <ul style="list-style-type: none"> <li>– the system has a clean compliance history for a minimum of 12 mo</li> <li>– the most recent sanitary survey shows that the system is free of sanitary defects, has corrected all identified sanitary defects, has a protected water sources, and meets approved construction standards</li> <li>– the State has conducted an annual site visit within the last 12 mo and the system has corrected all identified sanitary defects.)</li> </ul> <p>Verify that a system on quarterly or annual monitoring which experiences one of the following events begins monthly monitoring the month following the event:</p> <ul style="list-style-type: none"> <li>– the system triggers a Level 2 or two Level 1 assessments (see 40 CFR 141.859 in Appendix 13-6b) in a rolling 12-mo period</li> <li>– the system has an <i>E. coli</i> MCL violation</li> <li>– the system has a coliform treatment technique violation</li> <li>– the system has two 40 CFR 141, subpart Y monitoring violations or one subpart Y monitoring violation and one Level 1 assessment in a rolling 12-mo period for a system with quarterly monitoring</li> <li>– the system has one 40 CFR, subpart Y monitoring violation for a system on annual monitoring.</li> </ul> <p>Verify that systems collecting samples on a quarterly or annual frequency conduct additional routine monitoring the month following one or more total coliform-positive samples (with or without a Level 1 treatment technique trigger).</p> <p>Verify that systems collect at least three routine samples during the next month, unless the State has waived this requirement.</p> <p>(NOTE: Systems may either collect samples at regular time intervals throughout the month or may collect all required routine samples on a single day if samples are taken from different sites. Systems must use the results of additional routine samples in coliform treatment technique trigger calculations under 40 CFR 141.859(a) [see Appendix 13-6b].)</p> <p>(NOTE: A noncommunity water system can be either a nontransient, noncommunity (NTNC) water system or a transient noncommunity water system. See Definitions.)</p> <p>(NOTE: This checklist item is applicable beginning 1 April 2016 with systems required to begin regular monitoring at the same frequency as the system-specific frequency required on 31 March 2016. Seasonal systems must continue to monitor according to the total coliform monitoring schedules under 40 CFR 141.21 [see</p>

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<p>(except ground water under direct influence of surface water) must meet routine total coliform monitoring requirements (40 CFR 141.851(b), 141.854(c)(1), and 141.854(i)) <b>[Added April 2013]</b>.</p>	<p>checklist items WQ.10.2.US, WQ.15.1.US through WQ.15.3.US for Public Water Systems and WQ.65.1.US for Noncommunity Water Systems] that were in effect on 31 March 2016, unless any of the conditions for increased monitoring are triggered on or after 1 April 2016, or unless otherwise directed by the State.)</p> <p>Verify that seasonal systems demonstrate completion of a State-approved start-up procedure, which may include a requirement for startup sampling prior to serving water to the public.</p> <p>Verify that the seasonal system monitors every month that it is in operation unless it meets the following criteria to be eligible for monitoring less frequently:</p> <ul style="list-style-type: none"> <li>– the seasonal system has an approved sample siting plan that designates the time period for monitoring based on site-specific considerations (e.g., during periods of highest demand or highest vulnerability to contamination) and collects compliance samples during this time period</li> <li>– within the past 12 mo the seasonal system: <ul style="list-style-type: none"> <li>– has completed a sanitary survey or a site visit by the State or a Level 2 assessment by a party approved by the State, be free of sanitary defects, and have a protected water source</li> <li>– has a clean compliance history</li> </ul> </li> <li>– after an event which has resulted in increased monitoring, the seasonal system meets the above requirements for the past 12 mo and: <ul style="list-style-type: none"> <li>– has undergone an annual site visit by the State and corrected all identified sanitary defects (NOTE: The system may substitute a voluntary Level 2 assessments for a party approved by the State)</li> </ul> </li> <li>– the system has in place, or has adopted one or more of the following additional enhancements to the water system barriers to contamination: <ul style="list-style-type: none"> <li>– cross connection control approved by the State</li> <li>– an operator certified by the State or regular visits by a circuit rider certified by the State</li> <li>– continuous disinfection entering the distribution system and a residual in the distribution system in accordance with criteria specified by the State</li> <li>– demonstration of maintenance of at least a 4-log removal or inactivation of viruses as detailed in 40 CFR 141.403(b)(3) (see checklist item WQ.15.13.US)</li> <li>– other equivalent enhancements to water system barriers approved by the State.</li> </ul> </li> </ul> <p>(NOTE: The State can determine the system is eligible for reduced monitoring.)</p> <p>(NOTE: The State may exempt any seasonal system from some or all of the requirements for seasonal systems if the entire distribution system remains pressurized during the entire period that the system is not operating, except that</p>

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	<p>systems that monitor less frequently than monthly must still monitor during the vulnerable period designated by the State.)</p> <p>(NOTE: A noncommunity water system can be either a nontransient, noncommunity (NTNC) water system or a transient noncommunity water system. See Definitions.)</p>

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<b>NONCOMMUNITY WATER SYSTEMS</b>  <b>WQ.75</b> <b>Notification and Reporting Requirements</b>  <b>WQ.75.1.US.</b> When a noncommunity water system is required to submit a Tier 2 or a Tier 3 notice, the notice is required to be provided according to specific parameters (40 CFR 141.203(c)(2), 141.204(c)(2), 141.206(b), and 141.210) [Added July 2000; Revised April 2006; Revised April 2013].	<p>Verify that, unless directed otherwise by the primacy agency in writing, noncommunity water systems provide the Tier 2 or Tier 3 notice by:</p> <ul style="list-style-type: none"> <li>– posting the notice in conspicuous locations throughout the distribution system frequented by persons served by the system, or by mail or direct delivery to each customer and service connection (where known)</li> <li>– any other method reasonably calculated to reach other persons regularly served by the system, if they would not normally be reached by the notice</li> </ul> <p>(NOTE: Persons who might not normally be reached by the notice may include those who do not pay water bills or do not have service connection addresses (e.g., house renters, apartment dwellers, university students, nursing home patients, prison inmates, etc.). Other methods may include: publication in a local newspaper; delivery of multiple copies for distribution by customers that provide their drinking water to others (e.g., apartment building owners or large private employers); posting in public places served by the system or on the Internet; or delivery to community organizations.)</p> <p>(NOTE: See checklist item WQ.30.8.US. for additional information on Tier 2 notices and WQ.30.9 for additional information on Tier 3 notices.)</p> <p>Verify that noncommunity water systems continuously post the public notice in conspicuous locations in order to inform new consumers of any continuing violation, variance or exemption, or other situation requiring a public notice for as long as the violation, variance, exemption, or other situation persists.</p> <p>(NOTE: A noncommunity water system can be either a nontransient, noncommunity (NTNC) water system or a transient noncommunity water system. See Definitions.)</p> <p>(NOTE: The primacy agency may give the required notice on behalf of the owner and operator of the public water system if the primacy agency complies with the requirements of this checklist item. The owner or operator of the public water system remains responsible for ensuring that the requirements of this checklist item are met.)</p>
<b>WQ.75.2.US.</b> A noncommunity water system granted permission by the primacy agency under to	<p>Verify that the owner or operator of a noncommunity water system granted permission by the primacy agency to exceed the nitrate MCL provides notice to persons served according to the requirements for a Tier 1 notice under 40 CFR 141.202(a) and 141.202 (b) (see checklist item WQ.30.7.US).</p>

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<p>exceed the nitrate MCL must provide notice to persons served (40 CFR 141.209 and 141.210) <b>[Added April 2006]</b>.</p> <p><b>WQ.75.3.US.</b> Non-community water systems that use ground water having fecally contaminated source waters or significant deficiencies identified by a regulator must meet specific notification requirements (40 CFR 141.400(a), 141.400(d), 141.403(a)(7)(ii), and 141.403(a)(7)(iii)) <b>[Added January 2007]</b>.</p>	<p>Verify that noncommunity water systems granted permission by the primacy agency to exceed the nitrate MCL provide continuous posting of the fact that nitrate levels exceed 10 mg/l and the potential health effects of exposure, according to the requirements for Tier 1 notice delivery and the content requirements under 40 CFR 141.205 (see checklist item WQ.30.10.US).</p> <p>(NOTE: The primacy agency may give the required notice on behalf of the owner and operator of the public water system if the primacy agency complies with the requirements of this checklist item. The owner or operator of the public water system remains responsible for ensuring that the requirements of this checklist item are met.)</p> <p>(NOTE: This checklist item applies to all public water systems that use ground water except that it does not apply to public water systems that combine all of their ground water with surface water or with ground water under the direct influence of surface water prior to treatment under 40 CFR 141, Subpart H.)</p> <p>(NOTE: Unless otherwise noted, ground water systems must comply with this checklist item beginning 1 December 2009.)</p> <p>Verify that, in addition to the applicable public notification requirements of 40 CFR 141.202, a non-community ground water system that receives notice from the State of a significant deficiency informs the public served by the water system in a manner approved by the State of any significant deficiency that has not been corrected within 12 mo of being notified by the State, or earlier if directed by the State.</p> <p>Verify that the system continues to inform the public annually until the significant deficiency is corrected.</p> <p>Verify that the notification information includes:</p> <ul style="list-style-type: none"> <li>– the nature of the significant deficiency and the date the significant deficiency was identified by the State</li> <li>– the State-approved plan and schedule for correction of the significant deficiency, including interim measures, progress to date, and any interim measures completed</li> <li>– for systems with a large proportion of non-English speaking consumers, as determined by the State, information in the appropriate language(s) regarding the importance of the notice or a telephone number or address where consumers may contact the system to obtain a translated copy of the notice or assistance in the appropriate language.</li> </ul>

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	Verify that, if directed by the State, a non-community water system with significant deficiencies that have been corrected informs its customers of the significant deficiencies, how the deficiencies were corrected, and the dates of correction.



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<p><b>NONTRANSIENT NONCOMMUNITY (NTNC) WATER SYSTEMS</b></p> <p><b>WQ.76 Standards</b></p> <p><b>WQ.76.1.US.</b> NTNC water systems, except as defined under exempted water systems, are required to meet specific MCLs for organic contaminants, inorganic contaminants, and microbiological contaminants (40 CFR 141.60 through 141.63) [Revised March 1995; Reviewed March 2000; Revised April 2013].</p>	<p>(NOTE: An NTNC water system must also meet the standards for a public water system and a noncommunity water system. An NTNC is defined as a water system that is not a community water system that regularly serves at least 25 of the same persons over 6 mo of the year.)</p> <p>Verify that the standards outlined in Appendix 13-1 and 13-2 are met.</p> <p>(NOTE: Until 31 March 2016, the total coliform MCL is based on the presence or absence of total coliforms in a sample, rather than coliform density.)</p> <p>Verify that at NTNC water systems that collects at least 40 samples per month, no more than 5.0 percent of the samples collected during a month are total coliform positive,</p> <p>Verify that at a NTNC water system that collects fewer than 40 samples per month, no more than one sample collected during a month is total coliform-positive,</p> <p>(NOTE: EPA has stayed the effective date for the above total coliform MCL standards for systems that demonstrate to the State that the violation of the total coliform MCL is due to a persistent growth of total coliforms in the distribution system rather than fecal or pathogenic contamination, a treatment lapse or deficiency, or a problem in the operation or maintenance of the distribution system. This is stayed until 31 March 2016, at which time the total coliform MCL is no longer effective.)</p> <p>Verify that, until 31 March 2016, there are no fecal coliform-positive repeat samples or <i>E. coli</i>-positive repeat samples, or any total coliform-positive repeat samples following a fecal coliform-positive or <i>E. coli</i>-positive routine sample.</p> <p>(NOTE: For purposes of the public notification requirements, this is a violation that may pose an acute risk to health.)</p> <p>(NOTE: Until 31 March 2016, a public water system must determine compliance with the MCL for total coliforms for each month in which it is required to monitor for total coliforms.)</p> <p>Verify that, starting 1 April 2016, NTNC water systems do not have any of the following conditions:</p>

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<p><b>WQ.76.2.US.</b> NTNC water systems are required to meet specific MCLs and MRDLs related to disinfection (40 CFR 141.64, 141.65(a), and 141.65(b)(1)) [Added January 1999; Reviewed March 2000; Revised January 2001; Revised</p>	<ul style="list-style-type: none"> <li>– the system has an <i>E. coli</i>-positive repeat sample following a total coliform positive routine sample</li> <li>– the system has a total coliform positive repeat sample following an <i>E. coli</i>-positive routine sample</li> <li>– the system fails to take all required repeat samples following an <i>E. coli</i>-positive routine sample</li> <li>– the system fails to test for <i>E. coli</i> when any repeat sample tests positive for total coliform.</li> </ul> <p>(NOTE: Beginning 1 April 2016, a public water system must determine compliance with the MCL for <i>E. coli</i> for each month in which it is required to monitor for total coliforms.)</p> <p>(NOTE: The EPA Administrator has identified the following as the best technology, treatment techniques, or other means available for achieving compliance with the MCL for total coliforms and for achieving compliance with the MCL for <i>E. coli</i>:</p> <ul style="list-style-type: none"> <li>– protection of wells from fecal contamination by appropriate placement and construction</li> <li>– maintenance of a disinfectant residual throughout the distribution system</li> <li>– proper maintenance of the distribution system including appropriate pipe replacement and repair procedures, main flushing programs, proper operation and maintenance of storage tanks and reservoirs, cross connection control, and continual maintenance of positive water pressure in all parts of the distribution system</li> <li>– filtration and/or disinfection of surface water, as described in 40 CFR 141, Subparts H, P, T, and W, or disinfection of ground water, as described in 40 CFR 141, Subpart S, using strong oxidants such as chlorine, chlorine dioxide, or ozone</li> <li>– for systems using ground water, compliance with the requirements of an EPA-approved State Wellhead Protection Program developed and implemented under section 1428 of the SDWA.</li> </ul> <p>The EPA Administrator has also identified that the technology, treatment, techniques or other means available as affordable technology, treatment techniques, or other means available to systems serving 10,000 or fewer people for achieving compliance with the MCL for total coliforms and for achieving compliance with the MCL for <i>E. coli</i>.)</p> <p>Verify that NTNC water systems meet the MCL for disinfection byproducts and the MRDLs outlined in Appendix 13-9.</p> <p>(NOTE: This requirement applies to Subpart H systems serving 10,000 or more persons beginning 1 January 2002. Subpart H systems serving fewer than 10,000 persons and systems using only groundwater not under the direct influence of surface water must comply with this section beginning 1 January 2004. All systems must comply with these MCLs until the date specified in 40 CFR 141.620(c) [See checklist item WQ.77.14.US].)</p>

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<p><b>April 2001; Revised April 2006].</b></p> <p><b>WQ.76.3.US.</b> Subpart H NTNC water systems serving fewer than 10,000 persons are required to develop a disinfection profile (40 CFR 141.501, 141.502, and 141.530 through 141.536) [Added April 2002].</p>	<p>(NOTE: For the disinfection byproduct of Bromate, the Administrator has identified as the best technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels to be the control of ozone treatment process to reduce production of bromate.)</p> <p>(NOTE: For the disinfection byproduct of Chlorite, the Administrator has identified as the best technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels to be controlling treatment processes to reduce disinfectant demand and control of disinfection treatment processes to reduce disinfectant levels)</p> <p>(NOTE: For the disinfection byproduct of Total trihalomethanes (TTHM) and Haloacetic acids (five) (HAA5), the Administrator has identified as the best technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels to be enhanced coagulation or enhanced softening or GAC10, with chlorine as the primary and residual disinfectant.)</p> <p>(NOTE: See checklist item WQ.76.1.US for clarification on NTNC water systems.)</p> <p>(NOTE: These requirements to public water systems that use surface water or GWUDI as a source and serves fewer than 10,000 persons. In this case, these requirements apply specifically to Subpart H systems)</p> <p>(NOTE: A disinfection profile is a graphical representation of the system's level of <i>Giardia lamblia</i> or virus inactivation measured during the course of a year. The system is not required to develop a profile if the state determines it is unnecessary. States may only determine that a system's profile is unnecessary if a system's TTHM and HAA5 levels are below 0.064 mg/L and 0.048 mg/L, respectively. To determine these levels, TTHM and HAA5 samples must be collected after 1 January 1998, during the month with the warmest water temperature, and at the point of maximum residence time in the distribution system. The state may also approve the use of more representative data set for disinfection profiling that that required by these regulations.)</p> <p>Verify that the disinfection profile consists of three steps:</p> <ul style="list-style-type: none"> <li>– the system collects data for the following parameters from the plant once a week on the same day over the course of 12 consecutive months: <ul style="list-style-type: none"> <li>– temperature of the disinfected water at each residual disinfectant concentration sampling point during peak hourly flow</li> <li>– if the system uses chlorine, the pH of the disinfected water at each residual disinfectant concentration sampling point during peak hourly flow</li> <li>– the disinfectant contact time(s) ("T") during peak hourly flow</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– the residual disinfectant concentration(s) ("C") of the water before or at the first customer and prior to each additional point of disinfection during peak hourly flow</li> <li>– the system uses the data to calculate weekly log inactivation as detailed in 40 CFR 141.534</li> <li>– the system uses the weekly log inactivations to develop a disinfection profile as specified in 40 CFR 141.536.</li> </ul> <p>Verify that if the system serves between 500 and 9,999 persons, data collection data begins no later than 1 July 2003.</p> <p>Verify that if the system serves fewer than 500 persons data collection begins no later than 1 January 2004.</p> <p>(NOTE: The total log inactivation is calculated using the analytical methods in 40 CFR 141.74(a).)</p> <p>Verify that if the system uses chloramines, ozone, or chlorine dioxide for primary disinfection, the system also calculate the logs of inactivation for viruses and develop an additional disinfection profile for viruses using methods approved by the State.</p> <p>Verify the system retains the Disinfection Profile data in graphic form, such as a spreadsheet, which is available for review by the State as part of a sanitary survey.</p> <p>Verify that the system uses this data to calculate a benchmark if the system is considering changes to disinfection practices.</p> <p>(NOTE: See checklist item WQ.76.1.US for clarification on NTNC water systems.)</p>

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<b>NONTRANSIENT NONCOMMUNITY (NTNC) WATER SYSTEMS</b>  <b>WQ.77</b> <b>Monitoring/Sampling</b>  <b>WQ.77.1.US.</b> Facilities with NTNC water systems are required to meet specific monitoring requirements for inorganic contaminants (40 CFR 141.23(a)) <b>[Revised January 2000; Revised March 2000]</b> .	<p>Verify that groundwater systems:</p> <ul style="list-style-type: none"> <li>– take a minimum of one sample at every entry point to the distribution system that is representative of each well after treatment (a sampling point) beginning in the compliance period starting 1 January 1993</li> <li>– take each sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.</li> </ul> <p>Verify that surface water systems:</p> <ul style="list-style-type: none"> <li>– take a minimum of one sample at every entry point to the distribution system after any application of treatment or in the distribution system at a point that is representative of each source after treatment (a sampling point) beginning in the compliance period starting 1 January 1993</li> <li>– takes each sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.</li> </ul> <p>(NOTE: In relation to these requirements, surface water systems include systems with a combination of surface and ground sources.)</p> <p>Verify that, if the system draws water from more than one source and the sources are combined before distribution, the system samples at an entry point to the distribution system during periods of normal operating conditions.</p> <p>(NOTE: The state may reduce the total number of samples that must be analyzed by allowing the use of compositing. Composite samples from a maximum of five sampling points are allowed if the detection limit of the method used for analysis is less than one fifth the MCL and compositing is done in a laboratory.)</p> <p>Verify that, if the concentration in a composite sample is greater than or equal to one- fifth of the MCL of any inorganic chemical, a follow-up sample is analyzed within 14 days from each sampling point included in the composite and analyzed for the contaminants which exceeded one fifth of the MCL in the composite sample.</p> <p>(NOTE: Detection limits for each analytical method and MCLs for each inorganic contaminant are listed in Appendix 13-3.)</p> <p>(NOTE: If duplicates of the original sample taken from each sampling point used in the composite sample are available, the system may use these instead of</p>

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<p><b>WQ.77.2.US.</b> NTNC water systems are required to meet specific monitoring requirements for asbestos (40 CFR 141.23(b)) <b>[Revised March 1995; Reviewed March 2000]</b>.</p>	<p>resampling. The duplicates must be analyzed and the results reported to the state within 14 days after completing analysis of the composite sample provided the holding time of the sample is not exceeded.)</p> <p>Verify that, for groundwater systems, inorganic monitoring is repeated at least once every compliance period (every 3 yr), and samples are taken quarterly for at least two quarters if an MCL is violated.</p> <p>Verify that, for surface water systems, inorganic sampling is repeated annually and samples are taken quarterly for at least four quarters if an MCL is violated.</p> <p>(NOTE: The state may issue a waiver reducing the required monitoring.)</p> <p>(NOTE: See checklist item WQ.76.1.US for clarification on NTNC water systems.)</p> <p>Verify that asbestos is monitored during the first 3 yr compliance period of each 9 yr compliance cycle starting 1 January 1993.</p> <p>(NOTE: The facility may apply to the state for a waiver of monitoring if they believe that asbestos is not an issue.)</p> <p>Verify that, if the system is vulnerable to asbestos contamination only because of corrosion of asbestos-cement pipe, one sample is taken at a tap served by asbestos-cement pipe and under conditions where asbestos contamination is most likely to occur.</p> <p>Verify that, if the system is vulnerable to asbestos contamination due to both its source water supply and corrosion of asbestos-cement pipe, one sample is taken at a tap served by asbestos-cement pipe and under conditions where contamination is most likely to occur.</p> <p>Verify that, when the MCL is exceeded, monitoring is done quarterly.</p> <p>(NOTE: See checklist item WQ.76.1.US for clarification on NTNC water systems.)</p>
<p><b>WQ.77.3.US.</b> NTNC water systems are required to meet specific monitoring requirements for antimony, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium, and thallium (40 CFR 141.23(c)) <b>[Revised May 1996; Reviewed March 2000]</b>.</p>	<p>Verify that monitoring is done as follows:</p> <ul style="list-style-type: none"> <li>– groundwater systems: take one sample at each sampling point during each compliance period</li> <li>– surface water systems (or combined surface/ground): take one sample annually at each sampling point</li> <li>– when MCLs are exceeded, monitoring is done quarterly.</li> </ul> <p>(NOTE: States may grant a public water system a waiver for the monitoring of cyanide.)</p> <p>(NOTE: See checklist item WQ.76.1.US for clarification on NTNC water systems.)</p>

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<p><b>WQ.77.4.US.</b> NTNC water systems are required to conduct monitoring to determine compliance for nitrate and nitrite levels according to specific parameters (40 CFR 141.23(d) and 141.23(e)) <b>[Revised March 1995; Reviewed March 2000]</b>.</p>	<p>Verify that the following schedules are met for monitoring of nitrate:</p> <ul style="list-style-type: none"> <li>– NTNC water systems served by groundwater monitor annually starting 1 January 1993</li> <li>– NTNC water systems served by surface water monitor quarterly starting 1 January 1993.</li> </ul> <p>(NOTE: States may allow a surface water system to reduce annual sampling frequency if analytical results from four consecutive quarters are less than 50 percent of the MCL.)</p> <p>Verify that NTNC water systems do repeat monitoring quarterly for at least 1 yr following any one sample in which the concentration exceeds more than 50 percent of the MCL.</p> <p>(NOTE: States may allow groundwater systems to return to annual sampling if the results of four consecutive quarters are consistently and reliably below the MCL.)</p> <p>(NOTE: After the initial round of quarterly sampling is completed, each NTNC system that is monitoring annually shall take the subsequent samples during the quarters that previously resulted in the highest analytical result.)</p> <p>Verify that NTNC water systems take one sample at each sampling point in the compliance period beginning 1 January 1993 and ending 31 December 1995 for nitrite.</p> <p>(NOTE: After the initial sample, systems where an analytical result for nitrite is less than 50 percent of the MCL will monitor at the frequency specified by the state.)</p> <p>Verify that NTNC systems repeat monitoring for nitrites quarterly for at least 1 yr after any one sample is greater than 50 percent of the MCL.</p> <p>Verify that systems that are monitoring annually for nitrites take each subsequent sample during the quarters that previously resulted in the highest analytical result.</p> <p>Verify that, when nitrate or nitrite samples indicate an exceedance of the MCL, a confirmation sample is taken within 24 h of receipt of the results.</p> <p>(NOTE: If the system is unable to take a confirmation sample within 24 h, it must notify consumers of the exceedance.)</p> <p>(NOTE: See checklist item WQ.76.1.US for clarification on NTNC water systems.)</p>

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<p><b>WQ.77.5.US.</b> Beginning with the initial compliance period, monitoring of the contaminants listed in Table 2 of Appendix 13-1 at NTNC water systems is required to be done according to specific parameters (40 CFR 141.24(f)) [Revised March 1995; Reviewed March 2000].</p>	<p>Verify that groundwater systems take a minimum of one sample at every entry point of the distribution system that is representative of each well after treatment.</p> <p>Verify that surface water systems (or combined surface/ground) take a minimum of one sample at points in the distribution system that are representative of each source or at each entry point to the distribution system after treatment.</p> <p>(NOTE: For both groundwater and surface water systems, each sample must be taken at the same sampling point unless conditions make another sampling point more representative of each source, treatment plant, or within the distribution system.)</p> <p>Verify that, if the system draws water from more than one source and the sources are combined before distribution, the system samples at an entry point to the distribution system during periods of normal operating conditions.</p> <p>Verify that each NTNC water system takes four consecutive quarterly samples for each contaminant, except vinyl chlorides.</p> <p>(NOTE: If the initial monitoring for contaminants is completed by December 1992 and none of the contaminants listed are found, then each system shall take one sample annually starting with the initial compliance period.)</p> <p>(NOTE: After a minimum of 3 yr of sampling, the state may reduce the number of samples to one each compliance period.)</p> <p>Verify that, if a contaminant, except vinyl chloride, is detected at a level exceeding 0.0005 mg/L in any sample, the system monitors quarterly at each sampling point which resulted in detection.</p> <p>Verify that groundwater systems which have detected one or more of the following two-carbon organic compounds; trichloroethylene, tetrachloroethylene, 1,2-dichloroethane, 1,1,1-trichloroethane, cis-1, 2-dichloroethylene, trans-1, 2-dichloroethylene, or 1,1-dichloroethylene monitor quarterly for vinyl chlorides at each sampling point at which one or more of the two-carbon organic compounds was detected.</p> <p>Verify that, when the MCLs are exceeded, monitoring is conducted quarterly until the state determines that the system is reliably and consistently below the MCL.</p> <p>(NOTE: See checklist item WQ.76.1.US for clarification on NTNC water systems.)</p>
<p><b>WQ.77.6.US.</b> Monitoring for organic contaminants listed in Table 3 of Appendix 13-1 at NTNC water systems is</p>	<p>(NOTE: No monitoring is required for aldicarb, aldicarb sulfoxide or aldicarb sulfone.)</p>

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<p>required to be done according to specific parameters (40 CFR 141.24(h)) <b>[Revised March 1995; Reviewed March 2000; Revised April 2007]</b>.</p> <p><b>WQ.77.7.US.</b> NTNC systems are required to monitor for specific unregulated contaminants (40 CFR 141.40(a)(2), 141.40(a)(4), and 141.40(a)(5)) <b>[Revised October 1999; Reviewed</b></p>	<p>Verify that groundwater systems take a minimum of one sample at every entry point to the distribution system that is representative of each well after treatment.</p> <p>Verify that surface water systems (or surface/ground) take a minimum of one sample at points in the distribution system that are representative of each source or at each entry point to the distribution system after treatment.</p> <p>(NOTE: For both groundwater and surface water systems, each sample must be taken at the same sampling point unless conditions make another sampling point more representative of each source, treatment plant, or within the distribution system.)</p> <p>Verify that, if the system draws water from more than one source and the sources are combined before distribution, the system samples at an entry point to the distribution system during periods of normal operating conditions.</p> <p>Verify that each NTNC water system takes four consecutive quarterly samples for each contaminant during each compliance period starting with the initial compliance period.</p> <p>(NOTE: Systems serving more than 3300 persons, which do not detect a contaminant in the initial compliance period, may reduce sampling to two quarterly samples in 1 yr during each repeat compliance period.)</p> <p>(NOTE: Systems serving less than or equal to 3300 persons, that do not detect a contaminant in the initial compliance period, may reduce sampling to one sample during each repeat compliance period.)</p> <p>Verify that, when an organic contaminant is detected, the system monitors quarterly at each sampling point that resulted in detection.</p> <p>Verify that, if monitoring results in the detection of one or more of certain related contaminants (heptachlor and heptachlor epoxide), then subsequent monitoring analyzes for all related contaminants.</p> <p>(NOTE: The state may reduce the number of samples required and/or the frequency of sampling.)</p> <p>(NOTE: See checklist item WQ.76.1.US for clarification on NTNC water systems.)</p> <p>(NOTE: The determination of whether a PWS is required to monitor under the Unregulated Contaminant Monitoring Rule [UCMR] is based on the type of system [e.g., community water system, non-transient non-community water (NTNC) system, etc.] and its retail population, as indicated by SDWIS/Fed on 31 December 2015.)</p>

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<b>March 2000; Revised April 2001; Revised April 2007; Revised July 2012; Revised January 2017].</b>	<p>Verify that, if the retail NTNC water system serves more than 10,000 people, the system monitors for the unregulated contaminants on List 1 per Table 1, UCMR Contaminant List in Appendix 13-5.</p> <p>(NOTE: If the NTNC water systems believes that their applicability status is different than EPA has specified in the notification letter they received, or if the community water system is subject to UCMR requirements and they have not been notified by either EPA or the State, they report to EPA, as specified in 40 CFR 141.35(b)(2) or 141.35(c)(4) [see checklist item WQ.40.8.US].)</p> <p>(NOTE: The NTNC water system must monitor for unregulated contaminants regardless of whether or not they have been notified by EPA or the State if they serve a population of more than 10,000 people.)</p> <p>Verify that NTNC water systems monitor for the unregulated contaminants on List 2 (Screening Survey) of Table 1 (see appendix 13-5) if the system serves 10,001 to 100,000 people and the system is notified by EPA or the State that they are part of the State Monitoring Plan for Screening Survey testing.</p> <p>Verify that NTNC water systems that serve more than 100,000 people monitor for the unregulated contaminants on List 2 (Screening Survey) of Table 1 (see Appendix 13-5).</p> <p>Verify that retail NTNC water systems that serve more than 10,000 people monitor for the unregulated contaminants on List 3 of Table 1 of Appendix 13-5 if they are notified by their State or EPA that they are part of the Pre-Screen Testing.</p> <p>Verify that NTNC water systems serving more than 10,000 people which also meet the UCMR applicability criteria perform sampling and monitoring as outlined in the text of 40 CFR 141.40(a)(4)(i).</p> <p>(NOTE: Small PWSs [serves 10,000 people or fewer] will not be selected to monitor for any more than one of the three monitoring lists provided in Table 1, UCMR Contaminant List [see Appendix 13-5]. EPA will provide sample containers, provide pre-paid air bills for shipping the sampling materials, conduct the laboratory analysis, and report and review monitoring results for all small systems selected to conduct required monitoring.)</p> <p>Verify that NTNC water systems that serve 10,000 or fewer people monitor for the unregulated contaminants on List 1 per Table 1 of Appendix 13-5 if they are notified by the State or EPA that they are part of the State Monitoring Plan for Assessment Monitoring.</p> <p>Verify that NTNC water systems that serve 10,000 or fewer people monitor for the unregulated contaminants on List 2 of Table 1 of Appendix 13-5 if they are notified by the State or EPA that they are part of the State Monitoring Plan for the Screening Survey.</p>

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<p><b>WQ.77.8.US.</b> The reporting of unregulated contaminant monitoring results must be done according to certain parameters by NTNC water systems (40 CFR 141.35) [Revised October 1999; Reviewed March 2000; Revised October 2001; Revised April 2007; Revised July 2012; Revised January 2017].</p>	<p>Verify that NTNC water systems that serve 10,000 or fewer people allow EPA or its representative to collect samples to support monitoring for the unregulated contaminants on List 3 of Table 1 in Appendix 13-5 if they are notified by the State or EPA that they are part of the State Monitoring plan for Pre-Screen Testing.</p> <p>Verify that NTNC water systems that serve 10,000 or fewer people allow the collection of samples as necessary for EPA to perform analysis for total coliforms, E. coli, bacteriophage, Enterococci and aerobic spores.</p> <p>Verify that NTNC water systems that serve 10,000 or fewer people which are notified they are part of the State Monitoring Plan for Pre-Screen Testing monitor for the contaminants on List 3 of Table 1 of Appendix 13-5.</p> <p>Verify that NTNC water systems serving more than 10,000 people which is sampling for UCMRs does so according to the processes defined in 40 CFR 141.40(a)(4)(i) [see text].</p> <p>Verify that NTNC water systems serving 10,000 or fewer people and are notified that they are part of the State Monitoring Plan for Assessment Monitoring, Screening Survey or Pre-Screen monitoring comply with the sampling and monitoring as outlined in the text of 40 CFR 141.40(a)(4)(ii).</p> <p>(NOTE: Samples must be collected according to the schedule agreed upon with EPA or the State by 13 December 2017.)</p> <p>Verify that, if the EPA or State informs the NTNC water system serving 10,000 or fewer people that they will be collecting the UCMR samples, the community water system assists them in identifying the appropriate sampling locations and in collecting the samples.</p> <p>(NOTE: Quality control procedures are outlined in 40 CFR 141.40(a)(5).)</p> <p>(NOTE: This checklist item applies to any NTNC water system required to monitor for unregulated contaminants under 40 CFR 141.40(a) [see checklist item WQ.77.7.US]. It addresses both NTNC water systems serving 10,000 or fewer people and those serving more than 10,000 people.)</p> <p>(NOTE: For this checklist item, “population served” is the retail population served directly by the community water system as reported to the Federal Safe Drinking Water Information System [SDWIS/Fed]; wholesale or consecutive populations are not included.)</p> <p>(NOTE: For this checklist item, “finished” means water that is introduced into the distribution system of a PWS and is intended for distribution and consumption without further treatment, except the treatment necessary to maintain water quality</p>

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	<p>in the distribution system (e.g., booster disinfection, addition of corrosion control chemicals).)</p> <p>(NOTE: For this checklist item, the term “State” refers to the State or Tribal government entity that has jurisdiction over the community water system even if that government does not have primary enforcement responsibility under the <i>Safe Drinking Water Act</i>.)</p> <p>(NOTE: For this checklist item, the term “PWS Official” refers to the person at the water system who is able to function as the official spokesperson for the system's Unregulated Contaminant Monitoring Regulation (UCMR) activities.)</p> <p>(NOTE: For this checklist item, the term “PWS Technical Contact” refers to the person at the water system who is responsible for the technical aspects of the UCMR activities, such as details concerning sampling and reporting.)</p> <p>(NOTE: Some of the reporting requirements associated with UCMR are to be fulfilled electronically and others by mail. Information that must be submitted using EPA's electronic data reporting system must be submitted through: <a href="https://www.epa.gov/dwucmr">https://www.epa.gov/dwucmr</a>. Documentation that is required to be mailed can be submitted either: To UCMR Sampling Coordinator, USEPA, Technical Support Center, 26 West Martin Luther King Drive (MS 140), Cincinnati, OH 45268; or by email at <a href="mailto:UCMR_Sampling_Coordinator@epa.gov">UCMR_Sampling_Coordinator@epa.gov</a>.)</p> <p>(NOTE: If the NTNC water system has received a letter from EPA or the state concerning the required monitoring and the system does not meet the applicability criteria for UCMR, or if a change occurs at the system that may affect the requirements under UCMR, the facility must mail or email a letter to EPA. The letter must be from the PWS Official and must include the PWS Identification (PWSID) Code along with an explanation as to why the UCMR requirements are not applicable to the PWS, or have changed for the PWS, along with the appropriate contact information. EPA will make an applicability determination based on the letter and in consultation with the State when necessary. The system is subject to UCMR requirements unless and until it receives a letter from EPA agreeing that they do not meet the applicability criteria.)</p> <p>Verify that, if the NTNC water system serves a population of more than 10,000 people, and does not purchase the entire water supply as finished water from another PWS, the following reporting requirements are met:</p> <ul style="list-style-type: none"> <li>– provide contact information by 31 December 2017 and updates within 30 days if this information changes using EPA's electronic data reporting system, including the following for the PWS Technical Contact and PWS Official: <ul style="list-style-type: none"> <li>– name</li> <li>– affiliation</li> <li>– mailing address</li> <li>– phone number</li> </ul> </li> </ul>

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	<ul style="list-style-type: none"> <li>– email address</li> <li>– provide, as a one-time reporting requirement, the U.S. Postal Service Zip Code(s) for all areas being served water by the facility</li> <li>– provide sampling location and inventory information 31 December 2017, using EPA's electronic data reporting system</li> <li>– submit, verify or update the following information for each sampling location, or for each approved representative sampling location:               <ul style="list-style-type: none"> <li>– PWSID code</li> <li>– PWS name</li> <li>– PWS facility identification code</li> <li>– PWS facility name</li> <li>– PWS facility type</li> <li>– water source type</li> <li>– sampling point identification code</li> <li>– sampling point name</li> <li>– sampling point type code.</li> </ul> </li> </ul> <p>(NOTE: If information changes, report updates, including new sources and sampling locations that are put in use before or during the UCMR sampling period, to EPA's electronic data reporting system within 30 days of the change.)</p> <p>(NOTE: Some NTNC water systems that use ground water as a source and have multiple entry points to the distribution system (EPTDSs) may propose monitoring at representative entry point(s), rather than monitor at every EPTDS, see the text of 40 CFR 141.35(c)(3) for further information.)</p> <p>(NOTE: If the NTNC water system operators believe they are subject to UCMR requirements, and the system has not been notified by either EPA or your State by 19 April 2017, the system must send a letter to EPA including an explanation as to why the UCMR requirements are applicable to the system along with the appropriate contact information. A copy of the letter must also be submitted to the State, as directed by the State. EPA will make an applicability determination based on the letter, and in consultation with the State when necessary, and will notify the system regarding applicability status and required sampling schedule.)</p> <p>(NOTE: If a PWS meets the applicability criteria, they are subject to the UCMR monitoring and reporting requirements, regardless of whether they have been notified by the State or EPA.)</p> <p>(NOTE: Large systems may change their Assessment Monitoring [List 1] or Screening Survey [List 2] schedules up to 31 December 2017, using EPA's electronic data reporting system.)</p> <p>Verify that, after 31 December 2017, if the NTNC water system cannot sample according to the assigned sampling schedule (e.g., because of budget constraints, or if a sampling location will be closed during the scheduled month of monitoring),</p>

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	<p>the system mails or emails a letter to EPA prior to the scheduled sampling date including an explanation of why the samples cannot be taken according to the assigned schedule, and the alternative schedule the system is requesting.</p> <p>(NOTE: The NTNC water system is subject to their assigned UCMR sampling schedule or the schedule that you revised on or before 31 December 2017, unless and until the facility receives a letter from EPA specifying a new schedule.)</p> <p>(NOTE: The following are exceptions to the rescheduling notification requirements:</p> <ul style="list-style-type: none"> <li>– for ground water sampling, if the second round of sampling will be completed five to seven months after the first sampling event, no notification to EPA is required</li> <li>– if any ground water sampling location will be non- operational for more than one month before and one month after the month in which the second sampling event is scheduled (i.e., it is not possible to sample within the five to seven month window), the PWS must notify EPA explaining why the schedule cannot be met.)</li> </ul> <p>Verify that, for each sample, the facility reports the required information using EPA's electronic data reporting system.</p> <p>Verify that the NTNC water system reports any changes, relative to what is currently posted, made to data elements 1 through 9 to EPA, in writing, explaining the nature and purpose of the proposed change.</p> <p>(NOTE: The NTNC water system is responsible for ensuring that the laboratory conducting the analysis of their UCMR samples posts the analytical results to EPA's electronic reporting system. The NTNC water system is also responsible for reviewing, approving, and submitting those results to EPA.)</p> <p>Verify that the laboratory posts the data to EPA's electronic data reporting system within 120 days from the sample collection date.</p> <p>(NOTE: The NTNC water system has 60 days from when the laboratory posts the data in EPA's electronic data reporting system to review, approve, and submit the data to the State and EPA. If the NTNC water system does not electronically approve and submit the laboratory data to EPA within 60 days of the laboratory's posting data to EPA's electronic reporting system, the data will be considered approved by the system and available for State and EPA review.)</p> <p>(NOTE: If the NTNC water system reports more than one set of valid results for the same sampling location and the same sampling event, EPA will use the highest of the reported values as the official result.)</p> <p>(NOTE: The NTNC water system cannot report previously collected data to meet the testing and reporting requirements for the contaminants. All analyses must be</p>

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<p><b>WQ.77.9.US.</b> NTNC water systems that add ozone or chlorine dioxide to the water in any part of the drinking water process are required to meet specific monitoring requirements (40 CFR 141.130(a)(1), 141.130(b)(1), 141.131, 141.132(a), 141.132(b)(2) and 141.132(b)(3)) [Added January 1999; Reviewed March 2000; Revised April 2001; Revised April 2006].</p>	<p>performed by laboratories approved by EPA to perform UCMR analyses and using correctly collected samples collected.)</p> <p>(NOTE: If the NTNC water system serves a population of 10,000 or fewer people, and they are notified that they have been selected for UCMR monitoring, their reporting requirements will be specified within the materials that EPA sends the system, including a request for contact information and a request for information associated with the sampling kit.)</p> <p>Verify that NTNC water systems serving a population of 10,000 or fewer people record all data elements on each sample form and sample bottle provided to the facility by the UCMR Sampling Coordinator.</p> <p>(NOTE: NTNC water systems serving 10,000 or fewer people must send this sample information as specified in the instructions of the sampling kit, which will include the due date and return address.)</p> <p>Verify that NTNC water systems serving 10,000 or fewer people report any changes made in data elements 1 through 9 by mailing or emailing an explanation of the nature and purpose of the proposed change to EPA.</p> <p>(NOTE: This requirement applies to Subpart H systems serving 10,000 or more persons beginning 1 January 2002. Subpart H systems serving fewer than 10,000 persons and systems using only groundwater not under the direct influence of surface water must comply with this section beginning 1 January 2004.)</p> <p>Verify that all samples are taken during normal operating conditions.</p> <p>Verify that sample analysis is done using appropriate methodology and is conducted by laboratories that are certified by the USEPA or the State.</p> <p>(NOTE: Systems may consider multiple wells drawing water from a single aquifer as one treatment plant for determining the minimum number of TTHM and HAA5 samples required, if the state approves.)</p> <p>Verify that NTNC water systems using chlorine dioxide, for disinfection or oxidation, perform the following monitoring for chlorite:</p> <ul style="list-style-type: none"> <li>– daily samples at the entrance to the distribution system plus when the daily sample exceeds the chlorite MCL, additional samples in the distribution system the following day at the entrance to the distribution system, as close to the first customer as possible, in a location representative of average residence time, and as close to the end of the distribution system as possible</li> <li>– a monthly three-sample set in the distribution system near the first customer, at a location representative of average residence time, and at a location reflecting maximum residence time in the distribution system.</li> </ul>

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<p><b>WQ.77.10.US.</b> NTNC water systems serving at least 10,000 people and using a primary or residual disinfectant other than ultraviolet light or delivering water that has been treated with a primary or residual</p>	<p>Verify that daily chlorite monitoring at the entrance to the distribution system is not reduced.</p> <p>(NOTE: Monthly chlorite monitoring in the distribution system may be reduced to one three-sample set per quarter after 1 yr of monitoring where no individual chlorite sample taken in the distribution system exceeds the chlorite MCL and the system has not been required to conduct additional monitoring in response to a exceedance in the daily samples. The system may remain on the reduced monitoring schedule until either any of the three individual chlorite samples taken quarterly in the distribution system exceeds the chlorite MCL or the system is required to conduct additional monitoring in response to a exceedance in the daily samples.)</p> <p>Verify that systems using ozone, for disinfection or oxidation, take one sample per month for each treatment plant in the system using ozone at the entrance to the distribution system while the ozonation system is operating under normal conditions.</p> <p>(NOTE: Until 31 March 2009, systems required to analyze for bromate may reduce monitoring from monthly to quarterly, if the system's average source water bromide concentration is less than 0.05 mg/L based on representative monthly bromide measurements for one year. The system may remain on reduced bromate monitoring until the running annual average source water bromide concentration, computed quarterly, is equal to or greater than 0.05 mg/L based on representative monthly measurements. If the running annual average source water bromide concentration is greater than or equal to 0.05 mg/L, the system must resume routine monitoring for ozone in the following month. Beginning 1 April 2009, systems may no longer use these provisions to qualify for reduced monitoring. A system required to analyze for bromate may reduce monitoring from monthly to quarterly, if the system's running annual average bromate concentration is less than or equal to 0.0025 mg/L based on monthly bromate measurements for the most recent four quarters, with samples analyzed using Method 317.0 Revision 2.0, 326.0 or 321.8. If a system has qualified for reduced bromate monitoring, that system may remain on reduced monitoring as long as the running annual average of quarterly bromate samples less than or equal to 0.0025 mg/L based on samples analyzed using Method 317.0 Revision 2.0, 326.0, or 321.8. If the running annual average bromate concentration is greater than 0.0025 mg/L, the system must resume routine ozone monitoring.)</p> <p>(NOTE: See checklist item WQ.76.1.US for clarification on NTNC water systems.)</p> <p>(NOTE: Compliance with these requirements is not mandatory if the facility serves fewer than 500 people and the facility has taken TTHM and HAA5 samples under 40 CFR 141, Subpart L unless the State notifies the facility that they must conduct standard monitoring or a system specific study. If the facility has not taken TTHM and HAA5 samples under 40 CFR 141, Subpart L or if the State notifies the facility that they must comply, the facility must conduct standard monitoring or a system specific study.)</p>

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<p>disinfectant other than ultraviolet light must conduct monitoring according to specific parameters (40 CFR 141.600, 141.601, and 141.604) <b>[Added April 2006]</b>.</p>	<p>Verify that the sampling schedule in Table 1 of Appendix 13-9b is met.</p> <p>Verify that an Initial Distribution System Evaluation (IDSE) is used to determine locations with representative high TTHM and HAA5 concentrations throughout the distribution system.</p> <p>(NOTE: IDSEs are used in conjunction with, but separate from, compliance monitoring defined in 40 CFR 141.130 through 141.135 (see checklist items WQ.30.4.US, and WQ.77.9.US), to identify and select Stage 2 disinfection byproduct compliance monitoring locations.)</p> <p>(NOTE: In relation to the schedule, the State may determine that the combined distribution system does not include certain consecutive systems based on factors such as receiving water from a wholesale system only on an emergency basis or receiving only a small percentage and small volume of water from a wholesale system. The State may also determine that the combined distribution system does not include certain wholesale systems based on factors such as delivering water to a consecutive system only on an emergency basis or delivering only a small percentage and small volume of water to a consecutive system.)</p> <p>Verify that the NTNC water system conducts standard monitoring or a system specific study that meets the requirements in 40 CFR 141.602 (see checklist item WQ.77.11.US), or certifies to the State that the facility meets 40/30 certification criteria under 40 CFR 141.603 (see checklist item WQ.77.12.US), or qualifies for a very small system waiver.</p> <p>Verify that the full complement of routine TTHM and HAA5 compliance samples required of a system with the appropriate population and source water under 40 CFR 141.130 through 141.135 (see checklist item number WQ.30.4.US, WQ.65.3.US through WQ.65.5.US, and WQ.77.9.US) have been taken, or the facility has taken the full complement of reduced TTHM and HAA5 compliance samples required of a system with the appropriate population and source water under 40 CFR 141.130 through 141.135 (see checklist item number WQ.30.4.US, WQ.65.3.US through WQ.65.5.US, and WQ.77.9.US) if the facility meets reduced monitoring criteria under 40 CFR 141.130 through 141.135 during the period specified in 40 CFR 141.603(a) (see checklist item WQ.77.12.US) to meet the 40/30 certification criteria in 40 CFR 141.603.</p> <p>Verify that, in order to be eligible for the very small system waiver, the TTHM and HAA5 samples required under 40 CFR 141.131 and 141.132 (see checklist item number WQ.30.4.US, WQ.65.3.US through WQ.65.5.US, and WQ.77.9.US) have been taken.</p> <p>Verify that, if the NTNC water system has not taken the required samples, standard monitoring is conducted, or a system specific study that meets the requirements in 40 CFR 141.602 (see checklist item WQ.77.11.US) is conducted.</p>

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	<p>(NOTE: Use only the analytical methods specified in 40 CFR 141.131 [see text], or otherwise approved by EPA for monitoring under this subpart, to demonstrate compliance with the requirements of this subpart.)</p> <p>(NOTE: IDSE results will not be used for the purpose of determining compliance with MCLs in 40 CFR 141.64 [see checklist item WQ.76.2.US].)</p> <p>Verify that the NTNC water systems monitoring plan includes:</p> <ul style="list-style-type: none"> <li>– a schematic of the distribution system (including distribution system entry points and their sources, and storage facilities), with notes indicating locations and dates of all projected standard monitoring, and all projected compliance monitoring detailed in 40 CFR 141.130 through 141.135 (see checklist item number WQ.30.4.US, WQ.65.3.US through WQ.65.5.US, and WQ.77.9.US)</li> <li>– justification of standard monitoring location selection and a summary of data you relied on to justify standard monitoring location selection</li> <li>– specifications about the population served and system type (subpart H or ground water).</li> </ul> <p>Verify that the facility maintains a complete copy of the submitted standard monitoring plan, including any State modification of the standard monitoring plan, for as long as the facility are required to retain the IDSE report.</p> <p>Verify that the standard monitoring plan is prepared and submitted to the State according to the schedule in Appendix 13-9b, Table 2.</p> <p>Verify that the facility monitors as indicated in Table 2 of Appendix 13-9b.</p> <p>Verify that dual sample sets are collected at each monitoring location and one sample in the dual sample set is analyzed for TTHM while the other sample in the dual sample set is analyzed for HAA5.</p> <p>Verify that one monitoring period is conducted during the peak historical month for TTHM levels or HAA5 levels or the month of warmest water temperature.</p> <p>(NOTE: Review available compliance, study, or operational data to determine the peak historical month for TTHM or HAA5 levels or warmest water temperature.)</p> <p>Verify that samples are taken at locations other than the existing monitoring locations identified in 40 CFR 141.130 through 141.135 (see checklist item number WQ.30.4.US, WQ.65.3.US through WQ.65.5.US, and WQ.77.9.US).</p> <p>Verify that monitoring locations are distributed throughout the distribution system.</p> <p>(NOTE: If the number of entry points to the distribution system is fewer than the specified number of entry point monitoring locations, excess entry point samples</p>

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<p><b>WQ.77.11.US.</b> System specific studies done for NTNC water systems serving at least 10,000 people and using a primary or residual disinfectant other than ultraviolet light or delivering water that has been treated</p>	<p>must be replaced equally at high TTHM and HAA5 locations. If there is an odd extra location number, take a sample at a high TTHM location. If the number of entry points to the distribution system is more than the specified number of entry point monitoring locations, take samples at entry points to the distribution system having the highest annual water flows.)</p> <p>(NOTE: The monitoring outlined in Appendix 13-9b, Table 2 may not be reduced and the State may not reduce the monitoring.)</p> <p>Verify that the IDSE report contains the following:</p> <ul style="list-style-type: none"> <li>– all TTHM and HAA5 analytical results from compliance monitoring done according to 40 CFR 141.130 through 141.135 (see checklist item number WQ.30.4.US, WQ.65.3.US through WQ.65.5.US, and WQ.77.9.US) and all standard monitoring conducted during the period of the IDSE as individual analytical results and LRAAs presented in a tabular or spreadsheet format acceptable to the State</li> <li>– a schematic of the distribution system, the population served, and system type (Subpart H or groundwater) if this information has changed from the approved monitoring plan</li> <li>– an explanation of any deviations from the approved standard monitoring plan</li> <li>– recommendations and justifications of Stage 2 disinfection byproducts compliance monitoring locations and timing based on the protocol in 40 CFR 141.605 (see checklist item WQ.77.13.US).</li> </ul> <p>Verify that the IDSE report is submitted according to the schedule in Appendix 13-9b, Table 1.</p> <p>Verify that the facility retains a copy of the IDSE report submitted under this section for 10 years after the date the report was submitted.</p> <p>(NOTE: If the State modifies the Stage 2 disinfection byproducts monitoring requirements the facility recommended in their IDSE report or if the State approves alternative monitoring locations, the facility must keep a copy of the State's notification on file for 10 yr after the date of the State's notification.)</p> <p>Verify that the IDSE report and any State notification are available for review by the State or the public.</p> <p>(NOTE: Compliance with these requirements is not mandatory if the facility serves fewer than 500 people and the facility has taken TTHM and HAA5 samples under 40 CFR 141, Subpart L unless the State notifies the facility that they must conduct standard monitoring or a system specific study. If the facility has not taken TTHM and HAA5 samples under 40 CFR 141, Subpart L or if the State notifies the facility that they must comply, the facility must conduct standard monitoring or a system specific study.)</p>

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<p>with a primary or residual disinfectant other than ultraviolet light must meet certain requirements (40 CFR 141.602 and 141.604) [Added April 2006].</p>	<p>Verify that the system specific study plan is based on either existing monitoring results or modeling.</p> <p>Verify that the system specific study plan is prepared and submitted to the State according to the schedule in Appendix 13-9b, Table 2.</p> <p>(NOTE: The facility may comply by submitting monitoring results collected before the facility is required to begin monitoring (see Appendix 13-9b) and the monitoring results and analysis meet the following criteria:</p> <ul style="list-style-type: none"> <li>– TTHM and HAA5 results are based on samples collected and analyzed in accordance with 40 CFR 141.131 (see checklist item number WQ.30.4.US, WQ.65.3.US through WQ.65.5.US, and WQ.77.9.US) no earlier than 5 yr prior to the study plan submission date</li> <li>– the monitoring locations and frequency must meet the conditions identified in Table 3 of Appendix 13-9b</li> <li>– each location must be sampled once during the peak historical month for TTHM levels or HAA5 levels or the month of warmest water temperature for every 12 mo of data submitted for that location</li> <li>– monitoring results include all 40 CFR 141, Subpart L (see checklist items WQ.30.4.US, WQ.65.3.US. through WQ.65.3.US, and WQ.77.9.US) compliance monitoring results plus additional monitoring results as necessary to meet minimum sample requirements.)</li> </ul> <p>Verify that the facility reports the following information:</p> <ul style="list-style-type: none"> <li>– previously collected monitoring results certifying that the reported monitoring results include all compliance and non-compliance results generated during the time period beginning with the first reported result and ending with the most recent 40 CFR 141, Subpart L results (see checklist items WQ.30.4.US, WQ.65.3.US. through WQ.65.3.US, and WQ.77.9.US)</li> <li>– certification that the samples were representative of the entire distribution system and that treatment, and distribution system have not changed significantly since the samples were collected</li> <li>– the facility study monitoring plan, including a schematic of the distribution system (including distribution system entry points and their sources, and storage facilities), with notes indicating the locations and dates of all completed or planned system specific study monitoring</li> <li>– the facility system specific study plan which specifies the population served and system type (subpart H or ground water),</li> </ul> <p>Verify that the facility retains a complete copy of the submitted system specific study plan, including any State modification of the system specific study plan, for as long as the facility is required to retain the IDSE report.</p> <p>Verify that, if the facility submitted previously collected data that fully meets the required number of samples and the State rejects some of the data, the facility either conducts additional monitoring to replace rejected data on a schedule the State</p>

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	<p>approves or conducts standard monitoring under 40 CFR 141.601 (see checklist item WQ.77.10.US).</p> <p>(NOTE: Compliance may be achieved through analysis of an extended period simulation hydraulic model. The extended period simulation hydraulic model and analysis must meet the following criteria:</p> <ul style="list-style-type: none"> <li>– the model must simulate 24 h variation in demand and show a consistently repeating 24 h pattern of residence time</li> <li>– the model must represent the following criteria: <ul style="list-style-type: none"> <li>– 75% of pipe volume</li> <li>– 50% of pipe length</li> <li>– all pressure zones</li> <li>– all 12-in diameter and larger pipes</li> <li>– all 8-in and larger pipes that connect pressure zones, influence zones from different sources, storage facilities, major demand areas, pumps, and control valves, or are known or expected to be significant conveyors of water</li> <li>– all 6-in and larger pipes that connect remote areas of a distribution system to the main portion of the system</li> <li>– all storage facilities with standard operations represented in the model</li> <li>– all active pump stations with controls represented in the model</li> <li>– all active control valves</li> </ul> </li> <li>– the model is calibrated, or has calibration plans, for the current configuration of the distribution system during the period of high TTHM formation potential</li> <li>– all storage facilities are evaluated as part of the calibration process</li> <li>– all required calibration is completed no later than 12 mo after plan submission.</li> </ul> <p>Verify that the system specific study plan includes the following information:</p> <ul style="list-style-type: none"> <li>– tabular or spreadsheet data demonstrating that the model meets the following requirements: <ul style="list-style-type: none"> <li>– 75% of pipe volume</li> <li>– 50% of pipe length</li> <li>– all pressure zones</li> <li>– all 12-in diameter and larger pipes</li> <li>– all 8-in and larger pipes that connect pressure zones, influence zones from different sources, storage facilities, major demand areas, pumps, and control valves, or are known or expected to be significant conveyors of water</li> <li>– all 6-in and larger pipes that connect remote areas of a distribution system to the main portion of the system</li> <li>– all storage facilities with standard operations represented in the model</li> <li>– all active pump stations with controls represented in the model</li> <li>– all active control valves</li> </ul> </li> <li>– a description of all calibration activities undertaken, and if calibration is complete, a graph of predicted tank levels versus measured tank levels for the</li> </ul>

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	<p>storage facility with the highest residence time in each pressure zone, and a time series graph of the residence time at the longest residence time storage facility in the distribution system showing the predictions for the entire simulation period (i.e., from time zero until the time it takes to for the model to reach a consistently repeating pattern of residence time)</p> <ul style="list-style-type: none"> <li>– model output showing preliminary 24 h average residence time predictions throughout the distribution system</li> <li>– timing and number of samples representative of the distribution system planned for at least one monitoring period of TTHM and HAA5 dual sample monitoring at a number of locations no less than would be required for the system under standard monitoring during the historical month of high TTHM (NOTE: These samples must be taken at locations other than existing 40 CFR 141, Subpart L (see checklist items WQ.30.4.US, WQ.65.3.US. through WQ.65.3.US, and WQ.77.9.US) compliance monitoring locations</li> <li>– description of how all requirements will be completed no later than 12 mo after the facility submits their system specific study plan</li> <li>– schematic of the facility distribution system (including distribution system entry points and their sources, and storage facilities), with notes indicating the locations and dates of all completed system specific study monitoring (if calibration is complete) and all 40 CFR 141, Subpart L compliance monitoring (see checklist items WQ.30.4.US, WQ.65.3.US. through WQ.65.3.US, and WQ.77.9.US)</li> <li>– population served and system type (subpart H or ground water).</li> </ul> <p>Verify that the facility retains a complete copy of the submitted system specific study plan, including any State modification of the system specific study plan, for as long as the facility is required to retain their IDSE report.</p> <p>(NOTE: If the facility submits a model that does not fully meet the requirements, the facility must correct the deficiencies and respond to State inquiries concerning the model. If the facility fails to correct deficiencies or respond to inquiries to the State's satisfaction, the facility must conduct standard monitoring.)</p> <p>Verify that the IDSE report includes the following elements:</p> <ul style="list-style-type: none"> <li>– all TTHM and HAA5 analytical results from 40 CFR 141, Subpart L compliance monitoring and all system specific study monitoring conducted during the period of the system specific study presented in a tabular or spreadsheet format acceptable to the State</li> <li>– a schematic of the facility's distribution system, the population served, and system type (subpart H or ground water) if the information has changed from that in the submitted system specific study plan</li> <li>– final information for the following elements and a 24-h time series graph of residence time for each 40 CFR 141, Subpart V (see checklist items WQ.77.14.US through WQ.77.19.US and WQ.78.1.US) compliance monitoring location selected if using the modeling provision: <ul style="list-style-type: none"> <li>– 75% of pipe volume</li> </ul> </li> </ul>

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<p><b>WQ.77.12.US.</b> Eligibility for 40/30 certification at a NTNC water system serving at least 10,000 people using a primary or residual disinfectant other than ultraviolet light or delivering water that has been</p>	<ul style="list-style-type: none"> <li>– 50% of pipe length</li> <li>– all pressure zones</li> <li>– all 12-in diameter and larger pipes</li> <li>– all 8-in and larger pipes that connect pressure zones, influence zones from different sources, storage facilities, major demand areas, pumps, and control valves, or are known or expected to be significant conveyors of water</li> <li>– all 6-in and larger pipes that connect remote areas of a distribution system to the main portion of the system</li> <li>– all storage facilities with standard operations represented in the model</li> <li>– all active pump stations with controls represented in the model</li> <li>– all active control valves</li> </ul> <p>– recommendations and justification of 40 CFR 141, Subpart V (see checklist items WQ.77.14.US through WQ.77.19.US and WQ.78.1.US) compliance monitoring locations and timing based on the protocol in 40 CFR 141.605 (see checklist item WQ.77.13.US)</p> <p>– an explanation of any deviations from the approved system specific study plan</p> <p>– the basis (analytical and modeling results) and justification used to select the recommended 40 CFR 141, Subpart V monitoring locations (see checklist items WQ.77.14.US through WQ.77.19.US and WQ.78.1.US).</p> <p>(NOTE: The IDSE report may be submitted in lieu of the system specific study plan on the schedule identified in Appendix 13-9b for submission of the system specific study plan if the necessary information is available by the time that the system specific study plan is due. If the facility elects this approach, the IDSE report must also include all information required for the system specific study plan.)</p> <p>Verify that a complete copy of the submitted IDSE report is retained for 10 yr after the date that the IDSE report was submitted.</p> <p>Verify that, if the State modifies the 40 CFR 141, Subpart V monitoring requirements recommended in the IDSE report or if the State approves alternative monitoring locations, the facility keeps a copy of the State's notification on file for 10 yr after the date of the State's notification.</p> <p>Verify that the IDSE report and any State notification is available for review by the State or the public.</p> <p>(NOTE: Compliance with these requirements is not mandatory if the facility serves fewer than 500 people and the facility has taken TTHM and HAA5 samples under 40 CFR 141, Subpart L unless the State notifies the facility that they must conduct standard monitoring or a system specific study. If the facility has not taken TTHM and HAA5 samples under 40 CFR 141, Subpart L or if the State notifies the facility that they must comply, the facility must conduct standard monitoring or a system specific study.)</p>

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<p>treated with a primary or residual disinfectant other than ultraviolet light requires consistent TTHM and HAA5 compliance (40 CFR 141.603) [Added April 2006].</p> <p><b>WQ.77.13.US.</b> NTNC water systems serving at least 10,000 people and using a primary or residual disinfectant other than ultraviolet light or delivering water that has been treated with a primary or residual disinfectant other than ultraviolet light must follow certain monitoring location</p>	<p>(NOTE: The facility is eligible for 40/30 certification if the facility had no TTHM or HAA5 monitoring violations under 40 CFR 141, Subpart L and no individual sample exceeded 0.040 mg/L for TTHM or 0.030 mg/L for HAA5 during an eight consecutive calendar quarter period beginning no earlier than the following specified date:</p> <ul style="list-style-type: none"> <li>– if the 40/30 certification is due 1 October 2006; January 2004</li> <li>– if the 40/30 certification is due 1 April 2007; January 2004</li> <li>– if the 40/30 certification is due, 1 October 2007; January 2005</li> <li>– if the 40/30 certification is due 1 April 2008; January 2005.</li> </ul> <p>Eight consecutive calendar quarters are not required if the facility is on reduced monitoring under 40 CFR 141, Subpart L and were not required to monitor during the specified period. If the facility did not monitor during the specified period, they must base eligibility on compliance samples taken during the 12 mo preceding the specified period.)</p> <p>Verify that, in order to obtain 40/30 certification, the facility certifies to the State that every individual compliance sample taken under 40 CFR 141, Subpart L during the periods specified above were less than or equal to 0.040 mg/L for TTHM less than or equal to 0.030 mg/L for HAA5, and there has not been any TTHM or HAA5 monitoring violations during the specified period.</p> <p>(NOTE: The State may require the facility to submit compliance monitoring results, distribution system schematics, and/or recommended 40 CFR 141, Subpart V (see checklist items WQ.77.14.US through WQ.77.19.US and WQ.78.1.US) compliance monitoring locations in addition to the certification. If the facility fails to submit the requested information, the State may require standard monitoring or a system specific study.)</p> <p>Verify that the facility retains a complete copy of the submitted certification for 10 yr after the date the facility submitted their certification.</p> <p>Verify that the certification, all data upon which the certification is based, and any State notification is available for review by the State or the public.</p> <p>(NOTE: Compliance with these requirements is not mandatory if the facility serves fewer than 500 people and the facility has taken TTHM and HAA5 samples under 40 CFR 141, Subpart L unless the State notifies the facility that they must conduct standard monitoring or a system specific study. If the facility has not taken TTHM and HAA5 samples under 40 CFR 141, Subpart L or if the State notifies the facility that they must comply, the facility must conduct standard monitoring or a system specific study.)</p> <p>Verify that the IDSE report includes the facility's recommendations and justification for where and during what month(s) TTHM and HAA5 monitoring should be conducted.</p>

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<p>recommendations (40 CFR 141.605) [Added April 2006].</p>	<p>Verify that the facility bases the recommendations on the following:</p> <ul style="list-style-type: none"> <li>– select the number of monitoring locations specified in Table 4 of Appendix 13-9b unless the State requires different or additional locations</li> <li>– distribute locations throughout the distribution system to the extent possible</li> <li>– standard monitoring results, system specific study results, and 40 CFR 141, Subpart L compliance monitoring results</li> <li>– the following protocols: <ul style="list-style-type: none"> <li>– location with the highest TTHM LRAA not previously selected as a 40 CFR 141, Subpart V monitoring location (see checklist items WQ.77.14.US through WQ.77.19.US and WQ.78.1.US)</li> <li>– location with the highest HAA5 LRAA not previously selected as a 40 CFR 141, Subpart V monitoring location</li> <li>– existing 40 CFR 141, Subpart L average residence time compliance monitoring location (maximum residence time compliance monitoring location for ground water systems) with the highest HAA5 LRAA not previously selected as a 40 CFR 141, Subpart V monitoring location</li> <li>– location with the highest TTHM LRAA not previously selected as a 40 CFR 141, Subpart V monitoring location</li> <li>– location with the highest TTHM LRAA not previously selected as a 40 CFR 141, Subpart V monitoring location</li> <li>– location with the highest HAA5 LRAA not previously selected as a 40 CFR 141, Subpart V monitoring location</li> <li>– existing 40 CFR 141, Subpart L average residence time compliance monitoring location (maximum residence time compliance monitoring location for ground water systems) with the highest TTHM LRAA not previously selected as a 40 CFR 141, Subpart V monitoring location</li> <li>– location with the highest HAA5 LRAA not previously selected as a 40 CFR 141, Subpart V monitoring location.</li> </ul> </li> </ul> <p>Verify that, if the facility is required to monitor at more than eight locations, the protocol is repeated as necessary.</p> <p>Verify that, if the facility does not have existing 40 CFR 141, Subpart L compliance monitoring results or if the facility does not have enough existing 40 CFR 141, Subpart L compliance monitoring results, the facility repeats the protocol, skipping the provisions for existing 40 CFR 141, Subpart L average residence time compliance monitoring as necessary, until the facility has identified the required total number of monitoring locations.</p> <p>(NOTE: Other locations may be recommended if the facility includes a rationale for selecting other locations. If the State approves the alternate locations, the facility must monitor at these locations to determine compliance under 40 CFR 141 Subpart V [see checklist items WQ.77.14.US through WQ.77.19.US and WQ.78.1.US].)</p>

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<p><b>WQ.77.14.US.</b> NTNC water systems using a primary or residual disinfectant other than ultraviolet light or delivering water that has been treated with a primary or residual disinfectant other than ultraviolet light must meet the Stage 2 disinfection byproducts requirements according to a specific schedule (40 CFR 141.620) [Added April 2006].</p>	<p>Verify that the recommended schedule includes 40 CFR 141, Subpart V monitoring during the peak historical month for TTHM and HAA5 concentration, unless the State approves another month.</p> <p>(NOTE: Once the facility has identified the peak historical month, and if the facility is required to conduct routine monitoring at least quarterly, 40 CFR 141, Subpart V compliance monitoring must be schedules at a regular frequency of every 90 days or fewer.)</p> <p>(NOTE: The regulations in 40 CFR 141, Subpart V [40 CFR 141.620 through 141.629, see checklist items WQ.77.14.US through WQ.77.19.US and WQ.78.1.US] establish monitoring and other requirements for achieving compliance with MCLs based on locational running annual averages (LRAA) for total trihalomethanes [TTHM] and haloacetic acids [five] [HAA5], and for achieving compliance with maximum residual disinfectant residuals for chlorine and chloramine for certain consecutive systems. These are also known as the Stage 2 Disinfection Byproducts Requirements.)</p> <p>Verify that the facility complies with the Stage 2 disinfection byproducts requirements according to the following schedule:</p> <ul style="list-style-type: none"> <li>– for systems that are not part of a combined distribution system and systems that serve the largest population in the combined distribution system: <ul style="list-style-type: none"> <li>– if the system serves greater than or equal to 100,000 people, comply with 40 CFR 141, Subpart V (see checklist items WQ.77.14.US through WQ.77.19.US and WQ.78.1.US) monitoring by 1 April 2012</li> <li>– if the system serves between 50,000 and 99,999 people, comply with 40 CFR 141, Subpart V monitoring by 1 October 2012</li> <li>– if the system serves between 10,000 and 49,999 people, comply with 40 CFR 141, Subpart V monitoring by 1 October 2013</li> <li>– if the system serves less than 10,000 people, comply with 40 CFR 141, Subpart V monitoring by 1 October 2013 if no Cryptosporidium monitoring is required under 40 CFR 141.701(a)(4), or 1 October 2014 if Cryptosporidium monitoring is required under 40 CFR 141.701(a)(4) or (a)(6)</li> </ul> </li> <li>– for other systems that are part of a combined distribution system: <ul style="list-style-type: none"> <li>– if the systems is a consecutive or wholesale system, comply with 40 CFR 141, Subpart V monitoring at the same time as the system with the earliest compliance date in the combined distribution system.</li> </ul> </li> </ul> <p>(NOTE: The State may grant up to an additional 24 mo for compliance with MCLs and operational evaluation levels if you require capital improvements to comply with an MCL.)</p> <p>Verify that, if the facility is required to conduct quarterly monitoring, it begins monitoring in the first full calendar quarter that includes the compliance date listed above.</p>

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	<p>Verify that, if the facility is required to conduct monitoring at a frequency that is less than quarterly, the facility begins monitoring in the calendar month recommended in the IDSE report prepared under 40 CFR 141.601 (see checklist item WQ.77.10.US.) or 40 CFR 141.602 (see checklist item WQ.77.11.US) or the calendar month identified in the 40 CFR 141, Subpart V monitoring plan (see checklist items WQ.77.14.US through WQ.77.19.US and WQ.78.1.US) developed under 40 CFR 141.622 (see checklist item WQ.40.24.US) no later than 12 mo after the compliance date in this table.</p> <p>Verify that, if the facility is required to conduct quarterly monitoring, the facility makes compliance calculations at the end of the fourth calendar quarter that follows the compliance date and at the end of each subsequent quarter (or earlier if the LRAA calculated based on fewer than four quarters of data would cause the MCL to be exceeded regardless of the monitoring results of subsequent quarters).</p> <p>Verify that, if the facility is required to conduct monitoring at a frequency that is less than quarterly, the facility makes compliance calculations beginning with the first compliance sample taken after the compliance date.</p> <p>(NOTE: The State may determine that the combined distribution system does not include certain consecutive systems based on factors such as receiving water from a wholesale system only on an emergency basis or receiving only a small percentage and small volume of water from a wholesale system. The State may also determine that the combined distribution system does not include certain wholesale systems based on factors such as delivering water to a consecutive system only on an emergency basis or delivering only a small percentage and small volume of water to a consecutive system.)</p> <p>Verify that systems which are required to monitor quarterly and comply with the MCLs in 40 CFR 141.64(b)(2) (see checklist item WQ.76.2.US) calculate LRAAs for TTHM and HAA5 using collected monitoring results and determine that each LRAA does not exceed the MCL.</p> <p>(NOTE: If the facility fails to complete four consecutive quarters of monitoring, the facility must calculate compliance with the MCL based on the average of the available data from the most recent four quarters. If the facility takes more than one sample per quarter at a monitoring location, the facility averages all samples taken in the quarter at that location to determine a quarterly average to be used in the LRAA calculation.)</p> <p>Verify that systems which are required to monitor quarterly and comply with the MCLs in 40 CFR 141.64(b)(2) (see checklist item WQ.76.3.US) determine that each sample taken is less than the MCL.</p> <p>(NOTE: If any sample exceeds the MCL, the facility must comply with the requirements of 40 CFR 141.625 (see checklist item WQ.77.17.US). If no sample</p>

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<p><b>WQ.77.15.US.</b> NTNC water systems using a primary or residual disinfectant other than ultraviolet light or delivering water that has been treated with a primary or residual disinfectant other than ultraviolet light must meet the Stage 2 disinfection byproducts monitoring requirements (40 CFR 141.621, 141.623, and 141.627) [Added April 2006].</p>	<p>exceeds the MCL, the sample result for each monitoring location is considered the LRAA for that monitoring location.)</p> <p>(NOTE: The facility is in violation of the monitoring requirements for each quarter that a monitoring result would be used in calculating in LRAA if they fail to monitor.)</p> <p>Verify that if the facility submitted an IDSE report, the facility began monitoring at the locations and months recommended in the submitted IDSE report following the schedule in 40 CFR 141.620(c) (see checklist item WQ.40.22.US), unless the State requires other locations or additional locations after its review.</p> <p>Verify that if the facility submitted a 40/30 certification or the facility qualified for a very small system waiver under 40 CFR 141.604 (see checklist item WQ.40.18.US and WQ.40.19.US) the facility monitors at the location(s) and dates identified in the facility monitoring plan.</p> <p>Verify that the facility monitors at no fewer than the number of locations identified in Table 1 of Appendix 13-9c.</p> <p>(NOTE: If the facility is an undisinfected system that begins using a disinfectant other than UV light after the dates for complying with the IDSE requirements [see checklist item WQ.40.18.US], the facility must consult with the State to identify compliance monitoring locations and develop a monitoring plan under 40 CFR 141.622 [see checklist item WQ.77.16.US] that includes those monitoring locations.)</p> <p>Verify that the facility uses an approved method listed in 40 CFR 141.131 (see checklist item number WQ.30.4.US, WQ.65.3.US through WQ.65.5.US, and WQ.77.9.US) for TTHM and HAA5 analyses for the Stage 2 disinfection byproducts monitoring.</p> <p>Verify that the facility does not reduce monitoring to the level specified in Appendix 13-9c Table 2 unless the LRAA is less than or equal to 0.040 mg/L for TTHM and less than or equal to 0.030 mg/L for HAA5 at all monitoring locations.</p> <p>(NOTE: Only data collected under 40 CFR 141, Subpart V or 40 CFR 141, Subpart L qualifies for reduced monitoring. In addition, the source water annual average TOC level, before any treatment, must be less than or equal to 4.0 mg/L at each treatment plant treating surface water or ground water under the direct influence of surface water, based on monitoring conducted under either 40 CFR 141.132(b)(1)(iii) or 141.132(d) [(see checklist item number WQ.65.3.US through WQ.65.5.US and WQ.77.9.US].)</p> <p>(NOTE: The facility may remain on reduced monitoring as long as the TTHM LRAA is less than or equal to 0.040 mg/L and the HAA5 LRAA is less than or equal to 0.030 mg/L at each monitoring location (for systems with quarterly</p>

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<p><b>WQ.77.16.US.</b> NTNC water systems using a primary or residual disinfectant other than ultraviolet light or delivering water that has been treated with a primary or residual disinfectant other than ultraviolet light must develop a Subpart V monitoring plan (40</p>	<p>reduced monitoring) or each TTHM sample is less than or equal to 0.060 mg/L and each HAA5 sample is less than or equal to 0.045 mg/L (for systems with annual or less frequent monitoring).)</p> <p>(NOTE: The facility may remain on reduced monitoring after the dates identified in WQ.40.22.US for compliance only if the facility qualifies for a 40/30 certification under 40 CFR 141.603 (see checklist item WQ.40.20.US) or have received a very small system waiver under 40 CFR 141.604 (see checklist items WQ.40.18.US and WQ.40.19.US), plus the facility meets the reduced monitoring criteria outlined in this checklist item, and the facility does not change or add monitoring locations from those used for compliance monitoring under 40 CFR 141, Subpart L (see checklist items WQ.30.4.US, WQ.65.3.US through WQ.65.5.US, and WQ.77.9.US). If the monitoring locations under 40 CFR 141, Subpart V differ from the monitoring locations under 40 CFR 141, Subpart L, the facility may not remain on reduced monitoring after the dates identified in WQ.40.22.US.</p> <p>Verify that the source water annual average TOC level, before any treatment, is less than or equal to 4.0 mg/L at each treatment plant treating surface water or ground water under the direct influence of surface water, based on monitoring conducted under either 40 CFR 141.132(b)(1)(iii) or 40 CFR 141.132(d) (see checklist item number WQ.65.3.US through WQ.65.5.US and WQ.77.9.US).</p> <p>Verify that the facility resumes routine monitoring as outlined in this checklist item if:</p> <ul style="list-style-type: none"> <li>– the LRAA based on quarterly monitoring at any monitoring location exceeds either 0.040 mg/L for TTHM or 0.030 mg/L for HAA5</li> <li>– the annual (or less frequent) sample at any location exceeds either 0.060 mg/L for TTHM or 0.045 mg/L for HAA5</li> <li>– if the source water annual average TOC level, before any treatment, is greater than 4.0 mg/L at any treatment plant treating surface water or ground water under the direct influence of surface water.</li> </ul> <p>(NOTE: The State may return the system to routine monitoring at the State's discretion.)</p> <p>Verify that the facility develops and implements a monitoring plan to be kept on file for State and public review.</p> <p>Verify that the monitoring plan contains the following elements and is completed no later than the date the facility conducts the initial monitoring under 40 CFR 141, Subpart V (see checklist items WQ.77.14.US through WQ.77.19.US and WQ.78.1.US):</p> <ul style="list-style-type: none"> <li>– monitoring locations</li> <li>– monitoring dates</li> </ul>

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<p>CFR 141.622) [Added April 2006].</p>	<ul style="list-style-type: none"> <li>– compliance calculation procedures</li> <li>– monitoring plans for any other systems in the combined distribution system if the State has reduced monitoring requirements.</li> </ul> <p>(NOTE: If the facility was not required to submit an IDSE report under either 40 CFR 141.601 or 141.602 (see checklist items WQ.77.10.US and WQ.77.11.US), and the facility does not have sufficient 40 CFR 141, Subpart L monitoring locations (see checklist items WQ.30.4.US, WQ.65.3.US through WQ.65.5.US, and WQ.77.9.US) to identify the required number of 40 CFR 141, Subpart V compliance monitoring locations indicated in 40 CFR 141.605(b) (see checklist item WQ.77.13.US), the facility must identify additional locations by alternating selection of locations representing high TTHM levels and high HAA5 levels until the required number of compliance monitoring locations have been identified. The facility must also provide the rationale for identifying the locations as having high levels of TTHM or HAA5.)</p> <p>(NOTE: If the facility has more 40 CFR 141, Subpart L monitoring locations (see checklist items WQ.30.4.US and WQ.40.15.US through WQ.40.17.US) than required for 40 CFR 141, Subpart V compliance monitoring in 40 CFR 141.605(b) (see checklist item WQ.77.13.US), the facility must identify which locations they will use for 40 CFR 141, Subpart V compliance monitoring by alternating selection of locations representing high TTHM levels and high HAA5 levels until the required number of 40 CFR 141, Subpart V compliance monitoring locations have been identified.)</p> <p>Verify that, if the facility is a subpart H system serving &gt; 3,300 people, the facility submits a copy of their monitoring plan to the State prior to the date they conduct the initial monitoring under 40 CFR 141, Subpart V, unless the facility's submitted IDSE report contains all the required information.</p> <p>(NOTE: The facility may revise their monitoring plan to reflect changes in treatment, distribution system operations and layout (including new service areas), or other factors that may affect TTHM or HAA5 formation, or for State-approved reasons, after consultation with the State regarding the need for changes and the appropriateness of changes.)</p> <p>Verify that, if in the process of revising the monitoring plan, the facility changes monitoring locations, the facility replaces existing compliance monitoring locations with the lowest LRAA with new locations that reflect the current distribution system locations with expected high TTHM or HAA5 levels.</p> <p>(NOTE: The State may also require modifications in the monitoring plan.)</p> <p>Verify that, if the facility is a subpart H system serving &gt; 3,300 people, the facility submitted a copy of the modified monitoring plan to the State prior to the date the facility is required to comply with the revised monitoring plan.</p>

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<p><b>WQ.77.17.US.</b> NTNC water systems using a primary or residual disinfectant other than ultraviolet light or delivering water that has been treated with a primary or residual disinfectant other than ultraviolet light must increase monitoring under certain conditions (40 CFR 141.625 and 141.628) [Added April 2006].</p>	<p>Verify that, if the facility is required to monitor at a particular location annually or less frequently than annually under 40 CFR 141.621 or 40 CFR 141.623 (see checklist items WQ.77.15.US), the facility increases monitoring to dual sample sets once per quarter (taken every 90 days) at all locations if a TTHM sample is greater than 0.080 mg/L or a HAA5 sample is greater than 0.060 mg/L at any location.</p> <p>(NOTE: The facility is in violation of the MCL when the LRAA exceeds the 40 CFR 141, Subpart V MCLs in 40 CFR 141.64(b)(2) (see checklist item WQ.76.3.US), calculated based on four consecutive quarters of monitoring (or the LRAA calculated based on fewer than four quarters of data if the MCL would be exceeded regardless of the monitoring results of subsequent quarters). The facility is in violation of the monitoring requirements for each quarter that a monitoring result would be used in calculating an LRAA if the facility fails to monitor.)</p> <p>(NOTE: The facility may return to routine monitoring once it has conducted increased monitoring for at least four consecutive quarters and the LRAA for every monitoring location is less than or equal to 0.060 mg/L for TTHM and less than or equal to 0.045 mg/L for HAA5.)</p> <p>(NOTE: If the facility was on increased monitoring under 40 CFR 141.132(b)(1), the facility must remain on increased monitoring until it qualifies for a return to routine monitoring as described in this checklist item. The facility must conduct the increased monitoring in this checklist item at the monitoring locations in the monitoring plan developed under 40 CFR 141.622 (see checklist item WQ.77.16.US) beginning at the date identified for compliance with 40 CFR 141, Subpart V (see checklist items WQ.77.14.US through WQ.77.19.US and WQ.78.1.US) and remain on increased monitoring until the facility qualifies for a return to routine monitoring as described in this checklist item.)</p>
<p><b>WQ.77.18.US.</b> NTNC water systems using a primary or residual disinfectant other than ultraviolet light or delivering water that has been treated with a primary or residual disinfectant other than ultraviolet light must conduct an operational evaluation under certain conditions (40 CFR 141.626) [Added April 2006].</p>	<p>(NOTE: The facility has exceeded the operational evaluation level at any monitoring location where the sum of the two previous quarters' TTHM results plus twice the current quarter's TTHM result, divided by 4 to determine an average, exceeds 0.080 mg/L, or where the sum of the two previous quarters' HAA5 results plus twice the current quarter's HAA5 result, divided by 4 to determine an average, exceeds 0.060 mg/L.)</p> <p>Verify that, if the facility exceeds the operational evaluation level, the facility conducts an operational evaluation and submits a written report of the evaluation to the State no later than 90 days after being notified of the analytical result that causes the facility to exceed the operational evaluation level.</p> <p>Verify that the written report is made available to the public upon request.</p> <p>Verify that the operational evaluation includes an examination of system treatment and distribution operational practices, including storage tank operations, excess storage capacity, distribution system flushing, changes in sources or source water</p>

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<p><b>WQ.77.19.US.</b> A NTNC water system that is a consecutive system that does not add a disinfectant but delivers water treated with a primary or residual disinfectant other than ultraviolet light must meet specific monitoring requirements (40 CFR 141.624) [Added April 2006].</p>	<p>quality, and treatment changes or problems that may contribute to TTHM and HAA5 formation and what steps could be considered to minimize future exceedances.</p> <p>(NOTE: The facility may request and the State may allow the facility to limit the scope of the evaluation if the facility is able to identify the cause of the operational evaluation level exceedance.)</p> <p>(NOTE: The request to limit the scope of the evaluation does not extend the schedule submitting the written report. The State must approve this limited scope of evaluation in writing and the facility must keep that approval with the completed report.)</p> <p>Verify that, if the facility is a consecutive system that does not add a disinfectant but delivers water that has been treated with a primary or residual disinfectant other than ultraviolet light, the facility meets the following requirements:</p> <ul style="list-style-type: none"> <li>– analytical and monitoring requirements for chlorine and chloramines in 40 CFR 141.131(c) and 141.132(c)(1) (see checklist item number WQ.65.3.US through WQ.65.5.US and WQ.77.9.US) the compliance requirements in 40 CFR 141.133(c)(1) beginning 1 April 2009, unless required earlier by the State</li> <li>– report monitoring results under 40 CFR 141.134(c) (see checklist item WQ.30.4.US).</li> </ul>

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<p><b>NONTRANSIENT NONCOMMUNITY (NTNC) WATER SYSTEMS</b></p> <p><b>WQ.78</b> <b>Lead and Copper</b></p> <p><b>WQ.78.1.US.</b> Facilities with NTNC water systems must notify their users about an exceedance of lead in drinking water systems (40 CFR 141.85(b)(1), 141.85(b)(4), 141.85(b)(5), 141.85(b)(6) and 141.90(f)) [Revised March 1995; Revised April 2000; Revised October 2007; Revised January 2008].</p>	<p>Verify that the NTNC delivers a consumer notice of lead tap water monitoring results to persons served by the water system at sites that are tested.</p> <p>Verify that a NTNC water system that exceeds the lead action level based on tap water samples collected in accordance with 40 CFR 141.86 delivers the public education materials contained in Appendix 13-7a.</p> <p>Verify that, for NTNC water systems serving a large proportion of non-English speaking consumers, as determined by the State, the public education materials contains information in the appropriate language(s) regarding the importance of the notice or contain a telephone number or address where persons served may contact the water system to obtain a translated copy of the public education materials or to request assistance in the appropriate language.</p> <p>Verify that, within 60 days after the end of the monitoring period in which the exceedance occurred (unless it already is repeating public education tasks), a NTNC water system delivers the public education materials specified Appendix 13-7a:</p> <ul style="list-style-type: none"> <li>– informational posters on lead in drinking water are posted in a public place or common area in each of the buildings served by the system informational pamphlets and/or brochures on lead in drinking water are distributed to each person served by the non-transient non-community water system.</li> <li>– for systems that are required to conduct monitoring annually or less frequently, the end of the monitoring period is September 30 of the calendar year in which the sampling occurs, or, if the State has established an alternate monitoring period, the last day of that period.</li> </ul> <p>(NOTE: The State may allow the system to utilize electronic transmission in lieu of or combined with printed materials as long as it achieves at least the same coverage.)</p> <p>Verify that a NTNC repeats the above notification tasks at least once during each calendar year in which the system exceeds the lead action level.</p> <p>(NOTE: The State can allow notification activities to extend beyond the 60-day requirement if needed for implementation purposes on a case-by-case basis; however, this extension must be approved in writing by the State in advance of the 60-day deadline.)</p>

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<p><b>WQ.78.2.US.</b> NTNC water systems are required to meet specific standards for lead and copper action levels and reporting requirements when these levels are exceeded (40 CFR 141.80(a)(1), 141.80(c), 141.85(c), 141.80(g), and 141.85(d)) <b>[Revised March 1995; Reviewed March 2000; Revised January 2008]</b>.</p>	<p>(NOTE: A water system may discontinue delivery of public education materials if the system has met the lead action level during the most recent six-month monitoring period. Such a system shall recommence public education if subsequently exceeds the lead action level during any monitoring period.)</p> <p>Verify that any NTNC water system subject to the public education requirements outlined in this checklist item, within ten days after the end of each period in which the system is required to perform public education, sends written documentation to the State that contains the following:</p> <ul style="list-style-type: none"> <li>– a demonstration that the system has delivered the public education materials that meet the required content requirements and the delivery requirements</li> <li>– a list of all the newspapers, radio stations, television stations, and facilities and organizations to which the system delivered public education materials during the period in which the system was required to perform public education tasks.</li> </ul> <p>(NOTE: Unless required by the State, a system that previously has submitted the information about newspapers, radio stations etc., need not resubmit the information as long as there have been no changes in the distribution list and the system certifies that the public education materials were distributed to the same list submitted previously.)</p> <p>Verify that, no later than 3 mo following the end of the monitoring period, each water system mails a sample copy of the consumer notification of tap results to the State along with a certification that the notification has been distributed in a manner consistent with the requirements of 40 CFR 141.85(d).</p> <p>(NOTE: See checklist item WQ.76.1.US for clarification on NTNC water systems.)</p> <p>Verify that the concentration of lead does not exceed 0.015 mg/L in more than 10 percent of tap water samples collected during any monitoring period.</p> <p>Verify that the concentration of copper does not exceed 1.3 mg/L in more than 10 percent of tap water samples collected during any monitoring period.</p> <p>Verify that a NTNC water system that fails to meet the lead action level on the basis of tap samples collected in accordance with 40 CFR 141.86 offers to sample the tap water of any customer who requests it.</p> <p>(NOTE: The system is not required to pay for collecting or analyzing the sample, nor is the system required to collect and analyze the sample itself.)</p> <p>(NOTE: See checklist item WQ.76.1.US for clarification on NTNC water systems.)</p> <p>Verify that the water system provides a consumer notice of lead tap water monitoring results to persons served at the sites (taps) that are tested.</p>

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<p><b>WQ.78.3.US.</b> NTNC water systems are required to install and operate optimal corrosion control (40 CFR 141.80(d) and 141.82) <b>[Revised March 1995; Reviewed March 2000]</b>.</p> <p><b>WQ.78.4.US.</b> NTNC systems that exceed the lead or copper action level are required to implement applicable source water treatment standards (40 CFR 141.80(e) and 141.83) <b>[Revised March 1995; Reviewed March 2000; Revised October 2007]</b>.</p>	<p>Verify that the NTNC water system provides a notice of the individual tap results from lead tap water monitoring carried out under the requirements of 40 CFR 141.86 to the persons served by the water system at the specific sampling site from which the sample was taken (e.g., the occupants of the residence where the tap was tested).</p> <p>Verify that a NTNC water system provides the consumer notice as soon as practical, but no later than 30 days after the system learns of the tap monitoring results.</p> <p>Verify that the consumer notice includes the results of lead tap water monitoring for the tap that was tested, an explanation of the health effects of lead, list steps consumers can take to reduce exposure to lead in drinking water and contact information for the water utility.</p> <p>Verify that the notice also provides the MCL goal and the action level for lead and the definitions for these two terms.</p> <p>Verify that the consumer notice is provided to persons served at the tap that was tested, either by mail or by another method approved by the State.</p> <p>(NOTE: For example, upon approval by the State, a non-transient non-community water system could post the results on a bulletin board in the facility to allow users to review the information. The system must provide the notice to customers at sample taps tested, including consumers who do not receive water bills.)</p> <p>Verify that the water system has corrosion control that minimizes the lead and copper concentrations at users' taps while insuring that the treatment does not cause the water system to violate any of the national primary drinking water standards.</p> <p>(NOTE: Please see 40 CFR 141.81 for design details for corrosion control systems in relationship to the size of the water system.)</p> <p>(NOTE: See checklist item WQ.76.1.US for clarification on NTNC water systems.)</p> <p>Verify that systems exceeding the lead or copper action level complete lead and copper source water monitoring and make a treatment recommendation to the State no later than 180 days after the end of the monitoring period during which the lead or copper action level was exceeded.</p> <p>Verify that, if the state requires the installation of source water treatment, the installation is done within 24 mo after the state's initial response.</p>

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<p><b>WQ.78.5.US.</b> Facilities with NTNC water systems exceeding the lead action level after implementation of corrosion control and source water treatment requirements are required to replace lead service lines (40 CFR 141.80(f) and 141.84) [Revised March 1995; Reviewed March 2000].</p> <p><b>WQ.78.6.US.</b> Monitoring for lead and copper at NTNC water systems is required to start on a specified date and be done at a specified number of sites according to the chart in Appendix 13-7 (40 CFR 141.86(a)(1) 141.86(a)(6) through 141.86(a)(8), 141.86(c), 141.86(d) through 141.86(g)) [Revised March 1995; Reviewed March 2000; Revised April 2000; Citation Revised January 2008].</p>	<p>Verify that follow-up tap water monitoring and source water monitoring is completed within 36 mo after the state's initial response.</p> <p>(NOTE: See checklist item WQ.76.1.US for clarification on NTNC water systems.)</p> <p>Verify that lead service line replacement, if required, is done according to the schedules and parameters outlined in 40 CFR 141.84.</p> <p>(NOTE: A system is not required to replace an individual lead service line if the lead concentration in all service line samples from that line is less than or equal to 0.015 mg/L.)</p> <p>(NOTE: Replacement of lead service lines can stop when the first draw samples that are collected meet the lead action levels during two consecutive monitoring periods and the system submits the results to the state.)</p> <p>(NOTE: See checklist item WQ.76.1.US for clarification on NTNC water systems.)</p> <p>Verify that water systems have completed a materials evaluation of its distribution system to identify a pool of targeted sampling sites and which is sufficiently large to ensure that the water system can collect the number of samples required.</p> <p>(NOTE: Sampling sites may not include point-of-use or point-of-entry treatment devices designed to remove inorganic contaminants.)</p> <p>(NOTE: See Appendix 13-7 for details on the required number of samples and when the sampling program is required to start.)</p> <p>Verify that selected sampling sites (tier 1 sampling sites) for NTNC water systems consist of buildings that:</p> <ul style="list-style-type: none"> <li>– contain copper pipes with lead solder installed after 1982 or contain lead pipes</li> <li>– are served by a lead service line.</li> </ul> <p>(NOTE: An NTNC water system with insufficient tier 1 sites that meet the targeting criteria shall complete its sampling pool with sampling sites that contain copper pipes with lead solder installed before 1983. If additional sites are needed to complete the sampling pool, the NTNC water system shall use representative sites throughout the distribution system. A representative site is a site in which the plumbing materials used at that site would be commonly found at other sites served by the water system.)</p> <p>Verify that any water system with a distribution system that contains lead service lines draws 50 percent of the samples from sites that contain lead pipes or copper pipes with lead solder, and 50 percent of the samples from sites served by a lead service line.</p>

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	<p>Verify that a water system that cannot identify a sufficient number of sampling sites served by a lead service line collects first-draw samples from all of the sites identified as being served by such lines.</p> <p>(NOTE: See the text of 40 CFR 141.86(b) for details of sample collection methods.)</p> <p>Verify that, for the initial tap sample, all large water systems monitor during two consecutive 6-mo periods.</p> <p>Verify that all small and medium-sized water systems monitor during each 6 mo period until:</p> <ul style="list-style-type: none"> <li>– the system exceeds the lead or copper action levels and is then required to implement corrosion control treatment</li> <li>– the system meets the lead and copper action levels during two consecutive 6-mo monitoring periods.</li> </ul> <p>(NOTE: A small or medium-sized water system that meets the lead and copper action levels during each of two consecutive 6-mo monitoring periods can reduce the frequency of sampling to once a year. If action levels are met during 3 consecutive years of monitoring, the frequency may be reduced to once every 3 yr.)</p> <p>Verify that, for monitoring after the installation of corrosion control and source water treatment, large systems with optimal corrosion control by 1 January 1997 monitor during two consecutive 6-mo periods by 1 January 1998.</p> <p>Verify that, for monitoring after the installation of corrosion control and source water treatment, small or medium-sized systems that install optimal corrosion control within 24 mo after being required to do so by the state, monitor during two consecutive 6-mo periods within 36 mo after being required to install optimal corrosion control treatment.</p> <p>Verify that, for monitoring after the installation of corrosion control and source water treatment required by the state, all systems that install state required systems monitor during two consecutive months within 36 mo after the initial state requirement.</p> <p>Verify that, after the state has specified water quality parameter values for optimal corrosion control, monitoring is done during each subsequent 6-mo monitoring period beginning when the state specified the optimal values.</p> <p>(NOTE: See the text of 40 CFR 141.86(d)(4) for information on when a water system can implement reduced monitoring.)</p>

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<p><b>WQ.78.7.US.</b> All large water systems and all small and medium size systems that exceed the lead or copper action level are required to monitor for water quality parameters in addition to lead and copper (40 CFR 141.87) [Revised March 1995; Reviewed March 2000; Citation Revised April 2007].</p> <p><b>WQ.78.8.US.</b> NTNC water systems, that fail to meet the lead or copper action levels, are required to meet specific monitoring requirements (40 CFR 141.80(h) and 141.88) [Revised March 1995; Revised April 2000; Revised October 2007; Revised January 2008].</p>	<p>(NOTE: Small water systems may be able to obtain a waiver from the state.)</p> <p>(NOTE: See checklist item WQ.76.1.US for clarification on NTNC water systems.)</p> <p>Verify that monitoring for water quality parameters is done according to Appendix 13-8.</p> <p>(NOTE: See checklist item WQ.76.1.US for clarification on NTNC water systems.)</p> <p>Verify that groundwater systems that fail to meet the lead or copper action level on the basis of tap samples take a minimum of one sample at every entry point to the distribution system that is representative of each well after treatment (hereafter called a sampling point).</p> <p>Verify that the groundwater system takes one sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.</p> <p>Verify that surface water systems that fail to meet the lead or copper action level on the basis of tap samples take a minimum of one sample at every entry point to the distribution system after any application of treatment or in the distribution system at a point that is representative of each source after treatment (a sampling point).</p> <p>Verify that the surface water system takes each sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.</p> <p>(NOTE: For the purposes of this checklist item, surface water systems include systems with a combination of surface and ground sources.)</p> <p>Verify that, if a system draws water from more than one source and the sources are combined before distribution, the system samples at an entry point to the distribution system during periods of normal operating conditions (i.e., when water is representative of all sources being used).</p> <p>(NOTE: The state may reduce the total number of samples that must be analyzed by allowing the use of compositing.)</p>

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	<p>Verify that, if compositing of samples is allowed, it is done by certified laboratory personnel.</p> <p>(NOTE: Composite samples from a maximum of five samples are allowed, provided that, if the lead concentration in the composite sample is greater than or equal to 0.001 mg/L or the copper concentration is greater than or equal to 0.160 mg/L, then either:</p> <ul style="list-style-type: none"> <li>– a follow-up sample shall be taken and analyzed within 14 days at each sampling point included in the composite; or</li> <li>– if duplicates of or sufficient quantities from the original samples from each sampling point used in the composite are available, the system may use these instead of resampling.)</li> </ul> <p>(NOTE: Where the results of sampling indicate an exceedance of maximum permissible source water levels, the state may require that one additional sample be taken as soon as possible after the initial sample was taken (but not to exceed 2 weeks) at the same sampling point.)</p> <p>Verify that systems that exceed lead or copper action levels at the tap collect one source water sample from each entry point to the distribution system within 6 mo after the exceedance.</p> <p>Verify that any system which exceeds the lead or copper action level at the tap collects one source water sample from each entry point to the distribution system no later than 6 mo after the end of the monitoring period during which the lead or copper action level was exceeded.</p> <p>(NOTE: For monitoring periods that are annual or less frequent, the end of the monitoring period is September 30 of the calendar year in which the sampling occurs, or if the State has established an alternate monitoring period, the last day of that period.)</p> <p>Verify that the system monitors as follows when the state specifies maximum permissible source water levels:</p> <ul style="list-style-type: none"> <li>– once during the 3-yr compliance period for water systems using only groundwater</li> <li>– annually for water systems using surface water or a combination of surface and groundwater.</li> </ul> <p>(NOTE: Triennial samples shall be collected every third calendar year.)</p> <p>(NOTE: A water system using only ground water may reduce the monitoring frequency for lead and copper in source water to once during each 9-yr compliance cycle provided that the samples are collected no later than every ninth calendar year and if the system meets one of the following criteria:</p>

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<p><b>WQ.78.9.US.</b> In reference to lead and copper in water systems, NTNC water systems are required to report specific information to the state (40 CFR 141.90(a) through 141.90(e), 141.90(g), and 141.90(h)) <b>[Revised March 1995; Revised April 2000; Revised October 2007; Revised January 2008]</b>.</p>	<ul style="list-style-type: none"> <li>– the system demonstrates that finished drinking water entering the distribution system has been maintained below the maximum permissible lead and copper concentrations specified by the state during at least three consecutive compliance periods</li> <li>– the state has determined that source water treatment is not needed and the system demonstrates that, during at least three consecutive compliance periods in which sampling was conducted, the concentration of lead in source water was less than or equal to 0.005 mg/L and the concentration of copper in source water was less than or equal to 0.65 mg/L.)</li> </ul> <p>(NOTE: A water system using surface water (or a combination of surface water and ground water) may reduce the monitoring frequency to once during each 9-yr compliance cycle provided that the samples are collected no later than every ninth calendar year and the system meets one of the following criteria:</p> <ul style="list-style-type: none"> <li>– the system demonstrates that finished drinking water entering the distribution system has been maintained below the maximum permissible lead and copper concentrations specified by the state for at least three consecutive years</li> <li>– the state has determined that source water treatment is not needed and the system demonstrates that, during at least three consecutive years, the concentration of lead in source water was less than or equal to 0.005 mg/L and the concentration of copper in source water was less than or equal to 0.65 mg/L.)</li> </ul> <p>(NOTE: See checklist item WQ.76.1.US for clarification on NTNC water systems.)</p> <p>Verify that a water system reports the following information for all tap water samples specified in 40 CFR 141.86 (see checklist item WQ.78.6.US.) and for all water quality parameter samples specified in 40 CFR 141.87 (see checklist item WQ.78.7.US.) within the first 10 days following the end of each applicable monitoring period (i.e., every 6 mo, annually, every 3 yr, or every 9 yr):</p> <ul style="list-style-type: none"> <li>– the results of all tap samples for lead and copper, including the location of each site and the criteria under which the site was selected for the system’s sampling pool</li> <li>– documentation for each tap water lead or copper sample for which the water system requests invalidation</li> <li>– the 90th percentile lead and copper concentrations measured from among all lead and copper tap water samples collected during each monitoring period, unless the state calculates the system’s 90th percentile lead and copper levels</li> <li>– any site that was not sampled during previous monitoring periods and why the sampling sites have changed</li> <li>– the results of all tap samples for pH, and where applicable, alkalinity, calcium, conductivity, temperature, and orthophosphate or silica</li> <li>– the results of all water samples collected at the entry points to the distribution system for applicable water quality parameters under 40 CFR 141.87(b) through 40 CFR 141.87(e)</li> </ul>

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	<p>– the results of all water quality parameter samples collected during each 6-mo monitoring period within the first 10 days following the end of the monitoring period unless the state has specified a more frequent reporting requirement.</p> <p>(NOTE: For monitoring periods with a duration less than 6 mo, the end of the monitoring period is the last date samples can be collected during that period as specified in 40 CFR 141.86 and 141.87.)</p> <p>Verify that, if the system is a facility, such as a prison or hospital, where the population served is not capable of or is prevented from making improvements to plumbing or installing point-of-use devices, or the system provides water as part of the cost of services provided and does not separately charge for water consumption, one of the following is required when the system does not have enough taps that can provide first-draw samples:</p> <ul style="list-style-type: none"> <li>– provide written documentation to the state identifying standing times and locations for enough non-first-draw samples to make up its sampling pool by the start of the first applicable monitoring period that commences after 11 April 2000, unless the state has waived prior state approval of non-first-draw sample sites selected by the system</li> <li>– if the state has waived prior approval of non-first-draw sample sites selected by the system, identify, in writing, each site that did not meet the 6-h minimum standing time and the length of standing time for that particular substitute sample collected and include this information with the lead and copper tap sample results required to be submitted.</li> </ul> <p>Verify that, at a time specified by the State, or if no specific time is designated by the State, then as early as possible prior to the addition of a new source or any long-term change in water treatment, a water system deemed to have optimized corrosion control, a water system subject to reduced monitoring, or a water system subject to a monitoring waiver, submits written documentation to the State describing the change or addition.</p> <p>(NOTE: The State must review and approve the addition of a new source or long-term change in treatment before it is implemented by the water system. Examples of long-term treatment changes include the addition of a new treatment process or modification of an existing treatment process. Examples of modifications include switching secondary disinfectants, switching coagulants (e.g., alum to ferric chloride), and switching corrosion inhibitor products (e.g., orthophosphate to blended phosphate). Long-term changes can include dose changes to existing chemicals if the system is planning long-term changes to its finished water pH or residual inhibitor concentration. Long-term treatment changes would not include chemical dose fluctuations associated with daily raw water quality changes.)</p> <p>Verify that any small system applying for a monitoring waiver, or subject to a waiver, provides the following information to the state in writing by the specified deadline:</p>

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<p><b>WQ.78.10.US.</b> All NTNC systems subject to the lead and copper requirements are required to retain onsite all the</p>	<ul style="list-style-type: none"> <li>– by the start of the first applicable monitoring period, any small water system applying for a monitoring waiver provides the documentation required to demonstrate that it meets the waiver criteria</li> <li>– no later than 9 yr after the monitoring previously conducted, each small system desiring to maintain its monitoring waiver provides a demonstration that the 90th percentile lead level does not exceed 0.005 mg/L and the 90th percentile copper level does not exceed 0.65 mg/L</li> <li>– no later than 60 days after it becomes aware that it is no longer free of lead-containing and/or copper-containing material, as appropriate, each small system with a monitoring waiver provides written notification to the state, setting forth the circumstances resulting in the lead-containing and/or copper-containing materials being introduced into the system and what corrective action, if any, the system plans to remove these materials</li> <li>– by 10 October 2000, any small system with a waiver granted prior to 11 April 2000 and that has not previously met the monitoring criteria for a waiver issuance provides a demonstration that the 90th percentile lead level does not exceed 0.005 mg/L and the 90th percentile copper level does not exceed 0.65 mg/L.</li> </ul> <p>Verify that each groundwater system that limits water quality parameter monitoring to a subset of entry points provides, by the commencement of such monitoring, written correspondence to the state that identifies the selected entry points and includes information sufficient to demonstrate that the sites are representative of water quality and treatment conditions throughout the system.</p> <p>Verify that water systems report the sampling results for all source water samples collected according to 40 CFR 141.88 (see checklist item WQ.78.8.US.) within the first 10 days following the end of each source water monitoring period.</p> <p>Verify that, with the exception of the first round of source water sampling, the system specifies any site that was not sampled during previous monitoring periods, and includes an explanation of why the sampling point has changed.</p> <p>Verify that the following reports are submitted as applicable:</p> <ul style="list-style-type: none"> <li>– corrosion control treatment</li> <li>– source water treatment</li> <li>– lead service line replacement</li> <li>– demonstration of public education program.</li> </ul> <p>(NOTE: See checklist item WQ.76.1.US for clarification on NTNC water systems.)</p> <p>Verify that records are kept onsite for 12 yr.</p> <p>(NOTE: See checklist item WQ.76.1.US for clarification on NTNC water systems.)</p>

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original records of sampling data, analysis, reports, surveys, letters, evaluations, state determinations, and any other pertinent documents for at least 12 yr (40 CFR 141.80(j) and 141.91) <b>[Revised March 1995; Reviewed March 2000]</b> .	



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<p><b>NONTRANSIENT NONCOMMUNITY (NTNC) WATER SYSTEM</b></p> <p><b>WQ.79</b>  <b>Notification and Reporting Requirements</b></p> <p><b>WQ.79.1.US.</b> NTNC water systems using a primary or residual disinfectant other than ultraviolet light or delivering water that has been treated with a primary or residual disinfectant other than ultraviolet light must meet reporting and recordkeeping requirement (40 CFR 141.629) [Added April 2006].</p>	<p>Verify that the facility reports the following information for each monitoring location to the State within 10 days of the end of any quarter in which monitoring is required:</p> <ul style="list-style-type: none"> <li>– number of samples taken during the last quarter</li> <li>– date and results of each sample taken during the last quarter</li> <li>– arithmetic average of quarterly results for the last four quarters for each monitoring location (LRAA), beginning at the end of the fourth calendar quarter that follows the compliance date and at the end of each subsequent quarter</li> <li>– whether, based on 40 CFR 141.64(b)(2) and 40 CFR 141, Subpart V (see checklist items WQ.77.14.US through WQ.77.19.US and WQ.78.1.US), the MCL was violated at any monitoring location</li> <li>– any operational evaluation levels that were exceeded during the quarter and, if so, the location and date, and the calculated TTHM and HAA5 levels.</li> </ul> <p>(NOTE: If the LRAA calculated based on fewer than four quarters of data would cause the MCL to be exceeded regardless of the monitoring results of subsequent quarters, the facility must report this information to the State as part of the first report due following the compliance date or anytime thereafter that this determination is made. If the facility is required to conduct monitoring at a frequency that is less than quarterly, the facility must make compliance calculations beginning with the first compliance sample taken after the compliance date, unless you are required to conduct increased monitoring under 40 CFR 141.625 [see checklist item WQ.77.17.US].)</p> <p>Verify that, if the facility is a subpart H system seeking to qualify for or remain on reduced TTHM/HAA5 monitoring, the facility reports the following source water TOC information for each treatment plant that treats surface water or ground water under the direct influence of surface water to the State within 10 days of the end of any quarter in which monitoring is required:</p> <ul style="list-style-type: none"> <li>– the number of source water TOC samples taken each month during last quarter</li> <li>– the date and result of each sample taken during last quarter</li> <li>– the quarterly average of monthly samples taken during last quarter or the result of the quarterly sample</li> <li>– the running annual average (RAA) of quarterly averages from the past four quarters</li> </ul>

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<p><b>WQ.79.2.US.</b> NTNC water systems required to perform monitoring for unregulated contaminants are required to notify persons served by the system of the availability of sampling results (40 CFR 141.207) <b>[Added July 2012]</b>.</p>	<p>– whether the RAA exceeded 4.0 mg/L.</p> <p>(NOTE: The State may choose to perform calculations and determine whether the MCL was exceeded or the system is eligible for reduced monitoring in lieu of having the system report that information.)</p> <p>Verify that the facility retains any 40 CFR 141, Subpart V monitoring plans and monitoring results (see checklist items WQ.77.14.US through WQ.77.19.US and WQ.78.1.US) as required by 40 CFR 141.33 (see checklist items WQ.10.1.US, WQ.10.2.US, and WQ.30.1.US).</p> <p>Verify that the owner or operator of a NTNC water system required to monitor for unregulated contaminants notifies persons served by the system of the availability of the results of such sampling no later than 12 mo after the monitoring results are known.</p> <p>Verify that the form and manner of the public notice follows the requirements for a Tier 3 public notice prescribed in 40 CFR 141.204(c), 141.204(d)(1), and 141.204(d)(3) (see checklist item WQ.30.9.US).</p> <p>Verify that the notice also identifies a person and provides the telephone number to contact for information on the monitoring results.</p>

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<p><b>WQ.80</b></p> <p><b>TRANSIENT NONCOMMUNITY WATER SYSTEMS</b></p> <p><b>WQ.80.1.US.</b> Transient noncommunity water systems are required to conduct monitoring to determine compliance for nitrate and nitrite levels according to specific parameters (40 CFR 141.23(d) through 141.23(f)) [March 1995; Revised March 2000; Revised July 2000].</p> <p><b>WQ.80.2.US.</b> Transient noncommunity water systems are required to meet specific MRDLs related to disinfection (40 CFR 141.65(a), and 141.65(b)(2)) [Added January 1999; Revised</p>	<p>Verify that transient noncommunity water systems monitor annually for nitrate starting 1 January 1993.</p> <p>Verify that, when the MCL for nitrate is exceeded, transient noncommunity water systems do repeat monitoring quarterly for at least 1 yr following any one sample in which the concentration exceeds more than 50 percent of the MCL.</p> <p>Verify that transient noncommunity water systems take one sample at each sampling point in the compliance period beginning 1 January 1993 and ending 31 December 1995 for nitrite.</p> <p>(NOTE: After the initial sample, systems where an analytical result for nitrite is less than 50 percent of the MCL will monitor at the frequency specified by the state.)</p> <p>Verify that transient noncommunity systems repeat monitoring for nitrites quarterly for at least 1 yr after any one sample is greater than 50 percent of the MCL.</p> <p>Verify that systems, which are monitoring annually for nitrites, take each subsequent sample during the quarters that previously resulted in the highest analytical result.</p> <p>Verify that, when nitrate or nitrite samples indicate an exceedence of the MCL, a confirmation sample is taken within 24 h of receipt of the results of the first sample</p> <p>(NOTE: If the system is unable to take a confirmation sample within 24 h, it must notify consumers of the exceedence and meet other Tier 1 public notification requirements and take confirmation samples within 2 weeks.)</p> <p>(NOTE: A transient water system must also meet the requirements for a public water system and for noncommunity water systems. It is defined as a noncommunity water system that does not regularly serve at least 25 of the same person over 6 mo per year.)</p> <p>Verify that transient noncommunity water systems meet the MRDLs outlined in Appendix 13-9.</p> <p>(NOTE: The MCL standards in Appendix 13-9 are not applicable.)</p> <p>(NOTE: This requirement applies to Subpart H systems serving 10,000 or more persons and using chlorine dioxide as a disinfectant or oxidant beginning 1 January 2002. Subpart H systems serving fewer than 10,000 persons and using chlorine</p>

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<p><b>March 2000; Revised January 2001; Revised April 2001].</b></p> <p><b>WQ.80.3.US.</b> Transient noncommunity water systems must allow the collection of samples for unregulated contaminants in certain situations (40 CFR 141.40(a)(1)) <b>[Added July 2012].</b></p>	<p>dioxide as a disinfectant or oxidant and systems using only groundwater not under the direct influence of surface water and using chlorine dioxide as a disinfectant or oxidant must comply with the MRDL beginning 1 January 2004.)</p> <p>(NOTE: A transient water system must also meet the requirements for a public water system and for noncommunity water systems. It is defined as a noncommunity water system that does not regularly serve at least 25 of the same person over 6 mo per year.)</p> <p>Verify that, if the NTNC is notified by the State or EPA, they must permit the State, EPA or their contractors to collect samples for the contaminants specified on List 3 of Table 1 in Appendix 13-5.</p>

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<b>WQ.95</b>  <b>SOLE SOURCE AQUIFER</b>  <b>WQ.95.1.US.</b> Projects that may affect the recharge zone or stream flow source zone of a designated sole source aquifer are regulated (40 CFR 149.103 and 149.104) [ <b>Revised May 1996</b> ].	<p>(NOTE: Currently the only Federally designated sole source aquifers are the Edwards Aquifer in the San Antonio, TX area and the Buried Valley Aquifer System in southwest Ohio.)</p> <p>Determine if the facility is located near a designated sole source aquifer.</p> <p>Determine if the facility uses water from the aquifer, what impact water use may have on the aquifer, and if the water system requires additional treatment to protect the aquifer.</p> <p>Verify that the facility maintains a list of projects for which environmental impact statements will be prepared.</p> <p>Verify that if any projects may potentially cause direct or indirect contamination through its recharge zone a petition has been submitted to the USEPA regional administrator.</p>



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<b>UNDERGROUND INJECTION CONTROL WELLS</b>  <b>WQ.109</b> <b>All Wells</b>  <b>WQ.109.1.US.</b> Unless authorized by rule or permit, no underground injection is allowed (40 CFR 144.1(a), 144.1(b), 144.11, 144.12, 144.21, 144.22, 144.23, 144.24, and 144.84(c)) [Added July 2003; Revised October 2003].	<p>(NOTE: These regulations apply to the UIC Program promulgated under Part C of the SDWA and, to the extent that they deal with hazardous waste, RCRA. The regulations in 40 CFR 144 also constitutes a part of the UIC program for states listed in 40 CFR 147 to be administered directly by USEPA.)</p> <p>Verify that any underground injection, except into a well authorized by rule or except as authorized by permit issued under the UIC program, is prohibited.</p> <p>(NOTE: An existing Class I, II (except enhanced recovery and hydrocarbon storage), and III injection well is authorized by rule if the owner or operator injects into the existing well within 1 yr after the date at which a UIC program authorized under the SDWA becomes effective for the first time or inventories the well pursuant to the requirements of 40 CFR 144.26 [see checklist item WQ.109.3.US.]. Well authorization expires upon:</p> <ul style="list-style-type: none"> <li>– the effective date of a permit</li> <li>– after plugging and abandonment in accordance with an approved plugging and abandonment plan</li> <li>– upon submission of a plugging and abandonment report</li> <li>– upon conversion.)</li> </ul> <p>(NOTE: An existing Class II enhanced recovery or hydrocarbon storage injection well is authorized by rule for the life of the well or project, if the owner or operator injects into the existing well within 1 yr after the date which a UIC program authorized under the SDWA becomes effective for the first time or inventories the well pursuant to the requirements of 40 CFR 144.26 [see checklist item WQ.109.3.US.]. Well authorization expires upon:</p> <ul style="list-style-type: none"> <li>– the effective date of a permit</li> <li>– after plugging and abandonment in accordance with an approved plugging and abandonment plan</li> <li>– upon submission of a plugging and abandonment report</li> <li>– upon conversion.)</li> </ul> <p>(NOTE: Injection into existing Class IV wells is authorized for up to 6 mo after approval or promulgation of the UIC Program. Such wells are subject to the requirements of 40 CFR 144.13 and 144.14(c) (see checklist items WQ.109.2.US and WQ.113.1.US). Injection wells used to inject contaminated ground water that has been treated and is being injected into the same formation from which it was drawn are authorized by rule for the life of the well if such subsurface emplacement of fluids is approved by USEPA, or a State, pursuant to provisions for cleanup of</p>

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	<p>releases under the CERCLA, 42 U.S.C. 9601-9675, or pursuant to requirements and provisions under RCRA, 42 U.S.C. 6901-6992k.)</p> <p>(NOTE: Class V injection activity is authorized by rule but well authorization expires once the well is properly closed. If the well fits into one of the categories listed below, the Class V well is no longer authorized by rule:</p> <ul style="list-style-type: none"> <li>– it fails to comply with the prohibition of fluid movement standard in 40 CFR 144.12(a) [see checklist item WQ.109.2.US] and described in 40 CFR 144.82(a) [see checklist item WQ.114.2.US]</li> <li>– it is a Class V large-capacity cesspool or a Class V motor vehicle waste disposal well in a groundwater protection area or sensitive ground water area [NOTE: New motor vehicle waste disposal wells and new cesspools are prohibited as of 5 April 2000]</li> <li>– the UIC Program Director in the facility’s State or USEPA Region requires the facility to get a permit (in which case, rule authorization expires upon the effective date of the permit issued, or injection into the well is prohibited upon failure to submit a permit application in a timely manner or upon the effective date of the permit denial</li> <li>– the facility failed to submit inventory information to their UIC Program Director, as described in 40 CFR 144.83(a) [see checklist item WQ.114.3.US] [in which case, the facility is prohibited from injecting into the well until complying with the inventory requirements]</li> <li>– the facility is in a DI State and received a request from the UIC Program Director for additional information under 40 CFR 144.83(b), [see checklist item WQ.114.3.US] and have failed to comply with the request in a timely manner [in which case, injecting into the well is prohibited until getting a permit].)</li> </ul> <p>(NOTE: “Authorized by rule” means the facility can inject into the UIC well if in compliance with the UIC program requirements. This is the State UIC program requirements. If not authorized by rule, a permit is required or the injection well must be closed.)</p> <p>Verify that the construction of any well required to have a permit is not done until the permit has been issued.</p> <p>Verify that no owner or operator constructs, operates, maintains, converts, plugs, abandons, or conducts any other injection activity in a manner that allows the movement of fluid containing any contaminant into underground sources of drinking water, if the presence of that contaminant may cause a violation of any primary drinking water regulation under 40 CFR 141 or may otherwise adversely affect the health of persons.</p> <p>(NOTE: The applicant for a permit has the burden of showing that the contaminant will not cause a violation of any primary drinking water regulation under 40 CFR 142 or otherwise adversely affect the health of persons.)</p>

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<p><b>WQ.109.2.US.</b> Generators of hazardous waste and the owners or operators of all hazardous waste management facilities using any class of well to inject hazardous wastes accompanied by a manifest must meet specific operating requirements (40 CFR 144.1(a), 144.1(b), and 144.14) [Added July 2003].</p>	<p>(NOTE: For Class I, II, and III wells, if any water quality monitoring of an underground source of drinking water indicates the movement of any contaminant into the underground source of drinking water, except as authorized under 40 CFR 146, the Director shall prescribe such additional requirements for construction, corrective action, operation, monitoring, or reporting (including closure of the injection well) as are necessary to prevent such movement. In the case of wells authorized by permit, these additional requirements are imposed by modifying the permit, or the permit may be terminated if cause exists, or appropriate enforcement action may be taken if the permit has been violated. For USEPA-administered programs, such enforcement action shall be taken in accordance with appropriate sections of the SDWA.)</p> <p>(NOTE: For Class V wells, if at any time the USEPA Director learns that a Class V well may cause a violation of primary drinking water regulations under 40 CFR 142, he or she shall require the injector to obtain an individual permit and one of the following:</p> <ul style="list-style-type: none"> <li>– order the injector to take such actions [including, where required, closure of the injection well] as may be necessary to prevent the violation [NOTE: For USEPA-administered programs, such orders shall be issued in accordance with the appropriate provisions of the SDWA]</li> <li>– take enforcement action.)</li> </ul> <p>(NOTE: Whenever the Director learns that a Class V well may be otherwise adversely affecting the health of persons, he or she may prescribe such actions as may be necessary to prevent the adverse effect. The Director may take emergency action upon receipt of information that a contaminant that is present in or likely to enter a public water system or underground source of drinking water may present an imminent and substantial endangerment to the health of persons. If the Director is a USEPA official, he must first determine that the appropriate state and local authorities have not taken appropriate action to protect the health of such persons, before taking emergency action.)</p> <p>(NOTE: These regulations apply to the UIC program promulgated under Part C of the SDWA and, to the extent that they deal with hazardous waste, RCRA. The regulations in 40 CFR 144 also constitutes a part of the UIC program for states listed in 40 CFR 147 to be administered directly by USEPA.)</p> <p>(NOTE: This checklist item applies to generators of hazardous waste and the owners or operators of all hazardous waste management facilities using any class of well to inject hazardous wastes accompanied by a manifest.)</p> <p>Verify that the owner or operator of any well that is used to inject hazardous waste required to be accompanied by a manifest or delivery document applies for authorization to inject (see the text of 40 CFR 144.31 for information on permit applications) within 6 mo after the approval or promulgation of the state UIC program.</p>

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<p><b>WQ.109.3.US.</b> An inventory will be submitted of injection wells authorized by rule (40 CFR 144.1(a), 144.1(b), 144.21, 144.22, 144.26, and 144.27) <b>[Added July 2003]</b>.</p>	<p>Verify that the owner or operator complies with the notification requirements of section 3010 of Public Law 94-580.</p> <p>Verify that the owner or operator complies with the requirement to have an identification number under 40 CFR 264.11.</p> <p>Verify that the owner or operator complies with the applicable recordkeeping and reporting requirements for manifested wastes in 40 CFR 264.71.</p> <p>Verify that the owner or operator complies with the requirement for managing manifest discrepancies as outlined in 40 CFR 264.72.</p> <p>Verify that the owner or operator complies with the requirement to maintain an operating record as detailed in 40 CFR 264.73(a), 264.73(b)(1), and 264.73(b)(2).</p> <p>Verify that the owner or operator complies with the requirement for an annual report as detailed in 40 CFR 264.75.</p> <p>Verify that the owner or operator complies with the requirement for unmanifested waste reports as detailed in 40 CFR 264.75.</p> <p>Verify that the owner or operator complies with the applicable personnel training requirements of 40 CFR 264.16.</p> <p>Verify that, when abandonment is completed, the owner or operator submits to the Director certification by the owner or operator and certification by an independent registered professional engineer that the facility has been closed in accordance with the specifications in the permit.</p> <p>(NOTE: These regulations apply to the UIC program promulgated under Part C of the SDWA and, to the extent that they deal with hazardous waste, RCRA. The regulations in 40 CFR 144 also constitutes a part of the UIC program for states listed in 40 CFR 147 to be administered directly by USEPA.)</p> <p>Verify that the owner or operator of an injection well that is authorized by rule submits inventory information to the Director.</p> <p>(NOTE: An existing Class I, II (except enhanced recovery and hydrocarbon storage), and III injection well is authorized by rule if the owner or operator injects into the existing well within 1 yr after the date at which a UIC program authorized under the SDWA becomes effective for the first time or inventories the well pursuant to the requirements of 40 CFR 144.26. Well authorization expires upon:</p> <ul style="list-style-type: none"> <li>– the effective date of a permit</li> <li>– after plugging and abandonment in accordance with an approved plugging and abandonment plan</li> <li>– upon submission of a plugging and abandonment report</li> <li>– upon conversion.)</li> </ul>

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	<p>(NOTE: An existing Class II enhanced recovery or hydrocarbon storage injection well is authorized by rule for the life of the well or project, if the owner or operator injects into the existing well within 1 yr after the date which a UIC program authorized under the SDWA becomes effective for the first time or inventories the well pursuant to the requirements of 40 CFR 144.26. Well authorization expires upon:</p> <ul style="list-style-type: none"> <li>– the effective date of a permit</li> <li>– after plugging and abandonment in accordance with an approved plugging and abandonment plan</li> <li>– upon submission of a plugging and abandonment report</li> <li>– upon conversion.)</li> </ul> <p>(NOTE: An owner or operator is prohibited from injecting into the well upon failure to submit inventory information for the well within the specified time frame.)</p> <p>Verify that, as part of the inventory, the owner/operator provides at least the following information:</p> <ul style="list-style-type: none"> <li>– facility name and location</li> <li>– name and address of legal contact</li> <li>– ownership of facility</li> <li>– nature and type of injection wells</li> <li>– operating status of injection wells.</li> </ul> <p>(NOTE: This inventory information is requested on national form “Inventory of Injection Wells,” OMB No. 158-R0170.)</p> <p>Verify that, for USEPA-administered programs only, the owner or operator of the following wells provide additional information:</p> <ul style="list-style-type: none"> <li>– Class II enhanced recovery wells</li> <li>– Class IV wells</li> <li>– the following Class V wells (see the Definitions for more detailed descriptions of these well types): <ul style="list-style-type: none"> <li>– sand or other backfill wells</li> <li>– radioactive waste disposal wells that are not Class I wells</li> <li>– geothermal energy recovery wells</li> <li>– brine return flow wells</li> <li>– wells used in experimental technologies</li> <li>– municipal and industrial disposal wells other than Class I</li> <li>– any other Class V wells at the discretion of the Regional Administrator.</li> </ul> </li> </ul> <p>Verify that the owner or operator of a well in a USEPA-administered program as listed above provides a listing of all wells and sets forth the following information for each well.</p>

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	<ul style="list-style-type: none"> <li>– for Class II only, the field name(s)</li> <li>– location of each well or project given by Township, Range, Section, and Quarter-Section, or by latitude and longitude to the nearest second, according to the conventional practice in the state</li> <li>– date of completion of each well</li> <li>– identification and depth of the formation(s) into which each well is injecting</li> <li>– total depth of each well</li> <li>– casing and cementing record, tubing size, and depth of packer</li> <li>– nature of the injected fluids</li> <li>– average and maximum injection pressure at the wellhead</li> <li>– average and maximum injection rate</li> <li>– date of the last mechanical integrity test, if any.</li> </ul> <p>(NOTE: A single description of wells at a single facility with substantially the same characteristics is acceptable.)</p> <p>(NOTE: Upon approval of the UIC program in a state, the Director shall notify owners or operators of injection wells of their duty to submit inventory information. The method of notification selected by the Director must assure that the owners or operators will be made aware of the inventory requirement. The owner or operator of an injection well shall submit inventory information no later than 1 yr after the date of approval or effective date of the UIC program for the state. The Director need not require inventory information from any facility with interim status under RCRA.)</p> <p>(NOTE: For USEPA-administered programs the information need not be submitted if a complete permit application is submitted within 1 yr of the effective date of the UIC program. The owner or operator of a Class IV well shall submit inventory information no later than 60 days after the effective date of the program.)</p> <p>(NOTE: For USEPA-administered programs only, in addition to the inventory requirements, the Regional Administrator may require the owner or operator of any well authorized by rule to submit information as deemed necessary by the Regional Administrator to determine whether a well may be endangering an underground source of drinking water. Such information requirements may include, but are not limited to:</p> <ul style="list-style-type: none"> <li>– performance of ground-water monitoring and the periodic submission of reports of such monitoring</li> <li>– an analysis of injected fluids, including periodic submission of such analyses</li> <li>– a description of the geologic strata through and into which injection is taking place.</li> </ul> <p>Any request for information shall be made in writing and include a brief statement of the reasons for requiring the information. An owner or operator shall submit the information within the time period(s) provided in the notice.)</p>

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<p><b>WQ.109.4.US.</b> Injection wells are required to have mechanical integrity (40 CFR 146.8) [Added July 2003].</p>	<p>(NOTE: An owner or operator of an injection well authorized by rule is prohibited from injecting into the well if the owner or operator fails to comply with a request for information within the time period(s) specified by the Director. An owner or operator of a well prohibited from injection shall not resume injection except under a permit.)</p> <p>Verify that there is no significant leak in the casing, tubing, or packer.</p> <p>Verify that there is no significant fluid movement into an underground source of drinking water through vertical channels adjacent to the injection well bore.</p> <p>Verify that one of the following methods is used to evaluate the absence of significant leaks:</p> <ul style="list-style-type: none"> <li>– following an initial pressure test, monitoring of the tubing-casing annulus pressure with sufficient frequency to be representative, as determined by the Director, while maintaining an annulus pressure different from atmospheric pressure measured at the surface</li> <li>– pressure test with liquid or gas</li> <li>– records of monitoring showing the absence of significant changes in the relationship between injection pressure and injection flow rate for the following Class II enhanced recovery wells: <ul style="list-style-type: none"> <li>– existing wells completed without a packer provided that a pressure test has been performed and the data are available; provided further that one pressure test shall be performed at a time when the well is shut down; and if the running of such a test will not cause further loss of significant amounts of oil or gas</li> <li>– existing wells constructed without a long string casing, but with surface casing that terminates at the base of fresh water, provided that local geological and hydrological features allow such construction and provided further that the annular space is visually inspected.</li> </ul> </li> </ul> <p>Verify that one of the following methods is used to determine the absence of significant fluid:</p> <ul style="list-style-type: none"> <li>– the results of a temperature or noise log</li> <li>– for Class II only, cementing records demonstrating the presence of adequate cement to prevent such migration</li> <li>– for Class III wells where the nature of the casing precludes the use of the logging techniques, cementing records demonstrating the presence of adequate cement to prevent such migration.</li> </ul> <p>(NOTE: For Class III wells where the Director elects to rely on cementing records to demonstrate the absence of significant fluid movement, the monitoring program prescribed by 40 CFR 146.33(b) [see checklist item WQ.112.6.US] is designed to verify the absence of significant fluid movement.)</p>

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	<p>(NOTE: The Director may allow the use of a test to demonstrate mechanical integrity other than those listed above with the written approval of the Administrator. To obtain approval, the Director shall submit a written request to the Administrator, which shall set forth the proposed test and all technical data supporting its use. The Administrator shall approve the request if it will reliably demonstrate the mechanical integrity of wells for which its use is proposed. Any alternate method approved by the Administrator shall be published in the Federal Register and may be used in all states unless its use is restricted at the time of approval by the Administrator.)</p> <p>Verify that, in conducting and evaluating the tests enumerated in this checklist item or others to be allowed by the Director, the owner or operator and the Director apply methods and standards generally accepted in the industry.</p> <p>Verify that, when the owner or operator reports the results of mechanical integrity tests to the Director, he includes a description of the test(s) and the method(s) used.</p> <p>(NOTE: In making his/her evaluation, the Director shall review monitoring and other test data submitted since the previous evaluation. The Director may require additional or alternative tests if the results presented by the owner or operator are not satisfactory to the Director to demonstrate that there is no movement of fluid into or between USDWs resulting from the injection activity.</p>

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<b>UNDERGROUND INJECTION CONTROL WELLS</b>  <b>WQ.110</b> <b>Class I</b>  <b>WQ.110.1.US.</b> Class I nonhazardous wells must meet certain construction requirements (40 CFR 146.12) [Added July 2003].	<p>Verify that all Class I nonhazardous wells are sited so that they inject into a formation which is beneath the lowermost formation containing, within 1/4 mi of the well bore, an underground source of drinking water.</p> <p>Verify that all Class I wells are cased and cemented to prevent the movement of fluids into or between underground sources of drinking water.</p> <p>Verify that the casing and cement used in the construction of each newly drilled well is designed for the life expectancy of the well.</p> <p>Verify that, in determining and specifying casing and cementing requirements, the following factors are considered:</p> <ul style="list-style-type: none"> <li>– depth to the injection zone</li> <li>– injection pressure, external pressure, internal pressure, and axial loading;</li> <li>– hole size</li> <li>– size and grade of all casing strings (wall thickness, diameter, nominal weight, length, joint specification, and construction material)</li> <li>– corrosiveness of injected fluid, formation fluids, and temperatures</li> <li>– lithology of injection and confining intervals</li> <li>– type or grade of cement.</li> </ul> <p>Verify that all Class I injection wells, except those municipal wells injecting non-corrosive wastes, inject fluids through tubing with a packer set immediately above the injection zone, or tubing with an approved fluid seal as an alternative.</p> <p>Verify that the tubing, packer, and fluid seal are designed for the expected service.</p> <p>(NOTE: The use of other alternatives to a packer may be allowed with the written approval of the Director. To obtain approval, the operator shall submit a written request to the Director, which shall set forth the proposed alternative and all technical data supporting its use. The Director shall approve the request if the alternative method will reliably provide a comparable level of protection to underground sources of drinking water. The Director may approve an alternative method solely for an individual well or for general use.)</p> <p>Verify that, in determining and specifying requirements for tubing, packer, or alternatives the following factors are considered:</p> <ul style="list-style-type: none"> <li>– depth of setting</li> </ul>

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	<ul style="list-style-type: none"> <li>– characteristics of injection fluid (chemical content, corrosiveness, and density)</li> <li>– injection pressure</li> <li>– annular pressure</li> <li>– rate, temperature, and volume of injected fluid</li> <li>– size of casing.</li> </ul> <p>Verify that appropriate logs and other tests are conducted during the drilling and construction of new Class I wells.</p> <p>Verify that a descriptive report interpreting the results of such logs and tests is prepared by a knowledgeable log analyst and submitted to the Director.</p> <p>Verify that, at a minimum, the logs and tests include:</p> <ul style="list-style-type: none"> <li>– deviation checks on all holes constructed by first drilling a pilot hole, and then enlarging the pilot hole by reaming or another method (NOTE: Such checks shall be at sufficiently frequent intervals to assure that vertical avenues for fluid migration in the form of diverging holes are not created during drilling)</li> <li>– such other logs and tests as may be needed after taking into account the availability of similar data in the area of the drilling site, the construction plan, and the need for additional information, which may arise from time to time as the construction of the well progresses.</li> </ul> <p>Verify that, in determining which logs and tests are required, the following logs are considered for use in the following situations:</p> <ul style="list-style-type: none"> <li>– for surface casing intended to protect underground sources of drinking water: <ul style="list-style-type: none"> <li>– resistivity, spontaneous potential, and caliper logs before the casing is installed</li> <li>– a cement bond, temperature, or density log after the casing is set and cemented</li> </ul> </li> <li>– for intermediate and long strings of casing intended to facilitate injection: <ul style="list-style-type: none"> <li>– resistivity, spontaneous potential, porosity, and gamma ray logs before the casing is installed</li> <li>– fracture finder logs</li> <li>– a cement bond, temperature, or density log after the casing is set and cemented.</li> </ul> </li> </ul> <p>Verify that, at a minimum, the following information concerning the injection formation is determined or calculated for new Class I wells:</p> <ul style="list-style-type: none"> <li>– fluid pressure</li> <li>– temperature</li> <li>– fracture pressure</li> <li>– other physical and chemical characteristics of the injection matrix</li> </ul>

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<p><b>WQ.110.2.US.</b> Owners/operators of Class I wells authorized by rule must meet specific casing and cementing requirements (40 CFR 144.1(a), 144.1(b), and 144.28(e)) [Added July 2003].</p>	<p>– physical and chemical characteristics of the formation fluids.</p> <p>(NOTE: These regulations apply to the UIC Program promulgated under Part C of the SDWA and, to the extent that they deal with hazardous waste, RCRA. The regulations in 40 CFR 144 also constitute a part of the UIC program for states listed in 40 CFR 147 to be administered directly by USEPA.)</p> <p>Verify that, for enhanced recovery and hydrocarbon storage wells authorized by rule, the owner or operator cases and cements the well to prevent movement of fluids into or between underground sources of drinking water.</p> <p>Verify that, in determining and specifying casing and cementing requirements, the following factors are considered:</p> <ul style="list-style-type: none"> <li>– depth to the injection zone</li> <li>– depth to the bottom of all USDWs</li> <li>– estimated maximum and average injection pressures.</li> </ul> <p>(NOTE: In addition, in determining and specifying casing and cementing requirements the Director may consider information on:</p> <ul style="list-style-type: none"> <li>– nature of formation fluids</li> <li>– lithology of injection and confining zones</li> <li>– external pressure, internal pressure, and axial loading</li> <li>– hole size</li> <li>– size and grade of all casing strings</li> <li>– class of cement.)</li> </ul> <p>(NOTE: This checklist item does not apply if:</p> <ul style="list-style-type: none"> <li>– regulatory controls for casing and cementing existed at the time of drilling of the well and the well is in compliance with those controls</li> <li>– well injection will not result in the movement of fluids into an underground source of drinking water so as to create a significant risk to the health of persons.)</li> </ul> <p>(NOTE: When a state did not have regulatory controls for casing and cementing prior to the time of the submission of the state program to the Administrator, the Director need not apply the casing and cementing requirements of this checklist item if he submits, as a part of his application for primacy, an appropriate plan for casing and cementing of existing, newly converted, and newly drilled wells in existing fields, and the Administrator approves the plan.)</p> <p><b>WQ.110.3.US.</b> Class I wells authorized by rule must be operated according to specific requirements (40 CFR</p>

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<p>144.1(a), 144.1(b), 144.28(f))  <b>[Added July 2003].</b></p>	<p>Verify that there is no injection between the outermost casing protecting underground sources of drinking water and the well bore of Class I wells authorized by rule.</p> <p>Verify that the owner or operator of a Class I injection well authorized by rule establishes and maintains mechanical integrity as defined in 40 CFR 146.8 (see checklist item WQ.109.4.US) until the well is properly plugged in accordance with an approved plugging and abandonment plan, and a plugging and abandonment report is submitted, or until the well is converted in compliance with 40 CFR 144.28(j) (see checklist item WQ.110.8.US)</p> <p>(NOTE: For USEPA-administered programs, the Regional Administrator may require by written notice that the owner or operator comply with a schedule describing when mechanical integrity demonstrations shall be made.)</p> <p>(NOTE: When the Director determines that a Class I (nonhazardous) injection well lacks mechanical integrity, the Director shall give written notice of his determination to the owner or operator. Unless the Director requires immediate cessation, the owner or operator shall cease injection into the well within 48 hours of receipt of the Director's determination. The Director may allow plugging of the well in accordance with the requirements of 40 CFR 146.10, or require the owner or operator to perform such additional construction, operation, monitoring, reporting, and corrective action as is necessary to prevent the movement of fluid into or between underground sources of drinking water (USDWs) caused by the lack of mechanical integrity. The owner or operator may resume injection upon receipt of written notification from the Director that the owner or operator has demonstrated mechanical integrity.)</p> <p>(NOTE: The Director may allow the owner or operator of a well that lacks mechanical integrity to continue or resume injection if the owner or operator has made a satisfactory demonstration that there is no movement of fluid into or between USDWs.)</p> <p>Verify that, for Class I wells, unless an alternative to a packer has been approved under 40 CFR 146.12(c) (see checklist item WQ.110.1.US), the owner or operator fills the annulus between the tubing and the long string of casings with a fluid approved by the Director and maintains a pressure, also approved by the Director, on the annulus.</p> <p>Verify that, for USEPA-administered programs, the owner or operator of a Class I well completed with tubing and packer fills the annulus between tubing and casing with a noncorrosive fluid and maintains a positive pressure on the annulus.</p> <p>Verify that, for other Class I wells, the owner or operator ensures that the alternative completion method reliably provides a comparable level of protection to underground sources of drinking water.</p>

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<p><b>WQ.110.4.US.</b> Class I wells must be operated according to specific requirements (40 CFR 146.13(a)) <b>[Added July 2003]</b>.</p>	<p>Verify that, for Class I wells, the owner or operator does not inject at a pressure that will initiate fractures in the confining zone or cause the movement of injection or formation fluids into a USDW.</p> <p>Verify that, at a minimum, operating requirements specify that:</p> <ul style="list-style-type: none"> <li>– except during stimulation, injection pressure at the wellhead does not exceed a maximum which is calculated so as to assure that the pressure in the injection zone during injection does not initiate new fractures or propagate existing fractures in the injection zone</li> <li>– in no case will injection pressure initiate fractures in the confining zone or cause the movement of injection or formation fluids into a USDW</li> <li>– injection between the outermost casing protecting underground sources of drinking water and the well bore is prohibited</li> <li>– unless an alternative to a packer has been approved under 40 CFR 146.12(c) (see checklist item WQ.110.1.US), the annulus between the tubing and the long string of casings is filled with a fluid approved by the Director and a Director-approved pressure is maintained on the annulus.</li> </ul>
<p><b>WQ.110.5.US.</b> Owners/operators of Class I wells authorized by rule must meet specific monitoring requirements (40 CFR 144.1(a), 144.1(b), and 144.28(g)) <b>[Added July 2003]</b>.</p>	<p>(NOTE: These regulations apply to the UIC program promulgated under Part C of the SDWA and, to the extent that they deal with hazardous waste, RCRA. The regulations in 40 CFR 144 also constitutes a part of the UIC program for states listed in 40 CFR 147 to be administered directly by USEPA.)</p> <p>Verify that, for USEPA-administered programs, monitoring of the nature of the injected fluids complies with applicable analytical methods cited and described in Table I of 40 CFR 136.3, in appendix III of 40 CFR 261, or by other methods that have been approved by the Regional Administrator.</p> <p>Verify that the owner or operator of a Class I well:</p> <ul style="list-style-type: none"> <li>– analyzes the nature of the injected fluids with sufficient frequency to yield data representative of their characteristics</li> <li>– installs and uses continuous recording devices to monitor injection pressure, flow rate and volume, and the pressure on the annulus between the tubing and the long string of casing</li> <li>– installs and uses monitoring wells within the area of review if required by the Director, to monitor any migration of fluids into and pressure in the underground sources of drinking water.</li> </ul> <p>(NOTE: The type, number, and location of the wells, the parameters to be measured, and the frequency of monitoring must be approved by the Director.)</p>
<p><b>WQ.110.6.US.</b> Owners/operators of Class I wells must</p>	<p>Verify that, at a minimum, monitoring requirements include:</p>

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<p>meet specific monitoring requirements (40 CFR 146.13(b)) <b>[Added July 2003]</b>.</p> <p><b>WQ.110.7.US.</b> A plugging and abandonment plan is required for owners/operators of Class I wells authorized by rule (40 CFR 144.1(a), 144.1(b), 144.28(c), and 144.28(d)) <b>[Added July 2003]</b>.</p>	<ul style="list-style-type: none"> <li>– the analysis of the injected fluids with sufficient frequency to yield data representative of their characteristics</li> <li>– installation and use of continuous recording devices to monitor injection pressure, flow rate and volume, and the pressure on the annulus between the tubing and the long string of casing</li> <li>– a demonstration of mechanical integrity at least once every 5 yr during the life of the well</li> <li>– the type, number, and location of wells within the area of review to be used to monitor any migration of fluids into and pressure in the underground sources of drinking water, the parameters to be measured, and the frequency of monitoring.</li> </ul> <p>(NOTE: These regulations apply to the UIC program promulgated under Part C of the <i>SDWA</i> and, to the extent that they deal with hazardous waste, RCRA. The regulations in 40 CFR 144 also constitute a part of the UIC program for states listed in 40 CFR 147 to be administered directly by USEPA.)</p> <p>Verify that the owner or operator of Class I wells authorized by rule prepares, maintains, and complies with a plan for plugging and abandonment of the well or project that meets the requirements of 40 CFR 146.10 (see checklist item WQ.110.10.US) and is acceptable to the Director.</p> <p>(NOTE: For purposes of this checklist item, temporary intermittent cessation of injection operations is not abandonment.)</p> <p>Verify that, for USEPA-administered programs:</p> <ul style="list-style-type: none"> <li>– the owner or operator submits the plan, on a form provided by the Regional Administrator, no later than 1 yr after the effective date of the UIC program in the state</li> <li>– the owner or operator submits any proposed significant revision to the method of plugging reflected in the plan no later than the notice of plugging (i.e., 45 days prior to plugging unless shorter notice is approved)</li> <li>– the plan includes the following information: <ul style="list-style-type: none"> <li>– the nature, quantity, and material to be used in plugging</li> <li>– the location and extent (by depth) of the plugs</li> <li>– any proposed test or measurement to be made</li> <li>– the amount, size, and location (by depth) of casing to be left in the well</li> <li>– the method and location where casing is to be parted</li> <li>– the estimated cost of plugging the well.</li> </ul> </li> </ul> <p>Verify that, after a cessation of operations of 2 yr, the owner or operator shall plug and abandon the well in accordance with the plan unless he:</p> <ul style="list-style-type: none"> <li>– provides notice to the Regional Administrator</li> </ul>

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<p><b>WQ.110.8.US.</b> Owners/operators of Class I wells authorized by rule must notify the Director of well abandonment (40 CFR 144.1(a), 144.1(b), and 144.28(j)) [Added July 2003].</p> <p><b>WQ.110.9.US.</b> The plugging and abandonment of Class I wells must meet specific criteria (40 CFR 146.10(a)) [Added July 2003].</p> <p><b>WQ.110.10.US.</b> Owners/operators of Class I wells authorized by rule must submit</p>	<p>– describe actions or procedures, satisfactory to the Regional Administrator, that the owner or operator will take to ensure that the well will not endanger USDWs during the period of temporary abandonment.</p> <p>(NOTE: These actions and procedures shall include compliance with the technical requirements applicable to active injection wells unless waived by the Regional Administrator.)</p> <p>Verify that the owner or operator of any well that has been temporarily abandoned (ceased operations for more than 2 yr and has provided notice and described the actions to be taken) notifies the Regional Administrator prior to resuming operation of the well.</p> <p>(NOTE: These regulations apply to the UIC program promulgated under Part C of the SDWA and, to the extent that they deal with hazardous waste, RCRA. The regulations in 40 CFR 144 also constitute a part of the UIC program for states listed in 40 CFR 147 to be administered directly by USEPA.)</p> <p>Verify that the owner or operator notifies the Director, according to a time period required by the Director, before conversion or abandonment of the well.</p> <p>Verify that, for USEPA-administered programs, the owner or operator notifies the Regional Administrator at least 45 days before plugging and abandonment.</p> <p>(NOTE: The Regional Administrator, at his discretion, may allow a shorter notice period.)</p> <p>Verify that, prior to abandoning Class I wells, the well is plugged with cement in a manner that will not allow the movement of fluids either into or between underground sources of drinking water.</p> <p>Verify that the placement of the cement plugs is done by one of the following:</p> <ul style="list-style-type: none"> <li>– the Balance method</li> <li>– the Dump Bailer method</li> <li>– the Two-Plug method</li> <li>– an alternative method approved by the Director, which will reliably provide a comparable level of protection to underground sources of drinking water.</li> </ul> <p>Verify that the well to be abandoned is in a state of static equilibrium with the mud weight equalized top to bottom, either by circulating the mud in the well at least once or by a comparable method prescribed by the Director, prior to the placement of the cement plug(s).</p> <p>(NOTE: These regulations apply to the UIC program promulgated under Part C of the SDWA and, to the extent that they deal with hazardous waste, RCRA. The</p>

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<p>a plugging and abandonment report after plugging a well (40 CFR 144.1(a), 144.1(b), and 144.28(k)) <b>[Added July 2003]</b>.</p> <p><b>WQ.110.11.US.</b> Owners/operators of Class I wells authorized by rule must notify the Director of change of ownership or operational control (40 CFR 144.1(a), 144.1(b), and 144.28(l)) <b>[Added July 2003]</b>.</p> <p><b>WQ.110.12.US.</b> Reporting of noncompliance will be done by owners/operators of Class I wells authorized by rule (40 CFR 144.1(a), 144.1(b), 144.28(a), and 144.28(b)) <b>[Added July 2003]</b>.</p>	<p>regulations in 40 CFR 144 also constitute a part of the UIC program for states listed in 40 CFR 147 to be administered directly by USEPA.)</p> <p>Verify that, for USEPA-administered programs, within 60 days after plugging a well or at the time of the next quarterly report (whichever is less) the owner or operator submits a report to the Regional Administrator consisting of one of the following:</p> <ul style="list-style-type: none"> <li>– a statement that the well was plugged in accordance with the plan previously submitted to the Regional Administrator</li> <li>– where actual plugging differed from the plan previously submitted, an updated version of the plan, on the form supplied by the Regional Administrator, specifying the different procedures used.</li> </ul> <p>(NOTE: If the quarterly report is due less than 15 days before completion of plugging, then the report shall be submitted within 60 days.)</p> <p>Verify that the person who performed the plugging operation certifies the report as accurate.</p> <p>(NOTE: These regulations apply to the UIC program promulgated under Part C of the SDWA and, to the extent that they deal with hazardous waste, RCRA. The regulations in 40 CFR 144 also constitute a part of the UIC program for states listed in 40 CFR 147 to be administered directly by USEPA.)</p> <p>Verify that, for USEPA-administered programs, the transferor of a Class I well authorized by rule notifies the Regional Administrator of a transfer of ownership or operational control of the well at least 30 days in advance of the proposed transfer.</p> <p>Verify that the notice includes a written agreement between the transferor and the transferee containing a specific date for transfer of ownership or operational control of the well; and a specific date when the transferee will meet the financial responsibility demonstration.</p> <p>(NOTE: The transferee is authorized to inject unless he receives notification from the Director that the transferee has not demonstrated financial responsibility.)</p> <p>(NOTE: These regulations apply to the UIC program promulgated under Part C of the SDWA and, to the extent that they deal with hazardous waste, RCRA. The regulations in 40 CFR 144 also constitute a part of the UIC program for states listed in 40 CFR 147 to be administered directly by USEPA.)</p> <p>(NOTE: Any noncompliance with the requirements for injection wells constitutes a violation of the SDWA and is grounds for enforcement action, except that the owner or operator need not comply with these requirements to the extent and for the duration such noncompliance is authorized by an emergency permit.)</p>

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<p><b>WQ.110.13.US.</b> Owners/operators of Class I wells authorized by rule must meet specific reporting requirements (40 CFR 144.1(a), 144.1(b), and 144.28(h)(1)) [Added July 2003].</p> <p><b>WQ.110.14.US.</b> Owners/operators of Class I wells must meet specific reporting requirements (40 CFR 146.13(c)) [Added July 2003].</p>	<p>Verify that the owner or operator of Class I wells authorized by rule reports any noncompliance that may endanger health or the environment within 24 h, including:</p> <ul style="list-style-type: none"> <li>– any monitoring or other information which indicates that any contaminant may cause an endangerment to a USDW</li> <li>– any noncompliance or malfunction of the injection system that may cause fluid migration into or between USDWs.</li> </ul> <p>Verify that any information is provided orally within 24 h from the time the owner or operator becomes aware of the circumstances.</p> <p>Verify that a written submission is provided within 5 days of the time the owner or operator becomes aware of the circumstances.</p> <p>Verify that the written submission contains a description of the noncompliance and its cause, the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.</p> <p>(NOTE: These regulations apply to the UIC program promulgated under Part C of the SDWA and, to the extent that they deal with hazardous waste, RCRA. The regulations in 40 CFR 144 also constitute a part of the UIC program for states listed in 40 CFR 147 to be administered directly by USEPA.)</p> <p>Verify that the owner or operator of Class I wells authorized by rule submits quarterly reports on:</p> <ul style="list-style-type: none"> <li>– the physical, chemical, and other relevant characteristics of the injection fluids</li> <li>– monthly average, maximum, and minimum values for injection pressure, flow rate and volume, and annular pressure</li> <li>– the results from prescribed ground-water monitoring wells</li> <li>– the results of any test of the injection well conducted by the owner or operator during the reported quarter if required by the Director</li> <li>– any well work over performed during the reported quarter.</li> </ul> <p>Verify that, at a minimum, reporting requirements include:</p> <ul style="list-style-type: none"> <li>– quarterly reports to the Director on: <ul style="list-style-type: none"> <li>– the physical, chemical and other relevant characteristics of injection fluids</li> <li>– monthly average, maximum and minimum values for injection pressure, flow rate and volume, and annular pressure</li> <li>– the results of prescribed monitoring</li> </ul> </li> <li>– reporting, with the first quarterly report after the completion, the results of: <ul style="list-style-type: none"> <li>– periodic tests of mechanical integrity</li> </ul> </li> </ul>

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<p><b>WQ.110.15.US.</b> Owners/operators of Class I wells authorized by rule must meet specific recordkeeping requirements (40 CFR 144.1(a), 144.1(b), and 144.28(i)) <b>[Added July 2003]</b>.</p> <p><b>WQ.110.16.US.</b> Owners/operators of Class I hazardous waste wells authorized by rule must meet siting requirements (40 CFR 144.1(a), 144.1(b), and 144.28(m)) <b>[Added July 2003]</b>.</p> <p><b>WQ.110.17.US.</b> Owners/operators of Class I hazardous waste wells must meet siting</p>	<ul style="list-style-type: none"> <li>– any other test of the injection well conducted by the permittee if required by the Director</li> <li>– any well work over.</li> </ul> <p>(NOTE: These regulations apply to the UIC program promulgated under Part C of the SDWA and, to the extent that they deal with hazardous waste, RCRA. The regulations in 40 CFR 144 also constitute a part of the UIC program for states listed in 40 CFR 147 to be administered directly by USEPA.)</p> <p>Verify that the owner or operator retains records of all monitoring information, including the following:</p> <ul style="list-style-type: none"> <li>– calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, and copies of all required reports for a period of at least 3 yr from the date of the sample, measurement, or report</li> <li>– the nature and composition of all injected fluids until 3 yr after the completion of any plugging and abandonment procedures.</li> </ul> <p>(NOTE: The record retention period may be extended at any time by request of the Director.)</p> <p>(NOTE: The Director may require the owner or operator to deliver the records to the Director at the conclusion of the retention period.)</p> <p>Verify that, for USEPA-administered programs, the owner or operator continues to retain the records after the 3 yr retention period unless he delivers the records to the Regional Administrator or obtains written approval from the Regional Administrator to discard the records.</p> <p>(NOTE: These regulations apply to the UIC program promulgated under Part C of the SDWA and, to the extent that they deal with hazardous waste, RCRA. The regulations in 40 CFR 144 also constitute a part of the UIC program for states listed in 40 CFR 147 to be administered directly by USEPA.)</p> <p>Verify that the owner or operator of any Class I well injecting hazardous waste complies with 40 CFR 144.14(c) (see checklist item WQ.109.2.US).</p> <p>Verify that, for USEPA-administered programs, the owner or operator properly disposes of, or decontaminates by removing all hazardous waste residues, all injection well equipment.</p> <p>(NOTE: See Appendix 13-15 for a list of waste-specific prohibitions.)</p> <p>Verify that all Class I hazardous waste injection wells are sited such that they inject into a formation that is beneath the lowermost formation containing within 1/4 mi of the well bore an underground source of drinking water.</p>

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<p>requirements (40 CFR 146.62) [Added July 2003].</p> <p><b>WQ.110.18.US.</b> Owners/operators of Class I hazardous</p>	<p>Verify that the siting of Class I hazardous waste injection wells is limited to areas that are geologically suitable.</p> <p>(NOTE: The Director determines geologic suitability based upon:</p> <ul style="list-style-type: none"> <li>– an analysis of the structural and stratigraphic geology, the hydrogeology, and the seismicity of the region</li> <li>– an analysis of the local geology and hydrogeology of the well site, including, at a minimum, detailed information regarding stratigraphy, structure and rock properties, aquifer hydrodynamics, and mineral resources</li> <li>– a determination that the geology of the area can be described confidently and that limits of waste fate and transport can be accurately predicted through the use of models.</li> </ul> <p>Verify that Class I hazardous waste injection wells are sited such that:</p> <ul style="list-style-type: none"> <li>– the injection zone has sufficient permeability, porosity, thickness, and a real extent to prevent migration of fluids into USDWs</li> <li>– the confining zone: <ul style="list-style-type: none"> <li>– is laterally continuous and free of transecting, transmissive faults or fractures over an area sufficient to prevent the movement of fluids into a USDW</li> <li>– contains at least one formation of sufficient thickness and with lithologic and stress characteristics capable of preventing vertical propagation of fractures.</li> </ul> </li> </ul> <p>Verify that the owner or operator demonstrates to the satisfaction of the Director that one of the following is true:</p> <ul style="list-style-type: none"> <li>– the confining zone is separated from the base of the lowermost USDW by at least one sequence of permeable and less permeable strata that will provide an added layer of protection for the USDW in the event of fluid movement in an unlocated borehole or transmissive fault</li> <li>– within the area of review, the piezometric surface of the fluid in the injection zone is less than the piezometric surface of the lowermost USDW, considering density effects, injection pressures and any significant pumping in the overlying USDW</li> <li>– there is no USDW present.</li> </ul> <p>(NOTE: The Director may approve a site that does not meet the siting requirements if the owner or operator can demonstrate to the Director that, because of the geology, nature of the waste, or other considerations, abandoned boreholes or other conduits would not cause endangerment of USDWs.)</p> <p>(NOTE: See Appendix 13-15 for a list of waste-specific prohibitions.)</p> <p>(NOTE: For the purposes of Class I hazardous waste wells, this checklist item applies to the exclusion of 40 CFR 146.6. The area of review for Class I hazardous</p>

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<p>waste wells must meet area of review requirements (40 CFR 146.63, and 146.64) [Added July 2003].</p>	<p>waste injection wells is a 2-mi radius around the well bore. The Director may specify a larger area of review based on the calculated cone of influence of the well.)</p> <p>(NOTE: For the purposes of Class I hazardous waste wells, this checklist item applies to the exclusion of 40 CFR 144.55 and 146.07.)</p> <p>Verify that, as a part of the permit application, the owner or operator of a Class I hazardous waste well submit a plan to the Director outlining the protocol used to perform:</p> <ul style="list-style-type: none"> <li>– identification of all wells penetrating the confining zone or injection zone within the area of review</li> <li>– determination of whether wells are adequately completed or plugged.</li> </ul> <p>Verify that the owner or operator of a Class I hazardous waste well identifies the location of all wells within the area of review that penetrate the injection zone or the confining zone and submit:</p> <ul style="list-style-type: none"> <li>– a tabulation of all wells within the area of review that penetrate the injection zone or the confining zone</li> <li>– a description of each well or type of well and any records of its plugging or completion.</li> </ul> <p>Verify that, for wells that the Director determines are improperly plugged, completed, or abandoned, or for which plugging or completion information is unavailable, the permit applicant submits a plan consisting of the steps or modification as are necessary to prevent movement of fluids into or between USDWs.</p> <p>(NOTE: Where the plan is adequate, the Director shall incorporate it into the permit as a condition. Where the Director's review of an application indicates that the permittee's plan is inadequate, the Director shall do one of the following:</p> <ul style="list-style-type: none"> <li>– require the applicant to revise the plan</li> <li>– prescribe a plan for corrective action as a condition of the permit</li> <li>– deny the application.)</li> </ul> <p>(NOTE: Any permit issued for an existing Class I hazardous waste injection well requiring corrective action other than pressure limitations includes a compliance schedule requiring any corrective action accepted or prescribed. Any such compliance schedule provides for compliance no later than 2 yr following issuance of the permit and requires observance of appropriate pressure limitations until all other corrective action measures have been implemented.)</p> <p>Verify that no owner or operator of a new Class I hazardous waste injection begins injection until all required corrective actions have been taken.</p>

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<p><b>WQ.110.19.US.</b> Owners/operators of Class I hazardous waste wells must meet construction requirements (40 CFR 146.65) [Added July 2003].</p>	<p>(NOTE: The Director may require pressure limitations instead of plugging. If pressure limitations are used instead of plugging, the Director shall require, as a permit condition, that injection pressure be so limited that pressure in the injection zone at the site of any improperly completed or abandoned well within the area of review would not be sufficient to drive fluids into or between USDWs. This pressure limitation shall satisfy the corrective action requirement. Alternatively, such injection pressure limitation may be made part of a compliance schedule and may be required to be maintained until all other required corrective actions have been implemented.)</p> <p>(NOTE: See Appendix 13-15 for a list of waste-specific prohibitions.)</p> <p>Verify that all existing and new Class I hazardous waste injection wells are constructed and completed to:</p> <ul style="list-style-type: none"> <li>– prevent the movement of fluids into or between USDWs or into any unauthorized zones</li> <li>– permit the use of appropriate testing devices and workover tools</li> <li>– permit required continuous monitoring of injection tubing and long string casing.</li> </ul> <p>Verify that all well materials are compatible with fluids with which the materials may be expected to come into contact.</p> <p>(NOTE: A well is considered compatible as long as the materials used in the construction of the well meet or exceed standards developed for such materials by the American Petroleum Institute (API), the American Society for Testing Materials (ASTM), or comparable standards acceptable to the Director.)</p> <p>Verify that casing and cement used in the construction of each newly drilled well is designed for the life expectancy of the well, including the post-closure care period.</p> <p>Verify that the casing and cementing program are designed to prevent the movement of fluids into or between USDWs and to prevent potential leaks of fluids from the well.</p> <p>(NOTE: In determining and specifying casing and cementing requirements, the Director shall consider the following information:</p> <ul style="list-style-type: none"> <li>– depth to the injection zone</li> <li>– injection pressure, external pressure, internal pressure, and axial loading</li> <li>– hole size</li> <li>– size and grade of all casing strings [well thickness, diameter, nominal weight, length, joint specification and construction material]</li> <li>– corrosiveness of injected fluid, formation fluids, and temperature</li> <li>– lithology of injection and confining zones</li> </ul>

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	<ul style="list-style-type: none"> <li>– type or grade of cement</li> <li>– quantity and chemical composition of the injected fluid.)</li> </ul> <p>Verify that, at a minimum, one surface casing string extends into the confining bed below the lowest formation that contains a USDW and is cemented by circulating cement from the base of the casing to the surface, using a minimum of 120 percent of the calculated annual volume.</p> <p>(NOTE: The Director may require more than 120 percent when the geology or other circumstances warrant it.)</p> <p>Verify that, at least one long string casing, using a sufficient number of centralizers, extends to the injection zone and is cemented by circulating cement to the surface in one or more stages:</p> <ul style="list-style-type: none"> <li>– of sufficient quantity and quality to withstand the maximum operating pressure</li> <li>– in a quantity no less than 120 percent of the calculated volume necessary to fill the annular space.</li> </ul> <p>(NOTE: The Director may require more than 120 percent when the geology or other circumstances warrant it.)</p> <p>(NOTE: The Director may approve an alternative method of cementing in cases where the cement cannot be recirculated to the surface, provided the owner or operator can demonstrate by using logs that the cement is continuous and does not allow fluid movement behind the well bore.)</p> <p>Verify that casings, including any casing connections, are rated to have sufficient structural strength to withstand, for the design life of the well:</p> <ul style="list-style-type: none"> <li>– the maximum burst and collapse pressures which may be experienced during the construction, operation, and closure of the well</li> <li>– the maximum tensile stress that may be experienced at any point along the length of the casing during the construction, operation, and closure of the well.</li> </ul> <p>Verify that, at minimum, cement and cement additives are of sufficient quality and quantity to maintain integrity over the design life of the well.</p> <p>Verify that all Class I hazardous waste injection wells inject fluids through tubing with a packer set at a point specified by the Director.</p> <p>(NOTE: In determining and specifying requirements for tubing and packer, the following factors are considered:</p> <ul style="list-style-type: none"> <li>– depth of setting</li> <li>– characteristics of injection fluid (chemical content, corrosiveness, temperature and density)</li> </ul>

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<p><b>WQ.110.20.US.</b> Owners/operators of Class I hazardous waste wells must meet log and testing requirements (40 CFR 146.66) [Added July 2003].</p>	<ul style="list-style-type: none"> <li>– injection pressure</li> <li>– annular pressure</li> <li>– rate (intermittent or continuous), temperature, and volume of injected fluid</li> <li>– size of casing</li> <li>– tubing tensile, burst, and collapse strengths.)</li> </ul> <p>(NOTE: See Appendix 13-15 for a list of waste-specific prohibitions.)</p> <p>(NOTE: These regulations apply to the UIC program promulgated under Part C of the SDWA and, to the extent that they deal with hazardous waste, RCRA. The regulations in 40 CFR 144 also constitute a part of the UIC program for states listed in 40 CFR 147 to be administered directly by USEPA.)</p> <p>Verify that, during the drilling and construction of a new Class I hazardous waste injection well, appropriate logs and tests are run to determine or verify the depth, thickness, porosity, permeability, and rock type of, and the salinity of any entrained fluids in, all relevant geologic units to assure conformance with performance standards in 40 CFR 146.65, and to establish accurate baseline data against which future measurements may be compared.</p> <p>Verify that a descriptive report interpreting results of such logs and tests is prepared by a knowledgeable log analyst and submitted to the Director.</p> <p>Verify that, at a minimum, such logs and tests include:</p> <ul style="list-style-type: none"> <li>– deviation checks during drilling on all holes constructed by drilling a pilot hole which are enlarged by reaming or another method</li> <li>– such other logs and tests as may be needed after taking into account the availability of similar data in the area of the drilling site, the construction plan, and the need for additional information that may arise from time to time as the construction of the well progresses.</li> </ul> <p>(NOTE: Deviation checks will be at sufficiently frequent intervals to determine the location of the borehole and to assure that vertical avenues for fluid movement in the form of diverging holes are not created during drilling.)</p> <p>Verify that at a minimum, the following logs are developed in the following situations:</p> <ul style="list-style-type: none"> <li>– upon installation of the surface casing: <ul style="list-style-type: none"> <li>– resistivity, spontaneous potential, and caliper logs before the casing is installed</li> <li>– a cement bond and variable density log, and a temperature log after the casing is set and cemented</li> </ul> </li> <li>– upon installation of the long string casing:</li> </ul>

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	<ul style="list-style-type: none"> <li>– resistivity, spontaneous potential, porosity, caliper, gamma ray, and fracture finder logs before the casing is installed</li> <li>– a cement bond and variable density log, and a temperature log after the casing is set and cemented</li> <li>– a mechanical integrity test consisting of: <ul style="list-style-type: none"> <li>– a pressure test with liquid or gas</li> <li>– a radioactive tracer survey</li> <li>– a temperature or noise log</li> <li>– a casing inspection log, if required by the Director</li> <li>– any other test required by the Director.</li> </ul> </li> </ul> <p>(NOTE: The Director may allow the use of an alternative to the above logs when an alternative will provide equivalent or better information.)</p> <p>Verify that whole cores or sidewall cores of the confining and injection zones and formation fluid samples from the injection zone are taken.</p> <p>(NOTE: The Director may accept cores from nearby wells if the owner or operator can demonstrate that core retrieval is not possible and that such cores are representative of conditions at the well. The Director may require the owner or operator to core other formations in the borehole.)</p> <p>Verify that the fluid temperature, pH, conductivity, pressure, and static fluid level of the injection zone are recorded.</p> <p>Verify that, at a minimum, the following information concerning the injection and confining zones are determined or calculated for Class I hazardous waste injection wells:</p> <ul style="list-style-type: none"> <li>– fracture pressure</li> <li>– other physical and chemical characteristics of the injection and confining zones</li> <li>– physical and chemical characteristics of the formation fluids in the injection zone.</li> </ul> <p>Verify that, upon completion, but prior to operation, the owner or operator conducts one of the following tests to verify hydrogeologic characteristics of the injection zone:</p> <ul style="list-style-type: none"> <li>– a pump test</li> <li>– injectivity tests.</li> </ul> <p>(NOTE: The Director shall have the opportunity to witness all logging and testing.)</p> <p>Verify that the owner or operator submits a schedule of such activities to the Director 30 days prior to conducting the first test.</p>

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<p><b>WQ.110.21.US.</b> Owners/operators of Class I hazardous waste wells must meet operating requirements (40 CFR 146.67) [Added July 2003].</p>	<p>(NOTE: See Appendix 13-15 for a list of waste-specific prohibitions.)</p> <p>(NOTE: These regulations apply to the UIC program promulgated under Part C of the SDWA and, to the extent that they deal with hazardous waste, RCRA. The regulations in 40 CFR 144 also constitute a part of the UIC program for states listed in 40 CFR 147 to be administered directly by USEPA.)</p> <p>Verify that, except during stimulation, injection pressure at the wellhead does not exceed a maximum that is calculated so as to assure that the pressure in the injection zone during injection does not initiate new fractures or propagate existing fractures in the injection zone.</p> <p>Verify that the injection pressure does not initiate fractures or propagate existing fractures in the confining zone, nor cause the movement of injection or formation fluids into a USDW.</p> <p>Verify that there is no injection between the outermost casing protecting USDWs and the well bore.</p> <p>Verify that the owner or operator maintains an annulus pressure that exceeds the operating injection pressure, unless the Director determines that such a requirement might harm the integrity of the well.</p> <p>Verify that the fluid in the annulus is noncorrosive or contains a corrosion inhibitor.</p> <p>Verify that the owner or operator maintains mechanical integrity of the injection well at all times.</p> <p>(NOTE: Permit requirements for owners or operators of hazardous waste wells which inject wastes that have the potential to react with the injection formation to generate gases shall include:</p> <ul style="list-style-type: none"> <li>– conditions limiting the temperature, pH, or acidity of the injected waste; and</li> <li>– procedures necessary to assure that pressure imbalances that might cause a backflow or blowout do not occur.)</li> </ul> <p>Verify that the owner or operator installs and uses continuous recording devices to monitor: the injection pressure; the flow rate, volume, and temperature of injected fluids; and the pressure on the annulus between the tubing and the long string casing.</p> <p>Verify that the owner or operator installs and uses one of the following:</p> <ul style="list-style-type: none"> <li>– automatic alarm and automatic shutoff systems, designed to sound and shut-in the well when pressures and flow rates or other parameters approved by the Director exceed a range and/or gradient specified in the permit</li> </ul>

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	<p>– automatic alarms, designed to sound when the pressures and flow rates or other parameters approved by the Director exceed a rate and/or gradient specified in the permit, in cases where the owner or operator certifies that a trained operator will be onsite at all times when the well is operating.</p> <p>Verify that, if an automatic alarm or shutdown is triggered, the owner or operator immediately investigates and identifies as expeditiously as possible the cause of the alarm or shutoff.</p> <p>Verify that, if the well appears to be lacking mechanical integrity, or if monitoring otherwise indicates that the well may be lacking mechanical integrity, the owner or operator:</p> <ul style="list-style-type: none"> <li>– ceases injection of waste fluids unless authorized by the Director to continue or resume injection</li> <li>– takes all necessary steps to determine the presence or absence of a leak; and</li> <li>– notifies the Director within 24 h after the alarm or shutdown.</li> </ul> <p>Verify that, if a loss of mechanical integrity is discovered, the owner or operator:</p> <ul style="list-style-type: none"> <li>– immediately ceases injection of waste fluids</li> <li>– takes all steps reasonably necessary to determine whether there may have been a release of hazardous wastes or hazardous waste constituents into any unauthorized zone</li> <li>– notifies the Director within 24 h after loss of mechanical integrity is discovered;</li> <li>– notifies the Director when injection can be expected to resume</li> <li>– restores and demonstrates mechanical integrity to the satisfaction of the Director prior to resuming injection of waste fluids.</li> </ul> <p>Verify that, whenever the owner or operator obtains evidence that injected wastes may have been released into an unauthorized zone, the owner or operator:</p> <ul style="list-style-type: none"> <li>– immediately ceases injection of waste fluids</li> <li>– notifies the Director within 24 h of obtaining such evidence</li> <li>– takes all necessary steps to identify and characterize the extent of any release</li> <li>– complies with any remediation plan specified by the Director</li> <li>– implements any remediation plan approved by the Director</li> <li>– where such release is into a USDW currently serving as a water supply, places a notice in a newspaper of general circulation.</li> </ul> <p>(NOTE: The Director may allow the operator to resume injection prior to completing cleanup action if the owner or operator demonstrates that the injection operation will not endanger USDWs.)</p>

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<p><b>WQ.110.22.US.</b> Owners/operators of Class I hazardous waste wells must meet testing and monitoring requirements (40 CFR 146.68) [Added July 2003].</p>	<p>Verify that the owner or operator notifies the Director and obtain his approval prior to conducting any well workover.</p> <p>(NOTE: See Appendix 13-15 for a list of waste-specific prohibitions.)</p> <p>(NOTE: These regulations apply to the UIC program promulgated under Part C of the SDWA and, to the extent that they deal with hazardous waste, RCRA. The regulations in 40 CFR 144 also constitute a part of the UIC program for states listed in 40 CFR 147 to be administered directly by USEPA.)</p> <p>Verify that the owner or operator develops and follows an approved, written waste analysis plan that describes the procedures to be carried out to obtain a detailed chemical and physical analysis of a representative sample of the waste, including the quality assurance procedures used.</p> <p>Verify that, at a minimum, the plan specifies:</p> <ul style="list-style-type: none"> <li>– the parameters for which the waste will be analyzed and the rationale for the selection of these parameters</li> <li>– the test methods that will be used to test for these parameters</li> <li>– the sampling method that will be used to obtain a representative sample of the waste to be analyzed.</li> </ul> <p>Verify that the owner or operator repeats the analysis of the injected wastes as described in the waste analysis plan at frequencies specified in the waste analysis plan and when process or operating changes occur that may significantly alter the characteristics of the waste stream.</p> <p>Verify that the owner or operator conducts continuous or periodic monitoring of selected parameters as required by the Director.</p> <p>Verify that the owner or operator assures that the plan remains accurate and the analyses remain representative.</p> <p>Verify that the owner or operator submits information demonstrating to the satisfaction of the Director that the waste stream and its anticipated reaction products will not alter the permeability, thickness, or other relevant characteristics of the confining or injection zones so that they would no longer meet the requirements specified in 40 CFR 146.62 (see checklist item WQ.110.17.US).</p> <p>Verify that the owner or operator demonstrates that the waste stream will be compatible with the well materials with which the waste is expected to come into contact, and submits to the Director a description of the methodology used to make that determination.</p>

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	<p>(NOTE: Compatibility is established if contact with injected fluids will not cause the well materials to fail to satisfy any design requirement imposed under 40 CFR 146.65(b) [see checklist item WQ.110.19.US].)</p> <p>(NOTE: The Director shall require continuous corrosion monitoring of the construction materials used in wells injecting corrosive waste, and may require such monitoring for other waste, by one of the following:</p> <ul style="list-style-type: none"> <li>– placing coupons of the well construction materials in contact with the waste stream</li> <li>– routing the waste stream through a loop constructed with the material used in the well</li> <li>– using an alternative method approved by the Director.)</li> </ul> <p>Verify that, if a corrosion monitoring program is required:</p> <ul style="list-style-type: none"> <li>– the test uses materials identical to those used in the construction of the well, and such materials are continuously exposed to the operating pressures and temperatures (measured at the well head) and flow rates of the injection operation</li> <li>– the owner or operator monitors the materials for loss of mass, thickness, cracking, pitting, and other signs of corrosion on a quarterly basis to ensure that the well components meet the minimum standards for material strength and performance set forth in 40 CFR 146.65(b) (see checklist item WQ.110.19.US).</li> </ul> <p>Verify that the owner or operator of a Class I hazardous waste injection well conducts the mechanical integrity testing as follows:</p> <ul style="list-style-type: none"> <li>– the long string casing, injection tube, and annular seal are tested by means of an approved pressure test with a liquid or gas annually and whenever there has been a well workover</li> <li>– the bottom-hole cement is tested by means of an approved radioactive tracer survey annually</li> <li>– an approved temperature, noise, or other approved log is run at least once every 5 yr to test for movement of fluid along the borehole</li> <li>– casing inspection logs are run whenever the owner or operator conducts a workover in which the injection string is pulled, unless the Director waives this requirement due to well construction or other factors which limit the test's reliability, or based upon the satisfactory results of a casing inspection log run within the previous 5 yr.</li> <li>– any other test approved by the Director.</li> </ul> <p>(NOTE: Based on a site-specific assessment of the potential for fluid movement from the well or injection zone, and on the potential value of monitoring wells to detect such movement, the Director shall require the owner or operator to develop a monitoring program. At a minimum, the Director shall require monitoring of the pressure buildup in the injection zone annually including, at a minimum, a</p>

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<p><b>WQ.110.23.US.</b> Owners/operators of Class I hazardous waste wells must meet reporting requirements (40 CFR 146.69) [Added July 2003].</p>	<p>shutdown of the well for a time sufficient to conduct a valid observation of the pressure fall-off curve.)</p> <p>(NOTE: The Director may require seismicity monitoring when he has reason to believe that the injection activity may have the capacity to cause seismic disturbances.)</p> <p>(NOTE: See Appendix 13-15 for a list of waste-specific prohibitions.)</p> <p>(NOTE: These regulations apply to the UIC program promulgated under Part C of the SDWA and, to the extent that they deal with hazardous waste, RCRA. The regulations in 40 CFR 144 also constitute a part of the UIC program for states listed in 40 CFR 147 to be administered directly by USEPA.)</p> <p>Verify that reporting requirements include, at a minimum:</p> <ul style="list-style-type: none"> <li>– quarterly reports to the Director containing: <ul style="list-style-type: none"> <li>– the maximum injection pressure</li> <li>– a description of any event that exceeds operating parameters for annulus pressure or injection pressure as specified in the permit</li> <li>– a description of any event that triggers an alarm or shutdown device required pursuant to 40 CFR 146.67(f) (see checklist items WQ.110.21.US) and the response taken</li> <li>– the total volume of fluid injected</li> <li>– any change in the annular fluid volume</li> <li>– the physical, chemical, and other relevant characteristics of injected fluids</li> <li>– the results of monitoring prescribed under 40 CFR 146.68 (see checklist item WQ.110.22.US).</li> </ul> </li> <li>– reporting, within 30 days or with the next quarterly report, whichever comes later, the results of: <ul style="list-style-type: none"> <li>– periodic tests of mechanical integrity</li> <li>– any other test of the injection well conducted by the permittee if required by the Director</li> <li>– any well workover.</li> </ul> </li> </ul> <p>(NOTE: See Appendix 13-15 for a list of waste specific prohibitions.)</p>
<p><b>WQ.110.24.US.</b> Owners/operators of new Class I hazardous waste wells must submit certain information (40 CFR 146.70) [Added July 2003].</p>	<p>(NOTE: These regulations apply to the UIC program promulgated under Part C of the SDWA and, to the extent that they deal with hazardous waste, RCRA. The regulations in 40 CFR 144 also constitute a part of the UIC program for states listed in 40 CFR 147 to be administered directly by USEPA.)</p> <p>Verify that, for a new Class I hazardous waste injection well, the owner or operator submits all the information in this checklist item as part of the permit application.</p>

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	<p>Verify that, for an existing or converted Class I hazardous waste injection well, the owner or operator submits all information in this checklist item as part of the permit application except for those items of information which are current, accurate, and available in the existing permit file.</p> <p>(NOTE: For both existing and new Class I hazardous waste injection wells, certain maps, cross-sections, tabulations of wells within the area of review and other data may be included in the application by reference provided they are current and readily available to the Director (for example, in the permitting agency's files) and sufficiently identifiable to be retrieved. In cases where EPA issues the permit, all the information in this section must be submitted to the Administrator or his designee.)</p> <p>Verify that, prior to the issuance of a permit for an existing Class I hazardous waste injection well to operate or the construction or conversion of a new Class I hazardous waste injection well, the Director has the following to assure that the requirements of this part and 40 CFR 144 are met:</p> <ul style="list-style-type: none"> <li>– information required in 40 CFR 144.31</li> <li>– a map showing the injection well for which a permit is sought and the applicable area of review which shows the number or name and location of all producing wells, injection wells, abandoned wells, dry holes, surface bodies of water, springs, mines (surface and subsurface), quarries, water wells, and other pertinent surface features, including residences and roads (NOTE: The map should also show faults, if known or suspected.)</li> <li>– a tabulation of all wells within the area of review which penetrate the proposed injection zone or confining zone, including a description of each well's type, construction, date drilled, location, depth, record of plugging and/or completion and any additional information the Director may require</li> <li>– the protocol followed to identify, locate, and ascertain the condition of abandoned wells within the area of review which penetrate the injection or the confining zones</li> <li>– maps and cross-sections indicating the general vertical and lateral limits of all USDWs within the area of review, their position relative to the injection formation and the direction of water movement, where known, in each USDW that may be affected by the proposed injection</li> <li>– maps and cross-sections detailing the geologic structure of the local area</li> <li>– maps and cross-sections illustrating the regional geologic setting</li> <li>– proposed operating data: <ul style="list-style-type: none"> <li>– average and maximum daily rate and volume of the fluid to be injected</li> <li>– average and maximum injection pressure</li> </ul> </li> <li>– proposed formation testing program to obtain an analysis of the chemical, physical, and radiological characteristics of and other information on the injection formation and the confining zone</li> <li>– proposed stimulation program</li> <li>– proposed injection procedure</li> </ul>

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	<ul style="list-style-type: none"> <li>– schematic or other appropriate drawings of the surface and subsurface construction details of the well</li> <li>– contingency plans to cope with all shut-ins or well failures so as to prevent migration of fluids into any USDW</li> <li>– plans (including maps) for meeting monitoring requirements of 40 CFR 146.68 (see checklist item WQ.110.22.US)</li> <li>– for wells within the area of review which penetrate the injection zone or the confining zone but are not properly completed or plugged, the corrective action to be taken under 40 CFR 146.64 (see checklist item WQ.110.18.US)</li> <li>– construction procedures including a cementing and casing program, well materials specifications and their life expectancy, logging procedures, deviation checks, and a drilling, testing, and coring program</li> <li>– a demonstration pursuant to 40 CFR 144, subpart F, that the applicant has the resources necessary to close, plug, or abandon the well and for post-closure care.</li> </ul> <p>Verify that, prior to the Director's granting approval for the operation of a Class I hazardous waste injection well, the owner or operator submits and the Director reviews the following information, which is included in the completion report:</p> <ul style="list-style-type: none"> <li>– all available logging and testing program data on the well</li> <li>– a demonstration of mechanical integrity pursuant to 40 CFR 146.68 (see checklist item WQ.110.22.US)</li> <li>– the anticipated maximum pressure and flow rate at which the permittee will operate</li> <li>– the results of the injection zone and confining zone testing program as required in 40 CFR 146.70(a)(9)</li> <li>– the actual injection procedure</li> <li>– the compatibility of injected waste with fluids in the injection zone and minerals in both the injection zone and the confining zone and with the materials used to construct the well</li> <li>– the calculated area of review based on data obtained during logging and testing of the well and the formation, and where necessary revisions to the information submitted under 40 CFR 146.70(a)(2) and 146.70(a)(3)</li> <li>– the status of corrective action on wells identified in 40 CFR 146.70(a)(15).</li> </ul> <p>(NOTE: Prior to granting approval for the plugging and abandonment [i.e., closure] of a Class I hazardous waste injection well, the Director shall review the information required in 40 CFR 146.71(a)(4) and 146.72(a).)</p> <p>(NOTE: Any permit issued for a Class I hazardous waste injection well for disposal on the premises where the waste is generated shall contain a certification by the owner or operator that:</p> <ul style="list-style-type: none"> <li>– the generator of the hazardous waste has a program to reduce the volume or quantity and toxicity of such waste to the degree determined by the generator to be economically practicable</li> </ul>

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<p><b>WQ.110.25.US.</b> Owners/operators of new Class I hazardous waste wells must meet certain closure requirements (40 CFR 146.71) [Added July 2003].</p>	<p>– injection of the waste is the practicable method of disposal currently available to the generator that minimizes the present and future threat to human health and the environment.)</p> <p>(NOTE: See Appendix 13-15 for a list of waste specific prohibitions.)</p> <p>(NOTE: These regulations apply to the UIC program promulgated under Part C of the SDWA and, to the extent that they deal with hazardous waste, RCRA. The regulations in 40 CFR 144 also constitute a part of the UIC program for states listed in 40 CFR 147 to be administered directly by USEPA.)</p> <p>Verify that the owner or operator of a Class I hazardous waste injection well prepares, maintains, and complies with a plan for closure of the well.</p> <p>(NOTE: The obligation to implement the closure plan survives the termination of a permit or the cessation of injection activities. The requirement to maintain and implement an approved plan is directly enforceable regardless of whether the requirement is a condition of the permit.)</p> <p>Verify that the owner or operator submits the plan as a part of the permit application and, upon approval by the Director; the plan is a condition of any permit issued.</p> <p>Verify that the owner or operator submits any proposed significant revision to the method of closure reflected in the plan for approval by the Director no later than the date on which notice of closure is required to be submitted to the Director.</p> <p>Verify that the plan assures financial responsibility.</p> <p>Verify that the plan includes the following information:</p> <ul style="list-style-type: none"> <li>– the type and number of plugs to be used</li> <li>– the placement of each plug, including the elevation of the top and bottom of each plug</li> <li>– the type and grade and quantity of material to be used in plugging</li> <li>– the method of placement of the plugs</li> <li>– any proposed test or measure to be made</li> <li>– the amount, size, and location (by depth) of casing and any other materials to be left in the well</li> <li>– the method and location where casing is to be parted, if applicable</li> <li>– the procedure to be used to place cement plugs</li> <li>– the estimated cost of closure</li> <li>– any proposed test or measure to be made.</li> </ul> <p>(NOTE: The Director may modify a closure plan.)</p>

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	<p>(NOTE: An owner or operator of a Class I hazardous waste injection well who ceases injection temporarily, may keep the well open provided he:</p> <ul style="list-style-type: none"> <li>– has received authorization from the Director</li> <li>– has described actions or procedures, satisfactory to the Director, that the owner or operator will take to ensure that the well will not endanger USDWs during the period of temporary disuse.</li> </ul> <p>These actions and procedures shall include compliance with the technical requirements applicable to active injection wells unless waived by the Director.)</p> <p>Verify that the owner or operator of a well that has ceased operations for more than 2 yr notifies the Director 30 days prior to resuming operation of the well.</p> <p>Verify that the owner or operator notifies the Director at least 60 days before closure of a well.</p> <p>(NOTE: At the discretion of the Director, a shorter notice period may be allowed.)</p> <p>Verify that, within 60 days after closure or at the time of the next quarterly report (whichever is less), the owner or operator submits a closure report to the Director.</p> <p>(NOTE: If the quarterly report is due less than 15 days after completion of closure, then the report shall be submitted within 60 days after closure.)</p> <p>Verify that the report is certified as accurate by the owner or operator and by the person who performed the closure operation (if other than the owner or operator).</p> <p>Verify that the report consists of either:</p> <ul style="list-style-type: none"> <li>– a statement that the well was closed in accordance with the closure plan previously submitted and approved by the Director</li> <li>– where actual closure differed from the plan previously submitted, a written statement specifying the differences between the previous plan and the actual closure.</li> </ul> <p>Verify that, prior to closing the well, the owner or operator observes and records the pressure decay for a time specified by the Director.</p> <p>(NOTE: The Director shall analyze the pressure decay and the transient pressure observations conducted and determine whether the injection activity has conformed to predicted values.)</p> <p>Verify that, prior to well closure, appropriate mechanical integrity testing is conducted to ensure the integrity of that portion of the long string casing and cement that will be left in the ground after closure.</p> <p>(NOTE: Testing methods may include:</p> <ul style="list-style-type: none"> <li>– pressure tests with liquid or gas</li> </ul>

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<p><b>WQ.110.26.US.</b> Owners/operators of new Class I hazardous waste wells must meet certain postclosure requirements (40 CFR 146.72) [Added July 2003].</p>	<ul style="list-style-type: none"> <li>– radioactive tracer surveys</li> <li>– noise, temperature, pipe evaluation, or cement bond logs</li> <li>– any other test required by the Director.)</li> </ul> <p>Verify that, prior to well closure, the well is flushed with a buffer fluid.</p> <p>Verify that, upon closure, a Class I hazardous waste well is plugged with cement in a manner that will not allow the movement of fluids into or between USDWs.</p> <p>Verify that placement of the cement plugs is accomplished by one of the following:</p> <ul style="list-style-type: none"> <li>– the Balance Method</li> <li>– the Dump Bailer Method</li> <li>– the Two-Plug Method</li> <li>– an alternate method, approved by the Director, which will reliably provide a comparable level of protection.</li> </ul> <p>Verify that each plug used is appropriately tagged and tested for seal and stability before closure is completed.</p> <p>Verify that the well to be closed is in a state of static equilibrium with the mud weight equalized top to bottom, either by circulating the mud in the well at least once or by a comparable method prescribed by the Director, prior to the placement of the cement plug(s).</p> <p>(NOTE: See Appendix 13-15 for a list of waste specific prohibitions.)</p> <p>(NOTE: These regulations apply to the UIC program promulgated under Part C of the SDWA and, to the extent that they deal with hazardous waste, RCRA. The regulations in 40 CFR 144 also constitute a part of the UIC program for states listed in 40 CFR 147 to be administered directly by USEPA.)</p> <p>Verify that the owner or operator of a Class I hazardous waste well prepares, maintains, and complies with a plan for post-closure care.</p> <p>(NOTE: The obligation to implement the post-closure plan survives the termination of a permit or the cessation of injection activities. The requirement to maintain an approved plan is directly enforceable regardless of whether the requirement is a condition of the permit.)</p> <p>Verify that the owner or operator submits the plan as a part of the permit application and, upon approval by the Director; such plan is a condition of any permit issued.</p> <p>Verify that the owner or operator submits any proposed significant revision to the plan as appropriate over the life of the well, but no later than the date of the closure report.</p>

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	<p>Verify that the plan assures financial responsibility.</p> <p>Verify that the plan includes the following information:</p> <ul style="list-style-type: none"> <li>– the pressure in the injection zone before injection began</li> <li>– the anticipated pressure in the injection zone at the time of closure</li> <li>– the predicted time until pressure in the injection zone decays to the point that the well's cone of influence no longer intersects the base of the lowermost USDW</li> <li>– predicted position of the waste front at closure</li> <li>– the status of any cleanups</li> <li>– the estimated cost of proposed post-closure care.</li> </ul> <p>(NOTE: At the request of the owner or operator, or on his own initiative, the Director may modify the post-closure plan after submission of the closure report.)</p> <p>Verify that the owner or operator:</p> <ul style="list-style-type: none"> <li>– continues and completes any cleanup action required</li> <li>– continues to conduct any groundwater monitoring required under the permit until pressure in the injection zone decays to the point that the well's cone of influence no longer intersects the base of the lowermost USDW</li> <li>– submits a survey plat to the local zoning authority designated by the Director that indicates the location of the well relative to permanently surveyed benchmarks.</li> <li>– provides appropriate notification and information to such state and local authorities as have cognizance over drilling activities to enable such State and local authorities to impose appropriate conditions on subsequent drilling activities that may penetrate the well's confining or injection zone</li> <li>– retains, for a period of 3 yr following well closure, records reflecting the nature, composition and volume of all injected fluids.</li> </ul> <p>Verify that a copy of the plat is submitted to the Regional Administrator of the appropriate USEPA Regional Office.</p> <p>Verify that each owner of a Class I hazardous waste injection well, and the owner of the surface or subsurface property on or in which a Class I hazardous waste injection well is located, record a notation on the deed to the facility property or on some other instrument which is normally examined during title search that will in perpetuity provide any potential purchaser of the property the following information:</p> <ul style="list-style-type: none"> <li>– the fact that land has been used to manage hazardous waste</li> <li>– the name of the state agency or local authority with which the plat was filed, as well as the address of the Regional Environmental Protection Agency Office to which it was submitted</li> </ul>

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	<p>– the type and volume of waste injected, the injection interval or intervals over which it was injected, and the period over which injection occurred.</p> <p>(NOTE: See Appendix 13-15 for a list of waste-specific prohibitions.)</p>

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<b>UNDERGROUND CONTROL WELLS</b>  <b>WQ.111</b> <b>Class II</b>  <b>WQ.111.1.US.</b> The construction of Class II wells must meet certain parameters (40 CFR 146.22) [Added July 2003].	<p>Verify that all new Class II wells are sited such that they inject into a formation that is separated from any USDW by a confining zone that is free of known open faults or fractures within the area of review.</p> <p>Verify that all Class II injection wells are cased and cemented to prevent movement of fluids into or between underground sources of drinking water.</p> <p>Verify that the casing and cement used in the construction of each newly drilled well is designed for the life expectancy of the well.</p> <p>Verify that, in determining and specifying casing and cementing requirements, the following factors are considered:</p> <ul style="list-style-type: none"> <li>– depth to the injection zone</li> <li>– depth to the bottom of all USDWs</li> <li>– estimated maximum and average injection pressures.</li> </ul> <p>(NOTE: The Director may also consider information on:</p> <ul style="list-style-type: none"> <li>– nature of formation fluids</li> <li>– lithology of injection and confining zones</li> <li>– external pressure, internal pressure, and axial loading</li> <li>– hole size</li> <li>– size and grade of all casing strings</li> <li>– class of cement.)</li> </ul> <p>(NOTE: The casing and cementing requirements in this checklist item need not apply to existing or newly converted Class II wells located in existing fields if:</p> <ul style="list-style-type: none"> <li>– regulatory controls for casing and cementing existed for those wells at the time of drilling and those wells are in compliance with those controls</li> <li>– well injection will not result in the movement of fluids into an USDW so as to create a significant risk to human health.)</li> </ul> <p>(NOTE: The casing and cementing requirements in this checklist item need not apply to newly drilled wells in existing fields if:</p> <ul style="list-style-type: none"> <li>– they meet the requirements of the state for casing and cementing applicable to that field at the time of submission of the state program to the Administrator</li> <li>– well injection will not result in the movement of fluids into an USDW so as to create a significant risk to human health.)</li> </ul>

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	<p>(NOTE: Where a state did not have regulatory controls for casing and cementing prior to the time of the submission of the state program to the Administrator, the Director need not apply the casing and cementing requirements if he submits, as a part of his application for primacy, an appropriate plan for casing and cementing of existing, newly converted, and newly drilled wells in existing fields, and the Administrator approves the plan.)</p> <p>Verify that appropriate logs and other tests are conducted during the drilling and construction of new Class II wells.</p> <p>Verify that a descriptive report interpreting the results of that portion of those logs and tests which specifically relate to a USDW and the confining zone adjacent to it is prepared by a knowledgeable log analyst and submitted to the Director.</p> <p>Verify that, at a minimum, these logs and tests include:</p> <ul style="list-style-type: none"> <li>– deviation checks on all holes constructed by first drilling a pilot hole and then enlarging the pilot hole, by reaming or another Method (NOTE: Such checks shall be at sufficiently frequent intervals to assure that vertical avenues for fluid movement in the form of diverging holes are not created during drilling.)</li> <li>– such other logs and tests as may be needed after taking into account the availability of similar data in the area of the drilling site, the construction plan, and the need for additional information that may arise from time to time as the construction of the well progresses.</li> </ul> <p>(NOTE: In determining which logs and tests are required, the following are considered by the Director in setting logging and testing requirements:</p> <ul style="list-style-type: none"> <li>– for surface casing intended to protect underground sources of drinking water in areas where the lithology has not been determined: <ul style="list-style-type: none"> <li>– electric and caliper logs before casing is installed</li> <li>– a cement bond, temperature, or density log after the casing is set and cemented</li> </ul> </li> <li>– for intermediate and long strings of casing intended to facilitate injection: <ul style="list-style-type: none"> <li>– electric porosity and gamma ray logs before the casing is installed</li> <li>– fracture finder logs</li> <li>– a cement bond, temperature, or density log after the casing is set and cemented.)</li> </ul> </li> </ul> <p>Verify that, at a minimum, the following information concerning the injection formation is determined or calculated for new Class II wells or projects:</p> <ul style="list-style-type: none"> <li>– fluid pressure</li> <li>– estimated fracture pressure</li> <li>– physical and chemical characteristics of the injection zone.</li> </ul>

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<p><b>WQ.111.2.US.</b> Owners/operators of Class II wells authorized by rule must meet specific casing and cementing requirements (40 CFR 144.1(a), 144.1(b), and 144.28(e)) <b>[Added July 2003]</b>.</p>	<p>(NOTE: These regulations apply to the UIC program promulgated under Part C of the SDWA and, to the extent that they deal with hazardous waste, RCRA. The regulations in 40 CFR 144 also constitute a part of the UIC program for states listed in 40 CFR 147 to be administered directly by USEPA.)</p> <p>Verify that, for enhanced recovery and hydrocarbon storage wells authorized by rule, the owner or operator cased and cements the well to prevent movement of fluids into or between USDW.</p> <p>Verify that, in determining and specifying casing and cementing requirements, the following factors are considered:</p> <ul style="list-style-type: none"> <li>– depth to the injection zone</li> <li>– depth to the bottom of all USDWs</li> <li>– estimated maximum and average injection pressures.</li> </ul> <p>(NOTE: In addition, in determining and specifying casing and cementing requirements, the Director may consider information on:</p> <ul style="list-style-type: none"> <li>– nature of formation fluids</li> <li>– lithology of injection and confining zones</li> <li>– external pressure, internal pressure, and axial loading</li> <li>– hole size</li> <li>– size and grade of all casing strings</li> <li>– class of cement.)</li> </ul> <p>(NOTE: This checklist item does not apply if:</p> <ul style="list-style-type: none"> <li>– regulatory controls for casing and cementing existed at the time of drilling of the well, and the well is in compliance with those controls</li> <li>– well injection will not result in the movement of fluids into a USDW so as to create a significant risk to human health.)</li> </ul> <p>(NOTE: When a State did not have regulatory controls for casing and cementing prior to the time of the submission of the state program to the Administrator, the Director need not apply the casing and cementing requirements of this checklist item if he submits, as a part of his application for primacy, an appropriate plan for casing and cementing of existing, newly converted, and newly drilled wells in existing fields, and the Administrator approves the plan.)</p>
<p><b>WQ.111.3.US.</b> Owners/operators of Class II wells authorized by rule must meet specific operating requirements (40 CFR 144.1(a), 144.1(b), and</p>	<p>(NOTE: These regulations apply to the UIC program promulgated under Part C of the SDWA and, to the extent that they deal with hazardous waste, RCRA. The regulations in 40 CFR 144 also constitute a part of the UIC program for states listed in 40 CFR 147 to be administered directly by USEPA.)</p> <p>Verify that there is no injection between the outermost casing protecting a USDW and the well bore for Class II wells authorized by rule.</p>

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<p>144.28(f)) [Added July 2003].</p> <p><b>WQ.111.4.US.</b> Owners/operators of Class II wells authorized by rule must meet specific operating requirements (40 CFR 146.23(a)) [Added July 2003].</p>	<p>Verify that the owner or operator of a Class II injection well authorized by rule establishes and maintains mechanical integrity as defined in 40 CFR 146.8 (see checklist item WQ.109.4.US) until the well is properly plugged in accordance with an approved plugging and abandonment plan, and a plugging and abandonment report is submitted, or until the well is converted in compliance with 40 CFR 144.28(j) (see checklist item WQ.111.8.US).</p> <p>(NOTE: For USEPA-administered programs, the Regional Administrator may require, by written notice, that the owner or operator comply with a schedule describing when mechanical integrity demonstrations shall be made.)</p> <p>(NOTE: When the Director determines that a Class II injection well lacks mechanical integrity, the Director shall give written notice of his determination to the owner or operator. Unless the Director requires immediate cessation, the owner or operator shall cease injection into the well within 48 hours of receipt of the Director's determination. The Director may allow plugging of the well in accordance with the requirements of 40 CFR 146.10, or require the owner or operator to perform such additional construction, operation, monitoring, reporting, and corrective action as is necessary to prevent the movement of fluid into or between USDWs caused by the lack of mechanical integrity. The owner or operator may resume injection upon receipt of written notification from the Director that the owner or operator has demonstrated mechanical integrity.)</p> <p>(NOTE: The Director may allow the owner or operator of a well that lacks mechanical integrity to continue or resume injection if the owner or operator has made a satisfactory demonstration that there is no movement of fluid into or between USDWs.)</p> <p>Verify that, for Class II wells, the owner or operator does not exceed a maximum injection pressure at the wellhead that is calculated so as to assure that the pressure during injection does not initiate new fractures or propagate existing fractures in the confining zone adjacent to the USDWs.</p> <p>Verify that, for Class II wells, the owner or operator does not inject at a pressure that will cause the movement of injection or formation fluids into a USDW.</p> <p>Verify that, at a minimum, operating requirements specify that:</p> <ul style="list-style-type: none"> <li>– injection pressure at the wellhead does not exceed a maximum that is calculated so as to assure that the pressure during injection does not initiate new fractures or propagate existing fractures in the confining zone adjacent to the USDWs</li> <li>– in no case shall injection pressure cause the movement of injection or formation fluids into a USDW</li> <li>– injection between the outermost casing protecting USDW and the well bore is prohibited.</li> </ul>

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<p><b>WQ.111.5.US.</b> Owners/operators of Class II wells authorized by rule must meet specific monitoring requirements (40 CFR 144.1(a), 144.1(b), 144.28(g)) <b>[Added July 2003]</b>.</p>	<p>(NOTE: These regulations apply to the UIC program promulgated under Part C of the SDWA and, to the extent that they deal with hazardous waste, RCRA. The regulations in 40 CFR 144 also constitute a part of the UIC program for states listed in 40 CFR 147 to be administered directly by USEPA.)</p> <p>Verify that, for USEPA-administered programs, monitoring of the nature of the injected fluids complies with applicable analytical methods cited and described in table I of 40 CFR 136.3, in appendix III of 40 CFR 261, or by other methods that have been approved by the Regional Administrator.</p> <p>Verify that the owner or operator of a Class II well authorized by rule:</p> <ul style="list-style-type: none"> <li>– monitors the nature of the injected fluids with sufficient frequency to yield data representative of their characteristics.</li> <li>– observes the injection pressure, flow rate, and cumulative volume at least with the following frequencies: <ul style="list-style-type: none"> <li>– weekly for produced fluid disposal operations</li> <li>– monthly for enhanced recovery operations</li> <li>– daily during the injection of liquid hydrocarbons and injection for withdrawal of stored hydrocarbons</li> <li>– daily during the injection phase of cyclic steam operations</li> </ul> </li> <li>– records one observation of injection pressure, flow rate, and cumulative volume at reasonable intervals of no greater than 30 days.</li> </ul> <p>(NOTE: For USEPA-administered programs, this frequency of monitoring the nature of the injected fluids to yield data representative of their characteristic shall be at least once within the first year of the authorization and thereafter when changes are made to the fluid.)</p> <p>Verify that the owner or operator of enhanced recovery and hydrocarbon storage wells (Class II) demonstrates mechanical integrity at least once every 5 yr during the life of the injection well.</p> <p>(NOTE: For USEPA-administered programs, the Regional Administrator may require the owner or operator to comply with a schedule describing when such demonstrations of mechanical integrity will be made.)</p> <p>Verify that, for Class II wells in USEPA-administered programs, the owner or operator of any well required to be tested for mechanical integrity notifies the Regional Administrator at least 30 days prior to any required mechanical integrity test.</p> <p>(NOTE: The Regional Administrator may allow a shorter notification period if it would be sufficient to enable USEPA to witness the mechanical integrity testing if</p>

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<p><b>WQ.111.6.US.</b> Owners/operators of Class II wells must meet specific monitoring requirements (40 CFR 146.13(b)) [Added July 2003].</p>	<p>it chose. Notification may be in the form of a yearly or quarterly schedule of planned mechanical integrity tests, or it may be on an individual basis.)</p> <p>(NOTE: The owner or operator of a hydrocarbon storage or enhanced recovery wells may monitor them by manifold monitoring on a field or project basis rather than on an individual well basis if such facilities consist of more than one injection well, operate with a common manifold, and provided the owner or operator demonstrates to the Director that manifold monitoring is comparable to individual well monitoring.)</p> <p>Verify that, at a minimum, monitoring requirements include:</p> <ul style="list-style-type: none"> <li>– monitoring of the nature of injected fluids at time intervals sufficiently frequent to yield data representative of their characteristics</li> <li>– observation of injection pressure, flow rate, and cumulative volume at least with the following frequencies: <ul style="list-style-type: none"> <li>– weekly for produced fluid disposal operations</li> <li>– monthly for enhanced recovery operations</li> <li>– daily during the injection of liquid hydrocarbons and injection for withdrawal of stored hydrocarbons</li> <li>– daily during the injection phase of cyclic steam operations and recording of one observation of injection pressure, flow rate, and cumulative volume at reasonable intervals no greater than 30 days.</li> </ul> </li> <li>– a demonstration of mechanical integrity pursuant to 40 CFR 146.8 (see checklist item WQ.109.4.US) at least once every 5 yr during the life of the injection well</li> <li>– maintenance of the results of all monitoring until the next permit review</li> <li>– hydrocarbon storage and enhanced recovery may be monitored on a field or project basis rather than on an individual well basis by manifold monitoring.</li> </ul> <p>(NOTE: Manifold monitoring may be used in cases of facilities consisting of more than one injection well, operating with a common manifold. Separate monitoring systems for each well are not required provided the owner/operator demonstrates that manifold monitoring is comparable to individual well monitoring.)</p>
<p><b>WQ.111.7.US.</b> A plugging and abandonment plan is required for owners/operators of Class II wells authorized by rule (40 CFR 144.1(a), 144.1(b), 144.28(c), and 144.28(d)) [Added July 2003].</p>	<p>(NOTE: These regulations apply to the UIC program promulgated under Part C of the SDWA and, to the extent that they deal with hazardous waste, RCRA. The regulations in 40 CFR 144 also constitute a part of the UIC program for states listed in 40 CFR 147 to be administered directly by USEPA.)</p> <p>Verify that the owner or operator prepares, maintains, and complies with a plan for plugging and abandonment of the well or project that meets the requirements of 40 CFR 146.10 (see checklist item WQ.111.7.US) and is acceptable to the Director.</p>

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<p><b>WQ.111.8.US.</b> Owners/operators of Class II wells authorized by rule must notify the Director of well abandonment (40 CFR 144.1(a), 144.1(b), and 144.28(j)) [Added July 2003].</p>	<p>(NOTE: For purposes of this checklist item, temporary intermittent cessation of injection operations is not abandonment.)</p> <p>Verify that, for USEPA-administered programs:</p> <ul style="list-style-type: none"> <li>– the owner or operator submits the plan, on a form provided by the Regional Administrator, no later than 1 yr after the effective date of the UIC program in the state</li> <li>– the owner or operator submits any proposed significant revision to the method of plugging reflected in the plan no later than the notice of plugging (i.e., 45 days prior to plugging unless shorter notice is approved).</li> <li>– the plan includes the following information: <ul style="list-style-type: none"> <li>– the nature and quantity of material to be used in plugging</li> <li>– the location and extent (by depth) of the plugs</li> <li>– any proposed test or measurement to be made</li> <li>– the amount, size, and location (by depth) of casing to be left in the well</li> <li>– the method and location where casing is to be parted</li> <li>– the estimated cost of plugging the well.</li> </ul> </li> </ul> <p>Verify that, after a cessation of operations of 2 yr, the owner or operator shall plug and abandon the well in accordance with the plan unless he:</p> <ul style="list-style-type: none"> <li>– provides notice to the Regional Administrator</li> <li>– describes actions or procedures, satisfactory to the Regional Administrator, that the owner or operator will take to ensure that the well will not endanger USDWs during the period of temporary abandonment.</li> </ul> <p>(NOTE: These actions and procedures shall include compliance with the technical requirements applicable to active injection wells unless waived by the Regional Administrator.)</p> <p>Verify that the owner or operator of any well that has been temporarily abandoned (ceased operations for more than 2 yr and has provided notice and described the actions to be taken) notifies the Regional Administrator prior to resuming operation of the well.</p> <p>(NOTE: These regulations apply to the UIC program promulgated under Part C of the SDWA and, to the extent that they deal with hazardous waste, RCRA. The regulations in 40 CFR 144 also constitute a part of the UIC program for states listed in 40 CFR 147 to be administered directly by USEPA.)</p> <p>Verify that the owner or operator notifies the Director, according to a time period required by the Director, before conversion or abandonment of the well.</p>

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<p><b>WQ.111.9.US.</b> The plugging and abandonment of Class II wells must meet specific criteria (40 CFR 146.10(a)) [Added July 2003].</p>	<p>Verify that, for USEPA-administered programs, the owner or operator notifies the Regional Administrator at least 45 days before plugging and abandonment.</p> <p>(NOTE: The Regional Administrator, at his discretion, may allow a shorter notice period.)</p> <p>Verify that, prior to abandoning Class II wells; the well is plugged with cement in a manner that will not allow the movement of fluids either into or between USDWs.</p> <p>Verify that the placement of the cement plugs is done by one of the following:</p> <ul style="list-style-type: none"> <li>– the Balance method</li> <li>– the Dump Bailer method</li> <li>– the Two-Plug method</li> <li>– an alternative method approved by the Director, which will reliably provide a comparable level of protection to USDW.</li> </ul> <p>Verify that the well to be abandoned is in a state of static equilibrium with the mud weight equalized top to bottom, either by circulating the mud in the well at least once or by a comparable method prescribed by the Director, prior to the placement of the cement plug(s).</p>
<p><b>WQ.111.10.US.</b> Owners/operators of Class II wells authorized by rule must submit a plugging and abandonment report after plugging a well (40 CFR 144.1(a), 144.1(b), and 144.28(k)) [Added July 2003].</p>	<p>(NOTE: These regulations apply to the UIC program promulgated under Part C of the SDWA and, to the extent that they deal with hazardous waste, RCRA. The regulations in 40 CFR 144 also constitute a part of the UIC program for states listed in 40 CFR 147 to be administered directly by USEPA.)</p> <p>Verify that, for USEPA-administered programs, within 60 days after plugging a well or at the time of the next quarterly report (whichever is less) the owner or operator submits a report to the Regional Administrator consisting of one of the following:</p> <ul style="list-style-type: none"> <li>– a statement that the well was plugged in accordance with the plan previously submitted to the Regional Administrator</li> <li>– where actual plugging differed from the plan previously submitted, an updated version of the plan, on the form supplied by the Regional Administrator, specifying the different procedures used.</li> </ul> <p>(NOTE: If the quarterly report is due less than 15 days before completion of plugging, then the report shall be submitted within 60 days.)</p> <p>Verify that the person who performed the plugging operation certifies the report as accurate.</p>
<p><b>WQ.111.11.US.</b> Owners/operators of Class II wells</p>	<p>(NOTE: These regulations apply to the UIC program promulgated under Part C of the SDWA and, to the extent that they deal with hazardous waste, RCRA. The</p>

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<p>authorized by rule must notify the Director of change of ownership or operational control (40 CFR 144.1(a), 144.1(b), and 144.28(l)) [Added July 2003].</p> <p><b>WQ.111.12.US.</b> Reporting of noncompliance will be done by owners/operators of Class II wells authorized by rule (40 CFR 144.1(a), 144.1(b), 144.28(a), and 144.28(b)) [Added July 2003].</p>	<p>regulations in 40 CFR 144 also constitute a part of the UIC program for states listed in 40 CFR 147 to be administered directly by USEPA.)</p> <p>Verify that, for USEPA-administered programs, the transferor of a Class II well authorized by rule notifies the Regional Administrator of a transfer of ownership or operational control of the well at least 30 days in advance of the proposed transfers.</p> <p>Verify that the notice includes a written agreement between the transferor and the transferee containing a specific date for transfer of ownership or operational control of the well; and a specific date when the transferee will meet the financial responsibility demonstration.</p> <p>(NOTE: The transferee is authorized to inject unless he receives notification from the Director that the transferee has not demonstrated financial responsibility.)</p> <p>(NOTE: These regulations apply to the UIC program promulgated under Part C of the SDWA and, to the extent that they deal with hazardous waste, RCRA. The regulations in 40 CFR 144 also constitute a part of the UIC program for states listed in 40 CFR 147 to be administered directly by USEPA.)</p> <p>(NOTE: Any noncompliance with the requirements for injection wells constitutes a violation of the SDWA and is grounds for enforcement action, except that the owner or operator need not comply with these requirements to the extent and for the duration such noncompliance is authorized by an emergency permit.)</p> <p>Verify that the owner or operator report any noncompliance that may endanger health or the environment within 24 h, including:</p> <ul style="list-style-type: none"> <li>– any monitoring or other information which indicates that any contaminant may endanger a USDW</li> <li>– any noncompliance or malfunction of the injection system that may cause fluid migration into or between USDWs.</li> </ul> <p>Verify that any information is provided orally within 24 h from the time the owner or operator becomes aware of the circumstances.</p> <p>Verify that a written submission is provided within 5 days of the time the owner or operator becomes aware of the circumstances.</p> <p>Verify that the written submission contains a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times; if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.</p>

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<p><b>WQ.111.13.US.</b> Owners/operators of Class II wells authorized by rule must meet ongoing reporting requirements (40 CFR 144.1(a), 144.1(b), 144.28(h)(2)) <b>[Added July 2003]</b>.</p>	<p>(NOTE: These regulations apply to the UIC program promulgated under Part C of the SDWA and, to the extent that they deal with hazardous waste, RCRA. The regulations in 40 CFR 144 also constitute a part of the UIC program for states listed in 40 CFR 147 to be administered directly by USEPA.)</p> <p>Verify that the owner or operator of Class II wells submits an annual report to the Director summarizing the results of all required monitoring, including:</p> <ul style="list-style-type: none"> <li>– monthly records of injected fluids</li> <li>– any major changes in characteristics or sources of injected fluids.</li> </ul> <p>(NOTE: For Class II wells, previously submitted information may be included by reference.)</p> <p>The owner or operator of hydrocarbon storage and enhanced recovery projects may report on a field or project basis rather than on an individual well basis where manifold monitoring is used.</p> <p>Verify that the owner or operator of Class II wells submits:</p> <ul style="list-style-type: none"> <li>– quarterly reporting on all required monitoring</li> <li>– quarterly reporting of the results of any periodic tests required by the Director that are performed during the reported quarter.</li> </ul>
<p><b>WQ.111.14.US.</b> Owners/operators of Class II wells must meet ongoing reporting requirements (40 CFR 146.23(c)) <b>[Added July 2003]</b>.</p>	<p>Verify that, at a minimum, reporting requirements include an annual report to the Director summarizing the results of required monitoring, including:</p> <ul style="list-style-type: none"> <li>– monthly records of injected fluids</li> <li>– any major changes in characteristics or sources of injected fluid.</li> </ul> <p>(NOTE: Previously submitted information may be included by reference.)</p> <p>(NOTE: Owners or operators of hydrocarbon storage and enhanced recovery projects may report on a field or project basis rather than an individual well basis where manifold monitoring is used.)</p>
<p><b>WQ.111.15.US.</b> Owners/operators of Class II wells authorized by rule must meet specific recordkeeping requirements (40 CFR 144.1(a), 144.1(b), and 144.28(i)) <b>[Added July 2003]</b>.</p>	<p>(NOTE: These regulations apply to the UIC program promulgated under Part C of the SDWA and, to the extent that they deal with hazardous waste, RCRA. The regulations in 40 CFR 144 also constitute a part of the UIC program for states listed in 40 CFR 147 to be administered directly by USEPA.)</p> <p>Verify that the owner or operator retains records of all monitoring information, including the following:</p>

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	<ul style="list-style-type: none"> <li>– calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, and copies of all required reports for a period of at least 3 yr from the date of the sample, measurement, or report</li> <li>– the nature and composition of all injected fluids until 3 yr after the completion of any plugging and abandonment procedures.</li> </ul> <p>(NOTE: The record retention period may be extended at any time by the request of the Director.)</p> <p>(NOTE: The Director may require the owner or operator to deliver the records to the Director at the conclusion of the retention period.)</p> <p>Verify that, for USEPA-administered programs, the owner or operator continues to retain the records after the 3-yr retention period unless he delivers the records to the Regional Administrator or obtains written approval from the Regional Administrator to discard the records.</p>



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<b>UNDERGROUND CONTROL WELLS</b>  <b>WQ.112</b> <b>Class III</b>  <b>WQ.112.1.US.</b> The construction of Class III wells must meet certain parameters (40 CFR 146.32) [ <b>Added July 2003</b> ].	<p>Verify that all new Class III wells are cased and cemented to prevent the migration of fluids into or between underground sources of drinking water.</p> <p>(NOTE: The Director may waive the cementing requirement for new wells in existing projects or portions of existing projects where he has substantial evidence that no contamination of underground sources of drinking water would result.)</p> <p>Verify that the casing and cement used in the construction of each newly drilled well is designed for the life expectancy of the well.</p> <p>Verify that, in determining and specifying casing and cementing requirements, the following factors are considered:</p> <ul style="list-style-type: none"> <li>– depth to the injection zone</li> <li>– injection pressure, external pressure, internal pressure, axial loading, etc.</li> <li>– hole size</li> <li>– size and grade of all casing strings (wall thickness, diameter, nominal weight, length, joint specification, and construction material)</li> <li>– corrosiveness of injected fluids and formation fluids</li> <li>– lithology of injection and confining zones</li> <li>– type and grade of cement.</li> </ul> <p>Verify that appropriate logs and other tests are conducted during the drilling and construction of new Class III wells.</p> <p>Verify that a descriptive report interpreting the results of such logs and tests is prepared by a knowledgeable log analyst and submitted to the Director.</p> <p>Verify that the logs and tests appropriate to each type of Class III well are determined based on the intended function, depth, construction and other characteristics of the well, availability of similar data in the area of the drilling site and the need for additional information that may arise from time to time as the construction of the well progresses.</p> <p>Verify that deviation checks are conducted on all holes where pilot holes and reaming are used, unless the hole will be cased and cemented by circulating cement to the surface.</p> <p>Verify that, where deviation checks are necessary, they are conducted at sufficiently frequent intervals to assure that vertical avenues for fluid migration in the form of diverging holes are not created during drillings.</p>

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	<p>Verify that, where the injection zone is a formation that is naturally water-bearing the following information concerning the injection zone is determined or calculated for new Class III wells or projects:</p> <ul style="list-style-type: none"> <li>– fluid pressure</li> <li>– fracture pressure</li> <li>– physical and chemical characteristics of the formation fluids.</li> </ul> <p>Verify that, where the injection formation is not a water-bearing formation, the fracture pressure is submitted.</p> <p>Verify that, where injection is into a formation that contains water with less than 10,000 mg/L TDS monitoring wells are completed into the injection zone and into any underground sources of drinking water above the injection zone that could be affected by the mining operation.</p> <p>Verify that these wells are located in such a fashion as to detect any excursion of injection fluids, process by-products, or formation fluids outside the mining area or zone.</p> <p>Verify that, if the operation may be affected by subsidence or catastrophic collapse, the monitoring wells are located so that they will not be physically affected.</p> <p>(NOTE: Where injection is into a formation that does not contain water with less than 10,000 mg/L TDS, no monitoring wells are necessary in the injection stratum.)</p> <p>Verify that, where the injection wells penetrate a USDW in an area subject to subsidence or catastrophic collapse, an adequate number of monitoring wells are completed into the USDW to detect any movement of injected fluids, process by-products, or formation fluids into the USDW.</p> <p>Verify that the monitoring wells are located outside the physical influence of the subsidence or catastrophic collapse.</p> <p>Verify that, in determining the number of monitoring wells, location, construction, and frequency of monitoring, the following criteria are considered:</p> <ul style="list-style-type: none"> <li>– the population relying on the USDW affected or potentially affected by the injection operation</li> <li>– the proximity of the injection operation to points of withdrawal of drinking water</li> <li>– the local geology and hydrology</li> <li>– the operating pressures and whether a negative pressure gradient is being maintained</li> <li>– the nature and volume of the injected fluid, the formation water, and the process by-products</li> </ul>

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<p><b>WQ.112.2.US.</b> Owners/operators of Class III wells authorized by rule must meet specific casing and cementing requirements (40 CFR 144.1(a), 144.1(b), and 144.28(e)) [Added July 2003].</p>	<p>– the injection well density.</p> <p>(NOTE: These regulations apply to the UIC program promulgated under Part C of the SDWA and, to the extent that they deal with hazardous waste, RCRA. The regulations in 40 CFR 144 also constitute a part of the UIC program for states listed in 40 CFR 147 to be administered directly by USEPA.)</p> <p>Verify that, for enhanced recovery and hydrocarbon storage wells, the owner or operator cased and cements the well to prevent movement of fluids into or between USDW.</p> <p>Verify that, in determining and specifying casing and cementing requirements, the following factors are considered:</p> <ul style="list-style-type: none"> <li>– depth to the injection zone</li> <li>– depth to the bottom of all USDWs</li> <li>– estimated maximum and average injection pressures.</li> </ul> <p>(NOTE: In addition, in determining and specifying casing and cementing requirements, the Director may consider information on:</p> <ul style="list-style-type: none"> <li>– nature of formation fluids</li> <li>– lithology of injection and confining zones</li> <li>– external pressure, internal pressure, and axial loading</li> <li>– hole size</li> <li>– size and grade of all casing strings</li> <li>– class of cement.)</li> </ul> <p>(NOTE: This checklist item does not apply if:</p> <ul style="list-style-type: none"> <li>– regulatory controls for casing and cementing existed at the time of drilling of the well and the well is in compliance with those controls</li> <li>– well injection will not result in the movement of fluids into a USDW so as to create a significant risk to human health.)</li> </ul> <p>(NOTE: When a state did not have regulatory controls for casing and cementing prior to the time of the submission of the state program to the Administrator, the Director need not apply the casing and cementing requirements of this checklist item if he submits, as a part of his application for primacy, an appropriate plan for casing and cementing of existing, newly converted, and newly drilled wells in existing fields, and the Administrator approves the plan.)</p> <p><b>WQ.112.3.US.</b> Owners/operators of Class III wells authorized by rule must meet specific operating requirements (40 CFR</p>



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<p>146.33(a)) [Added July 2003].</p> <p><b>WQ.112.5.US.</b> Owners/operators of Class III wells authorized by rule must meet specific monitoring requirements (40 CFR 144.1(a), 144.1(b), and 144.28(g)) [Added July 2003].</p> <p><b>WQ.112.6.US.</b> Owners/operators of Class III wells must meet specific monitoring requirements (40 CFR 146.33(b)) [Added July 2003].</p>	<ul style="list-style-type: none"> <li>– in no case shall injection pressure initiate fractures in the confining zone or cause the migration of injection or formation fluids into a USDW</li> <li>– injection between the outermost casing protecting USDW and the well bore is prohibited.</li> </ul> <p>(NOTE: These regulations apply to the UIC program promulgated under Part C of the SDWA and, to the extent that they deal with hazardous waste, RCRA. The regulations in 40 CFR 144 also constitute a part of the UIC program for states listed in 40 CFR 147 to be administered directly by USEPA.)</p> <p>Verify that, for USEPA-administered programs, monitoring of the nature of the injected fluids complies with applicable analytical methods cited and described in table I of 40 CFR 136.3, in appendix III of 40 CFR 261, or by other methods that have been approved by the Regional Administrator.</p> <p>Verify that, for Class III wells, the owner or operator provides to the Director a qualitative analysis and ranges in concentrations of all constituents of injected fluids at least once within the first year of authorization and thereafter whenever the injection fluid is modified to the extent that the initial data are incorrect or incomplete.</p> <p>(NOTE: The owner or operator of a Class III well may request Federal confidentiality. If the information is proprietary, the owner or operator may, in lieu of the ranges in concentrations, choose to submit maximum concentrations that shall not be exceeded. In such a case the owner or operator shall:</p> <ul style="list-style-type: none"> <li>– retain records of the undisclosed concentrations and provide them upon request to the Regional Administrator as part of any enforcement investigation</li> <li>– monitor injection pressure and either flow rate or volume semi-monthly, or meter and record daily injected and produced fluid volumes as appropriate</li> <li>– monitor the fluid level in the injection zone semi-monthly, where appropriate.)</li> </ul> <p>(NOTE: All Class III wells may be monitored on a field or project basis rather than an individual well basis by manifold monitoring. Manifold monitoring may be used in cases of facilities consisting of more than one injection well, operating with a common manifold. Separate monitoring systems for each well are not required provided the owner or operator demonstrates to the Director that manifold monitoring is comparable to individual well monitoring.)</p> <p>Verify that, at a minimum, monitoring requirements specify:</p> <ul style="list-style-type: none"> <li>– monitoring of the nature of injected fluids with sufficient frequency to yield representative data on its characteristics</li> <li>– monitoring of injection pressure and either flow rate or volume semi-monthly, or metering and daily recording of injected and produced fluid volumes as appropriate</li> </ul>

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<p><b>WQ.112.7.US.</b> A plugging and abandonment plan is required for owners/operators of Class III wells authorized by rule (40 CFR 144.1(a), 144.1(b), 144.28(c), and 144.28(d)) <b>[Added July 2003]</b>.</p>	<ul style="list-style-type: none"> <li>– demonstration of mechanical integrity pursuant at least once every 5 yr during the life of the well for salt solution mining</li> <li>– monitoring of the fluid level in the injection zone semi-monthly, where appropriate and monitoring of the parameters chosen to measure water quality in the monitoring wells where injection is into a formation which contains water with less than 10,000 mg/L TDS, semi-monthly</li> <li>– quarterly monitoring of wells where the injection wells penetrate a USDW in an area subject to subsidence or catastrophic collapse.</li> </ul> <p>(NOTE: All Class III wells may be monitored on a field or project basis rather than an individual well basis by manifold monitoring. Manifold monitoring may be used in cases of facilities consisting of more than one injection well, operating with a common manifold. Separate monitoring systems for each well are not required provided the owner/operator demonstrates that manifold monitoring is comparable to individual well monitoring.)</p> <p>Verify that, whenever the injection fluid is modified to the extent that the required analysis is incorrect or incomplete, a new analysis is provided to the Director.</p> <p>(NOTE: These regulations apply to the UIC program promulgated under Part C of the SDWA and, to the extent that they deal with hazardous waste, RCRA. The regulations in 40 CFR 144 also constitute a part of the UIC program for states listed in 40 CFR 147 to be administered directly by USEPA.)</p> <p>Verify that the owner or operator prepares, maintains, and complies with a plan for plugging and abandonment of the well or project that meets the requirements of 40 CFR 146.10 (see checklist item WQ.112.10.US) and is acceptable to the Director.</p> <p>(NOTE: For purposes of this checklist item, temporary intermittent cessation of injection operations is not abandonment.)</p> <p>Verify that, for USEPA-administered programs:</p> <ul style="list-style-type: none"> <li>– the owner or operator submits the plan, on a form provided by the Regional Administrator, no later than 1 yr after the effective date of the UIC program in the state.</li> <li>– the owner or operator submits any proposed significant revision to the method of plugging reflected in the plan no later than the notice of plugging (i.e., 45 days prior to plugging unless shorter notice is approved).</li> <li>– the plan includes the following information: <ul style="list-style-type: none"> <li>– the nature and quantity of material to be used in plugging</li> <li>– the location and extent (by depth) of the plugs</li> <li>– any proposed test or measurement to be made</li> <li>– the amount, size, and location (by depth) of casing to be left in the well</li> <li>– the method and location where casing is to be parted</li> <li>– the estimated cost of plugging the well.</li> </ul> </li> </ul>

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<p><b>WQ.112.8.US.</b> Owners/operators of Class III wells authorized by rule must notify the Director of well abandonment (40 CFR 144.1(a), 144.1(b), and 144.28(j)) [Added July 2003].</p> <p><b>WQ.112.9.US.</b> The plugging and abandonment of Class III wells must meet specific criteria (40 CFR 146.10(a)) [Added July 2003].</p>	<p>Verify that, after a cessation of operations of 2 yr, the owner or operator shall plug and abandon the well in accordance with the plan unless he:</p> <ul style="list-style-type: none"> <li>– provides notice to the Regional Administrator;</li> <li>– describes actions or procedures, satisfactory to the Regional Administrator, that the owner or operator will take to ensure that the well will not endanger USDWs during the period of temporary abandonment.</li> </ul> <p>(NOTE: These actions and procedures shall include compliance with the technical requirements applicable to active injection wells unless waived by the Regional Administrator.)</p> <p>Verify that the owner or operator of any well that has been temporarily abandoned (ceased operations for more than 2 yr and has provided notice and described the actions to be taken) notifies the Regional Administrator prior to resuming operation of the well.</p> <p>(NOTE: These regulations apply to the UIC program promulgated under Part C of the SDWA and, to the extent that they deal with hazardous waste, RCRA. The regulations in 40 CFR 144 also constitute a part of the UIC program for states listed in 40 CFR 147 to be administered directly by USEPA.)</p> <p>Verify that the owner or operator notifies the Director, according to a time period required by the Director, before conversion or abandonment of the well.</p> <p>Verify that, for USEPA-administered programs, the owner or operator notifies the Regional Administrator at least 45 days before plugging and abandonment.</p> <p>(NOTE: The Regional Administrator, at his discretion, may allow a shorter notice period.)</p> <p>Verify that, prior to abandoning Class III wells; the well is plugged with cement in a manner that will not allow the movement of fluids either into or between USDW.</p> <p>(NOTE: The Director may allow Class III wells to use other plugging materials if the Director is satisfied that such materials will prevent movement of fluids into or between USDW.)</p> <p>Verify that the placement of the cement plugs is done by one of the following:</p> <ul style="list-style-type: none"> <li>– the Balance method</li> <li>– the Dump Bailer method</li> <li>– the Two-Plug method</li> <li>– an alternative method approved by the Director, which will reliably provide a comparable level of protection to USDWs.</li> </ul>

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<p><b>WQ.112.10.US.</b> Owners/operators of Class III wells authorized by rule must submit a plugging and abandonment report after plugging a well (40 CFR 144.1(a), 144.1(b), and 144.28(k)) [Added July 2003].</p>	<p>Verify that the well to be abandoned is in a state of static equilibrium with the mud weight equalized top to bottom, either by circulating the mud in the well at least once or by a comparable method prescribed by the Director, prior to the placement of the cement plug(s).</p> <p>Verify that, the plugging and abandonment plan required in the permit, in the case of a Class III project which underlies or is in an aquifer which has been exempted, also demonstrates adequate protection of USDWs.</p> <p>(NOTE: The Director shall prescribe aquifer cleanup and monitoring where he deems it necessary and feasible to ensure adequate protection of USDWs.)</p> <p>(NOTE: These regulations apply to the UIC program promulgated under Part C of the SDWA and, to the extent that they deal with hazardous waste, RCRA. The regulations in 40 CFR 144 also constitute a part of the UIC program for States listed in 40 CFR 147 to be administered directly by USEPA.)</p> <p>Verify that, for USEPA-administered programs, within 60 days after plugging a well or at the time of the next quarterly report (whichever is less) the owner or operator submits a report to the Regional Administrator consisting of one of the following:</p> <ul style="list-style-type: none"> <li>– a statement that the well was plugged in accordance with the plan previously submitted to the Regional Administrator</li> <li>– where actual plugging differed from the plan previously submitted, an updated version of the plan, on the form supplied by the Regional Administrator, specifying the different procedures used.</li> </ul> <p>(NOTE: If the quarterly report is due less than 15 days before completion of plugging, then the report shall be submitted within 60 days.)</p> <p>Verify that the person who performed the plugging operation certifies the report as accurate.</p>
<p><b>WQ.112.11.US.</b> Owners/operators of Class III wells authorized by rule must notify the Director of change of ownership or operational control (40 CFR 144.1(a), 144.1(b), and 144.28(l)) [Added July 2003].</p>	<p>(NOTE: These regulations apply to the UIC program promulgated under Part C of the SDWA and, to the extent that they deal with hazardous waste, RCRA. The regulations in 40 CFR 144 also constitute a part of the UIC program for states listed in 40 CFR 147 to be administered directly by USEPA.)</p> <p>Verify that, for USEPA-administered programs, the transferor of a Class III well authorized by rule notifies the Regional Administrator of a transfer of ownership or operational controls of the well at least 30 days in advance of the proposed transfer.</p> <p>Verify that the notice includes a written agreement between the transferor and the transferee containing a specific date for transfer of ownership or operational control of the well; and a specific date when the transferee will meet the financial responsibility demonstration.</p>

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<p><b>WQ.112.12.US.</b> Reporting of noncompliance will be done by owners/operators of Class III wells authorized by rule (40 CFR 144.1(a), 144.1(b), 144.28(a), and 144.28(b)) [Added July 2003].</p>	<p>(NOTE: The transferee is authorized to inject unless he receives notification from the Director that the transferee has not demonstrated financial responsibility.)</p> <p>(NOTE: These regulations apply to the UIC program promulgated under Part C of the SDWA and, to the extent that they deal with hazardous waste, RCRA. The regulations in 40 CFR 144 also constitute a part of the UIC program for states listed in 40 CFR 147 to be administered directly by USEPA.)</p> <p>(NOTE: Any noncompliance with the requirements for injection wells constitutes a violation of the SDWA and is grounds for enforcement action, except that the owner or operator need not comply with these requirements to the extent and for the duration such noncompliance is authorized by an emergency permit.)</p> <p>Verify that the owner or operator report any noncompliance which may endanger health or the environment within 24 h, including:</p> <ul style="list-style-type: none"> <li>– any monitoring or other information which indicates that any contaminant may endanger a USDW</li> <li>– any noncompliance or malfunction of the injection system that may cause fluid migration into or between USDWs.</li> </ul> <p>Verify that any information is provided orally within 24 h from the time the owner or operator becomes aware of the circumstances.</p> <p>Verify that a written submission is provided within 5 days of the time the owner or operator becomes aware of the circumstances.</p> <p>Verify that the written submission contains a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times; if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.</p>
<p><b>WQ.112.13.US.</b> Owners/operators of Class III wells must meet specific reporting requirements (40 CFR 144.1(a), 144.1(b), and 144.28(h)(3)) [Added July 2003].</p>	<p>(NOTE: These regulations apply to the UIC program promulgated under Part C of the SDWA and, to the extent that they deal with hazardous waste, RCRA. The regulations in 40 CFR 144 also constitute a part of the UIC program for states listed in 40 CFR 147 to be administered directly by USEPA.)</p> <p>(NOTE: For Class III wells, monitoring may be reported on a project or field basis rather than an individual well basis where manifold monitoring is used.)</p> <p>Verify that quarterly reporting is done on all monitoring (see 144.28(g)(3) [see checklist item WQ.112.5.US]).</p> <p>Verify that the results of any periodic tests required by the Director that are performed during the reported quarter are reported quarterly.</p>

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<p><b>WQ.112.14.US.</b> Owners/operators of Class III wells must meet specific reporting requirements (40 CFR 146.33(c)) [Added July 2003].</p>	<p>(NOTE: Monitoring may be reported on a project or field basis rather than an individual well basis where manifold monitoring is used.)</p> <p>Verify that, at a minimum, reporting includes:</p> <ul style="list-style-type: none"> <li>– quarterly reporting to the Director on required monitoring.</li> <li>– results of mechanical integrity and any other periodic test required by the Director reported with the first regular quarterly report after the completion of the test.</li> </ul> <p>(NOTE: Monitoring may be reported on a project or field basis rather than individual well basis where manifold monitoring is used.)</p>
<p><b>WQ.112.15.US.</b> Owners/operators of Class III wells must meet specific recordkeeping requirements (40 CFR 144.1(a), 144.1(b), and 144.28(i)) [Added July 2003].</p>	<p>(NOTE: These regulations apply to the UIC program promulgated under Part C of the SDWA and, to the extent that they deal with hazardous waste, RCRA. The regulations in 40 CFR 144 also constitute a part of the UIC program for states listed in 40 CFR 147 to be administered directly by USEPA.)</p> <p>Verify that the owner or operator retains records of all monitoring information, including the following:</p> <ul style="list-style-type: none"> <li>– calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, and copies of all required reports for a period of at least 3 yr from the date of the sample, measurement, or report</li> <li>– the nature and composition of all injected fluids until 3 yr after the completion of any plugging and abandonment procedures.</li> </ul> <p>(NOTE: The record retention period may be extended by request of the Director at any time.)</p> <p>(NOTE: The Director may require the owner or operator to deliver the records to the Director at the conclusion of the retention period.)</p> <p>Verify that, for USEPA-administered programs, the owner or operator continues to retain the records after the 3-yr retention period unless he delivers the records to the Regional Administrator or obtains written approval from the Regional Administrator to discard the records.</p>

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<b>UNDERGROUND CONTROL WELLS</b>  <b>WQ.113</b> <b>Class IV</b>  <b>WQ.113.1.US.</b> Except in specific instances, Class IV wells are prohibited (40 CFR 144.1(a), 144.1(b), 144.13, 144.23, and 146.10(b)) [Added July 2003].	<p>(NOTE: These regulations apply to the UIC program promulgated under Part C of the SDWA and, to the extent that they deal with hazardous waste, RCRA. The regulations in 40 CFR 144 also constitute a part of the UIC program for states listed in 40 CFR 147 to be administered directly by USEPA.)</p> <p>Verify that the following are not done:</p> <ul style="list-style-type: none"> <li>– the construction of any Class IV well</li> <li>– the operation or maintenance of any Class IV well not in operation prior to 18 July 1980</li> <li>– the operation or maintenance of any Class IV well that was in operation prior to 18 July 1980, after 6 mo following the effective date of a UIC program approved or promulgated for the state</li> <li>– any increase in the amount of hazardous waste or change in the type of hazardous waste injected into a Class IV well.</li> </ul> <p>Verify that the owner or operator of a Class IV well complies with the requirements of 40 CFR 144.14 (see checklist item WQ.109.2.US).</p> <p>(NOTE: Injection into existing Class IV wells is authorized for up to 6 mo after approval or promulgation of the UIC program.)</p> <p>Verify that, for USEPA-administered programs only:</p> <ul style="list-style-type: none"> <li>– prior to abandoning any Class IV well, the owner or operator plugs or otherwise closes the well in a manner acceptable to the Regional Administrator</li> <li>– the owner or operator of a Class IV well notifies the Regional Administrator of intent to abandon the well at least 30 days prior to abandonment.</li> </ul> <p>(NOTE: Injection wells used to inject contaminated groundwater that has been treated and is being injected into the same formation from which it was drawn are authorized by rule for the life of the well if such subsurface emplacement of fluids is approved by USEPA, or a state, pursuant to provisions for cleanup of releases under CERCLA, 42 U.S.C. 9601-9675, or pursuant to requirements and provisions under the RCRA, 42 U.S.C. 6901-6992k.)</p> <p>(NOTE: Wells used to inject contaminated groundwater that has been treated and is being reinjected into the same formation from which it was drawn are not prohibited if such injection is approved by USEPA, or a state, pursuant to</p>

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	<p>provisions for cleanup of releases under CERCLA, or pursuant to requirements and provisions under the RCRA.)</p> <p>(NOTE: The following wells are not prohibited:</p> <ul style="list-style-type: none"> <li>– wells used to inject hazardous waste into aquifers or portions thereof that have been exempted, if the exempted aquifer into which waste is injected underlies the lowermost formation containing a USDW</li> <li>– wells used to inject hazardous waste where no USDW exists, within ¼ mi of the well bore in any underground formation, provided that the Director determines that such injection is into a formation sufficiently isolated to ensure that injected fluids do not migrate from the injection zone.</li> </ul> <p>Both of these types of wells are considered Class I wells.)</p> <p>Verify that, prior to abandoning a Class IV well, the owner or operator closes the well in accordance with 40 CFR 144.23(b) (see checklist item WQ.113.1.US).</p>

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<b>UNDERGROUND CONTROL WELLS</b>  <b>WQ.114</b> <b>Class V</b>  <b>WQ.114.1.US.</b> In certain circumstances, a permit is required for Class V wells (40 CFR 144.1(a), 144.1(b), 144.79, and 144.84) [Added July 2003].	<p>(NOTE: These regulations apply to the UIC program promulgated under Part C of the SDWA and, to the extent that they deal with hazardous waste, RCRA. The regulations in 40 CFR 144 also constitute a part of the UIC program for states listed in 40 CFR 147 to be administered directly by USEPA.)</p> <p>(NOTE: Except as indicated in this checklist item, Class V injection activity is “authorized by rule,” meaning facilities have to comply with all the requirements of this subpart and the rest of the UIC program, but an individual permit is not required. Well authorization expires once a well has been properly closed.)</p> <p>Verify that, for the following categories, the facility obtains a permit or closes the well:</p> <ul style="list-style-type: none"> <li>– failure to comply with the prohibition of fluid movement standard in 40 CFR 144.12(a) and described in 40 CFR 144.82(a) (in which case, the facility has to get a permit, close the well, and/or comply with other conditions determined by the UIC Program Director in the state or USEPA Region)</li> <li>– the facility owns or operates a Class V large-capacity cesspool (in which case, the facility must close the well) or a Class V motor vehicle waste disposal well in a ground water protection area or sensitive ground water area (in which case, the facility must either close the well or get a permit)</li> <li>– the facility is specifically required by the UIC Program Director in the state or USEPA Region to get a permit (in which case, rule authorization expires upon the effective date of the permit issued, or the facility is prohibited from injecting into your well upon one of the following:             <ul style="list-style-type: none"> <li>– failure to submit a permit application in a timely manner as specified in a notice from the Director</li> <li>– upon the effective date of permit denial)</li> </ul> </li> <li>– the facility has failed to submit inventory information to the UIC Program Director, as described in 40 CFR 144.83(a) (in which case, the facility is prohibited from injecting into your well until they comply with the inventory requirements)</li> <li>– if the facility is in a Direct Implementation [DI] State and the facility received a request from the UIC Program Director for additional information, and failed to comply with the request in a timely manner (in which case, the facility is prohibited from injecting into the well until obtaining a permit).</li> </ul> <p>(NOTE: New motor vehicle waste disposal wells and new cesspools are prohibited as of 5 April 2000.)</p>

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<p><b>WQ.114.2.US.</b> Owners /operators of Class V wells must protect underground sources of drinking water (40 CFR 144.1(a), 144.1(b), 144.79, and 144.82) [Added July 2003].</p>	<p>(NOTE: These regulations apply to the UIC program promulgated under Part C of the SDWA and, to the extent that they deal with hazardous waste, RCRA. The regulations in 40 CFR 144 also constitute a part of the UIC program for states listed in 40 CFR 147 to be administered directly by USEPA.)</p> <p>Verify that injection activity does not allow the movement of fluid containing any contaminant into USDWs, if the presence of that contaminant may cause a violation of the primary drinking water standards under 40 CFR 141, other health based standards, or may otherwise adversely affect human health.</p> <p>(NOTE: The prohibition on movement of fluid applies to well construction, operation, maintenance, conversion, plugging, closure, or any other injection activity.)</p> <p>(NOTE: If the Director of the State UIC Program or EPA Region learns that an injection activity may endanger USDWs, he or she may require closure of the well, require a permit, or require other actions listed in 40 CFR 144.12(c), (d), or (e) [see checklist item WQ.109.1.US].)</p> <p>Verify that wells are closed in a manner that complies with the prohibition of fluid movement.</p> <p>Verify that any soil, gravel, sludge, liquids, or other materials removed from or adjacent to the well is disposed of or otherwise managed in accordance with all applicable Federal, state, and local regulations and requirements.</p> <p>(NOTE: Facilities are subject to other UIC program requirements in 40 CFR 144 through 147.)</p> <p>(NOTE: 40 CFR 144 through 147 define minimum Federal UIC requirements. EPA Regional Offices administering the UIC program have the flexibility to establish additional or more stringent requirements based on the authorities in 40 CFR 144 through 147, if believed to be necessary to protect USDWs. States can have their own authorities to establish additional or more stringent requirements if needed to protect USDWs. )</p>
<p><b>WQ.114.3.US.</b> Owners /operators of Class V wells must perform certain notifications (40 CFR 144.1(a), 144.1(b), 144.79, and 144.83) [Added July 2003].</p>	<p>(NOTE: These regulations apply to the UIC program promulgated under Part C of the SDWA and, to the extent that they deal with hazardous waste, RCRA. The regulations in 40 CFR 144 also constitute a part of the UIC program for states listed in 40 CFR 147 to be administered directly by USEPA.)</p> <p>Verify that the facility provides basic “inventory information” to the UIC Program Director and any additional information that the Director requests in accordance with the provisions of UIC regulations.</p>

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	<p>(NOTE: Inventory information is requested on national form “Inventory of Injection Wells,” OMB No. 2040-0042.)</p> <p>(NOTE: See Appendix 13-16 for a summary of notification requirements.)</p> <p>Verify that, if the facility is in a Primacy State or a DI Program State, the following information is submitted:</p> <ul style="list-style-type: none"> <li>– no matter what type of Class V well, submit at least the following information for each well: facility name and location; name and address of legal contact; ownership of facility; nature and type of injection well(s); and operating status of injection well(s)</li> <li>– a list of all wells owned or operated along with the following information for each well (a single description of wells at a single facility with substantially the same characteristics is acceptable): <ul style="list-style-type: none"> <li>– location of each well or project given by Township, Range, Section, and Quarter-Section, or by latitude and longitude to the nearest second, according to the conventional practice in the state</li> <li>– date of completion of each well</li> <li>– identification and depth of the underground formation(s) into which each well is injecting</li> <li>– total depth of each well</li> <li>– construction narrative and schematic (both plan view and cross-sectional drawings)</li> <li>– nature of the injected fluids</li> <li>– average and maximum injection pressure at the wellhead</li> <li>– average and maximum injection rate</li> <li>– date of the last inspection.</li> </ul> </li> </ul> <p>Verify that, if the facility is in a Direct Implementation State, and owns or operates one of the wells listed below, the facility provides the list of wells and associated information described above:</p> <ul style="list-style-type: none"> <li>– sand or other backfill wells</li> <li>– geothermal energy recovery wells</li> <li>– brine return flow wells</li> <li>– wells used in experimental technology</li> <li>– municipal and industrial disposal wells other than Class I</li> <li>– any other Class V wells at the discretion of the Regional Administrator.</li> </ul> <p>(NOTE: If the Director requires additional information, he will request it in writing, along with a brief statement of why the information is required. This written notification also will indicate when to submit the information. A facility is prohibited from using an injection well if they do not comply with the written request within the time frame specified. The facility can start injecting again only if they receive a permit.)</p>

<p style="text-align: center;"><b>COMPLIANCE CATEGORY</b>  <b>WATER QUALITY MANAGEMENT</b>  <b>U.S. TEAM Guide</b></p>	
<p style="text-align: center;"><b>REGULATORY REQUIREMENTS</b></p>	<p style="text-align: center;"><b>REVIEWER CHECKS</b>  <b>December 2018</b></p>
<p><b>WQ.114.4.US.</b> Prior to abandoning a Class V well, specific actions must be taken (40 CFR 146.10(c)) [<b>Added July 2003</b>].</p>	<p>Verify that, prior to abandoning a Class V well, the owner or operator closes the well in a manner that prevents the movement of fluid containing any contaminant into a USDW, if the presence of that contaminant may cause a violation of any primary drinking water regulation under 40 CFR 141 or may otherwise adversely affect human health.</p> <p>(NOTE: Closure requirements for motor vehicle waste disposal wells and large-capacity cesspools are reiterated at 40 CFR 144.89 [see checklist items WQ.114.5.US].)</p> <p>Verify that the owner or operator disposes of or otherwise manages any soil, gravel, sludge, liquids, or other materials removed from or adjacent to the well in accordance with all applicable Federal, state, and local regulations and requirements.</p>
<p><b>WQ.114.5.US.</b> Owners /operators of Class V large cesspools must comply with additional requirements (40 CFR 144.1(a), 144.1(b), 144.79, 144.85(a), 144.88(a), and 144.89) [<b>Added July 2003</b>].</p>	<p>(NOTE: These regulations apply to the UIC program promulgated under Part C of the SDWA and, to the extent that they deal with hazardous waste, RCRA. The regulations in 40 CFR 144 also constitute a part of the UIC program for states listed in 40 CFR 147 to be administered directly by USEPA.)</p> <p>(NOTE: These additional requirements apply to all new and existing large-capacity cesspools regardless of their location. If using a septic system for these types of wastes, the facility is not subject to the additional requirements.)</p> <p>Verify that, if the cesspool is existing (operational or under construction by 5 April 2000), the facility:</p> <ul style="list-style-type: none"> <li>– closes the well by 5 April 2005</li> <li>– notifies the UIC Program Director (both Primacy States and Direct Implementation States) of the intent to close the well 30 days in advance of closure.</li> </ul> <p>(NOTE: This information is requested on national form “Preclosure Notification for Closure of Injection Wells.”)</p> <p>Verify that there are no new or converted wells (construction not started before 5 April 2000).</p> <p>Verify that, prior to closing a Class V large-capacity cesspool, the facility plugs or otherwise closes the well in a manner that complies with the prohibition of fluid movement standard.</p> <p>(NOTE: If the UIC Program Director in the state or USEPA Region has any additional or more specific closure standards, those standards must also be met.)</p>

<p style="text-align: center;"><b>COMPLIANCE CATEGORY</b>  <b>WATER QUALITY MANAGEMENT</b>  <b>U.S. TEAM Guide</b></p>	
<p style="text-align: center;"><b>REGULATORY REQUIREMENTS</b></p>	<p style="text-align: center;"><b>REVIEWER CHECKS</b>  <b>December 2018</b></p>
<p><b>WQ.114.6.US.</b> Owners /operators of Class V motor vehicle waste disposal wells must comply with additional requirements (40 CFR 144.1(a), 144.1(b), 144.79, 144.85(b), 144.85(c), 144.87(d), 144.88(b), and 144.89) [Added July 2003].</p>	<p>Verify that the facility disposes of or otherwise manages any soil, gravel, sludge, liquids, or other materials removed from or adjacent to the well in accordance with all applicable Federal, state, and local regulations and requirements, as in 40 CFR 144.82(b) (see checklist item WQ.114.2.US).</p> <p>(NOTE: Closure does not mean a facility needs to cease operations, only that there is a need to close a well. Alternatives that may be available to owners and operators of a large-capacity cesspool include:</p> <ul style="list-style-type: none"> <li>– conversion to a septic system</li> <li>– connection to sewer</li> <li>– installation of an onsite treatment unit.)</li> </ul> <p>(NOTE: These regulations apply to the UIC program promulgated under Part C of the SDWA and, to the extent that they deal with hazardous waste, RCRA. The regulations in 40 CFR 144 also constitute a part of the UIC program for states listed in 40 CFR 147 to be administered directly by USEPA.)</p> <p>(NOTE: For Class V motor vehicle waste disposal wells existing on 5 April 2000, this checklist item applies if the well is located in a ground water protection area or other sensitive ground water area that is identified by the state or USEPA Region. If the state or USEPA Region fails to identify ground water protection areas and/or other sensitive ground water areas these requirements apply to all Class V motor vehicle wells in the state.)</p> <p>(NOTE: This checklist item applies to all new or Class V motor vehicle waste disposal wells as of 5 April 2000.)</p> <p>Verify that there are no new or converted Class V motor vehicle waste disposal wells (construction not started before 5 April 2000) onsite.</p> <p>Verify that, for existing Class V motor vehicle waste disposal wells (operational or under construction by 5 April 2000), if the well is in a ground water protection area, it is closed or a permit is obtained within 1 yr of the completion of the local source water assessment.</p> <p>(NOTE: The facility can find out if a Class V well is in a groundwater protection area by contacting the state agency responsible for the State Drinking Water Source Assessment and Protection Program in the facility area. Call the Safe Drinking Water Hotline at 1-800-426-4791 to find out who to call for this information.)</p> <p>(NOTE: The UIC Program Director may extend the closure deadline, but not the permit application deadline, for up to 1 yr if the most efficient compliance option is connection to a sanitary sewer or installation of new treatment technology.)</p> <p>Verify that, for existing Class V motor vehicle waste disposal wells (operational or under construction by 5 April 2000), if the well is in other sensitive ground water area, it is closed or a permit is obtained by 1 January 2007.</p>

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	<p>(NOTE: The UIC Program Director may extend the closure deadline, but not the permit application deadline, for up to 1 yr if the most efficient compliance option is connection to a sanitary sewer or installation of new treatment technology.)</p> <p>Verify that, for existing Class V motor vehicles waste disposal wells (operational or under construction by 5 April 2000), if the facility plans to seek a waiver from the ban and apply for a permit, the facility meets the MCLs at the point of injection while the permit application is under review.</p> <p>Verify that, for existing Class V motor vehicle waste disposal wells (operational or under construction by 5 April 2000), if the facility receives a permit, they comply with all permit conditions, including requirements to meet MCLs and other health-based standards at the point of injection, follow best management practices, and monitor the injectate and sludge quality by the dates specified in the permit.</p> <p>Verify that, for existing Class V motor vehicle waste disposal wells (operational or under construction by 5 April 2000), if the well is in a state that has not completed all its local assessments by 1 January 2004 (or the approved extension date) and the facility is outside an area with a completed assessment, the well is closed or a permit is obtained by 1 January 2005.</p> <p>(NOTE: The UIC Program Director may extend the closure deadline, but not the permit application deadline, for up to 1 yr if the most efficient compliance option is connection to a sanitary sewer or installation of new treatment technology.)</p> <p>Verify that, if the existing Class V motor vehicles waste disposal wells (operational or under construction by 5 April 2000) are in a state that has not delineated other sensitive ground water areas by 1 January 2004, and you are outside of an area with a completed assessment, the facility obtains a permit or closes the well regardless of location by 1 January 2007.</p> <p>Verify that, if facility plans to close the existing Class V motor vehicles waste disposal wells (operational or under construction by 5 April 2000), the facility notifies the UIC Program Director of the intent to close the well (this includes closing the well prior to conversion) at least 30 days prior to closure.</p> <p>(NOTE: This information is requested on national form "Preclosure Notification for Closure of Injection Wells.")</p> <p>Verify that, prior to closing a Class V motor vehicle waste disposal well, the facility plugs or otherwise closes the well in a manner that complies with the prohibition of fluid movement standard.</p> <p>(NOTE: If the UIC Program Director in the state or USEPA Region has any additional or more specific closure standards, those standards must also be met.)</p>

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	<p>Verify that the facility disposes or otherwise manages any soil, gravel, sludge, liquids, or other materials removed from or adjacent to the well in accordance with all applicable Federal, state, and local regulations and requirements, as in 40 CFR 144.82(b) (see checklist item WQ.114.2.US).</p> <p>(NOTE: Closure does not mean a facility needs to cease operations, only that there is a need to close a well. A number of alternatives are available for disposing of waste fluids. Examples of alternatives that may be available to motor vehicle stations include:</p> <ul style="list-style-type: none"> <li>– recycling and reusing wastewater as much as possible; collecting and recycling petroleum-based fluids, coolants, and battery acids drained from vehicles</li> <li>– washing parts in a self-contained, recirculating solvent sink, with spent solvents being recovered and replaced by the supplier</li> <li>– using absorbents to clean up minor leaks and spills, placing the used materials in approved waste containers, and disposing of them properly</li> <li>– using a wet vacuum or mop to pick up accumulated rain or snow melt and, if allowed, connecting floor drains to a municipal sewer system or holding tank and, if allowed, disposing of the holding tank contents through a publicly owned treatment works (POTW).</li> </ul> <p>(NOTE: Check with the POTW to see if they would accept the wastes.)</p> <p>(NOTE: In limited cases, the UIC Director may authorize the conversion [reclassification] of a motor vehicle waste disposal well to another type of Class V well. Motor vehicle wells may be converted only if:</p> <ul style="list-style-type: none"> <li>– all motor vehicle fluids are segregated by physical barriers and are not allowed to enter the well</li> <li>– injection of motor vehicle waste is unlikely based on a facility's compliance history and records showing proper waste disposal.)</li> </ul> <p>(NOTE: The use of a semi-permanent plug as the means to segregate waste is not sufficient to convert a motor vehicle waste disposal well to another type of Class V well.)</p>



## Appendix 13-1

### Primary Drinking Water Standards for Organic Contaminants [Revised January 1999; Reviewed March 2000; Revised April 2001; Revised April 2006]

**Table 1:**  
**Maximum Contaminant Levels Applicable to Community Water Systems (40 CFR 141.12)**

40 CFR 141.12 was removed and reserved in the revisions to 40 CFR 141 published in the January 4, 2006 Federal Register, pages 387 – 493.

**Table 2:**  
**Maximum Contaminant Levels Applicable to Community and  
Nontransient, Noncommunity Water Systems (40 CFR 141.61(a))**

Contaminant	mg/L
1,1-Dichloroethylene	0.007
1,1,1-Trichloroethane	0.20
1,2-Dichloroethane	0.005
1,2-Dichloropropane	0.005
Benzene	0.005
Carbon Tetra chloride	0.005
cis-1, 2-Dichloroethylene	0.07
Ethylbenzene	0.7
Monochlorobenzene	0.1
0-Dichlorobenzene	0.6
para-Dichlorobenzene	0.075
Styrene	0.1
Tetrachloroethylene	0.005
Toluene	1.0
trans-1, 2-Dichloroethylene	0.1
Trichloroethylene	0.005
Vinyl chloride	0.002
Xylenes (total)	10.0
Dichloromethane	0.005
1,2,4-Trichlorobenzene	0.07
1,1,2-Trichloroethane	0.005

**Table 3:**  
**Maximum Contaminant Levels For Synthetic Organic Contaminants Applicable to Community Water Systems and Nontransient, Noncommunity Water Systems (40 CFR 141.61(c))**

Contaminant	mg/L
Alachlor	0.002
Aldicarb	0.003
Aldicarb sulfoxide	0.004
Aldicarb sulfone	0.002
Atrazine	0.003
Carbofuran	0.04
Chlordane	0.002
Dibromochloropropane	0.0002
2,4-D	0.07
Ethylene dibromide	0.00005
Heptachlor	0.0004
Heptachlor epoxide	0.0002
Lindane	0.0002
Methoxychlor	0.04
Pentachlorophenol	0.001
Polychlorinated biphenyls	0.0005
Toxaphene	0.003
2,4,5-TP	0.05
Benzo(a)pyrene	0.0002
Delapon	0.2
Di(2-ethyhexyl) adipate	0.4
Di(2-ethyhexyl) phthalate	0.006
Dinoseb	0.007
Diquat	0.02
Endothall	0.1
Endrin	0.002
Glyphosate	0.7
Hexachlorobenzene	0.001
Hexachlorocyclopentadiene	0.05
Oxamyl (Vydate)	0.2
Picloram	0.5
Simazin	0.004
2,3,7,8,-TCDD (Dioxin)	3. x 10 <sup>-8</sup>

## Appendix 13-2

### Primary Drinking Water Standards for Inorganic Contaminants [Reviewed March 2000; Revised April 2003; Revised July 2003; Revised April 2005]

**Table 1:**  
**Community Water System MCLs**  
**(40 CFR 141.11 and 141.62(b))**

Contaminant	mg/L
Antimony	0.006 <sup>c</sup>
Asbestos	7 million fibers/L <sup>c</sup> (longer than 10 micrometers)
Arsenic (40 CFR 141.11(a) and 141.11(b))	0.05 <sup>a</sup>
Arsenic (40 CFR 141.62(b)(16))	0.010 <sup>b c</sup>
Barium	2.0 <sup>c</sup>
Beryllium	0.004 <sup>c</sup>
Cadmium	0.005 <sup>c</sup>
Chromium	0.1 <sup>c</sup>
Cyanide (as free Cyanide)	0.2 <sup>c</sup>
Fluoride (40 CFR 141.62(b)(1))	4.0 <sup>c</sup>
Mercury	0.002 <sup>c</sup>
Nitrate (as N)	10.0 <sup>c</sup>
Nitrite (as N)	1.0 <sup>c</sup>
Selenium	0.05 <sup>c</sup>
Thallium	0.002 <sup>c</sup>
Total Nitrate and Nitrite (as N)	10.0 <sup>c</sup>

<sup>a</sup> The value for arsenic is effective until 23 January 2006.

<sup>b</sup> Table 4 at the end of this Appendix identifies the affordable technology, treatment technique, or other means available to systems serving 10,000 persons or fewer for achieving the compliance MCL listed for arsenic at 40 CFR 141.62(b)(16)).

<sup>c</sup> See Table 5 at the end of this Appendix for information on the best technology, treatment technique, or other means available to achieving compliance with the MCL for inorganic contaminants identified in 40 CFR 141.62(b) except for fluoride.

(NOTE: 40 CFR 141.12 concerning the MCL for total trihalomethanes at Community Water Systems expired 31 December 2003.)

**Table 2:**

**Nontransient, Noncommunity Water System MCLs  
(40 CFR 141.62(b)(2) through 141.62(b)(16))<sup>a</sup>**

Contaminant	mg/L
Antimony	0.006
Arsenic	0.010 <sup>b</sup>
Asbestos	7 million fibers/L (longer than 10 micrometers)
Barium	2.0
Beryllium	0.004
Cadmium	0.005
Chromium	0.1
Cyanide (as free Cyanide)	0.2
Mercury	0.002
Nitrate (as N)	10.0
Nitrite (as N)	1.0
Selenium	0.05
Thallium	0.002
Total Nitrate and Nitrite (as N)	10.0

<sup>a</sup> Table 4 at the end of this Appendix identifies the affordable technology, treatment technique, or other means available to systems serving 10,000 persons or fewer for achieving the compliance MCL listed for arsenic at 40 CFR 141.62(b)(16)).

<sup>b</sup> See Table 5 at the end of this Appendix for information on the best technology, treatment technique, or other means available to achieving compliance with the MCL for inorganic contaminants identified in 40 CFR 141.62(b) except for fluoride.

**Table 3**

**Transient Noncommunity Water System MCLs<sup>a</sup>  
(40 CFR 141.62(b)(7) through 141.62(b)(9))**

Contaminant	mg/L
Nitrate (as N)	10.0
Nitrite (as N)	1.0
Total Nitrate and Nitrite (as N)	10.0

<sup>a</sup> See Table 5 at the end of this Appendix for information on the best technology, treatment technique, or other means available to achieving compliance with the listed MCLs.

**Table 4**

**Small System Compliance Technologies (SSCTs)<sup>a</sup> for Arsenic<sup>b</sup>  
(40 CFR 141.62(b)(d))**

The following table identifies the affordable technology, treatment technique, or other means available to systems serving 10,000 persons or fewer for achieving compliance with the MCL for arsenic as published in 40 CFR 141.62(b)(16).

<b>Small system compliance technology</b>	<b>Affordable for listed small system categories<sup>c</sup></b>
Activated Alumina (centralized).	All size categories
Activated Alumina (Point-of-Use) <sup>d</sup>	All size categories
Coagulation/Filtration <sup>e</sup>	501-3,300, 3,301-10,000
Coagulation-assisted Microfiltration	501-3,300, 3,301-10,000
Electrodialysis reversal <sup>f</sup>	501-3,300, 3,301-10,000
Enhanced coagulation/filtration	All size categories
Enhanced lime softening (pH 10.5)	All size categories
Ion Exchange	All size categories
Lime Softening <sup>e</sup>	501-3,300, 3,301-10,000
Oxidation/Filtration <sup>g</sup>	All size categories
Reverse Osmosis (centralized) <sup>f</sup>	501-3,300, 3,301-10,000
Reverse Osmosis (Point-of-Use) <sup>d</sup>	All size categories

<sup>a</sup> Section 1412(b)(4)(E)(ii) of SDWA specifies that SSCTs must be affordable and technically feasible for small systems.

<sup>b</sup> SSCTs for Arsenic V. Pre-oxidation may be required to convert Arsenic III to Arsenic V.

<sup>c</sup> The Act (ibid.) specifies three categories of small systems: (i) those serving 25 or more, but fewer than 501, (ii) those serving more than 500, but fewer than 3,301, and (iii) those serving more than 3,300, but fewer than 10,001.

<sup>d</sup> When POU or POE devices are used for compliance, programs to ensure proper long-term operation, maintenance, and monitoring must be provided by the water system to ensure adequate performance.

<sup>e</sup> Unlikely to be installed solely for arsenic removal. May require pH adjustment to optimal range if high removals are needed.

<sup>f</sup> Technologies reject a large volume of water--may not be appropriate for areas where water quantity may be an issue.

<sup>g</sup> To obtain high removals, iron to arsenic ratio must be at least 20:1.

**Table 5**

**BAT for Inorganic Compounds Listed in Section 141.62(b)  
(40 CFR 141.62(c))**

The following are the best technology, treatment technique, or other means available for achieving compliance with the MCLs for inorganic contaminants identified in 40 CFR 141.62(b), except fluoride.

<b>Chemical Name</b>	<b>BAT(s)</b>
Antimony	2, 7
Arsenic <sup>d</sup>	1, 2, 5, 6, 7, 9, 12 <sup>e</sup>
Asbestos	2, 3, 8
Barium	5, 6, 7, 9
Beryllium	1, 2, 5, 6, 7
Cadmium	2,5,6,7
Chromium	2, 5, 6 <sup>b</sup> , 7
Cyanide	5, 7, 10
Mercury	2 <sup>a</sup> , 4, 6 <sup>a</sup> , 7 <sup>a</sup>
Nickel	5, 6, 7
Nitrate	5, 7, 9
Nitrite	5, 7
Selenium	1, 2 <sup>c</sup> , 6, 7, 9
Thallium	1,5

<sup>a</sup> BAT only if influent Hg concentrations  $\leq 10 \mu\text{g/l}$ .

<sup>b</sup> BAT for Chromium III only.

<sup>c</sup> BAT for Selenium IV only.

<sup>d</sup> BATs for Arsenic V. Pre-oxidation may be required to convert Arsenic III to Arsenic V.

<sup>e</sup> To obtain high removals, iron to arsenic ratio must be at least 20:1.

Key to BATs in Table

- 1 = Activated Alumina
- 2 = Coagulation/Filtration (not BAT for systems < 500 service connections)
- 2 = Coagulation/Filtration
- 3 = Direct and Diatomite Filtration
- 4 = Granular Activated Carbon
- 5 = Ion Exchange
- 6 = Lime Softening (not BAT for systems < 500 service connections)
- 7 = Reverse Osmosis
- 8 = Corrosion Control
- 9 = Electrodialysis
- 10 = Chlorine
- 11= Ultraviolet
- 12 = Oxidation/Filtration

### Appendix 13-3

#### Detection Limitations for Inorganic Contaminants

(40 CFR 141.23(a))

[Reviewed March 2000; Revised January 2003; Revised April 2003]

Contaminant	MCL (mg/L)	Analytical Method	Detection Limit (mg/L)
Antimony	0.006	Atomic Absorption Furnace	0.003
		Atomic Absorption: Platform	0.0008 <sup>5</sup>
		ICP Mass spectrometry	0.0004
		Hydride Atomic Absorption	0.001
Asbestos	7 MFL <sup>1</sup>	Transmission Electron Microscopy	0.01 million fibers/L
Arsenic	0.0106	Atomic Absorption; Furnace	0.001
		Atomic Absorption; Platform-- Stabilized Temperature	0.00057
		Atomic Absorption; Gaseous Hydride	0.001
		ICP-Mass Spectrometry	0.00148
Barium	2.0	Atomic Absorption; furnace technique	0.002
		Atomic Absorption; direct aspiration	0.1
		Inductively Coupled Plasma	0.002(0.001)
Beryllium	0.004	Atomic Absorption, Furnace	0.0002
		Atomic Absorption: Platform	0.000025
		Inductively Coupled Plasma <sup>3</sup>	0.0003
		ICP Mass Spectrometry	0.0003
Cadmium	0.005	Atomic Absorption; furnace technique	0.0001
		Inductively Coupled Plasma <sup>2</sup>	0.001
Chromium	0.1	Atomic Absorption; furnace technique	0.001
		Inductively Coupled Plasma	0.007 (0.001)
Cyanide	0.2	Distillation, Spectrophotometric <sup>3</sup>	0.02
		Distillation, Automated, Spectrophotometric <sup>3</sup>	0.005
		Distillation, Selective Electrode <sup>3</sup>	0.05
		UV Distillation, Spectrophotometric	0.0005
		Distillation, Spectrophotometric	0.0006
Mercury	0.002	Manual Cold Vapor Technique	0.0002
		Automated Cold Vapor Technique	0.0002
Nickel	0.1	Atomic Absorption, Furnace	0.001
		Atomic Absorption: Platform	0.0006 <sup>5</sup>
		Inductively Coupled Plasma <sup>3</sup>	0.005
		ICP Mass Spectrometry	0.0005
Nitrate	10 as N	Manual Cadmium Reduction	0.01
		Automated Hydrazine Reduction	0.01
		Automated Cadmium Reduction	0.05
		Ion Selective Electrode	1.0
		Ion Chromatography	0.01

Contaminant	MCL (mg/L)	Analytical Method	Detection Limit (mg/L)
Nitrite	1 as N	Spectrophotometric	0.01
		Automated Cadmium Reduction	0.05
		Manual Cadmium Reduction	0.01
		Ion Chromatography	0.004
Selenium	0.05	Atomic Absorption; furnace	0.002
		Atomic Absorption; gaseous hydride	0.002
Thallium	0.002	Atomic Absorption Furnace	0.001
		Atomic Absorption: Platform	0.0007 <sup>5</sup>
		ICP-Mass Spectrometry	0.0003

<sup>1</sup> MFL = million fibers per liter > 10 ppm.

<sup>2</sup> Using a 2x preconcentration step as noted in Method 200.7. Lower MDLs may be achieved by using a 4x preconcentration.

<sup>3</sup> Screening method for total cyanides.

<sup>4</sup> Measures “free” cyanides.

<sup>5</sup> Lower MDLs are reported using stabilized temperature graphite furnace atomic absorption.

<sup>6</sup> The value for arsenic is effective January 23, 2006. Until then, the MCL is 0.05 mg/L.

<sup>7</sup> The MDL reported for USEPA Method 200.9 (Atomic Absorption; Platform--Stabilized Temperature) was determined using a 2x concentration step during sample digestion. The MDL determined for samples analyzed using direct analyses (i.e., no sample digestion) will be higher. Using multiple depositions, USEPA 200.9 is capable of obtaining MDL of 0.0001 mg/L.

<sup>8</sup> Using selective ion monitoring, USEPA Method 200.8 (ICP-MS) is capable of obtaining a MDL of 0.0001 mg/L.

## Appendix 13-4

### Detection Limitations (40 CFR 141.24(h)(18)) [Reviewed March 2000]

Contaminant	Detection Limit
Alachlor	0.0002
Aldicarb	0.0005
Aldicarb sulfoxide	0.0005
Aldicarb sulfone	0.0008
Atrazine	0.0001
Benzo[a]pyrene	0.00002
Carbofuran	0.0009
Chlordane	0.0002
Dalapon	0.001
1,2- Dibromo-3-chloro propane (DBCP)	0.00002
Di (2-ethylhexyl) adipate	0.0006
Di (2-ethylhexyl) phthalate	0.0006
Dinoseb	0.0002
Diquat	0.0004
2,4-D	0.0001
Endothall	0.009
Endrin	0.00001
Ethylene dibromide (EDB)	0.00001
Glyphosate	0.006
Heptachlor	0.00004
Heptachlor epoxide	0.00002
Hexachlorobenzene	0.0001
Hexachlorocyclopentadiene	0.0001

Contaminant	Detection Limit
Lindane	0.00002
Methoxychlor	0.0001
Oxamyl	0.002
Picloram	0.0001
Pentachlorophenol	0.00004
Polychlorinated biphenyls	0.0001
Simazine	0.00007
Toxaphene	0.001
2,3,7,8-TCDD (Dioxin)	0.000000005
2,4,5-TP (Silvex)	0.0002

## Appendix 13-5

### Unregulated Contaminant Monitoring (40 CFR 141.40(a)(3), Table 1)

[Revised October 1999; Revised April 2000; Revised April 2001; Revised July 2001;  
Revised April 2007; Revised July 2012; Revised January 2017]

Table 1—UCMR Contaminant List					
1 - Contaminant	2 - CAS Registry Number	3 - Analytical Methods <sup>a</sup>	4 - Minimum Reporting Level <sup>b</sup>	5 - Sampling Location <sup>c</sup>	6 - Period during which monitoring is to be completed
<b>List 1: Assessment Monitoring Chemical Contaminants</b>					
total microcystin	N/A	EPA 546	0.3 micrograms/L	EPTDS	3/1/2018 – 11/30/2020
anatoxin-a	64285-06-9	EPA 545	0.03 micrograms/L	EPTDS	3/1/2018 – 11/30/2020
cylindrospermopsin	143545-90-8	EPA 545	0.09 micrograms/L	EPTDS	3/1/2018 – 11/30/2020
microcystin-LA	96180-79-9	EPA 544	0.008 micrograms/L	EPTDS	3/1/2018 – 11/30/2020
microcystin-LF	154037-70-4	EPA 544	0.006 micrograms/L	EPTDS	3/1/2018 – 11/30/2020
microcystin-LR	101043-37-2	EPA 544	0.02 micrograms/L	EPTDS	3/1/2018 – 11/30/2020
microcystin-LY	123304-10-9	EPA 544	0.009 micrograms/L	EPTDS	3/1/2018 – 11/30/2020
microcystin-RR	111755-37-4	EPA 544	0.006 micrograms/L	EPTDS	3/1/2018 – 11/30/2020
microcystin-YR	101064-48-6	EPA 544	0.02 micrograms/L	EPTDS	3/1/2018 – 11/30/2020
nodularin	118399-22-7	EPA 544	0.005 micrograms/L	EPTDS	3/1/2018 – 11/30/2020
<b>List 1: Assessment Monitoring Additional Chemical Contaminants</b>					
<b>Metals</b>					
germanium	7440-56-4	EPA 200.8, ASTM D5673-10, SM 3125	0.3 micrograms/L	EPTDS	1/1/2018 – 12/31/2020
manganese	7439-96-5	EPA 200.8, ASTM D5673-10, SM 3125	0.4 micrograms/L	EPTDS	1/1/2018 – 12/31/2020
<b>Pesticides and a Pesticide Manufacturing ByProduct</b>					
alpha-hexachlorocyclohexane	319-84-6	EPA 525.3	0.01 microgram/L	EPTDS	1/1/2018 – 12/31/2020
chlorpyrifos	2921-88-2	EPA 525.3	0.03 microgram/L	EPTDS	1/1/2018 – 12/31/2020
dimethipin	55290-64-7	EPA 525.3	0.2 microgram/L	EPTDS	1/1/2018 – 12/31/2020
ethoprop	13194-48-4	EPA 525.3	0.03 microgram/L	EPTDS	1/1/2018 – 12/31/2020

Table 1—UCMR Contaminant List					
1 - Contaminant	2 - CAS Registry Number	3 - Analytical Methods <sup>a</sup>	4 - Minimum Reporting Level <sup>b</sup>	5 - Sampling Location <sup>c</sup>	6 - Period during which monitoring is to be completed
oxyfluorfen	42874-03-3	EPA 525.3	0.05 microgram/L	EPTDS	1/1/2018 – 12/31/2020
profenfos	41198-08-7	EPA 525.3	0.3 microgram/L	EPTDS	1/1/2018 – 12/31/2020
tebuconazole	107534-96-3	EPA 525.3	0.2 microgram/L	EPTDS	1/1/2018 – 12/31/2020
total permethrin (cis- & trans-)	52645-53-1	EPA 525.3	0.04 microgram/L	EPTDS	1/1/2018 – 12/31/2020
tribufos	78-48-8	EPA 525.3	0.07 microgram/L	EPTDS	1/1/2018 – 12/31/2020
<b>Brominated Naloacetic Acid (HAA) Groups<sup>de</sup></b>					
HAA5	N/A	EPA 552.3 or EPA 557	N/A	D/DBPR HAA location	1/1/2018 – 12/31/2020
HAA6Br	N/A	EPA 552.3 or EPA 557	N/A	D/DBPR HAA location	1/1/2018 – 12/31/2020
HAA9	N/A	EPA 552.3 or EPA 557	N/A	D/DBPR HAA location	1/1/2018 – 12/31/2020
<b>Alcohols</b>					
1-butanol	71-46-4	EPA 541	2.0 micrograms/L	EPTDS	1/1/2018 – 12/31/2020
2-methoxethanol	109-86-4	EPA 541	0.4 micrograms/L	EPTDS	1/1/2018 – 12/31/2020
2-propen-1-ol	107-18-6	EPA 541	0.5 micrograms/L	EPTDS	1/1/2018 – 12/31/2020
<b>Other Semivolatile Chemicals</b>					
butylated hydroanisole	25013-16-5	EPA 530	0.03 micrograms/L	EPTDS	1/1/2018 – 12/31/2020
o-toluidine	95-53-4	EPA 530	0.007 micrograms/L	EPTDS	1/1/2018 – 12/31/2020
quinolone	91-22-5	EPA-530	0.02 micrograms/L	EPTDS	1/1/2018 – 12/31/2020
<b>List 2: Screening Survey</b>					
Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
<b>List 3: Pre-Screen Testing</b>					
Reserved	Reserved	Reserved	Reserved	Reserved	Reserved

Column headings are:

- 1-- Contaminant: The name of the contaminants to be analyzed.
- 2--CAS (Chemical Abstract Service Number) Registry No. or Identification Number: A unique number identifying the chemical contaminants.
- 3--Analytical Methods: Method numbers identifying the methods that must be used to test the contaminants.
- 4--Minimum Reporting Level: The value and unit of measure at or above which the concentration of the contaminant must be measured using the approved analytical methods. If EPA determines, after the first 6 mo of monitoring, that the specified MRLs result in excessive resampling, EPA will establish alternate MRLs and will notify affected PWSs and laboratories of the new MRLs.

5--Sampling Location: The locations within a PWS at which samples must be collected.

6--Period During Which Monitoring to be Completed: The time period during which the sampling and testing will occur for the indicated contaminant.

<sup>a</sup> The analytical procedures shall be performed in accordance with the documents associated with each method.

<sup>b</sup> The minimum reporting level (MRL) is the minimum concentration of each analyte that must be reported to EPA.

<sup>c</sup> With the exception of HAA monitoring, sampling must occur at entry points to the distribution system (EPTDSs), after treatment is applied, that represent each non-emergency water source in routine use over the 12-month period of monitoring. Systems that purchase water with multiple connections from the same wholesaler may select one representative connection from that wholesaler. This EPTDS sampling location must be representative of the highest annual volume connections. If the connection selected as the representative EPTDS is not available for sampling, an alternate highest volume representative connection must be sampled. See 40 CFR 141.35(c)(3) for an explanation of the requirements related to the use of representative GW EPTDSs. Sampling for UCMR 4 HAA groups must be conducted at the Disinfectants and Disinfection Byproduct Rule (D/DBPR) sampling locations (40 CFR 141.622).

<sup>d</sup> HAA monitoring applies only to those PWSs that are subject to D/DBPR HAA5 monitoring requirements.

<sup>e</sup> PWSs that purchase 100 percent of their water ("consecutive systems") are not required to collect UCMR 4 source water samples for TOC or bromide analyses. Sampling for TOC and bromide must otherwise occur at source water influent locations representing untreated water entering the water treatment plant (i.e., a location prior to any treatment). SW and GWUDI systems subject to the D/DBPR TOC monitoring must use their D/DBPR TOC source water sampling site(s) from 40 CFR 141.132 for UCMR 4 TOC and bromide samples. SW and GWUDI systems that are not subject to D/DBPR TOC monitoring will use their Long Term 2 Enhance Surface Water Treatment Rule (LT2) source water sampling site(s) (40 CFR 141.703) for UCMR 4 TOC and bromide samples. Ground water systems that are subject to the D/DBPRs, and therefore subject to UCMR 4 HAA monitoring, will take TOC and bromide samples at their influents entering their treatment train. TOC and bromide must be collected at the same time as HAA samples. These indicator samples must be collected at a single source water influent using methods already approved for compliance monitoring. TOC methods include: SM 5310 B, SM 5310 C, SM 5310 D (21st edition), or SM 5310 B-00, SM 5310 C-00, SM 5310 D-00 (SM Online), EPA Method 415.3 (Rev. 1.1 or 1.2). Bromide methods include: EPA Methods 300.0 (Rev. 2.1), 300.1 (Rev. 1.0), 317.0 (Rev. 2.0), 326.0 (Rev. 1.0) or ASTM D 6581-12.



**Appendix 13-5a**  
**Unregulated Contaminant Monitoring Reporting Requirements**  
**(40 CFR 141.35, Table 1)**

**[Added October 1999; Reviewed March 2000; Revised April 2001; Revised July 2001; Revised April 2007;  
Revised July 2012]**

Appendix Deleted – see text of 40 CFR 131.35, Table 1



## Appendix 13-6

### Coliform Bacteria Sampling Frequency (40 CFR 141.21(a)(2), 141.21(h), and 141.857(b)) [Reviewed March 2000; Revised April 2013]

Table 1

NOTE: This Table is applicable until 31 March 2016

Population Served	Minimum Number of Samples Per Month
<sup>1</sup> 25 to 1000	1
1001 to 2500	2
2501 to 3300	3
3301 to 4100	4
4101 to 4900	5
4901 to 5800	6
5801 to 6700	7
6701 to 7600	8
7601 to 8500	9
8501 to 12,900	10
12,901 to 17,200	15
17,201 to 21,500	20
21,501 to 25,000	25
25,001 to 33,000	30
33,001 to 41,000	40
41,001 to 50,000	50
50,001 to 59,000	60
59,001 to 70,000	70
70,001 to 83,000	80
83,001 to 96,000	90
96,001 to 130,000	100

Population Served	Minimum Number of Samples Per Month
130,001 to 220,000	120
220,001 to 320,000	150
320,001 to 450,000	180
450,001 to 600,000	210
600,001 to 780,000	240
780,001 to 970,000	270
970,001 to 1,230,000	300
1,230,001 to 1,520,000	330
1,520,001 to 1,850,000	360
1,850,001 to 2,270,000	390
2,270,001 to 3,020,000	420
3,020,001 to 3,960,000	450
3,960,001 or more	480

<sup>1</sup> Includes public water systems that have at least 15 service connections, but serve fewer than 25 persons.

**Table 1**

**NOTE: This Table is applicable beginning 1 April 2016**

Population Served	Minimum Number of Samples Per Month
1001 to 2500	2
2501 to 3300	3
3301 to 4100	4
4101 to 4900	5
4901 to 5800	6
5801 to 6700	7
6701 to 7600	8
7601 to 8500	9
8501 to 12,900	10

<b>Population Served</b>	<b>Minimum Number of Samples Per Month</b>
12,901 to 17,200	15
17,201 to 21,500	20
21,501 to 25,000	25
25,001 to 33,000	30
33,001 to 41,000	40
41,001 to 50,000	50
50,001 to 59,000	60
59,001 to 70,000	70
70,001 to 83,000	80
83,001 to 96,000	90
96,001 to 130,000	100
130,001 to 220,000	120
220,001 to 320,000	150
320,001 to 450,000	180
450,001 to 600,000	210
600,001 to 780,000	240
780,001 to 970,000	270
970,001 to 1,230,000	300
1,230,001 to 1,520,000	330
1,520,001 to 1,850,000	360
1,850,001 to 2,270,000	390
2,270,001 to 3,020,000	420
3,020,001 to 3,960,000	450
3,960,001 or more	480



## Appendix 13-6a

### Consumer Confidence Report Contents (40 CFR 141.153 and 141.154)

[Revised January 1999; Reviewed March 2000; Revised July 2000; Revised April 2001; Revised July 2001; Revised April 2002; Revised April 2003; Revised April 2006; Revised January 2007; Revised October 2007; Revised January 2008; Revised April 2013]

- a. Each community water system must provide to its customers an annual report that contains the information specified below in items “a” through “h” and the required additional health information listed on pages H4 through H5.” The full text of the regulations regarding Consumer Confidence Report contents can be found in 40 CFR 141.153 and 141.154.
- b. Each report must identify the source(s) of the water delivered by the community water system by providing information on:
  1. The type of the water: e.g., surface water, groundwater; and
  2. The commonly used name (if any) and location of the body (or bodies) of water.

If a source water assessment has been completed, the report must notify consumers of the availability of this information and the means to obtain it. In addition, systems are encouraged to highlight in the report significant sources of contamination in the source water area if they have readily available information. Where a system has received a source water assessment from the primacy agency, the report must include a brief summary of the system's susceptibility to potential sources of contamination, using language provided by the primacy agency or written by the operator.

- c. Each report must include the following definitions:

*Maximum Contaminant Level Goal or MCLG:* The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

*Maximum Contaminant Level or MCL:* The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

A report for a community water system operating under a variance or an exemption issued under Sections 1415 or 1416 of the SDWA must include the following definition:

- *Variances and Exemptions:* state or U.S. EPA permission not to meet an MCL or a treatment technique under certain conditions.

A report that contains data on contaminants that EPA regulates using any of the following terms must include the applicable definitions:

- *Treatment Technique:* A required process intended to reduce the level of a contaminant in drinking water.
- *Action Level:* The concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a water system must follow.
- *Maximum residual disinfectant level goal or MRDLG:* The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
- *Maximum residual disinfectant level or MRDL:* The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

A report that contains information regarding a Level 1 or Level 2 Assessment required under 40 CFR 141, Subpart Y must include the applicable definitions:

- *Level 1 Assessment:* A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.
- *Level 2 Assessment:* A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an *E. coli* MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

d. Information on Detected Contaminants. This subsection specifies the requirements for information to be included in each report for contaminants subject to mandatory monitoring (except *Cryptosporidium*). It applies to:

1. Contaminants subject to an MCL, action level, maximum residual disinfectant level, or treatment technique (regulated contaminants)
2. Contaminants for which monitoring is required by 40 CFR 141.40 (unregulated contaminants); and
3. Disinfection by-products or microbial contaminants for which monitoring is required by 40 CFR 141.142 and 141.143, except as provided under paragraph (e)(1) of this section, and which are detected in the finished water.

The data relating to these contaminants must be displayed in one table or in several adjacent tables. Any additional monitoring results that a community water system chooses to include in its report must be displayed separately.

The data must be derived from data collected to comply with U.S. EPA and state monitoring and analytical requirements during calendar year 1998 for the first report and subsequent calendar years thereafter except that:

1. Where a system is allowed to monitor for regulated contaminants less often than once a year, the table(s) must include the date and results of the most recent sampling and the report must include a brief statement indicating that the data presented in the report are from the most recent testing done in accordance with the regulations. No data older than 5 years need be included.
2. Results of monitoring in compliance with 40 CFR 141.142 and 141.143 need only be included for 5 years from the date of last sample or until any of the detected contaminants becomes regulated and subject to routine monitoring requirements, whichever comes first.

For detected regulated contaminants (listed in Appendix A to 40 CFR 141, Subpart O), the table(s) must contain:

1. The MCL for that contaminant expressed as a number equal to or greater than 1.0 (as provided in Appendix A to 40 CFR 141, Subpart O);
2. The MCLG for that contaminant expressed in the same units as the MCL;
3. If there is no MCL for a detected contaminant, the table must indicate that there is a treatment technique, or specify the action level, applicable to that contaminant, and the report must include the definitions for treatment technique and/or action level, as appropriate, specified in paragraph(c)(3) of 40 CFR 141.153;
4. For contaminants subject to an MCL, except turbidity and total coliform, fecal coliform, and *E. coli*, the highest contaminant level used to determine compliance with an NPDWR and the range of detected levels, as follows:
  - i. When compliance with the MCL is determined annually or less frequently: The highest detected level at any sampling point and the range of detected levels expressed in the same units as the MCL.
  - ii. When compliance with the MCL is determined by calculating a running annual average of all samples taken at a monitoring location: the highest average of any of the monitoring locations and the range of all monitoring locations expressed in the same units as the MCL. For the MCLs for TTHM and HAA5 in 40 CFR 141.64(b)(2), systems must include the highest locational running annual average for TTHM and HAA5 and the range of individual sample results for all

- monitoring locations expressed in the same units as the MCL. If more than one location exceeds the TTHM or HAA5 MCL, the system must include the locational running annual averages for all locations that exceed the MCL.
- iii. When compliance with the MCL is determined on a system-wide basis by calculating a running annual average of all samples at all monitoring locations: the average and range of detection expressed in the same units as the MCL. The system is required to include individual sample results for the IDSE conducted under 40 CFR 141, Subpart U when determining the range of TTHM and HAA5 results to be reported in the annual consumer confidence report for the calendar year that the IDSE samples were taken.
5. For turbidity.
    - i. When it is reported pursuant to 40 CFR 141.13: The highest average monthly value.
    - ii. When it is reported pursuant to the requirements of 40 CFR 141.71: the highest monthly value. The report should include an explanation of the reasons for measuring turbidity.
    - iii. When it is reported pursuant to 40 CFR 141.73, 141.173, or 141.551: The highest single measurement and the lowest monthly percentage of samples meeting the turbidity limits specified in 40 CFR 141.73, 141.173, or 141.551 for the filtration technology being used. The report should include an explanation of the reasons for measuring turbidity;
  6. For lead and copper: the 90th percentile value of the most recent round of sampling and the number of sampling sites exceeding the action level;
  7. For total coliform analytical results until 31 March 2016:
    - i. The highest monthly number of positive samples for systems collecting fewer than 40 samples per month; or
    - ii. The highest monthly percentage of positive samples for systems collecting at least 40 samples per month;
  8. For fecal coliform and *E. coli* until 31 March 2016: The total number of positive samples; and
  9. The likely source(s) of detected contaminants to the best of the operator's knowledge. Specific information regarding contaminants may be available in sanitary surveys and source water assessments, and should be used when available to the operator. If the operator lacks specific information on the likely source, the report must include one or more of the typical sources for that contaminant listed in appendix A to this subpart that is most applicable to the system.
  10. For *E. coli* analytical results under 40 CFR 141, Subpart Y: The total number of positive results.

If a community water system distributes water to its customers from multiple hydraulically independent distribution systems that are fed by different raw water sources, the table should contain a separate column for each service area, and the report should identify each separate distribution system. Alternatively, systems could produce separate reports tailored to include data for each service area.

The table(s) must clearly identify any data indicating violations of MCLs, MRDLs, or treatment techniques, and the report must contain a clear and readily understandable explanation of the violation including: the length of the violation, the potential adverse health effects, and actions taken by the system to address the violation. To describe the potential health effects, the system must use the relevant language of Appendix A to Subpart O of 40 CFR 141.

For detected unregulated contaminants for which monitoring is required (except *Cryptosporidium*), the table(s) must contain the average and range at which the contaminant was detected. The report may include a brief explanation of the reasons for monitoring for unregulated contaminants.

e. Information on *Cryptosporidium*, radon, and other contaminants:

If the system has performed any monitoring for *Cryptosporidium*, including monitoring performed to satisfy the requirements of 40 CFR 141.143, which indicates that *Cryptosporidium* may be present in the source water or the finished water, the report must include:

1. A summary of the results of the monitoring; and
2. An explanation of the significance of the results.

If the system has performed any monitoring for radon that indicates that radon may be present in the finished water, the report must include:

1. The results of the monitoring; and
2. An explanation of the significance of the results.

If the system has performed additional monitoring that indicates the presence of other contaminants in the finished water, U.S. EPA strongly encourages systems to report any results that may indicate a health concern. To determine if results may indicate a health concern, U.S. EPA recommends that systems find out if U.S. EPA has proposed an NPDWR or issued a health advisory for that contaminant by calling the Safe Drinking Water Hotline (800-426-4791). U.S. EPA considers detects above a proposed MCL or health advisory level to indicate possible health concerns. For such contaminants, U.S. EPA recommends that the report include:

1. The results of the monitoring; and
2. An explanation of the significance of the results noting the existence of a health advisory or a proposed regulation.

f. Compliance with NPDWR. In addition to the requirements of 40 CFR 141.153(d)(6), the report must note any violation that occurred during the year covered by the report of a requirement listed below, and include a clear and readily understandable explanation of the violation, any potential adverse health effects, and the steps the system has taken to correct the violation.

1. Monitoring and reporting of compliance data;
2. Filtration and disinfection prescribed by Subpart H of 40 CFR 141. For systems that have failed to install adequate filtration or disinfection equipment or processes, or have had a failure of such equipment or processes which constitutes a violation, the report must include the following language as part of the explanation of potential adverse health effects: Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.
3. Lead and copper control requirements prescribed by Subpart I of 40 CFR 141. For systems that fail to take one or more actions prescribed by 40 CFR 141.80(d), 141.81, 141.82, 141.83, or 141.84, the report must include the applicable language of Appendix A to Subpart O of 40 CFR 141 for lead, copper, or both.
4. Treatment techniques for Acrylamide and Epichlorohydrin prescribed by 40 CFR 141, Subpart K. For systems that violate the requirements of 40 CFR 141, Subpart K, the report must include the relevant language from Appendix A to Subpart O of 40 CFR 141.
5. Recordkeeping of compliance data.
6. Special monitoring requirements prescribed by 40 CFR 141.40 and 141.41; and
7. Violation of the terms of a variance, an exemption, or an administrative or judicial order.

g. Variances and Exemptions. If a system is operating under the terms of a variance or an exemption issued under Sections 1415 or 1416 of the SDWA, the report must contain:

1. An explanation of the reasons for the variance or exemption;
2. The date on which the variance or exemption was issued;
3. A brief status report on the steps the system is taking to install treatment, find alternative sources of water, or otherwise comply with the terms and schedules of the variance or exemption; and
4. A notice of any opportunity for public input in the review, or renewal, of the variance or exemption.

h. Additional information:

The report must contain a brief explanation regarding contaminants that may reasonably be expected to be found in drinking water including bottled water. This explanation may include the language of items h(1) through h(3) listed below or systems may use their own comparable language. The report must also include the language of item h(4) below.

1. The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.
2. Contaminants that may be present in source water include:

- i. Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
  - ii. Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
  - iii. Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
  - iv. Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.
  - v. Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.
3. To ensure that tap water is safe to drink, U.S. EPA prescribes regulations to limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.
  4. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the U.S. EPA's Safe Drinking Water Hotline (800-426-4791).

The report must include the telephone number of the owner, operator, or designee of the community water system as a source of additional information concerning the report.

In communities with a large proportion of non-English speaking residents, as determined by the Primacy Agency, the report must contain information in the appropriate language(s) regarding the importance of the report or contain a telephone number or address where such residents may contact the system to obtain a translated copy of the report or assistance in the appropriate language.

The report must include information (e.g., time and place of regularly scheduled board meetings) about opportunities for public participation in decisions that may affect the quality of the water.

The systems may include such additional information as they deem necessary for public education consistent with, and not detracting from, the purpose of the report.

For systems required to comply with subpart S:

1. Any ground water system that receives notice from the State of a significant deficiency or notice from a laboratory of a fecal indicator-positive ground water source sample that is not invalidated by the State under 40 CFR 141.402(d) must inform its customers of any significant deficiency that is uncorrected at the time of the next report or of any fecal indicator-positive ground water source sample in the next report. The system must continue to inform the public annually until the State determines that particular significant deficiency is corrected or the fecal contamination in the ground water source is addressed under 40 CFR 141.403(a). Each report must include the following elements.
  - i. The nature of the particular significant deficiency or the source of the fecal contamination (if the source is known) and the date the significant deficiency was identified by the State or the dates of the fecal indicator-positive ground water source samples;
  - ii. If the fecal contamination in the ground water source has been addressed under 40 CFR 141.403(a) and the date of such action;
  - iii. For each significant deficiency or fecal contamination in the ground water source that has not been addressed under 40 CFR 141.403(a), the State-approved plan and schedule for correction, including interim measures, progress to date, and any interim measures completed; and
  - iv. If the system receives notice of a fecal indicator-positive ground water source sample that is not invalidated by the State under 40 CFR 141.402(d), the potential health effects using the health effects language of Appendix A of subpart O.
2. If directed by the State, a system with significant deficiencies that have been corrected before the next report is issued must inform its customers of the significant deficiency, how the deficiency was corrected, and the date of correction under paragraph (h)(6)(i) of this section.

Any system required to comply with the Level 1 assessment requirement or a Level 2 assessment requirement that is not due to an *E. coli* MCL violation must include in the report the text found in 40 CFR 141.153(h)(7)(i)(A) and 40 CFR 141.153(h)(7)(i)(B) and (C) of this section as appropriate, filling in the blanks accordingly and the text found in paragraphs 40 CFR 141.153(h)(7)(i)(D)(1) and (2) if appropriate.

**Required Additional Health Information. (40 CFR 141.154)**

- a. All reports must prominently display the following language: Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their healthcare providers. U.S. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).
- b. Ending in the report due by 1 July 2001, a system which detects arsenic at levels above 0.025 mg/L, but below the 0.05 mg/L, and beginning in the report due by 1 July 2002, a system that detects arsenic above 0.005 mg/L and up to and including 0.010 mg/L:
  1. Must include in its report a short informational statement about arsenic, using language such as: U.S. EPA is reviewing the drinking water standard for arsenic because of special concerns that it may not be stringent enough. Arsenic is a naturally occurring mineral known to cause cancer in humans at high concentrations.
  2. May write its own educational statement, but only in consultation with the Primacy Agency.
- c. A system that detects nitrate at levels above 5 mg/L, but below the MCL:
  1. Must include a short informational statement about the impacts of nitrate on children using language such as: Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than 6 mo of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask advice from your health care provider.
  2. May write its own educational statement, but only in consultation with the Primacy Agency.
- d. Every report must include the following lead-specific information:
  1. A short informational statement about lead in drinking water and its effects on children. The statement must include the following information:

“If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. [NAME OF UTILITY] is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 sec to 2 min before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.”
  2. A system may write its own educational statement, but only in consultation with the State.

**Community water systems that detect TTHM above 0.080 mg/l, but below the MCL in 40 CFR 141.12, as an annual average, monitored and calculated under the provisions of 40 CFR 141.30, must include health effects language for TTHMs prescribed by Appendix A.**

## Appendix 13-6b

### Coliform Treatment Technique Triggers and Assessment Requirements (40 CFR 141.859(a) and 141.859(b)) [Added April 2013]

(NOTE: This Appendix is not effective until 1 April 2016.)

#### Treatment Technique Triggers

Systems must conduct assessments after exceeding treatment technique triggers

Level 1 treatment technique triggers.

1. For systems taking 40 or more samples per month, the system exceeds 5.0% total coliform-positive samples for the month.
2. For systems taking fewer than 40 samples per month, the system has two or more total coliform-positive samples in the same month.
3. The system fails to take every required repeat sample after any single total coliform-positive sample.

Level 2 treatment technique triggers.

1. An E. coli MCL violation, as follows:
  - The system has an E. coli-positive repeat sample following a total coliform-positive routine sample.
  - The system has a total coliform-positive repeat sample following an E. coli-positive routine sample.
  - The system fails to take all required repeat samples following an E. coli-positive routine sample.
  - The system fails to test for E. coli when any repeat sample tests positive for total coliform.
2. A second Level 1 trigger as defined above, within a rolling 12-m period, unless the State has determined a likely reason that the samples that caused the first Level 1 treatment technique trigger were total coliform-positive and has established that the system has corrected the problem.
3. For systems with approved annual monitoring, a Level 1 trigger in two consecutive years.

#### Requirements for Assessments.

Systems must ensure that Level 1 and 2 assessments are conducted in order to identify the possible presence of sanitary defects and defects in distribution system coliform monitoring practices.

Level 2 assessments must be conducted by parties approved by the State.

When conducting assessments, systems must ensure that the assessor evaluates minimum elements that include review and identification of inadequacies in sample sites; sampling protocol; sample processing; atypical events that could affect distributed water quality or indicate that distributed water quality was impaired; changes in distribution system maintenance and operation that could affect distributed water quality (including water storage); source and treatment considerations that bear on distributed water quality, where appropriate (e.g., small ground water systems); and existing water quality monitoring data. The system must conduct the assessment consistent with any State directives that tailor specific assessment elements with respect to the size and type of the system and the size, type, and characteristics of the distribution system.

Level 1 Assessments.

- Conduct a Level 1 assessment consistent with State requirements if the system exceeds one of the Level 1 treatment technique triggers.
- Complete a Level 1 assessment as soon as practical after any trigger.

- In the completed assessment form, describe sanitary defects detected, corrective actions completed, and a proposed timetable for any corrective actions not already completed.
- The assessment form may also note that no sanitary defects were identified.
- Submit the completed Level 1 assessment form to the State within 30 days after the system learns that it has exceeded a trigger.

(NOTE: If the State reviews the completed Level 1 assessment and determines that the assessment is not sufficient (including any proposed timetable for any corrective actions not already completed), the State must consult with the system. If the State requires revisions after consultation, the system must submit a revised assessment form to the State on an agreed-upon schedule not to exceed 30 days from the date of the consultation.)

(NOTE: Upon completion and submission of the assessment form by the system, the State must determine if the system has identified a likely cause for the Level 1 trigger and, if so, establish that the system has corrected the problem, or has included a schedule acceptable to the State for correcting the problem.)

#### Level 2 Assessments.

- Ensure that a Level 2 assessment consistent with State requirements is conducted if the system exceeds one of the Level 2 treatment technique triggers.
- Comply with any expedited actions or additional actions required by the State in the case of an *E. coli* MCL violation.
- Ensure that a Level 2 assessment is completed by the State or by a party approved by the State as soon as practical after any trigger.
- Submit a completed Level 2 assessment form to the State within 30 days after the system learns that it has exceeded a trigger.
- In the completed assessment form, describe sanitary defects detected, corrective actions completed, and a proposed timetable for any corrective actions not already completed.
- The assessment form may also note that no sanitary defects were identified.

(NOTE: The system may conduct Level 2 assessments if the system has staff or management with the certification or qualifications specified by the State unless otherwise directed by the State.)

(NOTE: If the State reviews the completed Level 2 assessment and determines that the assessment is not sufficient (including any proposed timetable for any corrective actions not already completed), the State must consult with the system. If the State requires revisions after consultation, the system must submit a revised assessment form to the State on an agreed-upon schedule not to exceed 30 days.)

(NOTE: Upon completion and submission of the assessment form by the system, the State must determine if the system has identified a likely cause for the Level 2 trigger and determine whether the system has corrected the problem, or has included a schedule acceptable to the State for correcting the problem.)

## Appendix 13-7

### Monitoring and Sampling Parameters for Lead and Copper in Drinking Water (40 CFR 141.86(c)(5) and 141.86(d)(1)) [Revised April 2000]

#### *Number of Sampling Sites Required*

Water systems shall collect at least one sample during each specified monitoring period from the number of sites listed in the first column (“standard monitoring”) of the table. A system conducting reduced monitoring shall collect at least one sample from the number of sites specified in the second column (“reduced monitoring”) of the table during each specified monitoring period. Reduced monitoring sites shall be representative of the sites required for standard monitoring. States may specify sampling locations when a system is conducting reduced monitoring.

System Size (people served)	Number of sites (standard monitoring)	Number of sites (reduced monitoring)
> 100,000	100	50
10,001 - 100,000	60	30
3301 - 10,000	40	20
501 - 3300	20	10
101 - 500	10	5
<=100	5	5

#### *Initial Tap Sampling*

The first 6-mo monitoring period for small, medium, and large systems begin on the following dates:

System Size (people served)	First 6-mo monitoring period begins on:
> 50,000	1 Jan 1992
3301 - 50,000	1 Jul 1992
3300	1 Jul 1993



## **Appendix 13-7a**

### **Public Education Materials For Lead and Copper Exceedances at Community Water Systems and NTNC Water Systems (40 CFR 141.85) [Added January 2008]**

#### **“IMPORTANT INFORMATION ABOUT LEAD IN YOUR DRINKING WATER.**

[INSERT NAME OF WATER SYSTEM] found elevated levels of lead in drinking water in some homes/buildings. Lead can cause serious health problems, especially for pregnant women and young children. Please read this information closely to see what you can do to reduce lead in your drinking water.

Health effects of lead. Lead can cause serious health problems if too much enters your body from drinking water or other sources. It can cause damage to the brain and kidneys, and can interfere with the production of red blood cells that carry oxygen to all parts of your body. The greatest risk of lead exposure is to infants, young children, and pregnant women. Scientists have linked the effects of lead on the brain with lowered IQ in children. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults. Lead is stored in the bones, and it can be released later in life. During pregnancy, the child receives lead from the mother's bones, which may affect brain development.”

Additionally, include information about:

#### **Sources of Lead.**

- Explain what lead is.
- Explain possible sources of lead in drinking water and how lead enters drinking water. Include information on home/building plumbing materials and service lines that may contain lead.
- Discuss other important sources of lead exposure in addition to drinking water (e.g., paint).

Discuss the steps the consumer can take to reduce their exposure to lead in drinking water.

- Encourage running the water to flush out the lead.
- Explain concerns with using hot water from the tap and specifically caution against the use of hot water for preparing baby formula.
- Explain that boiling water does not reduce lead levels.
- Discuss other options consumers can take to reduce exposure to lead in drinking water, such as alternative sources or treatment of water.
- Suggest that parents have their child's blood tested for lead.

Explain why there are elevated levels of lead in the system's drinking water (if known) and what the water system is doing to reduce the lead levels in homes/buildings in this area.

“For more information, call us at [INSERT YOUR NUMBER] [(IF APPLICABLE), or visit our Web site at [INSERT YOUR WEB SITE HERE]]. For more information on reducing lead exposure around your home/building and the health effects of lead, visit EPA's Web site at <http://www.epa.gov/lead> or contact your health care provider.”

#### **Community Water System-Specific Content Requirements**

Tell consumers how to get their water tested.

Discuss lead in plumbing components and the difference between low lead and lead free.



## Appendix 13-8

### Summary of Monitoring Requirements for Water Quality Parameters<sup>1</sup> (40 CFR 141.87)

[Revised April 2000; Revised October 2007; Revised January 2008]

Monitoring Period	Parameters <sup>2</sup>	Location	Frequency
Initial Sampling	pH, alkalinity, orthophosphate or silica <sup>3</sup> , calcium, conductivity, temperature	Taps and at entry points to distribution system	Every 6 mo for large, small and medium-sized water systems
After Installation of Corrosion Control	pH, alkalinity, orthophosphate or silica <sup>3</sup> , calcium <sup>4</sup>	Taps	Every 6 mo for large, small and medium-sized water systems
	pH, alkalinity dosage rate and concentration (if alkalinity adjusted as a part of corrosion control), inhibitor dosage rate and inhibitor residual <sup>5</sup>	Entry points to distribution system <sup>6</sup>	No less frequently than every 2 weeks for large, small and medium-sized water systems
After State Specifies Parameter Values for Optimal Corrosion Control	pH, alkalinity, orthophosphate or silica <sup>3</sup> , calcium <sup>4</sup>	Taps	Every 6 mo with the first 6-mo period to begin on either January 1 or July 1, whichever comes first, after the State specifies the optimal values
	pH, alkalinity dosage rate and concentration (if alkalinity adjusted as a part of corrosion control), inhibitor dosage rate and inhibitor residual <sup>5</sup>	Entry points to distribution system <sup>6</sup>	No less frequently than every 2 weeks
Reduced Monitoring	pH, alkalinity, orthophosphate or silica <sup>3</sup> , calcium <sup>4</sup> ,	Taps	Every 6 mo, annually <sup>7</sup> or every 3 yr <sup>8</sup> ; reduced number of sites
	pH, alkalinity dosage rate and concentration (if alkalinity adjusted as a part of corrosion control), inhibitor dosage rate and inhibitor residual <sup>5</sup>	Entry points to distribution system <sup>6</sup>	No less frequently than every 2 weeks

<sup>1</sup> Table is for illustrative purposes; consult the text of this section for precise regulatory requirements.

<sup>2</sup> Small and medium-size systems have to monitor for water quality parameters only during monitoring periods in which the system exceeds the lead or copper action level.

- <sup>3</sup> Orthophosphate must be measured only when an inhibitor containing a phosphate compound is used. Silica must be measured only when an inhibitor containing silicate compound is used.
- <sup>4</sup> Calcium must be measured only when calcium carbonate stabilization is used as part of corrosion control.
- <sup>5</sup> Inhibitor dosage rates and inhibitor residual concentrations (orthophosphate or silica) must be measured only when an inhibitor is used.
- <sup>6</sup> Groundwater systems may limit monitoring to representative locations throughout the system.
- <sup>7</sup> Water systems may reduce frequency of monitoring for water quality parameters at the tap from every 6 mo to annually if they have maintained the range of values for water quality parameters reflecting optimal corrosion control during 3 consecutive years of monitoring.
- <sup>8</sup> Any water system that maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment specified by the State during three consecutive years of monitoring may reduce the frequency with which it collects the number of tap samples for applicable water quality parameters from every 6 mo to annually. This sampling begins during the calendar year immediately following the end of the monitoring period in which the third consecutive year of 6-mo monitoring occurs. Any water system that maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment specified by the State during three consecutive years of annual monitoring may reduce the frequency with which it collects the number of tap samples for applicable water quality parameters from annually to every 3 yr. This sampling begins no later than the third calendar year following the end of the monitoring period in which the third consecutive year of monitoring occurs.

## Appendix 13-9

**MCL and MRDL Requirements Related to Disinfection**  
**(40 CFR 141.64 and 141.65)**  
**[Added January 1999; Reviewed March 2000; Revised April 2006]**

**The MCLs for disinfection byproducts are as follows:**

<b>Disinfection byproduct</b>	<b>MCL (mg/L)</b>
Total trihalomethanes (TTHM)	0.080
Haloacetic acids (five) (HAA5)	0.060
Bromate	0.010
Chlorite	1.0

**Maximum residual disinfectant levels (MRDLs) are as follows:**

<b>Disinfection residual</b>	<b>MRDL (mg/L)</b>
Chlorine	4.0 (as Cl <sub>2</sub> ).
Chloramines	4.0 (as Cl <sub>2</sub> ).
Chlorine dioxide	0.8 (as ClO <sub>2</sub> ).



**Appendix 13-9a**

**Excepted Radionuclides  
(40 CFR 141.66, Table A)  
[Added January 2001]**

**Average Annual Concentrations Assumed To Produce a Total Body or Organ Dose of 4 mrem/yr**

<b>Radionuclide</b>	<b>Critical Organ</b>	<b>PCi per liter</b>
<b>Tritium</b>	<b>Total Body</b>	<b>20,000</b>
<b>Strontium-90</b>	<b>Bone Marrow</b>	<b>8</b>



## Appendix 13-9b

### Monitoring for TTHM and HAA5 at Community Water Systems and Nontransient Noncommunity Water Systems (40 CFR 141.600(c), 141.601(b)(1), 141.602(a)(1)(i)(B), and 141.605(b)) [Added April 2006, Revised July 2009]

(NOTE: This Appendix applies to:

- community water systems that use a primary or residual disinfectant other than ultraviolet light or deliver water that has been treated with a primary or residual disinfectant other than ultraviolet light
- nontransient noncommunity water systems that serves at least 10,000 people and use a primary or residual disinfectant other than ultraviolet light or delivers water that has been treated with a primary or residual disinfectant other than ultraviolet light.)

**Table 1: Schedule for Monitoring Plans and Studies**

If you serve this population	You must submit your standard monitoring plan or system specific study plan <sup>1</sup> or 40/30 certification <sup>2</sup> to the State by or receive very small system waiver from State	You must complete your standard monitoring or system specific study by	You must submit your IDSE report to the State by <sup>3</sup>
<b>Systems that are not part of a combined distribution system and systems that serve the largest population in the combined distribution system</b>			
Greater than or equal to 100,000	October 1, 2006	September 30, 2008	January 1, 2009
50,000 – 99,999	April 1, 2007	March 31, 2009	July 1, 2009
10,000 – 49,999	October 1, 2007	September 30, 2009	January 1, 2010
Less than 10,000 (CWS only)	April 1, 2008	March 31, 2010	July 1, 2010
<b>Other systems that are part of a combined distribution system</b>			
Wholesale system or consecutive system.	at the same time as the system with the earliest compliance date in the combined distribution system.	at the same time as the system with the earliest compliance date in the combined distribution system.	at the same time as the system with the earliest compliance date in the combined distribution system.

If, within 12 mo after the date identified in this column, the State does not approve the plan or notify the facility that it has not yet completed its review, the facility may consider the plan they submitted as approved. The facility must implement that plan and complete standard monitoring or a system specific study no later than the date identified in the third column.

Submit the facility's 40/30 certification under 40 CFR 141.603 by the date indicated.

If, within 3 mo after the date identified in this column (9 mo after the date identified in this column if the facility must comply on the schedule for the population of 10,000 – 49,999), the State does not approve the facility's IDSE report or notify the facility that it has not yet completed its review, the facility may consider the report they submitted as approved and the facility must implement the recommended Stage 2 disinfection byproducts monitoring as required.

**Table 2: Monitoring Schedule**

Source water type	Population size category	Monitoring periods and frequency of sampling	Distribution system monitoring locations <sup>1</sup>				
			Total per Monitoring Period	Near Entry Points	Average Residence Time	High TTHM Locations	High HAA5 Locations
<b>Subpart H</b>	< 500 consecutive systems	One during peak historical month <sup>2</sup>	2	1	-----	1	
	< 500 non-consecutive systems	-----	2	-----	-----	1	1
	500-3,300 consecutive systems	four (every 90 days)	-----	2	1	-----	1
	500-3,300 non-consecutive systems	----- -	2	-----	-----	1	1
	3,301-9,999	-----	4	-----	1	2	1
	10,000-49,999	six (every 60 days)	8	1	2	3	2
	50,000-249,999	-----	16	3	4	5	4
	250,000-999,999	-----	24	4	6	8	6
	1,000,000-4,999,999	-----	32	6	8	10	8
	>= 5,000,000	-----	40	8	10	12	10
<b>Ground Water</b>	< 500 consecutive systems	one (during peak)	2	1	-----	1	

Source water type	Population size category	Monitoring periods and frequency of sampling	Distribution system monitoring locations1				
			Total per Monitoring Period	Near Entry Points	Average Residence Time	High TTHM Locations	High HAA5 Locations
		historical month)2					
	< 500 non-consecutive systems	-----	2	-----	-----	1	1
	500-9,999	four (every 90 days)..	2	-----	-----	1	1
	10,000-99,999	-----	6	1	1	2	2
	100,000-499,999	-----	8	1	1	3	3
	>= 500,000	-----	12	2	2	4	4

1 A dual sample set (i.e., a TTHM and an HAA5 sample) must be taken at each monitoring location during each monitoring period.

2 The peak historical month is the month with the highest TTHM or HAA5 levels or the warmest water temperature.

**Table 3: Monitoring Locations and Frequencies**

System Type	Population Size Category	Number of monitoring locations	Number of Samples	
			TTHM	HAA5
Subpart H	< 500	3	3	3
	500 – 3,300	3	9	9
	3,301 – 9,999	6	36	36
	10,000 – 49,999	12	72	72
	50,000 – 249,999	24	144	144
	250,000 – 999,999	36	216	216

	1,000,000 – 4,999,999	48	288	288
	>= 5,000,000	60	360	360
Ground Water	< 500	3	3	3
	500 – 9,999	3	9	9
	10,000 – 99,999	12	48	48
	100,000 – 499,999	18	72	72
	>= 500,000	24	96	96

**Table 4: Monitoring Locations and Frequency for IDSE Report**

Source Water Type	Population Size Category	Monitoring Frequency <sup>1</sup>	Distribution system monitoring location			
			Total per monitoring period <sup>2</sup>	Highest TTHM Locations	Highest HAA% Locations	Existing Subpart L Compliance Locations
Subpart H	< 500	Per year	2	1	1	-----
	500 – 3,300	Per quarter	2	1	1	
	3,301 – 9,999	Per quarter	2	1	1	-----
	10,000 – 49,999	Per quarter	4	2	1	1
	50,000 – 249,999	Per quarter	8	3	3	2
	250,000 – 999,999	Per quarter	12	5	4	3
	1,000,000 – 4,999,999	Per quarter	16	6	6	4
	Greater than or equal to 5,000,000	Per quarter	20	8	7	5
Groundwater	< 500	Per year	2	1	1	
	500 – 9,999	Per year	2	1	1	
	10,000 – 99,999	Per quarter	4	2	1	1
	100,000 – 49,999	Per quarter	6	3	2	1
	Greater than or equal to 500,000	Per quarter	8	3	3	2

1 All systems must monitor during month of highest DBP concentrations.

2 Systems on quarterly monitoring must take dual sample sets every 90 days at each monitoring location, except for subpart H systems serving 500-3,300. Ground water systems serving 500-9,999 on annual monitoring must take dual sample sets at each monitoring location. All other systems on annual monitoring and subpart H systems serving 500-3,300 are required to take individual TTHM and HAA5 samples (instead of a dual sample set) at the locations with the highest TTHM and HAA5 concentrations, respectively. For systems serving fewer than 500 people, only one location with a dual sample set per monitoring period is needed if the highest TTHM and HAA5 concentrations occur at the same location and month.

## Appendix 13-9c

### Stage 2 Disinfection Byproducts Requirements (40 CFR 141.620(b), 141.621(a)(2), and 141.623(a)) [Added April 2006, Revised July 2009]

(NOTE: This appendix applies to a system that is a community water system or a nontransient noncommunity water system that uses a primary or residual disinfectant other than ultraviolet light or delivers water that has been treated with a primary or residual disinfectant other than ultraviolet light.)

**Table 1: Routine Monitoring**

Source Water Type	Population Size Category	Monitoring Frequency <sup>1</sup>	Distribution system monitoring location total per monitoring period <sup>2</sup>
<b>Subpart H</b>	<b>Less than 500</b>	<b>Per year</b>	<b>2</b>
	<b>500 – 3,300</b>	<b>Per quarter</b>	<b>2</b>
	<b>3,301 – 9,999</b>	<b>Per quarter</b>	<b>2</b>
	<b>10,000 – 49,999</b>	<b>Per quarter</b>	<b>4</b>
	<b>50,000 – 249,999</b>	<b>Per quarter</b>	<b>8</b>
	<b>250,000 – 999,999</b>	<b>Per quarter</b>	<b>12</b>
	<b>1,000,000 – 4,999,999</b>	<b>Per quarter</b>	<b>16</b>
	<b>Greater than or equal to 5,000,000</b>	<b>Per quarter</b>	<b>20</b>
<b>Ground Water</b>	<b>Less than 500</b>	<b>Per year</b>	<b>2</b>
	<b>500 – 9,999</b>	<b>Per year</b>	<b>2</b>
	<b>10,000 – 99,999</b>	<b>Per quarter</b>	<b>4</b>
	<b>100,000 – 499,999</b>	<b>Per quarter</b>	<b>6</b>
	<b>Greater than or equal to 500,000</b>	<b>Per quarter</b>	<b>8</b>

<sup>1</sup> All systems must monitor during month of highest DBP concentrations.

2. Systems on quarterly monitoring must take dual sample sets every 90 days at each monitoring location, except for subpart H systems serving 500-3,300. Ground water systems serving 500-9,999 on annual monitoring must take dual sample sets at each monitoring location. All other systems on annual monitoring and subpart H systems serving 500-3,300 are required to take individual TTHM and HAA5 samples (instead of a dual sample set) at the locations with the highest TTHM and HAA5 concentrations, respectively. For systems serving fewer than 500 people, only one location with a dual sample set per monitoring period is needed if the highest TTHM and HAA5 concentrations occur at the same location and month.

**Table 2: Reduced Monitoring Schedule**

Source Water Type	Population Size Category	Monitoring Frequency <sup>1</sup>	Distribution system monitoring location per monitoring period
<b>Subpart H</b>	<b>Less than 500</b>	<b>-----</b>	<b>Monitoring may not be reduced.</b>
	<b>500 – 3,300</b>	<b>Per year</b>	<b>1 TTHM and 1 HAA5 sample: one at the location and during the quarter with the highest</b>

Source Water Type	Population Size Category	Monitoring Frequency <sup>1</sup>	Distribution system monitoring location per monitoring period
			TTHM single measurement, one at the location and during the quarter with the highest HAA5 single measurement; 1 dual sample set per year if the highest TTHM and HAA5 measurements occurred at the same location and quarter.
	3,301-9,999	Per year	2 dual sample sets: one at the location and during the quarter with the highest TTHM single measurement, one at the location and during the quarter with the highest HAA5 single measurement.
	10,000 – 49,999	Per quarter	2 dual sample sets at the locations with the highest TTHM and highest HAA5 LRAAs.
	50,000 – 249,999	Per quarter	4 dual sample sets--at the locations with the two highest TTHM and two highest HAA5 LRAAs.
	250,000-999,99	Per quarter	6 dual sample sets--at the locations with the three highest TTHM and three highest HAA5 LRAAs.
	1,000,000 – 4,999,999	Per quarter	8 dual sample sets--at the locations with the four highest TTHM and four highest HAA5 LRAAs.
	Greater than or equal to 5,000,000	Per quarter	10 dual sample sets--at the locations with the five highest TTHM and five highest HAA5 LRAAs.
Ground Water	Less than 500	Every third year	1 TTHM and 1 HAA5 sample: one at the location and during the quarter with the highest TTHM single measurement, one at the location and during the quarter with the highest HAA5 single measurement; 1 dual sample set per year if the highest TTHM and HAA5 measurements occurred at the same location and quarter.
	500 – 9,999	Per year	1 TTHM and 1 HAA5 sample: one at the location and during the quarter with the highest TTHM single measurement, one at the location and during the quarter with the highest HAA5 single measurement; 1 dual sample set per year if the highest TTHM and HAA5 measurements occurred at the same location and quarter.
	10,000 – 99,999	Per year	2 dual sample sets: one at the location and during the quarter with the highest TTHM single measurement, one at the location and during the quarter with the highest HAA5 single measurement.

Source Water Type	Population Size Category	Monitoring Frequency <sup>1</sup>	Distribution system monitoring location per monitoring period
	100,000 – 499,999	Per quarter	2 dual sample sets; at the locations with the highest TTHM and highest HAA5 LRAAs.
	Greater than or equal to 500,000	Per quarter	4 dual sample sets at the locations with the two highest TTHM and two highest HAA5 LRAAs.

<sup>1</sup> Systems on quarterly monitoring must take dual sample sets every 90 days.



## Appendix 13-9d

### Source Water Monitoring Start Dates (40 CFR 141.701(c) and 141.711(a)) [Added April 2006]

Table 1: Source Water Monitoring Starting Dates

Systems that serve . . .	Must begin the first round of source water monitoring no later than the month beginning . . .	And must begin the second round of source water monitoring no later than the month beginning.....
At least 100,000 people	1 October 2006	1 April 2015
From 50,000 to 99,999 people	1 April 2007	1 October 2015
From 10,000 to 49,999 people	1 April 2008	1 October 2016
Fewer than 10,000 and monitor for E. coli <sup>a</sup>	1 October 2008	1 October 2017
Fewer than 10,000 and monitor for Cryptosporidium <sup>b</sup>	1 April 2010	1 April 2019

<sup>a</sup> Applies only to filtered systems.

<sup>b</sup> Applies to filtered systems that meet the conditions of paragraph (a)(4) of this section and unfiltered systems.

Table 2, Additional Treatment for Cryptosporidium Based on Bin Classification

If the system bin classification is:	And the system uses the following filtration treatment in full compliance with 40 CFR 141, Subparts H, P, and T (as applicable), then the additional Cryptosporidium treatment requirements are:			
	Conventional filtration treatment (including softening)	Direct Filtration	Slow sand or diatomaceous earth filtration	Alternative filtration technologies
Bin 1	No additional treatment	No additional treatment	No additional treatment	No additional treatment
Bin 2	1-log treatment.....	1.5-log treatment....	1-log treatment.....	(1)
Bin 3	2-log treatment.....	2.5-log treatment.....	2-log treatment.....	(2)
Bin 4	2.5-log treatment....	3-log treatment.....	2.5-log treatment...	(3)

1 As determined by the State such that the total Cryptosporidium removal and inactivation is at least 4.0-log.

2 As determined by the State such that the total Cryptosporidium removal and inactivation is at least 5.0-log.

3 As determined by the State such that the total Cryptosporidium removal and inactivation is at least 5.5-log.



## Appendix 13-10

### Monitoring Frequency for TTHM and HAA5 (40 CFR 141.132(b))

[Added January 1999; Reviewed March 2000; Revised April 2001; Revised April 2006]

**Table 1: Routine Monitoring Frequency for TTHM and HAA5**

Type of system	Minimum monitoring frequency	Sample location in the distribution system
Subpart H system serving at least 10,000 persons.	Four water samples per quarter per treatment plant.	At least 25% of all samples collected each quarter at locations representing maximum residence time. Remaining samples taken at locations representative of at least average residence time in the distribution system and representing the entire distribution system, taking into account number of persons served, different sources of water, and different treatment methods. <sup>1</sup>
Subpart H system serving from 500 to 9,999 persons.	One water sample per quarter per treatment plant.	Locations representing maximum residence time. <sup>1</sup>
Subpart H system serving < 500 persons.	One sample per year per treatment plant during month of warmest water temperature.	Locations representing maximum residence time. <sup>1</sup> If the sample (or average of annual samples, if more than one sample is taken) exceeds the MCL, the system must increase monitoring to one sample per treatment plant per quarter, taken at a point reflecting the maximum residence time in the distribution system, until the system meets reduced monitoring criteria (see 40 CFR 141.132(c))
System using only groundwater not under direct influence of surface water using chemical disinfectant and serving at least 10,000 persons.	One water sample per quarter per treatment plant <sup>2</sup> .	Locations representing maximum residence time. <sup>1</sup>
System using only groundwater not under direct influence of surface water using chemical disinfectant and serving < 10,000 persons.	One sample per year per treatment plant <sup>2</sup> during month of warmest water temperature.	Locations representing maximum residence time. <sup>1</sup> If the sample (or average of annual samples, if more than one sample is taken) exceeds the MCL, the system must increase monitoring to one sample per treatment plant per quarter, taken at a point reflecting the maximum residence time in the distribution system, until system meets criteria for reduced monitoring (see 40 CFR 141.132(c))

<sup>1</sup> If a system elects to sample more frequently than the minimum required, at least 25% of all samples collected each quarter (including those taken in excess of the required frequency) must be taken at locations that represent the maximum residence time of the water in the distribution system. The remaining samples must be taken at locations representative of at least average residence time in the distribution system.

<sup>2</sup> Multiple wells drawing water from a single aquifer may be considered one treatment plant for determining the minimum number of samples required, with state approval in accordance with criteria developed under 40 CFR 142.16(h)(5).

**Table 2: Reduced Monitoring Frequency for TTHM and HAA5**

<b>If you are a:</b>	<b>You may reduce monitoring if you have monitored at least one year and your ...</b>	<b>To this level</b>
Subpart H system serving at least 10,000 persons that has a source water annual average TOC level before any treatment, $\leq 4.0$ mg/L.	TTHM annual average $\leq 0.040$ mg/L and HAA5 annual average $\leq 0.030$ mg/L.	One sample per treatment plant per quarter at distribution system location reflecting maximum residence time.
Subpart H system serving from 500 to 999 persons which has a source water annual average TOC level before any treatment, $\leq 4.0$ mg/L.	TTHM annual average $\leq 0.040$ mg/L and HAA5 annual average $\leq 0.030$ mg/L.	One sample per treatment plant per year at distribution system location reflecting maximum residence time during month of warmest water temperature. NOTE: Any Subpart H system serving fewer than 500 persons may not reduce its monitoring to < one sample per treatment plant per year.
System using only groundwater not under direct influence of surface water using chemical disinfectant and serving at least 10,000 persons.	TTHM annual average $\leq 0.040$ mg/L and HAA5 annual average $\leq 0.030$ mg/L.	One sample per treatment plant per year at distribution system location reflecting maximum residence time during month of warmest water temperature.
System using only groundwater not under direct influence of surface water using chemical disinfectant and serving fewer than 10,000 persons.	TTHM annual average $\leq 0.040$ mg/L and HAA5 annual average $\leq 0.030$ mg/L for two consecutive years or TTHM annual average $\leq 0.020$ mg/L and HAA5 annual average $\leq 0.015$ mg/L for 1 yr.	One sample per treatment plant per 3 yr monitoring cycle at distribution system location reflecting maximum residence time during month of warmest water temperature with the 3-yr cycle beginning on January 1 following quarter in which system qualifies for reduced monitoring.

## Appendix 13-11

### Reporting Requirements (40 CFR 141.134(b)) [Revised April 2001]

**Disinfection Byproducts, systems must report the information specified in the following table:**

If you are a...	You must report...1
System monitoring for TTHM and HAA5 under the requirements of 40 CFR 141.132(b) on a quarterly or more frequent basis.	<ul style="list-style-type: none"> <li>(1) The number of samples taken during the last quarter.</li> <li>(2) The location, date, and result of each sample taken during the last quarter.</li> <li>(3) The arithmetic average of all samples taken in the last quarter.</li> <li>(4) The annual arithmetic average of the quarterly arithmetic averages of this section for the last four quarters.</li> <li>(5) Whether the MCL was violated.</li> </ul>
System monitoring for TTHMs and HAA5 under the requirements of 40 CFR 141.132(b) less frequently than quarterly (but at least annually).	<ul style="list-style-type: none"> <li>(1) The number of samples taken during the last year</li> <li>(2) The location, date, and result of each sample taken during the last monitoring period.</li> <li>(3) The arithmetic average of all samples taken over the last year.</li> <li>(4) Whether the MCL was violated.</li> </ul>
<p>System monitoring for TTHMs and HAA5 under the requirements of 40 CFR 141.132(b) less frequently than annually.</p> <p>System monitoring for chlorite under the requirements of 40 CFR 141.132(b).</p>	<ul style="list-style-type: none"> <li>(1) The location, date, and result of the last sample taken.</li> <li>(2) Whether the MCL was violated.</li> </ul> <ul style="list-style-type: none"> <li>(1) The number of entry point samples taken each month for the last 3 mo.</li> <li>(2) The location, date, and result of each sample (both entry point and distribution system) taken during the last quarter.</li> <li>(3) For each month in the reporting period, the arithmetic average of all samples taken in each three samples set taken in the distribution system.</li> <li>(4) Whether the MCL was violated, and how many times it was violated in each month.</li> </ul>
System monitoring for bromate under the requirements of 40 CFR 141.132(b).	<ul style="list-style-type: none"> <li>(1) The number of samples taken during the last quarter</li> <li>(2) The location, date, and result of each sample taken during the last quarter.</li> <li>(3) The arithmetic average of the monthly arithmetic averages of all samples in the last year.</li> <li>(4) Whether the MCL was violated.</li> </ul>

**Disinfectants, systems must report the information specified in the following table:**

<b>If you are a...</b>	<b>You must report...<sup>1</sup></b>
System monitoring for chlorine or chloramines under the requirements of 40 CFR 141.132(c).	<ul style="list-style-type: none"> <li>(1) The number of samples taken during each month of the last quarter.</li> <li>(2) The monthly arithmetic average of all samples taken in each month for the last 12 mo.</li> <li>(3) The arithmetic average of all monthly averages for the last 12 mo.</li> <li>(4) Whether the MRDL was violated.</li> </ul>
System monitoring for chlorine dioxide under the requirements of 40 CFR 141.132(c).	<ul style="list-style-type: none"> <li>(1) The dates, results, and locations of samples taken during the last quarter.</li> <li>(2) Whether the MRDL was violated.</li> <li>(3) Whether the MRDL was exceeded in any two consecutive daily samples and whether the resulting violation was acute/nonacute.</li> </ul>

<sup>1</sup> The state may choose to perform calculations and determine whether the MRDL was exceeded, in lieu of having the system report that information.

**Disinfection Byproduct Precursors and Enhanced Coagulation or Enhanced Softening, systems must report the information specified in the following table:**

<b>If you are a . . .</b>	<b>You must report . . .<sup>1</sup></b>
System monitoring monthly or quarterly for TOC under the requirements of 40 CFR 141.132(d) and required to meet the enhanced coagulation or enhanced softening requirements in 40 CFR 141.135(b)(2) or 141.135(b)(3).	<ul style="list-style-type: none"> <li>(1) The number of paired (source water and treated water) samples taken during the last quarter.</li> <li>(2) The location, date, and result of each paired sample and associated alkalinity taken during the last quarter.</li> <li>(3) For each month in the reporting period that paired samples were taken, the arithmetic average of the percent reduction of TOC for each paired sample and the required TOC percent removal.</li> <li>(4) Calculations for determining compliance with the TOC percent removal requirements, as provided in 40 CFR 141.135(c)(1).</li> <li>(5) Whether the system is in compliance with the enhanced coagulation or enhanced softening percent removal requirements in 40 CFR 141.135(b) for the last four quarters.</li> </ul>
System monitoring monthly or quarterly for TOC under the requirements of 40 CFR 141.132(d) and meeting one or more of the alternative compliance criteria in 40 CFR 141.135(a)(2) or 141.135(a)(3).	<ul style="list-style-type: none"> <li>(1) The alternative compliance criterion that the system is using.</li> <li>(2) The number of paired samples taken during the last quarter.</li> <li>(3) The location, date, and result of each paired sample and associated alkalinity taken during the last quarter.</li> <li>(4) The running annual arithmetic average based on monthly averages (or quarterly samples) of source water TOC for systems meeting a criterion in 40 CFR 141.135(a)(2)(i) or 141.135(a)(2)(iii) or of treated</li> </ul>

**Disinfection Byproduct Precursors and Enhanced Coagulation or Enhanced Softening, systems must report the information specified in the following table:**

If you are a . . .	You must report . . . <sup>1</sup>
	<p>water TOC for systems meeting the criterion in 40 CFR 141.135(a)(2)(ii).</p> <p>(5) The running annual arithmetic average based on monthly averages (or samples) of source water SUVA for systems meeting criterion in 40 CFR 141.135(a)(2)(v) or of treated water SUVA for systems meeting the criterion in 40 CFR 141.135(a)(2)(vi).</p> <p>(6) The running annual average of source water alkalinity for systems meeting the criterion in 40 CFR 141.135(a)(2)(iii) and of treated water alkalinity for systems meeting the criterion in 40 CFR 141.135(a)(3)(i).</p> <p>(7) The running annual average for both TTHM and HAA5 for systems meeting the criterion in 40 CFR 141.135(a)(2)(iii) or 141.135(a)(2)(iv).</p> <p>(8) The running annual average of the amount of magnesium hardness removal (as CaCO<sub>3</sub>, in mg/L) for systems meeting the criterion in 40 CFR 141.135(a)(3)(ii).</p> <p>(9) Whether the system is compliance with the particular alternative criterion in 40 CFR 141.135(a)(2) or (3).</p>

<sup>1</sup> The state may choose to perform calculations and determine whether the treatment technique was met, in lieu of having the system report that information.



## Appendix 13-12

### NPDWR Violations and Other Situations Requiring Public Notice

(40 CFR 141, Subpart Q [40 CFR 141.201 through 141.210], Appendix A)

[Added July 2000; Revised July 2001; Revised April 2002; Revised October 2004; Revised April 2006;  
Revised January 2007; Revised April 2013; Revised April 2014]

Contaminant	MCL/MRDL/TT violations <sup>2</sup>		Monitoring and testing procedure violations	
	Tier of public notice required	Citation	Tier of public notice required	Citation
<i>I. Violations of National Primary Drinking Water Regulations (NPDWR)<sup>3</sup></i>				
<b>A. Microbiological Contaminants</b>				
1. Total Coliform				
a. Total Coliform Bacteria *	2	141.63(a)	3	141.21(a) – (e)
b. Total Coliform (TT violations resulting from failure to perform assessments or corrective actions, monitoring violations, and reporting violations.)**	2	141.860(b)(1)	3	141.860(c)(1)
		-----		141.860(d)(1)
c. Seasonal system failure to follow State-approved start-up plan prior to serving water to the public or failure to provide certification to the State.**	2	141.860(b)(2)	-----	141.860(d)(3)
2. Fecal coliform/ <i>E.coli</i>				
a. Fecal coliform/ <i>E. coli</i> *	1	141.63(b)	<sup>4</sup> 1, 3	141.21(e)
b. <i>E. coli</i> (MCL, monitoring and reporting violations)**	1	141.860(a)	<sup>3</sup>	141.860(c)(2)
				141.860(d)(2)
				141.860(d)(1)
c. <i>E. coli</i> (TT violations resulting from failure to perform level 2 Assessments or corrective action)**	2	141.860(b)(1)	-----	-----
3. Turbidity MCL	2	141.13(a)	3	141.22
4. Turbidity MCL (average of 2 days' samples >5 NTU)	52, 1	141.13(b)	3	141.22
5. Turbidity (for TT violations resulting from a single exceedance of maximum allowable turbidity level)	62, 1	141.71(a)(2), 141.71(c)(2)(i) 141.73(a)(2), 141.73(b)(2), 141.73(c)(2),	3	141.74(a)(1), 141.74(b)(2), 141.74(c)(1), 141.174, 141.560(a) –(c),

Contaminant	MCL/MRDL/TT violations <sup>2</sup>		Monitoring and testing procedure violations	
	Tier of public notice required	Citation	Tier of public notice required	Citation
		141.73(d), 141.173(a)(2), 141.173(b), 141.551(b)		141.561
6. Surface Water Treatment Rule violations, other than violations resulting from single exceedance of max. allowable turbidity level (TT).	2	141.70-141.73	3	141.74
7. Interim Enhanced Surface Water Treatment Rule violations, other than violations resulting from single exceedance of max. turbidity level (TT)	72	141.170- 141.173, 141.500 - 141.553	3	141.172, 141.174, 141.530 – 141.544, 141.560 – 141.564
8. Filter Backwash Recycling Rule Violations	2	141.76(c)	3	141.76(b), 141.76(d)
9. Long Term I Enhanced Surface Water Treatment Rule Violation	2	141.500 – 141.553	3	141.530 – 141.544, 141.560 – 141.564
10. LT2ESWTR violations	2	141.710- 141.72022	2, 3	141.701- 141.705 and 141.708- 141.709
11. Ground Water Rule violations	2	141.404 141.403(d).	3	141.402(h)
<b>B. Inorganic Chemicals (IOCs)</b>				
1. Antimony	2	141.62(b)	3	141.23(a), (c)
2. Arsenic	2	141.11(b), 141.23(n)	3	141.23(a), (l), (m)
3. Asbestos (fibers > 10 microgram/meter	2	141.62(b)	3	141.23(a)-(b)
4. Barium	2	141.62(b)	3	141.23(a), (c)
5. Beryllium	2	141.62(b)	3	141.23(a), (c)
6. Cadmium	2	141.62(b)	3	141.23(a), (c)
7. Chromium (total)	2	141.62(b)	3	141.23(a), (c)
8. Cyanide	2	141.62(b)	3	141.23(a), (c)
9. Fluoride	2	141.62(b)	3	141.23(a), (c)
10. Mercury (inorganic)	2	141.62(b)	3	141.23(a), (c)

Contaminant	MCL/MRDL/TT violations <sup>2</sup>		Monitoring and testing procedure violations	
	Tier of public notice required	Citation	Tier of public notice required	Citation
11. Nitrate	1	141.62(b)	81, 3	141.23(a), (d), 141.23(f)(2)
12. Nitrite	1	141.62(b)	81, 3	141.23(a), (e), 141.23(f)(2)
13. Total Nitrate and Nitrite	1	141.62(b)	3	141.23(a)
14. Selenium	2	141.62(b)	3	141.23(a), (c)
15. Thallium	2	141.62(b)	3	141.23(a), (c)
C. Lead and Copper Rule (Action Level for lead is 0.015 mg/L, for copper is 1.3 mg/L)				
1. Lead and Copper Rule (TT)	2	141.80-141.85	3	141.86-141.89
D. Synthetic Organic Chemicals (SOCs)				
1. 2,4-D	2	141.61(c)	3	141.24(h)
2. 2,4,5-TP (Silvex)	2	141.61(c)	3	141.24(h)
3. Alachlor	2	141.61(c)	3	141.24(h)
4. Atrazine	2	141.61(c)	3	141.24(h)
5. Benzo(a)pyrene (PAHs)	2	141.61(c)	3	141.24(h)
6. Carbofuran	2	141.61(c)	3	141.24(h)
7. Chlordane	2	141.61(c)	3	141.24(h)
8. Dalapon	2	141.61(c)	3	141.24(h)
9. Di (2-ethylhexyl) adipate	2	141.61(c)	3	141.24(h)
10. Di (2-ethylhexyl) phthalate	2	141.61(c)	3	141.24(h)
11. Dibromochloropropane	2	141.61(c)	3	141.24(h)
12. Dinoseb	2	141.61(c)	3	141.24(h)
13. Dioxin (2,3,7,8-TCDD)	2	141.61(c)	3	141.24(h)
14. Diquat	2	141.61(c)	3	141.24(h)
15. Endothall	2	141.61(c)	3	141.24(h)
16. Endrin	2	141.61(c)	3	141.24(h)
17. Ethylene dibromide	2	141.61(c)	3	141.24(h)
18. Glyphosate	2	141.61(c)	3	141.24(h)
19. Heptachlor	2	141.61(c)	3	141.24(h)
20. Heptachlor epoxide	2	141.61(c)	3	141.24(h)
21. Hexachlorobenzene	2	141.61(c)	3	141.24(h)
22. Hexachlorocyclo-pentadiene	2	141.61(c)	3	141.24(h)
23. Lindane	2	141.61(c)	3	141.24(h)
24. Methoxychlor	2	141.61(c)	3	141.24(h)
25. Oxamyl (Vydate)	2	141.61(c)	3	141.24(h)
26. Pentachlorophenol	2	141.61(c)	3	141.24(h)
27. Picloram	2	141.61(c)	3	141.24(h)
28. Polychlorinated biphenyls (PCBs)	2	141.61(c)	3	141.24(h)
29. Simazine	2	141.61(c)	3	141.24(h)
30. Toxaphene	2	141.61(c)	3	141.24(h)
E. Volatile Organic Chemicals (VOCs)				
1. Benzene	2	141.61(a)	3	141.24(f)

Contaminant	MCL/MRDL/TT violations <sup>2</sup>		Monitoring and testing procedure violations	
	Tier of public notice required	Citation	Tier of public notice required	Citation
2. Carbon tetrachloride	2	141.61(a)	3	141.24(f)
3. Chlorobenzene	2	141.61(a)	3	141.24(f)
(monochlorobenzene)	2	141.61(a)	3	141.24(f)
4. o-Dichlorobenzene	2	141.61(a)	3	141.24(f)
5. p-Dichlorobenzene	2	141.61(a)	3	141.24(f)
6. 1,2-Dichloroethane	2	141.61(a)	3	141.24(f)
7. 1,1-Dichloroethylene	2	141.61(a)	3	141.24(f)
8. cis-1,2-Dichloroethylene	2	141.61(a)	3	141.24(f)
9. trans-1, 2-Dichloroethylene	2	141.61(a)	3	141.24(f)
10. Dichloromethane	2	141.61(a)	3	141.24(f)
11. 1,2-Dichloropropane	2	141.61(a)	3	141.24(f)
12. Ethylbenzene	2	141.61(a)	3	141.24(f)
13. Styrene	2	141.61(a)	3	141.24(f)
14. Tetrachloroethylene	2	141.61(a)	3	141.24(f)
15. Toluene	2	141.61(a)	3	141.24(f)
16. 1,2,4-Trichlorobenzene	2	141.61(a)	3	141.24(f)
17. 1,1,1-Trichloroethane	2	141.61(a)	3	141.24(f)
18. 1,1,2-Trichloroethane	2	141.61(a)	3	141.24(f)
19. Trichloroethylene	2	141.61(a)	3	141.24(f)
20. Vinyl chloride	2	141.61(a)	3	141.24(f)
21. Xylenes (total)	2	141.61(a)	3	141.24(f)
F. Radioactive Contaminants				
1. Beta/photon emitters	2	141.16	3	141.25(a), 141.26(b)
2. Alpha emitters	2	141.15(b)	3	141.25(a), 141.26(a)
3. Combined radium (226 & 228)	2	141.15(a)	3	141.25(a), 141.26(a)
G. Disinfection Byproducts (DBPs), Byproduct Precursors, Disinfectant Residuals. Where disinfection is used in the treatment of drinking water, disinfectants combine with organic and inorganic matter present in water to form chemicals called disinfection byproducts (DBPs). EPA sets standards for controlling the levels of disinfectants and DBPs in drinking water, including trihalomethanes (THMs) and haloacetic acids (HAAs). <sup>9</sup>				
1. Total trihalomethanes (TTHMs)	2	10141.12 141.64(a)	3	141.132(a)-(b) 141.600- 141.605 , 141.620

Contaminant	MCL/MRDL/TT violations <sup>2</sup>		Monitoring and testing procedure violations	
	Tier of public notice required	Citation	Tier of public notice required	Citation
2. Haloacetic Acids (HAA5)	2	141.64(b)	3	- 141.629 "
3. Bromate	2	141.64(a)	3	141.132(a)-(b) 141.600-
4. Chlorite	2	141.64(a)	3	141.605
5. Chlorine (MRDL)	2	141.65(a)	3	,
6. Chloramine (MRDL)	2	141.65(a)	3	141.620
7. Chlorine dioxide (MRDL), where any 2 consecutive daily samples at entrance to distribution system only are above MRDL	2	<b>141.65(a), 141.133(c)(3)</b>	211, 3	- 141.629 141.132(a)-(b) 141.132(a)-(b) 141.132(a), (c)
8. Chlorine dioxide (MRDL), where sample(s) in distribution system the next day are also above MRDL	121	141.65(a), 141.133(c)(3)	1	141.132(a), (c) 141.132(a), (c), 141.133(c)(2)
9. Control of DBP precursors--TOC (TT)	2	141.135(a), 141.135(b)	3	
10. Bench marking and disinfection profiling	N/A	N/A	3	141.132(a), (c), 141.133(c)(2)
11. Development of monitoring plan	N/A	N/A	3	141.132(a), (d)  141.172, 141.530 – 141.544 141.132(f)
H. Other Treatment Techniques				
1. Acrylamide (TT)	2	141.111	N/A	N/A
2. Epichlorohydrin (TT)	2	141.111	N/A	N/A
<b><u>II. Unregulated Contaminant Monitoring: 13</u></b>				
A. Unregulated Contaminants	N/A	N/A	3	141.40
B. Nickel	N/A	N/A	3	141.23(c), (k)
<b><u>III. Public Notification for Variances and Exemptions:</u></b>				
A. Operation under a variance or exemption	3	1415, 1416	N/A	N/A
B. Violation of conditions of a variance or exemption	2	1415, 1416, 15142.307	N/A	N/A
<b><u>IV. Other Situations Requiring Public Notification:</u></b>				

Contaminant	MCL/MRDL/TT violations <sup>2</sup>		Monitoring and testing procedure violations	
	Tier of public notice required	Citation	Tier of public notice required	Citation
A. Fluoride secondary maximum contaminant level (SMCL) exceedance	3	143.3	N/A	N/A
B. Exceedance of nitrate MCL for non-community systems, as allowed by primacy agency	1	141.11(d)	N/A	N/A
C. Availability of unregulated contaminant monitoring data	3	141.40	N/A	N/A
D. Waterborne disease outbreak	1	141.2, 141.71 (c)(2)(ii)	N/A	N/A
E. Other waterborne emergency <sup>16</sup>	1	N/A	N/A	N/A
F. Source Water Sample Positive for GWR Fecal indicators: <i>E. coli</i> , enterococci, or coliphage.	1	141.402(g)	N/A	N/A
G. Other situations as determined by primacy agency	171, 2, 3	N/A	N/A	N/A

\* Until 31 March 2016

\*\*Beginning 1 April 2016

- Violations and other situations not listed in this table (e.g., failure to prepare Consumer Confidence Reports), do not require notice, unless otherwise determined by the primacy agency. Primacy agencies may, at their option, also require a more stringent public notice tier (e.g., Tier 1 instead of Tier 2 or Tier 2 instead of Tier 3) for specific violations and situations listed in this Appendix, as authorized under 40 CFR 141.202(a) and 40 CFR 141.203(a).
- MCL—Maximum contaminant level, MRDL—Maximum residual disinfectant level, TT—Treatment technique
- The term Violations of National Primary Drinking Water Regulations (NPDWR) is used here to include violations of MCL, MRDL, treatment technique, monitoring, and testing procedure requirements.
- Failure to test for fecal coliform or *E. coli* is a Tier 1 violation if testing is not done after any repeat sample tests positive for coliform. All other total coliform monitoring and testing procedure violations are Tier 3.
- Systems that violate the turbidity MCL of 5 NTU based on an average of measurements over two consecutive days must consult with the primacy agency within 24 h after learning of the violation. Based on this consultation, the primacy agency may subsequently decide to elevate the violation to Tier 1. If a system is unable to make contact with the primacy agency in the 24-h period, the violation is automatically elevated to Tier 1.
- Systems with treatment technique violations involving a single exceedance of a maximum turbidity limit under the SWAT, the IIESWTR, or the LTIESWTR are required to consult with the primacy agency within 24 h after learning of the violation. Based on this consultation, the primacy agency may subsequently decide to elevate the violation to Tier 1. If a system is unable to make contact with the primacy agency in the 24-h period, the violation is automatically elevated to Tier 1.
- Most of the requirements of the Interim Enhanced Surface Water Treatment Rule (63 FR 69477) (40 CFR 141.170-141.171, 141.173-141.174) become effective 1 January 2002 for Subpart H systems (surface water systems and ground water systems under the direct influence of surface water) serving at least 10,000 persons. However, 40 CFR 141.172 has some requirements that become effective as early as 16 April 1999. The Surface Water Treatment Rule remains in effect for systems serving at least 10,000 persons even after 2002; the Interim Enhanced Surface Water Treatment Rule adds additional requirements and does not in many cases supersede the SWTR.

8. The arsenic MCL citations are effective 23 January 2006. Until then, the citations are 40 CFR 141.11(b) and 40 CFR 141.23(n).
9. The uranium MCL Tier 2 violation citations are effective 8 December 2003 for all community water systems.
10. The uranium Tier 3 violation citations are effective 8 December 2000 for all community water systems.
11. The arsenic Tier 3 violation MCL citations are effective 23 January 2006. Until then, the citations are Sec. 141.23(a), (l).
12. Failure to take a confirmation sample within 24 h for nitrate or nitrite after an initial sample exceeds the MCL is a Tier 1 violation. Other monitoring violations for nitrate are Tier 3.
13. Subpart H community and non-transient non-community systems serving  $\geq 10,000$  must comply with new DBP MCLs, disinfectant MRDLs, and related monitoring requirements beginning 1 January 2002. All other community and non-transient non-community systems must meet the MCLs and MRDLs beginning January 1, 2004. Subpart H transient non-community systems serving 10,000 or more persons and using chlorine dioxide as a disinfectant or oxidant must comply with the chlorine dioxide MRDL beginning 1 January 2002. Subpart H transient non-community systems serving fewer than 10,000 persons and using only ground water not under the direct influence of surface water and using chlorine dioxide as a disinfectant or oxidant must comply with the chlorine dioxide MRDL beginning 1 January 2004.
14. 40 CFR 141.12 will no longer apply after 1 January 2004.
15. Failure to monitor for chlorine dioxide at the entrance to the distribution system the day after exceeding the MRDL at the entrance to the distribution system is a Tier 2 violation.
16. If any daily sample taken at the entrance to the distribution system exceeds the MRDL for chlorine dioxide and one or more samples taken in the distribution system the next day exceed the MRDL, Tier 1 notification is required. Failure to take the required samples in the distribution system after the MRDL is exceeded at the entry point also triggers Tier 1 notification.
17. Some water systems must monitor for certain unregulated contaminants listed in 40 CFR 141.40.
18. This citation refers to Sections 1415 and 1416 of the Safe Drinking Water Act. Sections 1415 and 1416 require that “a schedule prescribed. . . for a public water system granted a variance [or exemption] shall require compliance by the system. . .”
19. In addition to Sections 1415 and 1416 of the Safe Drinking Water Act, 40 CFR 142.307 specifies the items and schedule milestones that must be included in a variance for small systems.
20. Other waterborne emergencies require a Tier 1 public notice under 40 CFR 141.202(a) for situations that do not meet the definition of a waterborne disease outbreak given in 40 CFR 141.2 but that still have the potential to have serious adverse effects on health as a result of short-term exposure. These could include outbreaks not related to treatment deficiencies, as well as situations that have the potential to cause outbreaks, such as failures or significant interruption in water treatment processes, natural disasters that disrupt the water supply or distribution system, chemical spills, or unexpected loading of possible pathogens into the source water.
21. Primacy agencies may place other situations in any tier they believe appropriate, based on threat to public health.
- 22 Failure to collect three or more samples for *Cryptosporidium* analysis is a Tier 2 violation requiring special notice as specified in 40 CFR 141.211. All other monitoring and testing procedure violations are Tier 3.



## Appendix 13-13

### Standard Health Effects Language for Public Notification

(40 CFR 141, Subpart Q [40 CFR 141.201 through 141.210], Appendix B)

[Added July 2000; Revised July 2001; Revised April 2002; Revised April 2003; Revised October 2004;  
Revised April 2006; Revised January 2007; Revised April 2013]

National Primary Drinking Water Regulations (NPDWR)			
Contaminant	MCLG <sup>1</sup> mg/L	MCL <sup>2</sup> mg/L	Standard Health Effects Language for Public Notification.
<b>A. Microbiological Contaminants</b>			
1a. Total Coliform*	Zero	See footnote <sup>3</sup>	Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.
1b. Fecal Coliform/ <i>E. coli</i> *	Zero	Zero	Fecal coliforms and <i>E. coli</i> are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.
1c. Fecal indicators (GWR): i. <i>E. coli</i> ii. enterococci iii. coliphage	Zero	TT	Microbes whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term health effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.
	None	TT	
	None	TT	
1d. Ground Water Rule (GWR) Violations	None	TT	Inadequately treated or inadequately protected water may contain disease-causing organisms. These organisms can cause symptoms such as diarrhea, nausea, cramps, and associated headaches.
1e. Subpart Y Coliform Assessment and/or Corrective Action Violations**	N/A	TT	Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be

National Primary Drinking Water Regulations (NPDWR)			
Contaminant	MCLG <sup>1</sup> mg/L	MCL <sup>2</sup> mg/L	Standard Health Effects Language for Public Notification.
			<p>present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessments to identify problems and to correct any problems that are found. [THE SYSTEM MUST USE THE FOLLOWING APPLICABLE SENTENCES.]</p> <p>We failed to conduct the required assessment.</p> <p>We failed to correct all identified sanitary defects that were found during the assessment(s).</p>
1f. Subpart Y <i>E. coli</i> Assessment and/or Corrective Action Violations**	N/A	TT	<p><i>E. coli</i> are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely compromised immune systems. We violated the standard for <i>E. coli</i>, indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct a detailed assessment to identify problems and to correct any problems that are found. [THE SYSTEM MUST USE THE FOLLOWING APPLICABLE SENTENCES.]</p> <p>We failed to conduct the required assessment.</p> <p>We failed to correct all identified sanitary defects that were found during the assessment that we conducted</p>
1g. <i>E. coli</i> **	Zero	In compliance unless one of the following conditions occurs: 1. The system has an <i>E. coli</i> -positive repeat sample	<p><i>E. coli</i> are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the</p>

National Primary Drinking Water Regulations (NPDWR)			
Contaminant	MCLG <sup>1</sup> mg/L	MCL <sup>2</sup> mg/L	Standard Health Effects Language for Public Notification.
		<p>following a total coliform-positive routine sample</p> <p>2. The system has a total coliform-positive repeat sample following an <i>E. coli</i>-positive routine sample.</p> <p>3. The system fails to take all required repeat samples following an <i>E. coli</i>-positive routine sample.</p> <p>4. The system fails to test for <i>E. coli</i> when any repeat sample tests positive for total coliform.</p>	elderly, and people with severely compromised immune systems.
1h. Subpart Y Seasonal System TT Violations**	N/A	TT	<p>When this violation includes the failure to monitor for total coliforms or <i>E. coli</i> prior to serving water to the public, the mandatory language found at 40 CFR 141.205(d)(2) must be used.</p> <p>When this violation includes failure to complete other actions, the appropriate elements found in 40 CFR 141.205(a) to describe the violation must be used.</p>
2a. Turbidity (MCL)4	None	1 NTU <sup>5</sup> /5 NTU	Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.
2b. Turbidity (SWTR TT)6	None	TT <sup>7</sup>	Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria,

National Primary Drinking Water Regulations (NPDWR)			
Contaminant	MCLG <sup>1</sup> mg/L	MCL <sup>2</sup> mg/L	Standard Health Effects Language for Public Notification.
2c. Turbidity (IESWTR TT and LTIESWTR TT) <sup>8</sup>			viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.
	None	TT	Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.
<b>B. Surface Water Treatment Rule (SWTR), Interim Enhanced Surface Water Treatment Rule (IESWTR), and Long Term I Enhanced Surface Water Treatment Rule (LTIESWTR) and the Filter Backwash Recycling Rule Violations</b>			
3. Giardia lamblia (SWTR/IESWTR/LTIESWTR)	Zero	TT <sup>10</sup>	Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches
4. Viruses (SWTR/IESWTR/LTIESWTR)			
5. Heterotrophic plate count (HPC) bacteria <sup>9</sup> (SWTR/IESWTR/LTIESWTR)			
6. Legionella (SWTR/IESWTR/LTIESWTR)			
7. Cryptosporidium (IESWTR/FBRR/LTIESWTR)			
<b>C. Inorganic Chemicals</b>			
8. Antimony	0.006	0.006	Some people who drink water containing antimony well in excess of the MCL over many years could experience increases in blood cholesterol and decreases in blood sugar.
9. Arsenic <sup>11</sup>	0	0.010	Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.
10. Asbestos (10 µm)	7 MFL <sup>11</sup>	7 MFL	Some people who drink water containing asbestos in excess of the MCL over many

National Primary Drinking Water Regulations (NPDWR)			
Contaminant	MCLG <sup>1</sup> mg/L	MCL <sup>2</sup> mg/L	Standard Health Effects Language for Public Notification.
11. Barium	2	2	years may have an increased risk of developing benign intestinal polyps. Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.
12. Beryllium	0.004	0.004	Some people who drink water containing beryllium well in excess of the MCL over many years could develop intestinal lesions.
13. Cadmium	0.005	0.005	Some people who drink water containing cadmium in excess of the MCL over many years could experience kidney damage.
14. Chromium (total)	0.1	0.1	Some people who use water containing chromium well in excess of the MCL over many years could experience allergic dermatitis.
15. Cyanide	0.2	0.2	Some people who drink water containing cyanide well in excess of the MCL over many years could experience nerve damage or problems with their thyroid.
16. Fluoride	4.0	4.0	Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Fluoride in drinking water at half the MCL or more may cause mottling of children's teeth, usually in children less than nine years old. Mottling, also known as dental fluorosis, may include brown staining and/or pitting of the teeth, and occurs only in developing teeth before they erupt from the gums.
17. Mercury (inorganic)	0.002	0.002	Some people who drink water containing inorganic mercury well in excess of the MCL over many years could experience kidney damage.
18. Nitrate	10	10	Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
19. Nitrite	1	1	Infants below the age of six months who drink water containing nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
20. Total Nitrate and Nitrite	10	10	Infants below the age of six months who drink water containing nitrate and nitrite in

National Primary Drinking Water Regulations (NPDWR)			
Contaminant	MCLG <sup>1</sup> mg/L	MCL <sup>2</sup> mg/L	Standard Health Effects Language for Public Notification.
21. Selenium			excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
	0.05	0.05	Selenium is an essential nutrient. However, some people who drink water containing selenium in excess of the MCL over many years could experience hair or fingernail losses, numbness in fingers or toes, or problems with their circulation.
22. Thallium	0.0005	0.002	Some people who drink water containing thallium in excess of the MCL over many years could experience hair loss, changes in their blood, or problems with their kidneys, intestines, or liver.
<b>D. Lead and Copper Rule</b>			
23. Lead	Zero	TT <sup>12</sup>	Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.
24. Copper	1.3	TT <sup>13</sup>	Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.
<b>E. Synthetic Organic Chemicals (SOCs)</b>			
25. 2,4-D	0.07	0.07	Some people who drink water containing the weed killer 2,4-D well in excess of the MCL over many years could experience problems with their kidneys, liver, or adrenal glands.
26. 2,4,5-TP (Silvex)	0.05	0.05	Some people who drink water containing silvex in excess of the MCL over many years could experience liver problems.
27. Alachlor	Zero	0.002	Some people who drink water containing alachlor in excess of the MCL over many years could have problems with their eyes,

National Primary Drinking Water Regulations (NPDWR)			
Contaminant	MCLG <sup>1</sup> mg/L	MCL <sup>2</sup> mg/L	Standard Health Effects Language for Public Notification.
28. Atrazine	0.003	0.003	liver, kidneys, or spleen, or experience anemia, and may have an increased risk of getting cancer. Some people who drink water containing atrazine well in excess of the MCL over many years could experience problems with their cardiovascular system or reproductive difficulties.
29. Benzo(a)pyrene (PAHs)	Zero	0.0002	Some people who drink water containing benzo(a)pyrene in excess of the MCL over many years may experience reproductive difficulties and may have an increased risk of getting cancer.
30. Carbofuran	0.04	0.04	Some people who drink water containing carbofuran in excess of the MCL over many years could experience problems with their blood, or nervous or reproductive systems.
31. Chlordane	Zero	0.002	Some people who drink water containing chlordane in excess of the MCL over many years could experience problems with their liver or nervous system, and may have an increased risk of getting cancer.
32. Dalapon	0.2	0.2	Some people who drink water containing dalapon well in excess of the MCL over many years could experience minor kidney changes.
33. Di (2-ethylhexyl) adipate	0.4	0.4	Some people who drink water containing di (2-ethylhexyl) adipate well in excess of the MCL over many years could experience general toxic effects or reproductive difficulties.
34. Di (2-ethylhexyl) phthalate	Zero	0.006	Some people who drink water containing di (2-ethylhexyl) phthalate in excess of the MCL over many years may have problems with their liver, or experience reproductive difficulties, and may have an increased risk of getting cancer.
35. Dibromochloropropane (DBCP).	Zero	0.0002	Some people who drink water containing DBCP in excess of the MCL over many years could experience reproductive difficulties and may have an increased risk of getting cancer.
36. Dinoseb	0.007	0.007	Some people who drink water containing dinoseb well in excess of the MCL over many years could experience reproductive difficulties.
37. Dioxin (2,3,7,8-TCDD)	Zero	3 x 10 <sup>-8</sup>	Some people who drink water containing dioxin in excess of the MCL over many years could experience reproductive

National Primary Drinking Water Regulations (NPDWR)			
Contaminant	MCLG <sup>1</sup> mg/L	MCL <sup>2</sup> mg/L	Standard Health Effects Language for Public Notification.
38. Diquat  39. Endothall  40. Endrin  41. Ethylene dibromide  42. Glyphosate			difficulties and may have an increased risk of getting cancer.
	0.02	0.02	Some people who drink water containing diquat in excess of the MCL over many years could get cataracts.
	0.1	0.1	Some people who drink water containing endothall in excess of the MCL over many years could experience problems with their stomach or intestines.
	0.002	0.002	Some people who drink water containing endrin in excess of the MCL over many years could experience liver problems.
	Zero	0.00005	Some people who drink water containing ethylene dibromide in excess of the MCL over many years could experience problems with their liver, stomach, reproductive system, or kidneys, and may have an increased risk of getting cancer.
43. Heptachlor  44. Heptachlor epoxide  45. Hexachlorobenzene  46. Hexachlorocyclo-pentadiene  47. Lindane  48. Methoxychlor	0.7	0.7	Some people who drink water containing glyphosate in excess of the MCL over many years could experience problems with their kidneys or reproductive difficulties.
	Zero	0.0004	Some people who drink water containing heptachlor in excess of the MCL over many years could experience liver damage and may have an increased risk of getting cancer.
	Zero	0.0002	Some people who drink water containing heptachlor epoxide in excess of the MCL over many years could experience liver damage, and may have an increased risk of getting cancer.
	Zero	0.001	Some people who drink water containing hexachlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys, or adverse reproductive effects, and may have an increased risk of getting cancer.
	0.05	0.05	Some people who drink water containing hexachlorocyclopentadiene well in excess of the MCL over many years could experience problems with their kidneys or stomach.
	0.0002	0.0002	Some people who drink water containing lindane in excess of the MCL over many years could experience problems with their kidneys or liver.
	0.04	0.04	Some people who drink water containing methoxychlor in excess of the MCL over

National Primary Drinking Water Regulations (NPDWR)			
Contaminant	MCLG <sup>1</sup> mg/L	MCL <sup>2</sup> mg/L	Standard Health Effects Language for Public Notification.
49. Oxamyl (Vydate)			many years could experience reproductive difficulties.
	0.2	0.2	Some people who drink water containing oxamyl in excess of the MCL over many years could experience slight nervous system effects.
50. Pentachlorophenol	Zero	0.001	Some people who drink water containing pentachlorophenol in excess of the MCL over many years could experience problems with their liver or kidneys, and may have an increased risk of getting cancer.
51. Picloram	0.5	0.5	Some people who drink water containing picloram in excess of the MCL over many years could experience problems with their liver.
52. Polychlorinated biphenyls (PCBs)	Zero	0.0005	Some people who drink water containing PCBs in excess of the MCL over many years could experience changes in their skin, problems with their thymus gland, immune deficiencies, or reproductive or nervous system difficulties, and may have an increased risk of getting cancer.
53. Simazine	0.004	0.004	Some people who drink water containing simazine in excess of the MCL over many years could experience problems with their blood.
54. Toxaphene	Zero	0.003	Some people who drink water containing toxaphene in excess of the MCL over many years could have problems with their kidneys, liver, or thyroid, and may have an increased risk of getting cancer.
<b>F. Volatile Organic Chemicals (VOCs)</b>			
55. Benzene	Zero	0.005	Some people who drink water containing benzene in excess of the MCL over many years could experience anemia or a decrease in blood platelets, and may have an increased risk of getting cancer.
56. Carbon tetrachloride	Zero	0.005	Some people who drink water containing carbon tetrachloride in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.
57. Chlorobenzene (monochlorobenzene)	0.1	0.1	Some people who drink water containing chlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys.

National Primary Drinking Water Regulations (NPDWR)			
Contaminant	MCLG <sup>1</sup> mg/L	MCL <sup>2</sup> mg/L	Standard Health Effects Language for Public Notification.
58. o-Dichlorobenzene	0.6	0.6	Some people who drink water containing o-dichlorobenzene well in excess of the MCL over many years could experience problems with their liver, kidneys, or circulatory systems.
59. p-Dichlorobenzene	0.075	0.075	Some people who drink water containing p-dichlorobenzene in excess of the MCL over many years could experience anemia, damage to their liver, kidneys, or spleen, or changes in their blood.
60. 1,2-Dichloroethane	Zero	0.005	Some people who drink water containing 1,2-dichloroethane in excess of the MCL over many years may have an increased risk of getting cancer.
61. 1,1-Dichloroethylene	0.007	0.007	Some people who drink water containing 1,1-dichloroethylene in excess of the MCL over many years could experience problems with their liver.
62. cis-1, 2-Dichloroethylene	0.07	0.07	Some people who drink water containing cis-1, 2-dichloroethylene in excess of the MCL over many years could experience problems with their liver.
63. trans-1, 2-Dichloroethylene	0.1	0.1	Some people who drink water containing trans-1, 2-dichloroethylene well in excess of the MCL over many years could experience problems with their liver.
64. Dichloromethane	Zero	0.005	Some people who drink water containing dichloromethane in excess of the MCL over many years could have liver problems and may have an increased risk of getting cancer.
65. 1,2-Dichloropropane	Zero	0.005	Some people who drink water containing 1,2-dichloropropane in excess of the MCL over many years may have an increased risk of getting cancer.
66. Ethylbenzene	0.7	0.7	Some people who drink water containing ethylbenzene well in excess of the MCL over many years could experience problems with their liver or kidneys.
67. Styrene	0.1	0.1	Some people who drink water containing styrene well in excess of the MCL over many years could have problems with their liver, kidneys, or circulatory system.
68. Tetrachloroethylene	Zero	0.005	Some people who drink water containing tetrachloroethylene in excess of the MCL over many years could have problems with their liver, and may have an increased risk of getting cancer.
69. Toluene	1	1	Some people who drink water containing toluene well in excess of the MCL over

National Primary Drinking Water Regulations (NPDWR)			
Contaminant	MCLG <sup>1</sup> mg/L	MCL <sup>2</sup> mg/L	Standard Health Effects Language for Public Notification.
70. 1,2,4-Trichlorobenzene	0.07	0.07	many years could have problems with their nervous system, kidneys, or liver. Some people who drink water containing 1,2,4-trichlorobenzene well in excess of the MCL over many years could experience changes in their adrenal glands.
71. 1,1,1-Trichloroethane	0.2	0.2	Some people who drink water containing 1,1,1-trichloroethane in excess of the MCL over many years could experience problems with their liver, nervous system, or circulatory system.
72. 1,1,2-Trichloroethane	0.003	0.005	Some people who drink water containing 1,1,2-trichloroethane well in excess of the MCL over many years could have problems with their liver, kidneys, or immune systems.
73. Trichloroethylene	Zero	0.005	Some people who drink water containing trichloroethylene in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.
74. Vinyl chloride	Zero	0.002	Some people who drink water containing vinyl chloride in excess of the MCL over many years may have an increased risk of getting cancer.
75. Xylenes (total)	10	10	Some people who drink water containing xylenes in excess of the MCL over many years could experience damage to their nervous system.
<b>G. Radioactive Contaminants</b>			
76. Beta/photon emitters	Zero	4 mrem/yr <sup>14</sup>	Certain minerals are radioactive and may emit forms of radiation known as photons and beta radiation. Some people who drink water containing beta and photon emitters in excess of the MCL over many years may have an increased risk of getting cancer.
77. Alpha emitters	Zero	15 pCi/L <sup>16</sup>	Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.
78. Combined radium (226 & 228).	Zero	5 pCi/L	Some people who drink water containing radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer.

National Primary Drinking Water Regulations (NPDWR)			
Contaminant	MCLG <sup>1</sup> mg/L	MCL <sup>2</sup> mg/L	Standard Health Effects Language for Public Notification.
79. Uranium 16	Zero	30 micrograms/L	Some people who drink water containing uranium in excess of the MCL over many years may have an increased risk of getting cancer and kidney toxicity.
<b>H. Disinfection Byproducts (DBPs), Byproduct Precursors, and Disinfectant Residuals:</b> Where disinfection is used in the treatment of drinking water, disinfectants combine with organic and inorganic matter present in water to form chemicals called disinfection byproducts (DBPs). EPA sets standards for controlling the levels of disinfectants and DBPs in drinking water, including trihalomethanes (THMs) and haloacetic acids (HAAs) <sup>17</sup>			
80. Total trihalomethanes (TTHMs)	N/A	0.080 <sup>19 20</sup>	Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.
81. Haloacetic Acids (HAA)	N/A	0.060 <sup>21</sup>	Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.
82. Bromate	Zero	0.010	Some people who drink water containing bromate in excess of the MCL over many years may have an increased risk of getting cancer.
83. Chlorite	0.08	1.0	Some infants and young children who drink water containing chlorite in excess of the MCL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorite in excess of the MCL. Some people may experience anemia.
84. Chlorine	4 (MRDLG) <sup>2</sup>	4.0 (MRDL) <sup>23</sup>	Some people who use water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine well in excess of the MRDL could experience stomach discomfort.
85. Chloramines	4 (MRDLG)	4.0 (MRDL)	Some people who use water containing chloramines well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chloramines well in excess of the MRDL could experience stomach discomfort or anemia.
85a. Chlorine dioxide, where any 2 consecutive daily samples	0.8 (MRDL)	0.8 (MRDL)	Some infants and young children who drink water containing chlorine dioxide in

National Primary Drinking Water Regulations (NPDWR)			
Contaminant	MCLG <sup>1</sup> mg/L	MCL <sup>2</sup> mg/L	Standard Health Effects Language for Public Notification.
taken at the entrance to the distribution system are above the MRDL.			excess of the MRDL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorine dioxide in excess of the MRDL. Some people may experience anemia. Add for public notification only: The chlorine dioxide violations reported today are the result of exceedances at the treatment facility only, not within the distribution system which delivers water to consumers. Continued compliance with chlorine dioxide levels within the distribution system minimizes the potential risk of these violations to consumers.
85b. Chlorine dioxide, where one or more distribution system samples are above the MRDL.	0.8 (MRDLG)	0.8 (MRDL)	Some infants and young children who drink water containing chlorine dioxide in excess of the MRDL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorine dioxide in excess of the MRDL. Some people may experience anemia. Add for public notification only: The chlorine dioxide violations reported today include exceedances of the EPA standard within the distribution system that delivers water to consumers. Violations of the chlorine dioxide standard within the distribution system may harm human health based on short-term exposures. Certain groups, including fetuses, infants, and young children, may be especially susceptible to nervous system effects from excessive chlorine dioxide exposure.
86. Control of DBP precursors (TOC).	None	TT	Total organic carbon (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these byproducts in excess of the MCL may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may lead to an increased risk of getting cancer.
<b>I. Other Treatment Techniques</b>			

National Primary Drinking Water Regulations (NPDWR)			
Contaminant	MCLG <sup>1</sup> mg/L	MCL <sup>2</sup> mg/L	Standard Health Effects Language for Public Notification.
87. Acrylamide	Zero	TT	Some people who drink water containing high levels of acrylamide over a long period of time could have problems with their nervous system or blood, and may have an increased risk of getting cancer.
88. Epichlorohydrin	Zero	TT	Some people who drink water containing high levels of epichlorohydrin over a long period of time could experience stomach problems, and may have an increased risk of getting cancer.

\*Until 31 March 2016

\*\*Beginning 1 April 2016

1. MCLG--Maximum contaminant level goal.
2. MCL--Maximum contaminant level.
3. For water systems analyzing at least 40 samples per month, no more than 5.0 percent of the monthly samples may be positive for total coliforms. For systems analyzing fewer than 40 samples per month, no more than one sample per month may be positive for total coliforms.
4. There are various regulations that set turbidity standards for different types of systems, including 40 CFR 141.13, and the 1989 Surface Water Treatment Rule, the 1998 Interim Enhanced Surface Water Treatment Rule and the 2002 Long Term 1 Enhanced Surface Water Treatment Rule. The MCL for the monthly turbidity average is 1 NTU; the MCL for the 2-day average is 5 NTU for systems that are required to filter but have not yet installed filtration (40 CFR 141.13).
5. NTU--Nephelometric turbidity unit
6. There are various regulations that set turbidity standards for different types of systems, including 40 CFR 141.13, and the 1989 Surface Water Treatment Rule, the 1998 Interim Enhanced Surface Water Treatment Rule and the 2001 Long Term 1 Enhanced Surface Water Treatment Rule. Systems subject to the Surface Water Treatment Rule (both filtered and unfiltered) may not exceed 5 NTU. In addition, in filtered systems, 95 percent of samples each month must not exceed 0.5 NTU in systems using conventional or direct filtration and must not exceed 1 NTU in systems using slow sand or diatomaceous earth filtration or other filtration technologies approved by the primacy agency.
7. TT--Treatment technique
8. There are various regulations that set turbidity standards for different types of systems, including 40 CFR 141.13, the 1989 Surface Water Treatment Rule (SWTR), the 1998 Interim Enhanced Surface Water Treatment Rule (IESWTR) and the 2002 Long Term 1 Enhanced Surface Water Treatment Rule (LT1ESWTR). For systems subject to the IESWTR (systems serving at least 10,000 people, using surface water or ground water under the direct influence of surface water), that use conventional filtration or direct filtration, after 1 January 2002, the turbidity level of a system's combined filter effluent may not exceed 0.3 NTU in at least 95 percent of monthly measurements, and the turbidity level of a system's combined filter effluent must not exceed 1 NTU at any time. Systems subject to the IESWTR using technologies other than conventional, direct, slow sand, or diatomaceous earth filtration must meet turbidity limits set by the primacy agency. For systems subject to the LT1ESWTR (systems serving fewer than 10,000 people, using surface water or ground water under the direct influence of surface water) that use conventional filtration or direct filtration, after 1 January 2005, the turbidity level of a system's combined filter effluent may not exceed 0.3 NTU in at least 95 percent of monthly measurements, and

the turbidity level of a system's combined filter effluent must not exceed 1 NTU at any time. Systems subject to the LT1ESWTR using technologies other than conventional, direct, slow sand, or diatomaceous earth filtration must meet turbidity limits set by the primacy agency.

9. The bacteria detected by heterotrophic plate count (HPC) are not necessarily harmful. HPC is simply an alternative method of determining disinfectant residual levels. The number of such bacteria is an indicator of whether there is enough disinfectant in the distribution system.
10. SWTR, IESWTR, and LT1ESWTR treatment technique violations that involve turbidity exceedances may use the health effects language for turbidity instead.
11. These arsenic values are effective 23 January 2006. Until then, the MCL is 0.05 mg/L and there is no MCLG.
12. Millions fibers per liter.
13. Action Level = 0.015 mg/L
14. Action Level = 1.3 mg/L
15. Millirems per years
16. Picocuries per liter
17. Surface water systems and ground water systems under the direct influence of surface water are regulated under Subpart H of 40 CFR 141. Subpart H community and non-transient non-community systems serving [ge] 10,000 must comply with DBP MCLs and disinfectant maximum residual disinfectant levels (MRDLs) beginning 1 January 2002. All other community and non-transient non-community systems must meet the MCLs and MRDLs beginning 1 January 2004. Subpart H transient non-community systems serving 10,000 or more persons and using chlorine dioxide as a disinfectant or oxidant must comply with the chlorine dioxide MRDL beginning 1 January 2002. Subpart H transient non-community systems serving fewer than 10,000 persons and systems using only ground water not under the direct influence of surface water and using chlorine dioxide as a disinfectant or oxidant must comply with the chlorine dioxide MRDL beginning 1 January 2004.
18. Surface water systems and ground water systems under the direct influence of surface water are regulated under subpart H of 40 CFR 141. Subpart H community and non-transient non-community systems serving greater than or equal to 10,000 must comply with 40 CFR 141, Subpart L (40 CFR 141.130 through 141.135) DBP MCLs and disinfectant maximum residual disinfectant levels (MRDLs) beginning 1 January 2002. All other community and non-transient non-community systems must comply with subpart L DBP MCLs and disinfectant MRDLs beginning January 1, 2004. Subpart H transient non-community systems serving greater than or equal to 10,000 that use chlorine dioxide as a disinfectant or oxidant must comply with the chlorine dioxide MRDL beginning January 1, 2002. All other transient non-community systems that use chlorine dioxide as a disinfectant or oxidant must comply with the chlorine dioxide MRDL beginning 1 January 2004.
19. Community and non-transient non-community systems must comply with Stage 2 disinfection byproducts TTHM and HAA5 MCLs of 0.080 mg/L and 0.060 mg/L, respectively (with compliance calculated as a locational running annual average) on the schedule in 40 CFR 141.620.
20. The MCL for haloacetic acids is the sum of the concentrations of the individual haloacetic acids.
21. MRDLG--Maximum residual disinfectant level goal.
22. MRDL--Maximum residual disinfectant level.



## Appendix 13-14

### Enhanced Filtration and Disinfection Reporting Requirements for Systems Serving Fewer Than 10,000 People (40 CFR 141.570) [Revised October 2004]

Corresponding Requirements	Information to Report	Frequency
Combined Filter Effluent Requirements (40 CFR 141.550 through 141.553 (see checklist items WQ.20.15.US))	<ol style="list-style-type: none"> <li>1. The total number of filtered water turbidity measurements taken during the month.</li> <li>2. The number and percentage of filtered water turbidity measurements taken during the month which are less than or equal to the system's required 95th percentile limit.</li> <li>3. The date and value of any turbidity measurements taken during the month which exceed the maximum turbidity value for the filtration system.</li> </ol>	By the 10th of the following month
Individual Filter turbidity Requirements (40 CFR 141.560 through 141.564 (see checklist item WQ.15.4.US))	<ol style="list-style-type: none"> <li>1. The system conducted individual filter turbidity monitoring during the month</li> <li>2. The filter number(s), corresponding date(s), and the turbidity value(s) which exceeded 1.0 NTU during the month, and the cause (if known) for the exceedance(s), but only if 2 consecutive measurements exceeded 1.0 NTU.</li> <li>3. If a self-assessment is required, the date that it was triggered and the date that it was completed.</li> <li>4. If a CPE is required, that the CPE is required and the date that it was triggered.</li> <li>5. Copy of completed CPE report.</li> </ol>	<ol style="list-style-type: none"> <li>1. By the 10th of the following month</li> <li>2. By the 10th of the following month</li> <li>3. By the 10th of the following month (or 14 days after the self-assessment was triggered only if the self-assessment was triggered during the last four days of the month)</li> <li>4. By the 10th of the following month</li> <li>5. Within 120m days after the CPE was triggered.</li> </ol>
Disinfection Profiling (40 CFR 141.530 through 141.536 (see checklist items WQ.35.4.US and WQ.76.3.US))	Results of optional monitoring which show TTHM levels 0.054 mg/l and HAA5 levels 0.048 mg/l (only if the system wishes to forgo profiling) or that the system has begun disinfection profiling.	<ul style="list-style-type: none"> <li>• For systems serving 500 – 9,999 by 1 July 2003</li> <li>• For systems serving fewer than 500 by 1 January 2004/</li> </ul>
Disinfection Benchmarking (40 CFR 141.540 through 141.546 (see checklist item WQ.20.14.US))	A description of the proposed change in disinfection, the system's disinfection profile for Giardia lamblia (and, if necessary, viruses) and disinfection benchmark, and an analysis of how the proposed	Anytime the system is considering a significant change to its disinfection practices.

Corresponding Requirements	Information to Report	Frequency
	change will affect the current levels of disinfection.	

## Appendix 13-15

### Hazardous Waste Injection Restrictions (40 CFR 148.1(c), 148.1(d), 148.10 through 148.18) [Added July 2003]

(NOTE: Wastes otherwise prohibited from injection may continue to be injected:

- If an extension from the effective date of a prohibition has been granted pursuant to 40 CFR 148.4 with respect to such wastes; or
- If an exemption from a prohibition has been granted in response to a petition filed under 40 CFR 148.20 to allow injection of restricted wastes with respect to those wastes and wells covered by the exemption; or
- If the waste is generated by a conditionally exempt small quantity generator, as defined in 40 CFR 261.5.)

(NOTE: Wastes that are hazardous only because they exhibit a hazardous characteristic, and which are otherwise prohibited under 40 CFR 148, or 40 CFR 268, are not prohibited if the wastes:

- Are disposed into a nonhazardous or hazardous injection well as defined under 40 CFR 146.6(a); and
- Do not exhibit any prohibited characteristic of hazardous waste identified in 40 CFR 261, subpart C at the point of injection.)

Waste-Specific Prohibitions	Prohibition Date
Solvent Wastes	
EPA Hazardous Waste Nos. F001, F002, F003, F004, and F005 are prohibited from underground injection unless the solvent waste is a solvent-water mixture or solvent-containing sludge containing less than 1 percent total F001-F005 solvent constituents listed in Table A below. (NOTE: This does not apply: <ul style="list-style-type: none"> <li>– if the wastes meet or are treated to meet the applicable standards specified in subpart D of 40 CFR 268; or</li> <li>– if an exemption from a prohibition has been granted in response to a petition under 40 CFR 148, subpart C; or</li> <li>– during the period of extension of the applicable effective date, if an extension has been granted under 40 CFR 148.4.)</li> </ul>	8 August 1988
All spent F001-F005 solvent wastes containing less than 1 percent total F001-F005 solvent constituents listed in Table A below are prohibited from injection. (NOTE: This does not apply: <ul style="list-style-type: none"> <li>– if the wastes meet or are treated to meet the applicable standards specified in subpart D of 40 CFR 268; or</li> <li>– if an exemption from a prohibition has been granted in response to a petition under 40 CFR 148, subpart C; or</li> <li>– during the period of extension of the applicable effective date, if an extension has been granted under 40 CFR 148.4.)</li> </ul>	8 August 1990
All spent F002 and F005 wastes containing solvent constituents listed in Table B below are prohibited from underground injection at offsite injection facilities.	8 August 1990
All spent F002 and F005 wastes containing solvent constituents listed in Table B below are prohibited from underground injection at onsite injection facilities.	8 November 1990

Waste-Specific Prohibitions	Prohibition Date
Dioxin Wastes	
<p>The dioxin-containing wastes specified in 40 CFR 261.31 as EPA Hazardous Waste Nos. F020, F021, F022, F023, F026, F027, and F028, and prohibited from underground injection.</p> <p>(NOTE: This does not apply:</p> <ul style="list-style-type: none"> <li>– if the wastes meet or are treated to meet the applicable standards specified in subpart D of 40 CFR 268; or</li> <li>– if an exemption from a prohibition has been granted in response to a petition under 40 CFR 148, subpart C; or</li> <li>– during the period of extension of the applicable effective date, if an extension has been granted under 40 CFR 148.4.)</li> </ul>	8 August 1988
California-list Wastes	
<p>The hazardous wastes listed in 40 CFR 268.32 containing polychlorinated biphenyls at concentrations greater than or equal to 50 ppm or halogenated organic compounds at concentrations greater than or equal to 10,000 mg/kg are prohibited from underground injection.</p> <p>(NOTE: This does not apply:</p> <ul style="list-style-type: none"> <li>– if the wastes meet or are treated to meet the applicable standards specified in subpart D of 40 CFR 268; or</li> <li>– if an exemption from a prohibition has been granted in response to a petition under 40 CFR 148, subpart C; or</li> <li>– during the period of extension of the applicable effective date, if an extension has been granted under 40 CFR 148.4.)</li> </ul>	8 August 1988
<p>Liquid hazardous wastes, including free liquids associated with any solid or sludge, containing free cyanides at concentrations greater than or equal to 1,000 mg/L.</p> <p>(NOTE: This does not apply:</p> <ul style="list-style-type: none"> <li>– if the wastes meet or are treated to meet the applicable standards specified in subpart D of 40 CFR 268; or</li> <li>– if an exemption from a prohibition has been granted in response to a petition under 40 CFR 148, subpart C; or</li> <li>– during the period of extension of the applicable effective date, if an extension has been granted under 40 CFR 148.4.)</li> </ul>	8 August 1990
<p>Liquid hazardous wastes, including free liquids associated with any solid or sludge, containing the following metals (or elements) or compounds of these metals (or elements) at concentrations greater than or equal to those specified below:</p> <ul style="list-style-type: none"> <li>• Arsenic and/or compounds (as As) 500 mg/L;</li> <li>• Cadmium and/or compounds (as Cd) 100 mg/L;</li> <li>• Chromium (VI) and/or compounds (as Cr VI) 500 mg/L;</li> <li>• Lead and/or compounds (as Pb) 500 mg/L;</li> <li>• Mercury and/or compounds (as Hg) 20 mg/L;</li> <li>• Nickel and/or compounds (as Ni) 134 mg/L;</li> <li>• Selenium and/or compounds (as Se) 100 mg/L; and</li> </ul>	8 August 1990

Waste-Specific Prohibitions	Prohibition Date
<ul style="list-style-type: none"> <li>Thallium and/or compounds (as Tl) 130 mg/L.</li> </ul> <p>(NOTE: This does not apply:</p> <ul style="list-style-type: none"> <li>– if the wastes meet or are treated to meet the applicable standards specified in subpart D of 40 CFR 268; or</li> <li>– if an exemption from a prohibition has been granted in response to a petition under 40 CFR 148, subpart C; or</li> <li>– during the period of extension of the applicable effective date, if an extension has been granted under 40 CFR 148.4.)</li> </ul>	
<p>Liquid hazardous waste having a pH less than or equal to 2.0.</p> <p>(NOTE: This does not apply:</p> <ul style="list-style-type: none"> <li>– if the wastes meet or are treated to meet the applicable standards specified in subpart D of 40 CFR 268; or</li> <li>– if an exemption from a prohibition has been granted in response to a petition under 40 CFR 148, subpart C; or</li> <li>– during the period of extension of the applicable effective date, if an extension has been granted under 40 CFR 148.4.)</li> </ul>	8 August 1990
<p>Hazardous wastes containing halogenated organic compounds in total concentration less than 10,000 mg/kg but greater than or equal to 1,000 mg/kg.</p> <p>(NOTE: This does not apply:</p> <ul style="list-style-type: none"> <li>– if the wastes meet or are treated to meet the applicable standards specified in subpart D of 40 CFR 268; or</li> <li>– if an exemption from a prohibition has been granted in response to a petition under 40 CFR 148, subpart C; or</li> <li>– during the period of extension of the applicable effective date, if an extension has been granted under 40 CFR 148.4.)</li> </ul>	8 August 1990
<p>First Third Wastes</p> <p>(NOTE: This does not apply:</p> <ul style="list-style-type: none"> <li>– if the wastes meet or are treated to meet the applicable standards specified in subpart D of 40 CFR 268; or</li> <li>– if an exemption from a prohibition has been granted in response to a petition under 40 CFR 148, subpart C; or</li> <li>– during the period of extension of the applicable effective date, if an extension has been granted under 40 CFR 148.4.)</li> </ul>	
<p>The wastes specified in 40 CFR 261.31 as EPA Hazardous Waste numbers F006 (nonwastewaters) and the wastes specified in 40 CFR 261.32 as EPA Hazardous Waste numbers K001, K015 (wastewaters), K016 (at concentrations greater than or equal to 1%), K018, K019, K020, K021 (nonwastewaters generated by the process described in the waste listing description and disposed after 17 August 1988, and not generated in the course of treating wastewater forms of these wastes), K022 (nonwastewaters), K024, K030, K036 (nonwastewaters generated by the process described in the waste listing description and disposed after 17 August 1988, and not generated in the course of treating wastewater forms of these wastes), K037, K044, K045, nonexplosive K046 (nonwastewaters), K047, K048, K060 (nonwastewaters generated by the process described in the waste listing description and disposed after 17 August 1988, and not generated in the course of treating wastewater forms of these wastes), K061</p>	7 June 1989

Waste-Specific Prohibitions	Prohibition Date
(nonwastewaters), noncalcium sulfate K069 (nonwastewaters generated by the process described in the waste listing description and disposed after 17 August 1988, and not generated in the course of treating wastewater forms of these wastes), K086 solvent washes, K087, K099, K101 (all wastewaters and less than 1% total arsenic nonwastewaters), K102 (all wastewaters and less than 1% total arsenic nonwastewaters), and K103 are prohibited from underground injection.	
The waste specified in 40 CFR 261.32 as EPA Hazardous Waste number K036 (wastewaters); and the wastes specified in 40 CFR 261.33 as P030, P039, P041, P063, P071, P089, P094, P097, U221, and U223 are prohibited from underground injection.	8 June 1989
The wastes specified in 40 CFR 261.31 as EPA Hazardous Waste numbers F008 and F009 are prohibited from underground injection.	8 July 1989
The wastes specified in 40 CFR 261.31 as EPA Hazardous Waste Number F006 (wastewaters) and F019; the wastes specified in 40 CFR 261.32 as EPA Hazardous Waste Numbers K004, K008, K015 (nonwastewaters), K017, K021 (wastewaters), K022 (wastewaters), K031, K035, K046 (reactive nonwastewaters and all wastewaters), K060 (wastewaters), K061 (wastewaters), K069 (calcium sulfate nonwastewaters and all wastewaters), K073, K083, K084, K085, K086 (all but solvent washes), K101 (high arsenic nonwastewaters), K102 (high arsenic nonwastewaters), and K106; and the wastes specified in 40 CFR 261.33 as EPA Hazardous Waste Numbers P001, P004, P005, P010, P011, P012, P015, P016, P018, P020, P036, P037, P048, P050, P058, P059, P068, P069, P070, P081, P082, P084, P087, P092, P102, P105, P108, P110, P115, P120, P122, P123, U007, U009, U010, U012, U016, U018, U019, U022, U029, U031, U036, U037, U041, U043, U044, U046, U050, U051, U053, U061, U063, U064, U066, U067, U074, U077, U078, U086, U089, U103, U105, U108, U115, U122, U124, U129, U130, U133, U134, U137, U151, U154, U155, U157, U158, U159, U171, U177, U180, U185, U188, U192, U200, U209, U210, U211, U219, U220, U226, U227, U228, U237, U238, U248, and U249 are prohibited from underground injection at offsite injection facilities.	8 August 1990
The wastes specified in 40 CFR 261.32 as EPA Hazardous Waste numbers K049, K050, K051, K052, K062, K071, and K104 are prohibited from underground injection.	8 August 1990
The wastes specified in 40 CFR 261.31 as EPA Hazardous Waste Number F006 (wastewaters) and F019; the wastes specified in 40 CFR 261.32 as EPA Hazardous Waste Numbers K004, K008, K015 (nonwastewaters), K017, K021 (wastewaters), K022 (wastewaters), K031, K035, K046 (reactive nonwastewaters and all wastewaters), K060 (wastewaters), K061 (wastewaters), K069 (calcium sulfate nonwastewaters and all wastewaters), K073, K083, K084, K085, K086 (all but solvent washes), K101 (high arsenic nonwastewaters), K102 (high arsenic nonwastewaters), and K106; and the wastes specified in 40 CFR 261.33 as EPA Hazardous Waste Numbers P001, P004, P005, P010, P011, P012, P015, P016, P018, P020, P036, P037, P048, P050, P058, P059, P068, P069, P070, P081, P082, P084, P087, P092, P102, P105, P108, P110, P115, P120, P122, P123, U007, U009, U010, U012, U016, U018, U019, U022, U029, U031, U036, U037, U041,	8 November 1990

Waste-Specific Prohibitions	Prohibition Date
U043, U044, U046, U050, U051, U053, U061, U063, U064, U066, U067, U074, U077, U078, U086, U089, U103, U105, U108, U115, U122, U124, U129, U130, U133, U134, U137, U151, U154, U155, U157, U158, U159, U171, U177, U180, U185, U188, U192, U200, U209, U210, U211, U219, U220, U226, U227, U228, U237, U238, U248, and U249 are prohibited from underground injection at onsite injection facilities.	
The wastes specified in 40 CFR 261.32 as EPA Hazardous Waste numbers K016 (at concentrations less than 1%) are prohibited from underground injection.	7 June 1991
The waste specified in 40 CFR 261.31 as EPA Hazardous Waste number F007; and the wastes specified in 40 CFR 261.32 as K011 (nonwastewaters) and K013 (nonwastewaters) are prohibited from underground injection.	8 June 1991
The wastes specified in 40 CFR 261.32 and 261.33 as EPA Hazardous Waste Numbers K011 (wastewaters), K013 (wastewaters), and K014 are prohibited from underground injection.	8 May 1992
<p>Second Third Wastes (NOTE: This does not apply:</p> <ul style="list-style-type: none"> <li>– if the wastes meet or are treated to meet the applicable standards specified in subpart D of 40 CFR 268; or</li> <li>– if an exemption from a prohibition has been granted in response to a petition under 40 CFR 148, subpart C; or</li> <li>– during the period of extension of the applicable effective date, if an extension has been granted under 40 CFR 148.4.)</li> </ul>	
The wastes specified in 40 CFR 261.32 as EPA Hazardous Waste numbers K025 (nonwastewaters generated by the process described in the waste listing description and disposed after 17 August 1988, and not generated in the course of treating wastewater forms of these wastes) are prohibited from underground injection.	7 June 1989
The wastes specified in 40 CFR 261.31 as EPA Hazardous Waste numbers F010, F024; the wastes specified in 40 CFR 261.32 as K009 (nonwastewaters), K010, K027, K028, K029 (nonwastewaters), K038, K039, K040, K043, K095 (nonwastewaters), K096 (nonwastewaters), K113, K114, K115, K116; and wastes specified in 40 CFR 261.33 as P029, P040, P043, P044, P062, P074, P085, P098, P104, P106, P111, U028, U058, U107, and U235 are prohibited from underground injection.	8 June 1989
The wastes specified in 40 CFR 261.32 as EPA Hazardous Waste Number K025 (wastewaters), K029 (wastewaters), K041, K042, K095 (wastewaters), K096 (wastewaters), K097, K098, and K105; and the wastes specified in 40 CFR 261.33 as P002, P003, P007, P008, P014, P026, P027, P049, P054, P057, P060, P066, P067, P072, P107, P112, P113, P114, U002, U003, U005, U008, U011, U014, U015, U020, U021, U023, U025, U026, U032, U035, U047, U049, U057, U059, U060, U062, U070, U073, U080, U083, U092, U093, U094, U095, U097, U098, U099, U101, U106, U109, U110, U111, U114, U116, U119, U127, U128, U131, U135, U138, U140, U142, U143, U144, U146, U147, U149, U150, U161, U162, U163, U164, U165, U168, U169, U170, U172, U173, U174, U176, U178, U179, U189,	8 August 1990

Waste-Specific Prohibitions	Prohibition Date
U193, U196, U203, U205, U206, U208, U213, U214, U215, U216, U217, U218, U239, and U244 are prohibited from underground injection at off-site injection facilities.	
The waste specified in 40 CFR 261.32 as EPA Hazardous Waste number K009 (wastewaters) is prohibited from underground injection.	8 June 1991
The wastes specified in 40 CFR 261.32 as EPA Hazardous Waste Number K025 (wastewaters), K029 (wastewaters), K041, K042, K095 (wastewaters), K096 (wastewaters), K097, K098, and K105; and the wastes specified in 40 CFR 261.33 as P002, P003, P007, P008, P014, P026, P027, P049, P054, P057, P060, P066, P067, P072, P107, P112, P113, P114, U002, U003, U005, U008, U011, U014, U015, U020, U021, U023, U025, U026, U032, U035, U047, U049, U057, U059, U060, U062, U070, U073, U080, U083, U092, U093, U094, U095, U097, U098, U099, U101, U106, U109, U110, U111, U114, U116, U119, U127, U128, U131, U135, U138, U140, U142, U143, U144, U146, U147, U149, U150, U161, U162, U163, U164, U165, U168, U169, U170, U172, U173, U174, U176, U178, U179, U189, U193, U196, U203, U205, U206, U208, U213, U214, U215, U216, U217, U218, U239, and U244 are prohibited from underground injection at onsite injection facilities.	8 November 1990
<p>Third Third Wastes (NOTE: This does not apply:</p> <ul style="list-style-type: none"> <li>– if the wastes meet or are treated to meet the applicable standards specified in subpart D of 40 CFR 268; or</li> <li>– if an exemption from a prohibition has been granted in response to a petition under 40 CFR 148, subpart C; or</li> <li>– during the period of extension of the applicable effective date, if an extension has been granted under 40 CFR 148.4.)</li> </ul>	
The wastes specified in 40 CFR 261.32 as EPA Hazardous Waste numbers K100 (nonwastewaters generated by the process described in the waste listing description and disposed after 17 August 1988, and not generated in the course of treating wastewater forms of these wastes) are prohibited from underground injection.	7 June 1989
The wastes specified in 40 CFR 261.32 as EPA Hazardous Waste numbers K005 (nonwastewaters), K007 (nonwastewaters), K023, K093, K094; and the wastes specified in 40 CFR 261.33 as P013, P021, P099, P109, P121, U069, U087, U088, U102, and U190 are prohibited from underground injection.	8 June 1989
The wastes identified in 40 CFR 261.31 as EPA Hazardous Waste Number F039 (nonwastewaters); the wastes specified in 40 CFR 261.32 as EPA Hazardous Waste Numbers K002, K003, K005 (wastewaters), K006, K007 (wastewaters), K026, K032, K033, K034, and K100 (wastewaters); the wastes specified in 40 CFR 261.33 as P006, P009, P017, P022, P023, P024, P028, P031, P033, P034, P038, P042, P045, P046, P047, P051, P056, P064, P065, P073, P075, P076, P077, P078, P088, P093, P095, P096, P101, P103, P116, P118, P119, U001, U004, U006, U017, U024, U027, U030, U033, U034, U038, U039, U042, U045, U048, U052, U055, U056, U068, U071, U072, U075, U076, U079, U081, U082, U084, U085, U090, U091, U096,	8 August 1990

Waste-Specific Prohibitions	Prohibition Date
<p>U112, U113, U117, U118, U120, U121, U123, U125, U126, U132, U136, U141, U145, U148, U152, U153, U156, U160, U166, U167, U181, U182, U183, U184, U186, U187, U191, U194, U197, U201, U202, U204, U207, U222, U225, U234, U236, U240, U243, U246, and U247; and the wastes identified in 40 CFR 261.21, 261.23 or 261.24 as hazardous based on a characteristic alone, designated as D001, D004, D005, D006, D008, D009 (wastewaters), D010, D011, D012, D013, D014, D015, D016, D017, and newly listed waste F025 are prohibited from underground injection at off-site injection facilities.</p>	
<p>The wastes identified in 40 CFR 261.31 as EPA Hazardous Waste Number F039 (nonwastewaters); the wastes specified in 40 CFR 261.32 as EPA Hazardous Waste Numbers K002, K003, K005 (wastewaters), K006, K007 (wastewaters), K026, K032, K033, K034, and K100 (wastewaters); the wastes specified in 40 CFR 261.33 as P006, P009, P017, P022, P023, P024, P028, P031, P033, P034, P038, P042, P045, P046, P047, P051, P056, P064, P065, P073, P075, P076, P077, P078, P088, P093, P095, P096, P101, P103, P116, P118, P119, U001, U004, U006, U017, U024, U027, U030, U033, U034, U038, U039, U042, U045, U048, U052, U055, U056, U068, U071, U072, U075, U076, U079, U081, U082, U084, U085, U090, U091, U096, U112, U113, U117, U118, U120, U121, U123, U125, U126, U132, U136, U141, U145, U148, U152, U153, U156, U160, U166, U167, U181, U182, U183, U184, U186, U187, U191, U194, U197, U201, U202, U204, U207, U222, U225, U234, U236, U240, U243, U246, and U247; and the wastes identified in 40 CFR 261.21, 261.23 or 261.24 as hazardous based on a characteristic alone, designated as D001, D004, D005, D006, D008, D009 (wastewaters), D010, D011, D012, D013, D014, D015, D016, D017, and newly listed waste F025 are prohibited from underground injection at off-site injection facilities.</p>	8 August 1990
<p>The wastes identified in 40 CFR 261.31 as EPA Hazardous Waste Number F039 (nonwastewaters); the wastes specified in 40 CFR 261.32 as EPA Hazardous Waste Numbers K002, K003, K005 (wastewaters), K006, K007 (wastewaters), K026, K032, K033, K034, and K100 (wastewaters); the wastes specified in 40 CFR 261.33 as P006, P009, P017, P022, P023, P024, P028, P031, P033, P034, P038, P042, P045, P046, P047, P051, P056, P064, P065, P073, P075, P076, P077, P078, P088, P093, P095, P096, P101, P103, P116, P118, P119, U001, U004, U006, U017, U024, U027, U030, U033, U034, U038, U039, U042, U045, U048, U052, U055, U056, U068, U071, U072, U075, U076, U079, U081, U082, U084, U085, U090, U091, U096, U112, U113, U117, U118, U120, U121, U123, U125, U126, U132, U136, U141, U145, U148, U152, U153, U156, U160, U166, U167, U181, U182, U183, U184, U186, U187, U191, U194, U197, U201, U202, U204, U207, U222, U225, U234, U236, U240, U243, U246, and U247; and the wastes identified in 40 CFR 261.21, 261.23 or 261.24 as hazardous based on a characteristic alone, designated as D001, D004, D005, D006, D008, D009 (wastewaters), D010, D011, D012, D013, D014, D015, D016, D017, and newly listed waste F025 are prohibited from underground injection at onsite injection facilities.</p>	8 November 1990
<p>The waste identified in 40 CFR 261.31 as EPA Hazardous Waste Number F039 (wastewaters); the wastes identified in 40 CFR 261.22, 261.23 or 261.24 as hazardous based on a characteristic alone, designated as D002 (wastewaters and nonwastewaters), D003 (wastewaters and</p>	8 May 1992

Waste-Specific Prohibitions	Prohibition Date
nonwastewaters), D007 (wastewaters and nonwastewaters), and D009 (nonwastewaters) are prohibited from underground injection. These effective dates do not apply to the wastes listed in 40 CFR 148.12(b) which are prohibited from underground injection on 8 August 1990.	
Newly Listed Wastes	
The wastes specified in 40 CFR 261 as EPA hazardous waste numbers F037, F038, K107, K108, K109, K110, K111, K112, K117, K118, K123, K124, K125, K126, K131, K136, U328, U353, and U359 are prohibited from underground injection.  (NOTE: This does not apply: – if the wastes meet or are treated to meet the applicable standards specified in subpart D of 40 CFR 268; or – if an exemption from a prohibition has been granted in response to a petition under 40 CFR 148, subpart C; or – during the period of extension of the applicable effective date, if an extension has been granted under 40 CFR 148.4.)	9 November 1992
The wastes specified in 40 CFR 261.32 as EPA Hazardous waste numbers K141, K142, K143, K144, K145, K147, K148, K149, K150, and K151, are prohibited from underground injection.  (NOTE: This does not apply: – if the wastes meet or are treated to meet the applicable standards specified in subpart D of 40 CFR 268; or – if an exemption from a prohibition has been granted in response to a petition under 40 CFR 148, subpart C; or – during the period of extension of the applicable effective date, if an extension has been granted under 40 CFR 148.4.)	19 December 1994
The wastes specified in 40 CFR 261 as EPA Hazardous waste numbers K117, K118, K131, and K132 are prohibited from underground injection.	30 June 1995
Newly Listed and Identified Wastes (NOTE: This does not apply: – if the wastes meet or are treated to meet the applicable standards specified in subpart D of 40 CFR 268; or – if an exemption from a prohibition has been granted in response to a petition under 40 CFR 148, subpart C; or – during the period of extension of the applicable effective date, if an extension has been granted under 40 CFR 148.4.)	
All newly identified D004-D011 wastes and characteristic mineral processing wastes.	24 August 1998
Characteristic hazardous wastes from titanium dioxide mineral processing, and radioactive wastes mixed with newly identified D004-D011 or mixed with newly identified characteristic mineral processing wastes, are prohibited from underground injection.	26 May 2000

Waste-Specific Prohibitions	Prohibition Date
The wastes specified in 40 CFR 261 as EPA Hazardous waste numbers F032, F034, F035 are prohibited from underground injection.	11 August 1997
The wastes specified in 40 CFR 261 as EPA Hazardous waste numbers F032, F034, F035 that are mixed with radioactive wastes are prohibited from underground injection.	12 May 1999
The wastes specified in 40 CFR 261.32 as EPA Hazardous waste numbers K156-K161, P127, P128, P185, P188-P192, P194, P196-P199, P201-P205, U271, U277-U280, U364-U367, U372, U373, U375-U379, U381-387, U389-U396, U400-U404, U407, and U409-U411 are prohibited from underground injection.	8 July 1996
The wastes specified in 40 CFR 261.32 as EPA Hazardous waste number K088 is prohibited from underground injection.	8 January 1997
The wastes specified in 40 CFR 261 as EPA Hazardous waste numbers D018-043, and Mixed TC/Radioactive wastes, are prohibited from underground injection.	8 April 1998
The wastes specified in 40 CFR 261.32 as EPA Hazardous Waste Numbers K169, K170, K171, and K172 are prohibited from underground injection.	8 February 1999
The wastes specified in 40 CFR 261.32 as EPA Hazardous Waste Numbers K174 and K175 are prohibited from underground injection.	8 May 2001
The wastes specified in 40 CFR 261.32 as EPA Hazardous Waste Numbers K176, K177, and K178 are prohibited from underground injection.	20 May 2002

**Table A**

- Acetone
- n-Butyl alcohol
- Carbon disulfide
- Carbon tetrachloride
- Chlorobenzene
- Cresols and cresylic acid
- Cyclohexanone
- 1,2-dichlorobenzene
- Ethyl acetate
- Ethyl benzene
- Ethyl ether
- Isobutanol
- Methanol
- Methylene chloride
- Methylene chloride (from the pharmaceutical industry)
- Methyl ethyl ketone
- Methyl isobutyl ketone
- Nitrobenzene
- Pyridine

- Tetrachloroethylene
- Toulene
- 1,1,1-Trichloroethane
- 1,2,2-Trichloro-1,2,2-trifluoroethane
- Trichloroethylene
- Trichlorofluoromethane
- Xylene

**Table B**

- Benzene
- 2-Ethoxyethanol
- 2-Nitropropane
- 1,1,2-Trichloroethane

## Appendix 13-16

### Class V Wells Notification Requirements (40 CFR 144.83) [Added July 2003]

If your well is . . .	And you're in one of these locations ("Primacy" States, where the State runs the Class V UIC Program): Alabama, Arkansas, Commonwealth of Northern Mariana Islands, Connecticut, Delaware, Florida, Georgia, Guam, Idaho, Illinois, Kansas, Louisiana, Maine, Maryland, Massachusetts, Mississippi, Missouri, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Puerto Rico, Rhode Island, South Carolina, Texas, Utah, Vermont, Washington, West Virginia, Wisconsin, or Wyoming	Or you're in one of these locations ("Direct Implementation" or DI Programs, where EPA runs the Class V UIC Program): Alaska, American Samoa, Arizona, California, Colorado, Hawaii, Indiana, Iowa, Kentucky, Michigan, Minnesota, Montana, New York, Pennsylvania, South Dakota, Tennessee, Virginia, Virgin Islands, Washington, DC, or any Indian Country.
<ul style="list-style-type: none"> <li>• <b>New (prior to consturction of the well)...</b></li> </ul>	...contact the State UIC Program to determine what to submit and when.	... then submit the inventory information prior to well construction.
<ul style="list-style-type: none"> <li>• <b>Existing (construction underway or completed.</b></li> </ul>	...contact the State UIC Program to determine what to submit and when.	... cease the injection and submit the inventory information. Injection may be resumed 90 days after submitting the information unless the UIC Program Director notifies the facility that injection may not resume or may not resume sooner.

If the facility is in one of the DI Programs listed in the table above, the UIC Program Director may require the submission of other information believed necessary to protect underground sources of drinking water. Such information requirements may include, but are not limited to:

1. Perform ground water monitoring and periodically submit monitoring results;
2. Analyze the fluids injected and periodically submit the results analyses;
3. Describe the geologic layers through which and into which the facility is injecting; and
4. Conduct other analyses and submit other information, if needed to protect underground sources of drinking water.



## SECTION 14

### ENVIRONMENTAL MANAGEMENT SYSTEMS

U.S. TEAM Guide, December 2018

[Added July 2007; Revised July 2017]

#### A. Applicability

The checklist for EMS primarily consists of management practices (MP). These MPs are drawn from ISO 14001, ISO 14004, and guidance documents provided by the EPA. This checklist is also targeted at facility-level (i.e., installation, project, refuge, laboratory, center, park) EMS, not at Departmental, Bureau, Agency, or Regional EMS.

Assessors are required to review state and local regulations and, if applicable, the appropriate Agency Supplement, to perform a comprehensive assessment. While this checklist presents the principles of EMS, it does not specifically describe how an individual Department, Agency, Bureau, or facility implements their EMS. To accurately assess EMS conformance the assessor must use the pertinent Department, Agency, Bureau, or facility policy, guidance, or SOPs.

#### B. Federal Regulations

- International Organization for Standardization (ISO) 14001, Environmental Management Systems – Specification with Guidance for Use. The purpose of this standard, revised 15 September 2015, is to provide organizations with a framework to protect the environment and respond to changing environmental conditions in balance with socio-economic needs. It specifies requirements that enable an organization to achieve the intended outcomes it sets for its environmental management system. The basis for the approach underlying an environmental management system is founded on the concept of Plan-Do-Check-Act (PDCA). ISO 14001 is not a regulation [Revised October 2016].
- International Organization for Standardization (ISO) 14004, *Environmental Management Systems — General Guidelines on Principles, Systems and Support Techniques*. This standard, revised 15 November 2004, provides assistance to organizations that wish to implement or improve an environmental management system and thereby improve their environmental performance. This International Standard is consistent with the concept of sustainable development and compatible with diverse cultural, social and organizational frameworks and systems of management.
- Executive Order (EO) 13693, *Planning for Federal Sustainability in the Next Decade*. This EO, signed 19 March 2015, encourages the continued implementation of formal Environmental Management Systems (EMS) where those systems have proven effective and deployment of new EMSs where appropriate (Section 7, para (i)) [Added October 2016].
- *Implementing Instruction For Executive Order (EO) 13693, Planning for Federal Sustainability in the Next Decade*. These instructions, dated 10 June 2015, provide Federal Executive departments and agencies with clarifying instructions for implementing EO 13693. According to these instructions, E.O. 13693 charges the Principal agency Chief Sustainability Officer (CSO) with considering the impact of government leases and contracts on the agency's ability to comply with the goals of the E.O. and supporting continual improvement through appropriate implementation of formal environmental managements systems where those systems have proven effective.

#### C. State/Local Regulations

For information on regulations in specific states, see the State Supplements to TEAM Guide.

## E. Key Compliance Definitions

- *Agency* - an executive agency as defined in section 105 of title 5, United States Code, excluding the Government Accountability Office (EO 13693, Section 19, para b).
- *Audit* - systematic, independent and documented process for obtaining audit evidence and evaluating it objectively to determine the extent to which the audit criteria are fulfilled. Note 1 to entry: An internal audit is conducted by the organization itself, or by an external party on its behalf. Note 2 to entry: An audit can be a combined audit (combining two or more disciplines). Note 3 to entry: Independence can be demonstrated by the freedom from responsibility for the activity being audited or freedom from bias and conflict of interest. Note 4 to entry: “Audit evidence” consists of records, statements of fact or other information which are relevant to the audit criteria and are verifiable; and “audit criteria” are the set of policies, procedures or requirements used as a reference against which audit evidence is compared, as defined in ISO 19011:2011, 3.3 and 3.2 respectively (ISO 14001:2015(E), para 3.4.1).
- *Competence* - ability to apply knowledge and skills to achieve intended results (ISO 14001:2015(E), para 3.3.1).
- *Compliance Obligations* - (preferred term) legal requirements and other requirements (admitted term) legal requirements that an organization has to comply with and other requirements that an organization has to or chooses to comply with. Note 1 to entry: Compliance obligations are related to the environmental management system. Note 2 to entry: Compliance obligations can arise from mandatory requirements, such as applicable laws and regulations, or voluntary commitments, such as organizational and industry standards, contractual relationships, codes of practice and agreements with community groups or non-governmental organizations (ISO 14001:2015(E), para 3.2.9).
- *Conformity* - fulfilment of a requirement (ISO 14001:2015(E), para 3.4.2).
- *Continual Improvement* - recurring activity to enhance performance. Note 1 to entry: Enhancing performance relates to the use of the environmental management system to enhance environmental performance consistent with the organization’s environmental policy. Note 2 to entry: The activity need not take place in all areas simultaneously, or without interruption (ISO 14001:2015(E), para 3.4.5).
- *Corrective Action* - action to eliminate the cause of a nonconformity (3.4.3) and to prevent recurrence. Note 1 to entry: There can be more than one cause for a nonconformity (ISO 14001:2015(E), para 3.4.4).
- *Documented Information* - information required to be controlled and maintained by an organization and the medium on which it is contained. Note 1 to entry: Documented information can be in any format and media, and from any source. Note 2 to entry: Documented information can refer to (ISO 14001:2015(E), para 3.3.2).
  1. the environmental management system, including related processes;
  2. information created in order for the organization to operate (can be referred to as documentation);
  3. evidence of results achieved (can be referred to as records).
- *Effectiveness* - extent to which planned activities are realized and planned results achieved (ISO 14001:2015(E), para 3.4.6).
- *Environment* - surroundings in which an organization operates, including air, water, land, natural resources, flora, fauna, humans and their interrelationships. Note 1 to entry: Surroundings can extend from within an organization to the local, regional and global system. Note 2 to entry: Surroundings can be described in terms of biodiversity, ecosystems, climate or other characteristics (ISO 14001:2015(E), para 3.2.1).
- *Environmental Aspect* - element of an organization’s activities or products or services that interacts or can interact with the environment. Note 1 to entry: An environmental aspect can cause (an) environmental impact(s). A significant environmental aspect is one that has or can have one or more significant environmental impact(s).

Note 2 to entry: Significant environmental aspects are determined by the organization applying one or more criteria (ISO 14001:2015(E), para 3.2.2).

- *Environmental Condition* - state or characteristic of the environment as determined at a certain point in time (ISO 14001:2015(E), para 3.2.3).
- *Environmental Impact* - change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's environmental aspects (ISO 14001:2015(E), para 3.2.4).
- *Environmental Management System* - part of the management system used to manage environmental aspects, fulfil compliance obligations, and address risks and opportunities (ISO 14001:2015(E), para 3.1.2).
- *Environmental Objective* - objective set by the organization consistent with its environmental policy (ISO 14001:2015(E), para 3.2.6).
- *Environmental Performance* - performance related to the management of environmental aspects. Note 1 to entry: For an environmental management system, results can be measured against the organization's environmental policy, environmental objectives or other criteria, using indicators (ISO 14001:2015(E), para 3.4.11).
- *Environmental Policy* - intentions and direction of an organization related to environmental performance, as formally expressed by its top management (ISO 14001:2015(E), para 3.1.3).
- *Federal Facility* - any building or collection of buildings, grounds, or structures, as well as any fixture or part thereof, which is owned by the United States or any Federal agency or that is held by the United States or any Federal agency under a lease-acquisition agreement under which the United States or a Federal agency will receive fee simple title under the terms of such agreement without further negotiation (EO 13693, Section 19, para 1).
- *Indicator* - measurable representation of the condition or status of operations, management or conditions (ISO 14001:2015(E), para 3.4.7).
- *Interested Party* - person or organization that can affect, be affected by, or perceive itself to be affected by a decision or activity. EXAMPLE Customers, communities, suppliers, regulators, non-governmental organizations, investors and employees. Note 1 to entry: To "perceive itself to be affected" means the perception has been made known to the organization (ISO 14001:2015(E), para 3.1.6).
- *Life Cycle* - consecutive and interlinked stages of a product (or service) system, from raw material acquisition or generation from natural resources to final disposal. Note 1 to entry: The life cycle stages include acquisition of raw materials, design, production, transportation/delivery, use, end-of-life treatment and final disposal (ISO 14001:2015(E), para 3.3.3).
- *Management Practice (MP)* - practices that, although not mandated by law, are encouraged to promote safe operating procedures.
- *Management System* - set of interrelated or interacting elements of an organization to establish policies and objectives and processes to achieve those objectives. Note 1 to entry: A management system can address a single discipline or several disciplines (e.g. quality, environment, occupational health and safety, energy, financial management). Note 2 to entry: The system elements include the organization's structure, roles and responsibilities, planning and operation, performance evaluation and improvement. Note 3 to entry: The scope of a management system can include the whole of the organization, specific and identified functions of the organization, specific and identified sections of the organization, or one or more functions across a group of organizations (ISO 14001:2015(E), para 3.1.1).
- *Measurement* - process to determine a value (ISO 14001:2015(E), para 3.4.9).

- *Monitoring* - determining the status of a system, a process or an activity. Note 1 to entry: To determine the status, there might be a need to check, supervise or critically observe (ISO 14001:2015(E), para 3.4.8).
- *Nonconformity* - non-fulfilment of a requirement. Note 1 to entry: Nonconformity relates to requirements in this International Standard and additional environmental management system requirements that an organization establishes for itself (ISO 14001:2015(E), para 3.4.3).
- *Objective* - result to be achieved. Note 1 to entry: An objective can be strategic, tactical, or operational. Note 2 to entry: Objectives can relate to different disciplines (such as financial, health and safety, and environmental goals) and can apply at different levels (such as strategic, organization-wide, project, product, service and process). Note 3 to entry: An objective can be expressed in other ways, e.g. as an intended outcome, a purpose, an operational criterion, as an environmental objective, or by the use of other words with similar meaning (e.g. aim, goal, or target) (ISO 14001:2015(E), para 3.2.5).
- *Organization* - person or group of people that has its own functions with responsibilities, authorities and relationships to achieve its objectives. Note 1 to entry: The concept of organization includes, but is not limited to sole-trader, company, corporation, firm, enterprise, authority, partnership, charity or institution, or part or combination thereof, whether incorporated or not, public or private (ISO 14001:2015(E), para 3.1.4).
- *Outsource* (verb) - make an arrangement where an external *organization* performs part of an organization's function or *process*. Note 1 to entry: An external organization is outside the scope of the *management system*, although the outsourced function or process is within the scope (ISO 14001:2015(E), para 3.3.4).
- *Performance* - measurable result. Note 1 to entry: Performance can relate either to quantitative or qualitative findings. Note 2 to entry: Performance can relate to the management of activities, processes, products (including services), systems or organizations (ISO 14001:2015(E), para 3.4.10).
- *Prevention of Pollution* - use of processes, practices, techniques, materials, products, services or energy to avoid, reduce or control (separately or in combination) the creation, emission or discharge of any type of pollutant or waste, in order to reduce adverse environmental impacts. Note 1 to entry: Prevention of pollution can include source reduction or elimination; process, product or service changes; efficient use of resources; material and energy substitution; reuse; recovery; recycling, reclamation; or treatment (ISO 14001:2015(E), para 3.2.7).
- *Process* - set of interrelated or interacting activities which transforms inputs into outputs. Note 1 to entry: A process can be documented or not (ISO 14001:2015(E), para 3.3.5).
- *Requirement* - need or expectation that is stated, generally implied or obligatory. Note 1 to entry: "Generally implied" means that it is custom or common practice for the organization and interested parties that the need or expectation under consideration is implied. Note 2 to entry: A specified requirement is one that is stated, for example in documented information. Note 3 to entry: Requirements other than legal requirements become obligatory when the organization decides to comply with them (ISO 14001:2015(E), para 3.2.8).
- *Risk* - effect of uncertainty. Note 1 to entry: An effect is a deviation from the expected — positive or negative. Note 2 to entry: Uncertainty is the state, even partial, of deficiency of information related to, understanding or knowledge of, an event, its consequence, or likelihood. Note 3 to entry: Risk is often characterized by reference to potential "events" (as defined in ISO Guide 73:2009, 3.5.1.3) and "consequences" (as defined in ISO Guide 73:2009, 3.6.1.3), or a combination of these. Note 4 to entry: Risk is often expressed in terms of a combination of the consequences of an event (including changes in circumstances) and the associated "likelihood" (as defined in ISO Guide 73:2009, 3.6.1.1) of occurrence (ISO 14001:2015(E), para 3.2.10).
- *Risks and Opportunities* - potential adverse effects (threats) and potential beneficial effects (opportunities) (ISO 14001:2015(E), para 3.2.11).
- *Top Management* - person or group of people who directs and controls an *organization* at the highest level. Note 1 to entry: Top management has the power to delegate authority and provide resources within the organization.

Note 2 to entry: If the scope of the *management system* covers only part of an organization, then top management refers to those who direct and control that part of the organization (ISO 14001:2015(E), para 3.1.5)

#### **F. Records To Review**

- EMS manual and the procedures applicable to the area being audited
- Regulatory documents and specifications that typically apply in the area being audited
- The findings of the last audit of the area and any available audit checklists relating to that area
- Any records of corrective action analysis relating to that area

#### **G. Physical Features To Inspect**

- None

#### **H. Guidance for EMS Checklist Users**

	<b>REFER TO CHECKLIST ITEMS:</b>
All Facilities (includes 4)	EM.1.1.US. through EM.1.3.US
Missing, Risk Management, and Positive Checklist Items	EM.2.1.US. through EM.2.3.US
Leadership	EM.11.1.US through EM.11.3.US
Planning	EM.20.1.US. through EM.20.7.US.
Support	EM.31.1.US through EM.31.5.US
Operation	EM.41.1.US and EM.41.2.US
Performance Evaluation	EM.51.1.US through EM.51.4.US
Improvement	EM.60.1.US through EM.60.3.US



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<p><b>EMS</b></p> <p><b>EM.1</b>  <b>All Facilities</b></p> <p><b>EM.1.1.US.</b> The current status of any ongoing or unresolved consent orders, compliance agreements, notices of violation (NOVs), interagency agreements, or equivalent state enforcement actions is required to be examined (a finding under this checklist item will have the enforcement action/identifying information as the citation).</p> <p><b>EM.1.2.US.</b> When developing an EMS, organizations should consider multiple factors when defining the scope and/or planning its EMS (ISO 14001:2015, para 4) [<b>Revised July 2017</b>].</p>	<p>Determine if noncompliance issues have been resolved by reviewing a copy of the previous report, consent orders, compliance agreements, NOVs, interagency agreements, programmatic agreements executed with the SHPO, NEPA documents with specific mitigation requirements, management plans, litigation settlement agreements, court imposed injunctions, or equivalent state enforcement actions.</p> <p>Verify that the organization determines external and internal issues that are relevant to its purpose and that affect its ability to achieve the intended outcomes of its EMS.</p> <p>(NOTE: Such issues include environmental conditions being affected by or capable of affecting the organization.)</p> <p>Verify that the organization determines the boundaries and applicability of the EMS to establish its scope.</p> <p>Verify that, when determining the scope and/or planning for EMS, the organization considers:</p> <ul style="list-style-type: none"> <li>– the external and internal issues that are relevant to its purpose and that affect its ability to achieve the intended outcomes of its EMS</li> <li>– the interested parties that are relevant to the environmental management system</li> <li>– the relevant needs and expectations (i.e. requirements) of these interested parties</li> <li>– which of these needs and expectations become its compliance obligations.</li> <li>– its organizational units, functions and physical boundaries</li> <li>– its activities, products and services</li> <li>– its authority and ability to exercise control and influence.</li> </ul> <p>(NOTE: Per Annex A of ISO 14001:2015, para A.4.1: Examples of internal and external issues which can be relevant to the context of the organization include:</p> <ul style="list-style-type: none"> <li>– environmental conditions related to climate, air quality, water quality, land use, existing contamination, natural resource availability and biodiversity, that</li> </ul>

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<p><b>EM.1.3.US.</b> Checklist item deleted <b>[Deleted October 2016]</b>.</p>	<p>can either affect the organization's purpose, or be affected by its environmental aspects</p> <ul style="list-style-type: none"> <li>–the external cultural, social, political, legal, regulatory, financial, technological, economic, natural and competitive circumstances, whether international, national, regional or local</li> <li>–the internal characteristics or conditions of the organization, such as its activities, products and services, strategic direction, culture and capabilities (i.e. people, knowledge, processes, systems).)</li> </ul> <p>Verify that, once the scope is defined, all activities, products and services of the organization within that scope are included in the EMS.</p> <p>(NOTE: Per Annex A of ISO 14001:2015, para A.4.3: In setting the scope, the credibility of the environmental management system depends upon the choice of organizational boundaries. The organization considers the extent of control or influence that it can exert over activities, products and services considering a life cycle perspective. Scoping should not be used to exclude activities, products, services, or facilities that have or can have significant environmental aspects, or to evade its compliance obligations. The scope is a factual and representative statement of the organization's operations included within its environmental management system boundaries that should not mislead interested parties.)</p> <p>Verify that the scope is maintained as documented information and is available to interested parties.</p> <p>Verify that the organization establishes, implements, maintains and continually improves an EMS, including the processes needed and their interactions, in accordance with the requirements of ISO 14001.</p> <p>NOTE: Checklist item concerning inclusion of the elements of Compliance Management Plans deleted.)</p>

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<p><b>EMS</b></p> <p><b>EM.2</b>  <b>Missing, Risk Management, and Positive Checklist Items</b></p> <p><b>EM.2.1.US.</b> Facilities are required to comply with all applicable Federal regulatory requirements not contained in this checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of finding).</p> <p><b>EM.2.2.US.</b> Risk management techniques should be promoted in environmental efforts (MP).</p> <p><b>EM.2.3.US.</b> Facilities should go above and beyond statutory and regulatory compliance (MP).</p>	<p>Determine if any new regulations concerning EMS have been issued since the finalization of the manual.</p> <p>Determine if the facility has activities or facilities that are regulated but not addressed in this checklist.</p> <p>Verify that the facility is in compliance with all applicable and newly issued regulations.</p> <p>Determine if risk management techniques are promoted in environmental efforts.</p> <p>Determine if the facility has gone above and beyond simply complying with environmental requirements.</p>



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<p><b>EMS</b></p> <p><b>EM.10 Policy</b></p> <p><b>EM.10.1.US.</b> Checklist item moved [Citation Revised October 2009; Moved July 2017].</p> <p><b>EM.10.2.US.</b> Checklist item moved [Citation Revised October 2009; Moved July 2017].</p>	<p>(NOTE: This checklist item was moved in the re-organization of the EMS section. See EM.11.2.US.)</p> <p>(NOTE: This checklist item was incorporated into EM.11.2.US in the re-organization of the EMS section)</p>





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<b>EM.11.3.US.</b> Top management shall assign and communicate responsibilities for relevant roles within the organization (MP - ISO 14001:2015, para 5.3) [ <b>Added July 2017</b> ].	<ul style="list-style-type: none"> <li>– includes a commitment to fulfil its compliance obligations;</li> <li>– includes a commitment to continual improvement of the environmental management system to enhance environmental performance.</li> </ul> <p>(NOTE Other specific commitment(s) to protect the environment can include sustainable resource use, climate change mitigation and adaptation, and protection of biodiversity and ecosystems.)</p> <p>Verify that the environmental policy is maintained as documented information.</p> <p>Verify that the environmental policy is available to interested parties.</p> <p>Verify that top management ensures that the responsibilities and authorities for relevant roles are assigned and communicated within the organization.</p> <p>Verify that top management assigns the responsibility and authority for:</p> <ul style="list-style-type: none"> <li>– ensuring that the environmental management system conforms to the requirements of ISO 14001</li> <li>– reporting on the performance of the EMS, including environmental performance, to top management.</li> </ul>

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<p><b>EMS</b></p> <p><b>EM.20 Planning</b></p> <p><b>EM.20.1.US.</b> Checklist item moved (Moved) [<b>Citation Revised October 2009; Moved July 2017</b>].</p> <p><b>EM.20.2.US.</b> Checklist item moved (Moved) [<b>Citation Revised October 2009; Moved July 2017</b>].</p> <p><b>EM.20.3.US.</b> Checklist item moved [<b>Citation Revised October 2009; Moved July 2017</b>].</p> <p><b>EM.20.4.US.</b> Checklist item moved (Moved) [<b>Citation Revised October 2009; Moved July 2017</b>].</p> <p><b>EM.20.5.US.</b> Checklist item deleted (Deleted) [<b>Deleted October 2016</b>].</p> <p><b>EM.20.6.US.</b> Checklist item deleted (Deleted) [<b>Deleted October 2016</b>].</p> <p><b>EM.20.7.US.</b> Checklist item moved (Moved) [<b>Citation Revised October 2009; Moved July 2017</b>].</p>	<p>(NOTE: This checklist item was moved in the re-organization of the EMS section. See EM.21.2.US.)</p> <p>(NOTE: This checklist item was moved in the re-organization of the EMS section. See EM.21.3.US.)</p> <p>(NOTE: This checklist item was moved in the re-organization of the EMS section. See EM.21.4.US.)</p> <p>(NOTE: This checklist item was moved in the re-organization of the EMS section. See EM.31.2.US.)</p> <p>(NOTE: This checklist item concerning inclusion of EO 13423 in performance standards based on the <i>Instructions for Implementing EO 13423</i> has been deleted.)</p> <p>(NOTE: This checklist item concerning gap analysis is incorporated into checklist item EM.1.2.US.)</p> <p>(NOTE: This checklist item was moved in the re-organization of the EMS section. See EM.31.1.US.)</p>

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<p><b>EMS</b></p> <p><b>EM.21 Planning</b></p> <p><b>EM.21.1.US.</b> The organization should establish, implement, and maintain the processes needed for EMS planning (MP – ISO 14001:2015, para 6.1.1) [Added July 2017].</p> <p><b>EM.21.2.US.</b> Organizations should develop and implement a procedure to identify environmental aspects and their impacts (MP - ISO 14001:2015, para 6.1.2 and 6.1.4) [Moved July 2017].</p>	<p>Verify that the organization establishes, implements and maintains the process(es) needed to meet the requirements in ISO 14001:2105 para 6.1.1 to 6.1.4 (see checklist items EM.21.2.US through EM.21.4.US).</p> <p>Verify that, when planning for the EMS, the organization considers:</p> <ul style="list-style-type: none"> <li>– the issues referred to in 4.1 (see checklist item ??)</li> <li>– the requirements referred to in 4.2 (see checklist item ??)</li> <li>– the scope of its EMS; and determine the risks and opportunities, related to its environmental aspects (see 6.1.2 [see checklist item ??]), compliance obligations (see 6.1.3 [see checklist item ??]) and other issues and requirements, identified in 4.1 and 4.2 (see checklist item ???), that need to be addressed to: <ul style="list-style-type: none"> <li>– give assurance that the environmental management system can achieve its intended outcomes;</li> <li>– prevent or reduce undesired effects, including the potential for external environmental conditions</li> <li>– to affect the organization;</li> <li>– achieve continual improvement.</li> </ul> </li> </ul> <p>Verify that, within the scope of the EMS, the organization determines potential emergency situations, including those that can have an environmental impact.</p> <p>Verify that the organization maintains documented information of its:</p> <ul style="list-style-type: none"> <li>– risks and opportunities that need to be addressed;</li> <li>– process(es) needed in 6.1.1 to 6.1.4 (see checklist items ???), to the extent necessary to have confidence they are carried out as planned.</li> </ul> <p>(NOTE: This was previously checklist item EM.20.1.US.)</p> <p>Verify that, within the defined scope of the EMS, the organization determines the environmental aspects of its activities, products and services that it can control and those that it can influence, and their associated environmental impacts, considering a life cycle perspective.</p> <p>Verify that, when determining environmental aspects, the organization takes into account the following:</p> <ul style="list-style-type: none"> <li>– change, including planned or new developments, and new or modified activities, products and services</li> </ul>

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	<p>– abnormal conditions and reasonably foreseeable emergency situations.</p> <p>Verify that the organization determines those aspects that have or can have a significant environmental impact (i.e. significant environmental aspects), by using established criteria.</p> <p>Verify that the organization communicates its significant environmental aspects among the various levels and functions of the organization, as appropriate.</p> <p>Verify that the organization maintains documented information of its:</p> <ul style="list-style-type: none"> <li>– environmental aspects and associated environmental impacts</li> <li>– criteria used to determine its significant environmental aspects</li> <li>– significant environmental aspects.</li> </ul> <p>(NOTE: Significant environmental aspects can result in risks and opportunities associated with either adverse environmental impacts (threats) or beneficial environmental impacts (opportunities)).</p> <p>Verify that the organization plans to take actions to address its environmental aspects and impacts.</p> <p>Verify that the organization plans how to:</p> <ul style="list-style-type: none"> <li>– integrate and implement the actions into its environmental management system processes, or other business processes</li> <li>– evaluate the effectiveness of these actions.</li> </ul> <p>Verify that, when planning these actions to address its aspects and impacts, the organization considers its technological options and its financial, operational and business requirements.</p> <p>(NOTE: Per Annex A of ISO 14001:2015, para A.6.1.2: When determining environmental aspects, the organization considers a life cycle perspective. This does not require a detailed life cycle assessment; thinking carefully about the life cycle stages that can be controlled or influenced by the organization is sufficient. Typical stages of a product (or service) life cycle include raw material acquisition, design, production, transportation/delivery, use, end-of-life treatment and final disposal. The life cycle stages that are applicable will vary depending on the activity, product or service. An organization needs to determine the environmental aspects within the scope of its EMS. It takes into account the inputs and outputs (both intended and unintended) that are associated with its current and relevant past activities, products and services; planned or new developments; and new or modified activities, products and services. The method used should consider normal and abnormal operating conditions, shut-down and start-up conditions, as well as the reasonably foreseeable emergency situations. Attention should be paid to prior occurrences of emergency situations. An organization does not have to consider each product,</p>

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	<p>component or raw material individually to determine and evaluate their environmental aspects; it may group or categorize activities, products and services when they have common characteristics. When determining its environmental aspects, the organization can consider:</p> <ul style="list-style-type: none"> <li>– emissions to air</li> <li>– releases to water</li> <li>– releases to land</li> <li>– use of raw materials and natural resources</li> <li>– use of energy</li> <li>– energy emitted (e.g. heat, radiation, vibration (noise), light)</li> <li>– generation of waste and/or by-products</li> <li>– use of space.)</li> </ul> <p>(NOTE: Per Annex A of ISO 14001:2015, para A.6.1.2: In addition to the environmental aspects that it can control directly, an organization determines whether there are environmental aspects that it can influence. These can be related to products and services used by the organization which are provided by others, as well as products and services that it provides to others, including those associated with (an) outsourced process(es). With respect to those an organization provides to others, it can have limited influence on the use and end-of-life treatment of the products and services. In all circumstances, however, it is the organization that determines the extent of control it is able to exercise, the environmental aspects it can influence, and the extent to which it chooses to exercise such influence. Consideration should be given to environmental aspects related to the organization's activities, products and services, such as:</p> <ul style="list-style-type: none"> <li>– design and development of its facilities, processes, products and services</li> <li>– acquisition of raw materials, including extraction</li> <li>– operational or manufacturing processes, including warehousing</li> <li>– operation and maintenance of facilities, organizational assets and infrastructure</li> <li>– environmental performance and practices of external providers</li> <li>– product transportation and service delivery, including packaging</li> <li>– storage, use and end-of-life treatment of products</li> <li>– waste management, including reuse, refurbishing, recycling and disposal.)</li> </ul> <p>(NOTE: Per Annex A of ISO 14001:2015, para A.6.1.2: There is no single method for determining significant environmental aspects, however, the method and criteria used should provide consistent results. The organization sets the criteria for determining its significant environmental aspects. Environmental criteria are the primary and minimum criteria for assessing environmental aspects. Criteria can relate to the environmental aspect (e.g. type, size, frequency) or the environmental impact (e.g. scale, severity, duration, exposure). Other criteria may also be used. An environmental aspect might not be significant when only considering environmental criteria. It can, however, reach or exceed the threshold for determining significance when other criteria are considered. These other criteria can include organizational issues, such as legal requirements or interested party</p>

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<b>EM.21.3.US.</b> Consideration of compliance obligations should be a part of EMS (MP - ISO 14001:2015, para 6.1.3 and 6.1.4) <b>[Moved July 2017]</b> .	<p>concerns. These other criteria are not intended to be used to downgrade an aspect that is significant based on its environmental impact.)</p> <p>(NOTE: This was previously checklist item EM.20.2.US.)</p> <p>Verify that the organization determines and has access to the compliance obligations related to its environmental aspects.</p> <p>Verify that the organization determines how these compliance obligations apply to the organization.</p> <p>Verify that the organization takes their compliance obligations into account when establishing, implementing, maintaining and continually improving its EMS.</p> <p>Verify that the organization maintains documented information of its compliance obligations.</p> <p>(NOTE: Per Annex A of ISO 14001:2015, para A.6.1.3: Compliance obligations include legal requirements that an organization has to comply with and other requirements that the organization has to or chooses to comply with. Mandatory legal requirements related to an organization's environmental aspects can include, if applicable:</p> <ul style="list-style-type: none"> <li>– requirements from governmental entities or other relevant authorities</li> <li>– international, national and local laws and regulations</li> <li>– requirements specified in permits, licenses or other forms of authorization</li> <li>– orders, rules or guidance from regulatory agencies</li> <li>– judgements of courts or administrative tribunals.)</li> </ul> <p>(NOTE: Per Annex A of ISO 14001:2015, para A.6.1.3: Compliance obligations also include other interested party requirements related to its EMS which the organization has to or chooses to adopt. These can include, if applicable:</p> <ul style="list-style-type: none"> <li>– agreements with community groups or non-governmental organizations</li> <li>– agreements with public authorities or customers</li> <li>– organizational requirements</li> <li>– voluntary principles or codes of practice</li> <li>– voluntary labelling or environmental commitments</li> <li>– obligations arising under contractual arrangements with the organization</li> <li>– relevant organizational or industry standards.)</li> </ul> <p>(NOTE Compliance obligations can result in risks and opportunities to the organization.)</p> <p>Verify that the organization plans to take actions to address its compliance obligations.</p> <p>Verify that the organization plans how to:</p>

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<p><b>EM.21.4.US.</b> EMS Planning should include the development of environmental objectives (MP - ISO 14001:2015, para 6.2) [<b>Moved July 2017</b>].</p>	<ul style="list-style-type: none"> <li>– integrate and implement the actions into its environmental management system processes, or other business processes</li> <li>– evaluate the effectiveness of these actions.</li> </ul> <p>Verify that, when planning these actions to address compliance obligations, the organization considers its technological options and its financial, operational and business requirements.</p> <p>(NOTE: Per Annex A of ISO 14001:2015, para A.6.1.4: The actions planned may include establishing environmental objectives or may be incorporated into other EMS processes, either individually or in combination. Some actions may be addressed through other management systems, such as those related to occupational health and safety or business continuity, or through other business processes related to risk, financial or human resource management.)</p> <p>(NOTE: Per Annex A of ISO 14001:2015, para A.6.1.4: When considering its technological options, an organization should consider the use of best-available techniques, where economically viable, cost-effective and judged appropriate. This is not intended to imply that organizations are obliged to use environmental cost-accounting methodologies.)</p> <p>(NOTE: This was previously checklist item EM.20.3.US.)</p> <p>Verify that the organization establishes environmental objectives at relevant functions and levels, taking into account the organization’s significant environmental aspects and associated compliance obligations, and considering its risks and opportunities.</p> <p>(NOTE: Per Annex A of ISO 14001:2015, para A.6.2: Top management may establish environmental objectives at the strategic level, the tactical level or the operational level. The strategic level includes the highest levels of the organization and the environmental objectives can be applicable to the whole organization. The tactical and operational levels can include environmental objectives for specific units or functions within the organization and should be compatible with its strategic direction.)</p> <p>(NOTE: Per Annex A of ISO 14001:2015, para A.6.2: The requirement to “take into account significant environmental aspects” does not mean that an environmental objective has to be established for each significant environmental aspect, however, these have a high priority when establishing environmental objectives.)</p> <p>Verify that the environmental objectives are:</p> <ul style="list-style-type: none"> <li>– consistent with the environmental policy</li> </ul>

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	<ul style="list-style-type: none"> <li>– measurable (if practicable)</li> <li>– monitored</li> <li>– communicated</li> <li>– updated as appropriate.</li> </ul> <p>(NOTE: Per Annex A of ISO 14001:2015, para A.6.2: “Consistent with the environmental policy” means that the environmental objectives are broadly aligned and harmonized with the commitments made by top management in the environmental policy, including the commitment to continual improvement.)</p> <p>(NOTE: Per Annex A of ISO 14001:2015, para A.6.2: “Measurable” means it is possible to use either quantitative or qualitative methods in relation to a specified scale to determine if the environmental objective has been achieved. By specifying “if practicable”, it is acknowledged that there can be situations when it is not feasible to measure an environmental objective, however, it is important that the organization is able to determine whether or not an environmental objective has been achieved.)</p> <p>Verify that the organization maintains documented information on the environmental objectives.</p> <p>Verify that, when planning how to achieve its environmental objectives, the organization determines:</p> <ul style="list-style-type: none"> <li>– what will be done</li> <li>– what resources will be required</li> <li>– who will be responsible</li> <li>– when it will be completed</li> <li>– how the results will be evaluated, including indicators for monitoring progress toward achievement of its measurable environmental objectives (see <a href="#">9.1.1</a>).</li> </ul> <p>Verify that the organization considers how actions to achieve its environmental objectives can be integrated into the organization’s business processes.</p>

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<p><b>EMS</b></p> <p><b>EM.30 Implementation</b></p> <p><b>EM.30.1.US.</b> Checklist item deleted (Deleted) <b>[Deleted July 2017]</b>.</p> <p><b>EM.30.2.US.</b> Checklist item deleted (Deleted) <b>[Deleted July 2017]</b>.</p> <p><b>EM.30.3.US.</b> Checklist item deleted (Deleted) <b>[Deleted July 2017]</b>.</p> <p><b>EM.30.4.US.</b> Checklist item deleted (Deleted) <b>[Deleted July 2017]</b>.</p> <p><b>EM.30.5.US.</b> Checklist item moved (Moved) <b>[Citation Revised October 2009; Moved July 2017]</b>.</p> <p><b>EM.30.6.US.</b> Checklist item moved (Moved) <b>[Citation Revised October 2009; Moved July 2017]</b>.</p>	<p>(NOTE: This checklist item concerning initial awareness training and refresher training on the goals of EO 13423 based on the <i>Instructions for Implementing EO 13423</i> has been deleted.)</p> <p>(NOTE: This checklist item concerning training on environmental management based on the <i>Instructions for Implementing EO 13423</i> has been deleted.)</p> <p>(NOTE: This checklist item concerning public participation based on the <i>Instructions for Implementing EO 13423</i> has been deleted.)</p> <p>(NOTE: This checklist item relating EO 13423 to EMS based on the <i>Instructions for Implementing EO 13423</i> has been deleted.)</p> <p>(NOTE: This checklist item was moved in the re-organization of the EMS section. See EM.41.2.US.)</p> <p>(NOTE: This checklist item was moved in the re-organization of the EMS section. See EM.60.3.US.)</p>



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<b>EMS</b>  <b>EM.31 Support</b>  <b>EM.31.1.US.</b> Organizations should determine and provide the resources needed for their EMS (MP – ISO 14001:2015, para 7.1) <b>[Moved July 2017]</b> .          <b>EM.31.2.US.</b> The organization should be involved in determining competence (ISO 14001:2015 para 7.2) <b>[Moved July 2017]</b> .	<p>(NOTE: This was previously checklist item EM.20.7.US.)</p> <p>Verify that the organization determines and provide the resources needed for the establishment, implementation, maintenance and continual improvement of the EMS.</p> <p>(NOTE: Per Annex A of ISO 14001:2015, para A.7.1: Internal resources may be supplemented by (an) external provider(s). Resources can include human resources, natural resources, infrastructure, technology and financial resources. Examples of human resources include specialized skills and knowledge. Examples of infrastructure resources include the organization’s buildings, equipment, underground tanks and drainage system.)</p> <p>(NOTE: This was previously checklist item EM.20.4.US.)</p> <p>Verify that the organization:</p> <ul style="list-style-type: none"> <li>– determines the necessary competence of person(s) doing work under its control that affects its environmental performance and its ability to fulfil its compliance obligations</li> <li>– ensures that these persons are competent on the basis of appropriate education, training or experience</li> <li>– determines training needs associated with its environmental aspects and its EMS</li> <li>– where applicable, takes actions to acquire the necessary competence, and evaluate the effectiveness of the actions taken.</li> </ul> <p>(NOTE: Applicable actions can include, for example, the provision of training to, the mentoring of, or the reassignment of currently employed persons; or the hiring or contracting of competent persons.)</p> <p>Verify that the organization retains appropriate documented information as evidence of competence.</p> <p>(NOTE: Per Annex A of ISO 14001:2015, para A.7.2: The competency requirements of ISO 14001:2015 apply to persons working under the organization’s control who affect its environmental performance, including persons:</p> <ul style="list-style-type: none"> <li>– whose work has the potential to cause a significant environmental impact;</li> </ul>

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<p><b>EM.31.3.US.</b> The organization should ensure that persons working under their control are appropriately aware of policies, risks, and implications (ISO 14001:2015 para 7.3) <b>[Moved July 2017].</b></p>	<ul style="list-style-type: none"> <li>– who are assigned responsibilities for the environmental management system, including those who:               <ul style="list-style-type: none"> <li>– determine and evaluate environmental impacts or compliance obligations</li> <li>– contribute to the achievement of an environmental objective</li> <li>– respond to emergency situations</li> <li>– perform internal audits</li> <li>– perform evaluations of compliance.)</li> </ul> </li> </ul> <p>(NOTE: This was previously checklist item EM.20.4.US.)</p> <p>Verify that the organization ensures that persons doing work under the organization’s control are aware of:</p> <ul style="list-style-type: none"> <li>– the environmental policy</li> <li>– the significant environmental aspects and related actual or potential environmental impacts associated with their work</li> <li>– their contribution to the effectiveness of the environmental management system, including the benefits of enhanced environmental performance</li> <li>– the implications of not conforming with the environmental management system requirements, including not fulfilling the organization’s compliance obligations.</li> </ul> <p>(NOTE: Per Annex A of ISO 14001:2015, para A.7.3: Awareness of the environmental policy should not be taken to mean that the commitments need to be memorized or that persons doing work under the organization’s control have a copy of the documented environmental policy. Rather, these persons should be aware of its existence, its purpose and their role in achieving the commitments, including how their work can affect the organization’s ability to fulfil its compliance obligations.)</p>
<p><b>EM.31.4.US.</b> The organization should establish, implement and maintain the process(es) needed for internal and external communications relevant to the EMS (MP - ISO 14001:2015, para 7.4) <b>[Moved July 2017].</b></p>	<p>(NOTE: This was previously checklist item EM.30.7.US.)</p> <p>Verify that the organization establishes, implements and maintains the process(es) needed for internal and external communications relevant to the EMS, including:</p> <ul style="list-style-type: none"> <li>– on what it will communicate</li> <li>– when to communicate</li> <li>– with whom to communicate</li> <li>– how to communicate.</li> </ul> <p>Verify that, when establishing its communication process(es), the organization:</p>

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<p><b>EM.31.5.US.</b> Documented information and management of documented information should be a part of the organization's EMS (MP -</p>	<ul style="list-style-type: none"> <li>– takes into account its compliance obligations</li> <li>– ensures that environmental information communicated is consistent with information generated within the environmental management system, and is reliable.</li> </ul> <p>Verify that the organization responds to relevant communications on its EMS.</p> <p>Verify that the organization retains documented information as evidence of its communications, as appropriate.</p> <p>Verify that the organization:</p> <ul style="list-style-type: none"> <li>– internally communicates information relevant to the environmental management system among the various levels and functions of the organization, including changes to the EMS, as appropriate</li> <li>– ensures its communication process(es) enable(s) persons doing work under the organization's control to contribute to continual improvement.</li> </ul> <p>(NOTE: Per Annex A of ISO 14001:2015, para A.7.4: When establishing its communication process(es), the internal organizational structure should be considered to ensure communication with the most appropriate levels and functions. A single approach can be adequate to meet the needs of many different interested parties, or multiple approaches might be necessary to address specific needs of individual interested parties.)</p> <p>Verify that the organization externally communicates information relevant to the EMS, as established by the organization's communication process(es) and as required by its compliance obligations.</p> <p>(NOTE: Per Annex A of ISO 14001:2015, para A.7.4: The information received by the organization can contain requests from interested parties for specific information related to the management of its environmental aspects, or can contain general impressions or views on the way the organization carries out that management. These impressions or views can be positive or negative. In the latter case (e.g. complaints), it is important that a prompt and clear answer is provided by the organization. A subsequent analysis of these complaints can provide valuable information for detecting improvement opportunities for the environmental management system.)</p> <p>(NOTE: This was previously checklist item EM.30.8.US.)</p> <p>Verify that the organization's EMS includes:</p> <ul style="list-style-type: none"> <li>– documented information required by ISO 14001</li> <li>– documented information determined by the organization as being necessary for the effectiveness of the environmental management system.</li> </ul>

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ISO 14001:2015, para 7.5) <b>[Moved July 2017].</b>	<p>(NOTE: The extent of documented information for an EMS can differ from one organization to another due to:</p> <ul style="list-style-type: none"> <li>– the size of organization and its type of activities, processes, products and services</li> <li>– the need to demonstrate fulfilment of its compliance obligations</li> <li>– the complexity of processes and their interactions</li> <li>– the competence of persons doing work under the organization’s control.)</li> </ul> <p>Verify that, when creating and updating documented information, the organization ensures appropriate:</p> <ul style="list-style-type: none"> <li>– identification and description (e.g. a title, date, author, or reference number)</li> <li>– format (e.g. language, software version, graphics) and media (e.g. paper, electronic)</li> <li>– review and approval for suitability and adequacy.</li> </ul> <p>Verify that documented information required by the EMS and by ISO 14001 is controlled to ensure:</p> <ul style="list-style-type: none"> <li>– it is available and suitable for use, where and when it is needed</li> <li>– it is adequately protected (e.g. from loss of confidentiality, improper use, or loss of integrity).</li> </ul> <p>(NOTE: Per Annex A of ISO 14001:2015, para A.7.5: An organization should create and maintain documented information in a manner sufficient to ensure a suitable, adequate and effective environmental management system. The primary focus should be on the implementation of the EMS and on environmental performance, not on a complex documented information control system.)</p> <p>Verify that, for the control of documented information, the organization addresses the following activities as applicable:</p> <ul style="list-style-type: none"> <li>– distribution, access, retrieval and use</li> <li>– storage and preservation, including preservation of legibility</li> <li>– control of changes (e.g. version control)</li> <li>– retention and disposition.</li> </ul> <p>Verify that documented information of external origin which is determined by the organization to be necessary for the planning and operation of the EMS is identified, as appropriate, and controlled.</p> <p>(NOTE: Access can imply a decision regarding the permission to view the documented information only, or the permission and authority to view and change the documented information.)</p>

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	<p>(NOTE: Per Annex A of ISO 14001:2015, para A.7.5: Documented information originally created for purposes other than the environmental management system may be used. The documented information associated with the EMS may be integrated with other information management systems implemented by the organization. It does not have to be in the form of a manual.)</p> <p>(NOTE: Per Annex A of ISO 14001:2015, para A.8.1: When a process is outsourced, or when products and services are supplied by (an) external provider(s), the organization's ability to exert control or influence can vary from direct control to limited or no influence. In some cases, an outsourced process performed onsite might be under the direct control of an organization; in other cases, an organization's ability to influence an outsourced process or external supplier might be limited. When determining the type and extent of operational controls related to external providers, including contractors, the organization may consider one or more factors such as:</p> <ul style="list-style-type: none"> <li>– environmental aspects and associated environmental impacts</li> <li>– risks and opportunities associated with the manufacturing of its products or the provision of its services</li> <li>– the organization's compliance obligations.)</li> </ul> <p>(NOTE: Per Annex A of ISO 14001:2015, para A.8.1: An outsourced process is one that fulfils all of the following:</p> <ul style="list-style-type: none"> <li>– it is within the scope of the environmental management system;</li> <li>– it is integral to the organization's functioning;</li> <li>– it is needed for the environmental management system to achieve its intended outcome;</li> <li>– liability for conforming to requirements is retained by the organization;</li> <li>– the organization and the external provider have a relationship where the process is perceived by interested parties as being carried out by the organization.)</li> </ul>

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<p><b>EMS</b></p> <p><b>EM.40</b>  <b>Monitoring and Measuring</b></p> <p><b>EM.40.1.US.</b> Checklist item deleted (Deleted) [<b>Deleted October 2016</b>].</p> <p><b>EM.40.2.US.</b> Checklist item deleted (Deleted) [<b>Deleted October 2016</b>].</p> <p><b>EM.40.3.US.</b> Checklist item moved (Moved) [<b>Citation Revised October 2009; Moved July 2017</b>].</p> <p><b>EM.40.4.US.</b> Checklist item moved (Moved) [<b>Moved July 2017</b>].</p> <p><b>EM.40.5.US.</b> Checklist item moved (Moved) [<b>Citation Revised October 2009; Moved July 2017</b>].</p> <p><b>EM.40.6.US.</b> Checklist item moved (Moved) [<b>Moved July 2017</b>].</p>	<p>(NOTE: This checklist item concerning conformance with EO 13423 EMS based on the <i>Instructions for Implementing EO 13423</i> has been deleted.)</p> <p>(NOTE: This checklist item based on the <i>Instructions for Implementing EO 13423</i> has been deleted.)</p> <p>(NOTE: This checklist item was moved in the re-organization of the EMS section. See EM.51.3.US.)</p> <p>(NOTE: This checklist item was moved in the re-organization of the EMS section. See EM.51.1.US.)</p> <p>(NOTE: This checklist item was moved in the re-organization of the EMS section. See EM.51.2.US.)</p> <p>(NOTE: This checklist item was moved in the re-organization of the EMS section. See EM.60.2.US.)</p>





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<p>emergencies (MP - ISO 14001:2015, para 8.2) [Moved July 2017].</p>	<p>consequences. Emergency situations can result in adverse environmental impacts or other effects on the organization. When determining potential emergency situations (e.g. fire, chemical spill, severe weather), the organization should consider:</p> <ul style="list-style-type: none"> <li>– the nature of onsite hazards (e.g. flammable liquids, storage tanks, compressed gasses);</li> <li>– the most likely type and scale of an emergency situation;</li> <li>– the potential for emergency situations at a nearby facility (e.g. plant, road, railway line.)</li> </ul> <p>Verify that the organization establishes, implements and maintains the process(es) needed to prepare for and respond to potential emergency situations.</p> <p>(NOTE: Per Annex A of ISO 14001:2015, para A.8.2: When planning its emergency preparedness and response process(es), the organization should consider:</p> <ul style="list-style-type: none"> <li>– the most appropriate method(s) for responding to an emergency situation</li> <li>– internal and external communication process(es)</li> <li>– the action(s) required to prevent or mitigate environmental impacts</li> <li>– mitigation and response action(s) to be taken for different types of emergency situations</li> <li>– the need for post-emergency evaluation to determine and implement corrective actions</li> <li>– periodic testing of planned emergency response actions</li> <li>– training of emergency response personnel</li> <li>– a list of key personnel and aid agencies, including contact details (e.g. fire department, spillage clean-up services)</li> <li>– evacuation routes and assembly points</li> <li>– the possibility of mutual assistance from neighboring organizations.)</li> </ul> <p>Verify that the organization:</p> <ul style="list-style-type: none"> <li>– prepares to respond by planning actions to prevent or mitigate adverse environmental impacts from emergency situations</li> <li>– responds to actual emergency situations</li> <li>– takes action to prevent or mitigate the consequences of emergency situations, appropriate to the magnitude of the emergency and the potential environmental impact</li> <li>– periodically tests the planned response actions, where practicable</li> <li>– periodically reviews and revises the process(es) and planned response actions, in particular after the occurrence of emergency situations or tests</li> <li>– provide relevant information and training related to emergency preparedness and response, as appropriate, to relevant interested parties, including persons working under its control.</li> </ul>

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	<p>Verify that the organization maintains documented information to the extent necessary to have confidence that the process(es) is (are) carried out as planned.</p>



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<p><b>EMS</b></p> <p><b>EM.50</b>  <b>Management Review</b></p> <p><b>EM.50.1.US.</b> Checklist item moved (Moved) [<b>Moved July 2017</b>].</p> <p><b>EM.50.2.US.</b> Checklist item moved (Moved) [<b>Moved July 2017</b>].</p>	<p>(NOTE: This checklist item was moved in the re-organization of the EMS section. See EM.51.4.US.)</p> <p>(NOTE: This checklist item was moved in the re-organization of the EMS section. See EM.11.1.US.)</p>



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<b>EMS</b>  <b>EM.51</b> <b>Performance Review</b>  <b>EM.51.1.US.</b> The organization should monitor, measure, analyze, and evaluate its environmental performance (MP – ISO 14001:2015, para 9.1.1) <b>[Moved July 2017]</b> .	<p>(NOTE: This was previously EM.40.4.US.)</p> <p>Verify that the organization monitors, measures, analyses and evaluates its environmental performance.</p> <p>(NOTE: Per Annex A of ISO 14001:2015, para A.9.1.1: When determining what should be monitored and measured, in addition to progress on environmental objectives, the organization should take into account its significant environmental aspects, compliance obligations and operational controls. The methods used by the organization to monitor and measure, analyze and evaluate should be defined in the EMS, in order to ensure that:</p> <ul style="list-style-type: none"> <li>– the timing of monitoring and measurement is coordinated with the need for analysis and evaluation results</li> <li>– the results of monitoring and measurement are reliable, reproducible and traceable</li> <li>– the analysis and evaluation are reliable and reproducible, and enable the organization to report trends.</li> </ul> <p>The environmental performance analysis and evaluation results should be reported to those with responsibility and authority to initiate appropriate action.)</p> <p>Verify that the organization has determined:</p> <ul style="list-style-type: none"> <li>– what needs to be monitored and measured</li> <li>– the methods for monitoring, measurement, analysis and evaluation, as applicable, to ensure valid results</li> <li>– the criteria against which the organization will evaluate its environmental performance, and appropriate indicators</li> <li>– when the monitoring and measuring shall be performed</li> <li>– when the results from monitoring and measurement shall be analyzed and evaluated.</li> </ul> <p>Verify that the organization ensures that calibrated or verified monitoring and measurement equipment is used and maintained, as appropriate.</p> <p>Verify that the organization evaluates its environmental performance and the effectiveness of the EMS.</p>

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<p><b>EM.51.2.US.</b> The organization should evaluate fulfillment of its compliance obligations (MP - ISO 14001:2015, para 9.1.2) [Moved July 2017].</p>	<p>Verify that the organization communicates relevant environmental performance information both internally and externally, as identified in its communication process(es) and as required by its compliance obligations.</p> <p>Verify that the organization retains appropriate documented information as evidence of the monitoring, measurement, analysis and evaluation results.</p> <p>(NOTE: This was previously checklist item EM.40.5.US.)</p> <p>Verify that the organization has established, implemented and maintains the process(es) needed to evaluate fulfilment of its compliance obligations.</p> <p>Verify that the organization:</p> <ul style="list-style-type: none"> <li>– determines the frequency that compliance will be evaluated</li> <li>– evaluates compliance and take action if needed</li> <li>– maintains knowledge and understanding of its compliance status.</li> </ul> <p>Verify that the organization retains documented information as evidence of the compliance evaluation result(s).</p> <p>(NOTE: Per Annex A of ISO 14001:2015, para A.9.1.2: The frequency and timing of compliance evaluations can vary depending on the importance of the requirement, variations in operating conditions, changes in compliance obligations and the organization's past performance. An organization can use a variety of methods to maintain its knowledge and understanding of its compliance status, however, all compliance obligations need to be evaluated periodically.)</p> <p>(NOTE: Per Annex A of ISO 14001:2015, para A.9.1.2: If compliance evaluation results indicate a failure to fulfil a legal requirement, the organization needs to determine and implement the actions necessary to achieve compliance. This might require communication with a regulatory agency and agreement on a course of action to fulfil its legal requirements. Where such an agreement is in place, it becomes a compliance obligation.)</p> <p>(NOTE: Per Annex A of ISO 14001:2015, para A.9.1.2: A non-compliance is not necessarily elevated to a nonconformity if, for example, it is identified and corrected by the environmental management system processes. Compliance-related nonconformities need to be corrected, even if those nonconformities have not resulted in actual non-compliance with legal requirements.)</p>
<p><b>EM.51.3.US.</b> Organizations should conduct internal audits</p>	<p>(NOTE: This was previously checklist item EM.40.3.US.)</p>

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<p>(MP - ISO 14001:2015, para 9.2) <b>[Moved July 2017]</b>.</p>	<p>Verify that the organization conducts internal audits at planned intervals to provide information on whether the EMS conforms to:</p> <ul style="list-style-type: none"> <li>– the organization’s own requirements for its EMS</li> <li>– the requirements of this ISO 14001.</li> </ul> <p>Verify that the organization conducts internal audits at planned intervals to provide information on whether the EMS is effectively implemented and maintained.</p> <p>(NOTE: Per Annex A of ISO 14001:2015, para A.9.2: Auditors should be independent of the activity being audited, wherever practicable, and should in all cases act in a manner that is free from bias and conflict of interest.)</p> <p>Verify that the organization establishes, implements and maintains an internal audit program, including the frequency, methods, responsibilities, planning requirements and reporting of its internal audits.</p> <p>Verify that, when establishing the internal audit program, the organization takes into consideration the environmental importance of the processes concerned, changes affecting the organization and the results of previous audits.</p> <p>Verify that the organization:</p> <ul style="list-style-type: none"> <li>– defines the audit criteria and scope for each audit</li> <li>– selects auditors and conducts audits to ensure objectivity and the impartiality of the audit process</li> <li>– ensures that the results of the audits are reported to relevant management.</li> </ul> <p>Verify that the organization retains documented information as evidence of the implementation of the audit program and the audit results.</p> <p>(NOTE: Per Annex A of ISO 14001:2015, para A.9.2: Nonconformities identified during internal audits are subject to appropriate corrective action. When considering the results of previous audits, the organization should include:</p> <ul style="list-style-type: none"> <li>– previously identified nonconformities and the effectiveness of the actions taken</li> <li>– results of internal and external audits.)</li> </ul> <p><b>EM.51.4.US.</b> Top management should review the organization’s EMS at planned intervals (ISO 14001:2015, para 9.3) <b>[Moved July 2017]</b>.</p> <p>(NOTE: This was previously checklist item EM.50.1.US.)</p> <p>Verify that top management reviews the organization’s EMS, at planned intervals, to ensure its continuing suitability, adequacy and effectiveness.</p> <p>(NOTE: Per Annex A of ISO 14001:2015, para A.9.3: The management review should be high-level; it does not need to be an exhaustive review of detailed information. The management review topics need not be addressed all at once. The</p>

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	<p>review may take place over a period of time and can be part of regularly scheduled management activities, such as board or operational meetings; it does not need to be a separate activity. Relevant complaints received from interested parties are reviewed by top management to determine opportunities for improvement.)</p> <p>Verify that the management review includes consideration of:</p> <ul style="list-style-type: none"> <li>– the status of actions from previous management reviews</li> <li>– changes in: <ul style="list-style-type: none"> <li>– external and internal issues that are relevant to the environmental management system</li> <li>– the needs and expectations of interested parties, including compliance obligations</li> <li>– its significant environmental aspects</li> <li>– risks and opportunities</li> </ul> </li> <li>– the extent to which environmental objectives have been achieved</li> <li>– information on the organization’s environmental performance, including trends in: <ul style="list-style-type: none"> <li>– nonconformities and corrective actions</li> <li>– monitoring and measurement results</li> <li>– fulfilment of its compliance obligations</li> <li>– audit results</li> </ul> </li> <li>– adequacy of resources</li> <li>– relevant communication(s) from interested parties, including complaints</li> <li>– opportunities for continual improvement.</li> </ul> <p>(NOTE: Per Annex A of ISO 14001:2015, para A.9.3: “Suitability” refers to how the environmental management system fits the organization, its operations, culture and business systems. “Adequacy” refers to whether it meets the requirements of ISO 14001:2015 and is implemented appropriately. “Effectiveness” refers to whether it is achieving the desired results.)</p> <p>Verify that the outputs of the management review includes:</p> <ul style="list-style-type: none"> <li>– conclusions on the continuing suitability, adequacy and effectiveness of the EMS</li> <li>– decisions related to continual improvement opportunities</li> <li>– decisions related to any need for changes to the EMS, including resources</li> <li>– actions, if needed, when environmental objectives have not been achieved</li> <li>– opportunities to improve integration of the EMS with other business processes, if needed</li> <li>– any implications for the strategic direction of the organization.</li> </ul> <p>Verify that the organization retains documented information as evidence of the results of management reviews.</p>

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<p><b>EMS</b></p> <p><b>EM.60 Improvement</b></p> <p><b>EM.60.1.US.</b> The organization should determine opportunities for improvement and implement them (MP – ISO14001:2015, para 10.1) [Added July 2017].</p> <p><b>EM.60.2.US.</b> The organization should correct and prevent the recurrence of nonconformance (MP - ISO 14001:2015, para 10.2) [Citation Revised October 2009; Moved July 2017].</p> <p><b>EM.60.3.US.</b> The facility/organization should integrate continual improvement as a part of its EMS (MP - ISO 14001:2015, para 10.3) [Citation Revised</p>	<p>Verify that the organization determines opportunities for improvement (see 9.1, 9.2 and 9.3 [see checklist items EM.51.1.US through EM.51.4.US]) and implements necessary actions to achieve the intended outcomes of its environmental management system.</p> <p>(NOTE: This was previously checklist item EM.40.6.US.)</p> <p>Verify that, when a nonconformity occurs, the organization:</p> <ul style="list-style-type: none"> <li>– reacts to the nonconformity and, as applicable: <ul style="list-style-type: none"> <li>– takes action to control and correct it</li> <li>– deals with the consequences, including mitigating adverse environmental impacts</li> </ul> </li> <li>– evaluates the need for action to eliminate the causes of the nonconformity, in order that it does not recur or occur elsewhere, by: <ul style="list-style-type: none"> <li>– reviewing the nonconformity</li> <li>– determining the causes of the nonconformity</li> <li>– determining if similar nonconformities exist, or could potentially occur</li> </ul> </li> <li>– implements any action needed</li> <li>– reviews the effectiveness of any corrective action taken</li> <li>– makes changes to the environmental management system, if necessary.</li> </ul> <p>Verify that corrective actions are appropriate to the significance of the effects of the nonconformities encountered, including the environmental impact(s).</p> <p>Verify that the organization retains documented information as evidence of:</p> <ul style="list-style-type: none"> <li>– the nature of the nonconformities and any subsequent actions taken</li> <li>– the results of any corrective action.</li> </ul> <p>(NOTE: This was previously checklist item EM.30.6.US.)</p> <p>Verify that the organization continually improves the suitability, adequacy and effectiveness of the EMS to enhance environmental performance.</p>

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